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NATIONAL ACCOUNTS AND BALANCES: LINKS BETWEEN THE SYSTEM  
OF NATIONAL ACCOUNTS (SNA) AND THE SYSTEM OF BALANCES OF  
THE NATIONAL ECONOMY (MPS)

Progress report on links between the System of National Accounts (SNA)  
and the System of Balances of the National Economy (MPS)

Report of the Secretary-General

SUMMARY

The present document contains a general description of the work on SNA/MPS comparisons carried out since the twenty-fourth session of the Statistical Commission (paras. 1-6). Section I of the report is devoted to conceptual issues, in particular, to the impact of the latest methodological developments in SNA and MPS on intersystem comparisons. Special attention is given to the revision of the publication entitled Comparisons of the System of National Accounts and the System of Balances of the National Economy: Part One, Conceptual Relationships and the MPS questionnaire (paras. 6-36). In section II an evaluation of analytical and quantitative results of SNA/MPS comparisons made on a bilateral basis is presented (paras. 37-44). A possible approach to the development of short-cut methods of SNA/MPS comparisons is described (paras. 45-54). Section III includes proposals for future work in this area (paras. 55-62) and section IV presents points for discussion (para. 63).

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## INTRODUCTION

1. The objective of the present paper is to inform the Statistical Commission of the progress made in work on links between the System of National Accounts (SNA) and the System of Balances of the National Economy (MPS) with special attention to the problems of linking the concepts and classifications of the two systems.

2. As its twenty-fourth session in 1987, the Commission reviewed a progress report on SNA/MPS comparisons (E/CN.3/1987/9) and "requested that work continue on the further elaboration of the conceptual framework of SNA and MPS comparisons and that priority be given to the revision of the publication entitled Comparisons of the System of National Accounts and the System of Balances of the National Economy: Part One, Conceptual Relationships (Series F, No. 20, United Nations publication, Sales No. E.77.XVII.6)". 1/ (The publication will be referred to below as Comparisons ... Part One.) The Commission stressed the desirability of introducing into the publication a discussion of several topics, including the impact of institutional differences of the comparisons of SNA and MPS aggregates, comparisons of aggregates applied in both systems in the field of capital formation and consumption of the population.

3. During the two years that followed the twenty-fourth session of the Statistical Commission, both national accounting systems have undergone an intensive development processes. For the SNA, a number of expert group meetings were held as a part of the effort to revise the system; for the MPS, a revised version of the system was published and implementation of the changes started. In the attempt to develop the two systems, special attention was paid to the requirements of linking and reconciliation; however, the progress on linking itself in the revision of the document Comparisons ... Part One was limited, because both systems were in a somewhat fluid stage during that period.

4. In the review of developments during the last two years in the field of national accounting, two important features deserve special attention:

(a) A number of countries with centrally planned economies have regularly compiled for their own use some SNA aggregates, such as gross domestic (or national) product. In addition, other countries with centrally planned economies have recently started to undertake such compilations. Still others compile them on ad hoc or experimental basis;

(b) In a number of developing countries (essentially market economies compiling their national accounts using SNA concepts on a regular basis), there are some institutional arrangements similar to countries with centrally planned economies. This requires the adaptation of the SNA to meet these circumstances, possibly through the inclusion of approaches or solutions similar to those recommended in the MPS.

5. These features require some reorientation of work on SNA/MPS links. In addition to the need to elaborate on methods of moving from the concept of one system to the corresponding concept of the other system (e.g. from net material

product to gross domestic product) - which was the focus of attention in earlier stages of work on SNA/MPS links - substantially more attention will need to be given to the adaptation of each system to the circumstances of countries with different economic and social systems.

## I. CONCEPTUAL WORK ON SNA/MPS COMPARISONS

### A. Revision of "Comparisons of the System of National Accounts and the System of Balances of the National Economy: Part One, Conceptual Relationships"

6. The purpose of international comparisons of national accounting aggregates may be described in broad terms as the study and comparison of the results of economic activity and the means by which the results are achieved. This calls for the comparison of trends of the main indicators of economic development. However, for comparisons to be meaningful it is necessary that the data also be available in comparable absolute terms, so that the structure of the different aggregates, their interrelationships and factors by which their levels and trends are determined may be studied.

7. One major objective of the revision of the document Comparisons ... Part One is to improve and elaborate the conceptual framework for comparisons of definitions and statistical contents of macroeconomic aggregates which are currently in use in countries with centrally planned and market economies. The systems used in the comparison are set out in two United Nations publications: A System of National Accounts 2/ and Basic Principles of the System of Balances of the National Economy. 3/ Since both systems of national accounting are currently under review, it would be useful to describe methodological developments which may lead to improvement of the comparisons of their main aggregates. The second major objective, which is now receiving increasing emphasis, is the need to adapt each system to different economic and social circumstances, as referred to in paragraph 4 above.

#### 1. System of National Accounts (SNA)

8. The present SNA was revised in 1968 and subsequently published by the United Nations in 1970 for use by national statistical authorities and for international reporting of comparable national accounting data. It provides a comprehensive and detailed framework for the systematic and integrated recording of transaction flows in an economy. It brings together data ranging in degree of aggregation from the consolidated accounts of a country to detailed input-output and flow of funds tables into an articulated and coherent system. It includes goods and services accounts for different production activities in the economy as well as income, outlay and capital finance accounts for institutional sectors and subsectors.

9. The basic structure of the revised SNA will not be changed from the 1968 version. For the new version of the SNA, 4/ amendments are proposed, mainly in transaction classification and the presentation, but generally in order to allow

the system to be more clear for users. Supporting tables or satellite accounts will be added to describe particular aspects of the economy and to improve links to related statistical systems. It is proposed that no major changes be made in the conceptual framework of the system. However, some areas, such as income distribution and household sector accounts, government accounts and external transactions, may require the use of concepts and classifications at least somewhat different from those used in the present SNA. The SNA production account would be subdivided into two parts and include value added in addition to operating surplus as a balancing item in the accounts. This would make explicit an important concept in accounts - that of value added - which is now available only through alternative table presentations. Income and outlay accounts are also further subdivided into compensation of employees, operating surplus, entrepreneurial income, net indirect taxes and property income on the one hand, and current transfers on the other, so that an intermediate income concept - the sectoral equivalent of national income for the economy as a whole - would be made explicit. Capital accumulation accounts would be broken down into capital transfers on the one hand and gross capital formation, net purchases of land and intangible assets on the other. This would result in an additional balancing item, reflecting the change in net worth in the balance sheets.

10. Gross domestic product (GDP), which can alternatively be expressed as the sum of income generated in the economy (value added) and as the difference between gross output and intermediate consumption, or final demand minus imports, would be used as a central aggregate. The breakdown of consumption in the new SNA allows the compilation of data on a concept similar to the MPS concept of total consumption of the population, bringing the concepts of these two systems closer together.

11. The role of input-output tables would be increased in the revised SNA as an analytical instrument to check the internal consistency of national accounts data with regard to commodity and income flows. Since the input-output tables are the major source for intersystem comparisons, a clear distinction is needed in the new SNA between goods and services, in the classification of both producers and products. Further distinction between goods-related and other services may be useful. The usefulness and feasibility of this distinction should further be explored, especially in connection with reconciliation between SNA and MPS.

## 2. System of Balances of the National Economy (MPS)

12. The MPS in its original version is based on a system of balances, that is, the material and financial balances, the balance of manpower resources and the balance of fixed assets and indicators of national wealth. 5/ The material balance (the balance of production, consumption and accumulation of the global social product) is a presentation in physical form of the supply of goods and material services originating in the domestically produced global social product and imports and their disposition into consumption, capital formation and exports, classified by different production activity categories. The financial balance (the balance of the production, distribution, redistribution and final disposition of the global social product and the national income) is a presentation of income flows generated

in production, their redistribution through transactions in the non-material sphere and through other transfer flows and, finally, their disbursement to consumption and capital formation. The income flows of the financial balance are classified by institutional (or social) sectors. The manpower balance presents the allocation of available manpower to production activities and institutional or social sectors. This balance is expressed in the number of persons employed. The balance of fixed assets and indicators of the national wealth is a presentation in physical terms of the stocks of tangible fixed and other assets available at the beginning and end of the year and the changes that have taken place during the year. The tangible assets are classified by type of assets and by form of ownership and production activities of the national economy.

13. The Standing Commission on Co-operation in the Field of Statistics of the Council for Mutual Economic Assistance (CMEA) has recently approved "Basic methodological principles governing the compilation of the System of Statistical Balances of the National Economy", 6/ which is an improved, updated and expanded version of the description of the MPS. The new document considerably expands the scope of economic analysis and facilitates intersystem comparisons.

14. A number of new balances and tables are introduced which are designed for more specific study of the various aspects of the economy, such as the results of production and the final disposition of the global social product and national income. In the compilation of individual balances, the grouping of elements of income and expenditures is used, which makes it possible to define important individual categories of income and expenditures. This provides an opportunity to break down the financial balance data. The following newly created balances were introduced in the revised MPS:

- (a) Balance of receipts and expenditures of units of material sphere;
- (b) Balances of receipts and expenditures of units of non-material sphere;
- (c) Balance of the state budget system;
- (d) Balance of the social security system;
- (e) Balance of non-material services.

15. The balance of receipts and expenditures of units of material sphere covers all kinds of units of the material sphere grouped in accordance with the requirements of analysis: by individual sector and form of ownership, by sector of the national economy, by type of organizational unit and by organizational aggregation (such as a governmental office). The receipts are shown in the balance according to sources and in certain sequence (production and sale of material goods; non-material services; allowances, credits, insurance premiums). These receipts are grouped in a way that distinguishes the separate stages in income formation, starting with sales receipts and ending with the creation of profits and other financial resources. This balance contains more detailed information than the conventional financial balance. From the point of view of intersystem comparisons, the production and sale of non-material services is especially

important, because it is difficult to distinguish those items in the financial balance or in input-output tables.

16. The balance of receipts and expenditures of units in the non-material sphere covers all kinds of units of the non-material sphere classified by two major groups: units satisfying the social and cultural needs of the population (housing and community services, education, culture and art, health, social security, physical culture and tourism) and units satisfying the needs of the community as a whole (science, finance, credit, insurance, central government, other sectors of the non-material sphere). Receipts in the balance are reflected by their sources, through the financial and credit system, from sales in the non-material sphere and directly for the financing of capital investment. The expenditure side of the balance contains wages and salaries of employees working in the non-material sphere; payments and contributions into the financial and credit system; payment for non-material services furnished by domestic units; payments for imported non-material services; and expenditures from final income. This newly introduced balance may facilitate intersystem comparisons by allowing countries with centrally planned economies to build up some type of production accounts for units in the non-material sphere.

17. In the balance of the state budget system receipts to the state budget are shown as follows: incomes from economic units of the material and non-material sphere (turnover tax, deductions from profits, other taxes, transfers of incomes of self-financing units); payments made by the population; incomes from abroad; receipts from other parts of the budget system, etc. Expenditures from the state budget cover financial transactions of economic units (such as financing of capital investments, allowances granted to the state-financed units, payments for the expenses of state-financed units and other payments, etc.); pensions and allowances; stipends, and other payments to the population; transfers to other countries; transfers to other parts of the budget system (for example, from central to regional budgets); credits paid and increase in bank deposits from the state budget. The more detailed data in this balance may facilitate links with the SNA government sector accounts.

18. The balance of the social security system reflects receipts resulting from deductions for social security made by economic units in the material and non-material spheres and by the population, as well as receipts from the budget system. The outlays in the balance characterize payments to the population (pensions, allowances), financing of selected health and social security institutions, other payments and changes in bank deposits as a result of social security assets.

19. The balance of non-material services is specially developed to provide a conceptual basis for collecting and publishing internationally comparable figures on economic activities in the non-material sphere and to establish closer links between the SNA and MPS. Indicators of non-material services are regarded as a further elaboration of the conventional balances - in particular, the financial balance. These indicators, such as sales and purchases of non-material services, are further developed, presented in a more detailed form and supplemented by other information. What is more important, they are organized in the form of

interrelated tables (balances), which ensure co-ordination and consistency among the corresponding aggregates. Besides the basic categories of final (non-productive) consumption the following supplementary groups are distinguished:

(a) Services purchased by the population, including all forms of services provided by self-financing units and the part of the services provided by state-financed institutions which is paid for by the population from its own income;

(b) Free-of-charge services for the population financed from social funds. These include the expenditures of all state-financed, social and similar organizations that provide services, less the amounts paid for these services by the population and by organizations;

(c) Services meeting the needs of the community as a whole (in addition to services provided for the population) financed from the state budget and the budgets of co-operative and social organizations (this refers mainly to the activities of central government agencies, scientific, financial and insurance bodies, state defence and state security agencies, political and social organizations);

(d) Non-material services furnished to enterprises and organizations in the sphere of material production, to the non-material sphere and to the rest of the world as well.

20. The new version of the MPS also includes an input-output table which describes the global social product in terms of its material composition and its value broken down into a large number of sectors. The CMEA Classification of Branches of the National Economy (CBNE) is taken as the basis for aggregation of the statistical input-output table. The various sectors of material production are distinguished according to the origin of their activity. For example, construction carried out at industrial enterprises is included in the construction sector, and industrial activity carried out in construction is included in the industrial sector. Therefore the basic sectors of material production appear in the table as clearly defined items. A close link was established between the input-output table and the two basic parts of the MPS - material and financial balances. This makes it possible for the input-output table to be used in the intersystem comparison of production aggregates.

### 3. Work on the revision of "Comparisons ... Part One"

21. The conceptual framework for intersystem comparisons should provide for comparisons and adjustments of as large parts of the two systems as is possible and meaningful. In theory, it would be possible to introduce in each of the systems all the subdivisions needed for a complete transformation into the other system and then draw up a framework for full intersystem comparisons. In practice, however, the comparison of certain parts of the systems would be of relatively little analytical interest. It would seem that intersystem comparisons are meaningful mainly in respect of those transactions and flows which relate to comparable functions and which are not too greatly affected by institutional differences



between countries, and that the conceptual framework for such comparisons should be limited to the parts of the system in which those transactions and flows are recorded. In the light of these considerations, the conceptual framework should concentrate mainly on comparisons and adjustments of flows relating to the supply and disposition of goods and services, the formation of income and selected aspects of the redistribution of income and financial flows (finance of current and capital transactions; transactions in financial assets and liabilities). If this is accepted, then the framework ought to be concerned mainly with the following accounts and tables in the two systems: in the SNA - the production, consumption, expenditure and capital formation accounts and selected aspects of the income and outlay accounts; in the MPS - the material and financial balances and the related balances and tables mentioned in paragraph 14.

22. The work on revision of Comparisons ... Part One began in principle with the twenty-first session of the Commission, attempting to further elaborate and clarify the conceptual framework of intersystem comparisons. Particularly important was the introduction in substantial detail of the improved version of the modified matrices and conversion tables designed to derive net material product (NMP) for countries using the SNA. Also important was the introduction of feasibility of application for intersystem comparisons of the system of indicators of non-material services (SINS), developed by CMEA. Tentative schemes of the conversion tables were also presented. These theoretical issues may be considered as basic background materials for the revision of the document Comparisons ... Part One.

23. During the twenty-second session of the Commission the results of the first round of illustrative calculations were examined, culminating in a publication entitled Comparisons of the System of National Accounts and the System of Balances of the National Economy: Part Two, Conversion of Aggregates of SNA and MPS to Vice Versa for Selected Countries. 7/ At that time the Statistical Office of the United Nations Secretariat made an in-depth study of intersystem differences with regard to selected aggregates of the MPS and SNA and, particularly, with regard to capital formation flows. A draft document entitled "Comparative analysis of SNA and MPS concepts of capital formation" was prepared and distributed for comments to countries and agencies. The comments received were favourable, and its major findings may therefore be included in the revised document Comparisons ... Part One. The draft document can also serve as a basis for working out a concept of capital formation common to both the SNA and MPS, which is similar to the common concept of total consumption of the population.

24. Work done on improvement and elaboration of the conceptual framework during that time resulted in the introduction of the modified MPS matrix depicting the general structure of the MPS and the relationships between its major aggregates and classifications while focusing on those flows which are treated differently in the SNA.

25. Based on the Commission's recommendation that work on the revision of the document Comparisons ... Part One should reflect the experience gained through illustrated calculation, the Statistical Office of the United Nations Secretariat expanded the number of countries involved in the second round of this exercise. As a result, valuable theoretical findings were obtained and discussed during the

twenty-third session of the Statistical Commission. It was recognized that the revised document Comparisons ... Part One should include a number of new topics which had not been covered in the original document on that subject, namely the impact of institutional differences on comparisons of GDP and NMP, problems of comparisons of total consumption of the population, data collection and intersystem conversion. The Statistical Office, in close co-operation with the Statistical Division of the Economic Commission for Europe (ECE) has worked out a tentative outline of the revised document. During the twenty-third session two methodological issues were presented and discussed, namely, the treatment of external trade flows in the context of intersystem comparison and the treatment of capital formation flows in the SNA and MPS.

26. During the twenty-fourth session of the Commission methodological issues were presented and discussed concerning the improvement and elaboration of comparisons of certain non-material activities which might help to reduce the impact of institutional set-ups.

27. A number of international forums also discussed methodological issues and practical results of the SNA/MPS comparison. Valuable work was carried out by ECE which, under the auspices of the Conference of European Statisticians, considers national accounts and balances issues annually. Also, valuable initiative was undertaken by the Economic Commission for Latin America and the Caribbean (ECLAC) which, in co-operation with the Institute for Ibero-American Co-operation of Spain and the Government of Cuba, organized a seminar on SNA and MPS comparison in Havana in May 1982. Possibilities and problems of reconciliation of SNA and MPS were also discussed at the nineteenth General Conference of the International Association for Research in Income and Wealth (IARIW) in Noordwijkerhout, Netherlands in August 1985. 8/ Trends in national accounting and their effect on links between SNA/MPS were discussed at the forty-sixth session of the International Statistical Institute in Tokyo, September 1987. 9/

28. In line with the decisions of the Commission and the recommendations of the Inter-Secretariat Working Group, a meeting of the Expert Group on the Reconciliation of SNA and MPS Standards on National Accounts is proposed to be held in the Union of Soviet Socialist Republics in the second half of 1989. This meeting is one in a series of expert group meetings that are being organized to deal with different aspects of the SNA and related fields of statistics. The meeting would bring together experts on national accounting from countries with centrally planned and market economies and include participants from developed and developing countries in order to consider national accounts standards that could be implemented in a number of countries with different economic systems and in different stages of economic development.

29. It was suggested that the meeting deal in concrete terms with the following issues:

(a) Review of present SNA concepts and classifications and proposals for their revision to assess their applicability in countries with centrally planned economies and recommendations on adaptations to the concepts and classifications to facilitate their use in those countries;

(b) Assessment of the role of certain MPS concepts and approaches in the compilation of national accounts for use in developing countries taking into account the long-term experience obtained with the use of the MPS in countries with centrally planned economies. Certain features of the MPS may be useful for specific types of analysis in developing countries. For example, because MPS concepts relate to the material sphere their use may be cost-effective in those cases where national accounts data are needed for certain types of planning purposes and where non-material services are not a significant factor in the economy. This question has been discussed briefly during the previous SNA Expert Group Meeting on Production Accounts and Input-Output Tables held in Vienna in March 1988;

(c) Recommendations on how to modify the SNA and MPS (e.g. further breakdowns of the earlier systems' classifications) to facilitate the linking of the two systems;

(d) Links between the two systems should be expanded to those areas of national accounting to which relatively little attention was given in earlier works (e.g. statistical units, classifications of transactors, income concepts).

30. The outcome of the discussion will ultimately be reflected in a revised version of Comparisons ... Part One. It is the intention of the Statistical Office of the United Nations Secretariat to issue the revised Comparisons ... Part One as a volume in the series of handbooks on national accounting. This volume should assist national accounting in countries with centrally planned economies in the process of developing SNA concepts along with the MPS and also assist national accounting in other countries (particularly developing countries) to elaborate the MPS-type concepts for use in conjunction with the SNA.

31. In order to have a fruitful discussion and reach relevant conclusions in the proposed SNA/MPS Expert Group meeting, it is necessary to carry out preparatory work and to hold intermediate meetings prior to the Expert Group meeting which will include the following:

(a) Case studies in a few selected developing countries to compile SNA and MPS aggregates. These studies would supplement the work already carried out in Europe pairing some market economy countries with others having centrally planned economies (Hungary with France, Finland with Bulgaria). The case studies are intended to bring out the differences between the two sets of concepts, test the feasibility of developing a comparison framework and assess the role that the two systems may play in statistical development, supporting policy and planning;

(b) Convening the ECE Working Party on National Accounts and Balances (May 1989, Geneva) to evaluate the results of case studies and prepare for the SNA/MPS Expert Group meeting. The Geneva meeting would be a final preparation for the SNA/MPS Expert Group meeting and may decide about papers needed to support the discussion.

## B. Revision of the MPS questionnaire

32. The main purpose of the MPS questionnaire is to obtain uniformly reported data from countries with centrally planned economies or from countries using the MPS. Following the adoption of the new version of the MPS in 1985 by the CMEA Standing Commission on Co-operation in the Field of Statistics and the recommendation for its publication as a United Nations document, the present format and content of the MPS questionnaire, which has not been revised since 1968, needs to be brought in line with the latest developments.

33. The SNA questionnaire was designed immediately after the adoption in 1969 of the third revision of the SNA. It was subsequently revised and was considerably expanded in 1980. Another version of the questionnaire was prepared in 1984. The present SNA questionnaire and MPS questionnaire differ not only in underlying concepts but also in informational content.

34. The present MPS questionnaire needs to be revised so that it will more closely resemble the present SNA questionnaire. The latter introduced priorities in the tables, requesting countries to reply as a minimum to the most important part of the questionnaire (which includes the main aggregates). Following the SNA example, the revised MPS questionnaire might improve the number and comparability of responses.

35. One outcome of revising the MPS questionnaire will be to achieve more comparability with tables of the SNA questionnaire. The first section of the questionnaire may cover the main tables, such as NMP by activity, expenditure categories and cost components in current and constant prices. These tables may be similar to the present tables 1a, 1b, 2a, 2b and 3 of the MPS questionnaire. These are the tables of highest priority in the Statistical Office compilation effort and are similar to the present SNA questionnaire tables on GDP. The remaining detailed tables of the present MPS questionnaire should be given lower priority and should therefore be included in a second part of the questionnaire in a manner similar to the SNA questionnaire. In addition, the feasibility of incorporating tables similar to the income and outlay tables and other accounts of institutional sectors that are part of the SNA questionnaire should be explored for the MPS questionnaire.

36. Since some countries with centrally planned economies compile national aggregates according to the SNA, the revised MPS questionnaire may also provide tables containing GDP.

## II. ANALYTICAL AND QUANTITATIVE RESULTS OF SNA/MPS COMPARISONS

### A. Results of bilateral intersystem comparisons

37. Intersystem comparisons of national accounts aggregates on a bilateral basis were initiated by the Hungarian Central Statistical Office and by the French Institut national de la statistique et des études économiques (INSEE) under the auspices of the Conference of European Statisticians in 1978. Since then

considerable work has been carried out by the two countries. Two rounds of calculations were implemented to compare GDP and NMP for 1976 and 1981. The results of the work (together with the detailed description of the methodology used) were included in the document entitled "Comparison of national accounts and balances of France and Hungary"; 10/ in a paper for the seventeenth General Conference of the International Association for Research in Income and Wealth (IARIW) and in the paper entitled "The Franco-Hungarian experiment in applying document F.20 recommendations", presented at the twenty-third session of the Commission.

38. The statistical offices of Bulgaria and Finland also conducted a bilateral comparison of GDP and NMP for 1982. The results of the exercise were published in November 1985 in a document on the Comparison of the balance sheets and the national accounts of the People's Republic of Bulgaria and the Republic of Finland.

39. The major purpose of the bilateral comparison was to test the conversion procedure from the theoretical and quantitative points of view. The experience which countries have accumulated during the exercise of trying to link the SNA and MPS is very useful for the revision of Comparisons ... Part One. Some of the findings by countries during this exercise are summarized below.

40. Generally, the results of the bilateral comparisons confirmed that the Comparisons ... Part One can be used as a principal guideline for comparisons of national accounts aggregates. However, some problems concerning the conversion were raised during the exercise.

41. The first group of problems have arisen in connection with the statistical units in the delineation of the material and non-material spheres (classification problems). One important methodological issue in constructing the national accounting system is the definition of the statistical unit. From this point of view there is a difference between the SNA and MPS. In the MPS, the non-material service results of enterprises engaged in material activities and the material production results of enterprises engaged in non-material activities are always separated from the main activities of the enterprises. In the SNA, however, this is done only if the alien activity is performed in separate establishments. Therefore, an establishment based on the distinction between material production and non-material activities in a country using the SNA is not entirely the same as an establishment in a country using the MPS. This problem was considered significant by Hungary and France, and was felt that it should be taken into account in future revisions of international recommendations.

42. There are also minor classification problems concerning the treatment of certain activities, particularly the services of engineers and technical services (not connected with construction); the distribution of electricity, gas and water to households; the renting of goods to the general public for other than recreational purposes (e.g. clothes); parking lots and structures; data processing; advertising; news gathering and reporting agencies; photographic studios and a number of other activities. The revised Comparisons ... Part One could be made to more specifically distinguish among certain detailed activities in the material and non-material spheres. In the case of the Bulgaria-Finland experiment, a detailed

study of that problem was made, and it was concluded that the difference in the statistical units between the two approaches was not quantitatively significant.

43. The experience of both bilateral exercises has shown that an input-output framework gives a more convenient base for the conversion procedures than the matrices recommended in Comparisons ... Part One. However, both approaches may be covered by the revised document.

44. Some valuation problems may also need to be taken into account in the revision of Comparisons ... Part One. It concerns mainly the consideration of subsidies; services provided by budgetary units and social institutions; valuation at replacement costs; housing and financial services; and the value added tax (VAT) and import duties.

#### B. Short-cut method of SNA/MPS comparisons

45. The conventional approach to SNA/MPS conversions involves the following steps:

- (a) Identification of the corresponding aggregates of the SNA and MPS in respect of which the conversion is to be made;
- (b) Identification (isolation) in SNA and MPS input-output matrices of those components of the aggregates to be converted which are treated differently in the two systems;
- (c) Creation of a set of conversion tables designed for the derivation of SNA concepts (such as GDP) for countries with centrally planned economies and MPS concepts (such as NMP) for countries with market economies.

46. During the more than 15 years of its involvement in intersystem comparisons, the Statistical Office of the United Nations Secretariat has gained substantial experience in using the conventional (comprehensive) method of comparison. Detailed calculations were done for the following countries:

- (a) Developed market economies: Austria (1969), Canada (1976), Finland (1965, 1970, 1982), France (1976, 1984), Japan (1965, 1970, 1975), United Kingdom (1963, 1971, 1972, 1974), United States (1963, 1967, 1972);
- (b) Developing market economies: Peru (1969), Philippines (1961), Zambia (1969);
- (c) Centrally planned economies: Bulgaria (1982), Hungary (1972, 1976, 1982), Yugoslavia (1962, 1970).

The experience gained in these studies allows for some generalization and enables intersystem comparisons to be carried out using certain simplified methods.

47. While the conventional (comprehensive) method of intersystem comparisons allows for great detail in the results gathered, it remains a rather time- and resource-consuming exercise. The use of this method cannot lead to the development

of lengthy time series of the results of comparisons in a given country. The limiting factor is the lack of a detailed input-output table which on the average is compiled every five to 10 years. Therefore in order to obtain rapid results of national accounts aggregates to be used for intersystem comparisons a short-cut method has been worked out.

48. The short-cut method relies on a less detailed data base than that which is used in conventional intersystem comparisons. Nevertheless, and this is borne out by calculations, it seems likely that sufficiently comparable aggregates can be compiled even from this limited data base. This applies not only to the main aggregates, such as GNP and NMP, but also to some of their components.

49. In general, the methodology of the short-cut method may be described using the format of the conversion table 11/ to define the major aggregates needed for comparisons, 12/ solely on the basis of data obtained from the national accounts data base of the Statistical Office of the United Nations Secretariat. For example, in the case of the United States, it is possible to distinguish the non-material component of final expenditures using table 2.5 of the SNA questionnaire. "Private final consumption expenditures by type and purpose" of the national accounts data base. Although the categories listed in table 1 below are not entirely non-material services (many of them may include material components) and although some of the other categories not listed in the table may include non-material services, the error committed by this simplification is relatively small, and the share of non-material services in the final consumption expenditures in the domestic market by households can be approximated quite well. The sum of final expenditures on non-material services can be defined by selecting the components of final consumption expenditures of resident households.

Table 1. Final consumption expenditures of resident households in the United States  
 (In millions of US dollars)

	1973	1976	1979
1. Gross rent	124 802	165 540	232 879
2. Household operation	16 159	20 810	27 726
3. Medical care and health expenses	83 415	121 981	178 120
4. Recreational, entertainment, education and cultural services	72 211	98 946	134 446
5. Personal care	25 181	34 217	46 606
6. Total	321 768	441 494	619 827
7. Final consumption expenditures in the domestic market by households	828 985	1 119 079	1 550 148
8. Percentage share of non-material part (6:7)	38.8	39.5	40.0

50. The comparative results of the estimates made on the basis of the national accounts data base and of those calculated on the basis of the input-output tables for several years are shown in table 2. Estimates made on the basis of the input-output table were adjusted using the results of intersystem comparisons using the conventional (comprehensive) method.

Table 2. Percentage share of non-material part of estimated final consumption

	1973	1974	1975	1976	1977	1978	1979
(a) By short-cut method	38.8	39.2	39.6	39.5	39.6	39.9	40.0
(b) On the basis of input-output table (not adjusted)	37.8	38.3	38.9	38.7	n.a.	39.8	40.0
(c) On the basis of input-output table (adjusted)	34.0	34.4	34.7	34.6	35.6	35.5	35.8
Difference between (a) and (c)	4.8	4.8	4.9	4.9	4.0	4.5	4.2

51. The data for the United States show that estimates on the basis of the national account data base should be adjusted by approximately 4.5 to 5 per cent in order to bring them in line with the data obtained by the conventional (comprehensive) method.

52. Similarly, the difference between the results obtained by the conventional (comprehensive) and short-cut methods are also relatively small for the other main NMP aggregates (see table 3). Consequently, the national accounts data base may in general provide a relatively good basis for intersystem comparisons.

53. Two components are needed for the derivation which cannot be estimated from the above-mentioned source: the value of material inputs in the non-material sphere and consumption of fixed assets in the non-material sphere. These can only be obtained from input-output data. In the case of the United States, an estimated share of these aggregates in total final consumption (SNA sense) compiled by the conventional (comprehensive) method were relatively small (5.9 per cent and 3.5 per cent for 1963; 5.7 per cent and 3.3 per cent for 1967 and 6.3 per cent and 2.9 per cent for 1972). Therefore the estimates made by the short-cut method may either be adjusted by approximately 6 per cent and 3 per cent respectively or may be ignored during the conversion.



Table 3. Percentage share of non-material services in various GNP aggregates, United States

	1963*	1967*	1968	1969	1970	1972*	1973	1974	1975	1976	1977	1978	1979
Personal consumption expenditures	..	..	31.3	31.7	32.4	34.4	34.0	34.4	34.7	34.6	35.6	35.5	35.8
Government final consumption expenditures	..	..	50.7	53.3	56.2	59.8	61.4	59.8	59.5	60.5	61.7	60.2	59.6
Total final consumption	37.2	37.5	36.6	37.3	38.6	40.9	40.8	40.9	41.1	41.1	41.9	41.5	41.5
Gross fixed capital formation	1.5	1.9	1.9	1.9	1.9	2.5	2.3	2.3	2.9	3.2	3.4	3.6	3.5
Increase in stocks	--	--	3.9	--	--	--	--	--	--	--	--	1.3	1.4
Exports	..	..	..	--	--	--	4.0	3.6	4.0	4.3	4.2	4.4	3.6
Imports	..	..	..	--	--	--	1.4	0.6	1.1	1.4	0.3	1.5	1.7

\* Estimates obtained using the conventional (comprehensive) method.

Note: The following symbols have been used in the table:

Two dots (..) indicate that data are not available or are not separately reported.

A dash (--) indicates that the amount is nil or negligible.

54. The advantage of the short-cut method is that it can be used for those years for which input-output tables are not available. Since approximately 120 countries already compile input-output tables, they may serve as valuable sources of information for the SNA/MPS comparison. The fact that the use of the short-cut method would reduce the time required to process the derivation and therefore would increase the number of countries for which intersystem comparisons can be made is also important.

### III. PROPOSALS FOR FUTURE WORK

55. Future work on SNA and MPS links may proceed on several fronts. Work should be continued towards further elaboration of the methodology of intersystem comparisons. A special effort should be made to incorporate those concepts and definitions which received relatively little attention within the present framework of SNA/MPS links (such as statistical units, transactor classification, income concepts). In this context the experiences of the countries involved in bilateral comparisons of national accounts aggregates should be taken into account.

56. Effort to reconcile SNA and MPS concepts and classifications should be made in order to bring the two systems close together. In this way comparisons and linking would be easier and, more importantly, all countries would be in a better position to use the concepts and approaches of either system to meet their national needs. Towards this end, modifications or elaborations will need to be identified in the definitions and classifications of the SNA so that the SNA may be applied equally to the different institutional arrangements and related transactions found in countries with centrally planned economies. In this context particular attention should be paid to the treatment of banks and other institutions that have different functions in countries with centrally planned economies from those with market economies. Similar attention should be given to the treatment of prices (for example, how to treat highly subsidized housing).

57. Final recommendations on these matters will be made by the SNA/MPS Expert Group and will be reflected in the revised SNA and the revised Comparisons ... Part One.

58. Work on the development and elaboration of the short-cut method of intersystem comparisons should continue to make the SNA/MPS comparison more practical. Case studies with the application of the conventional (comprehensive) method should also be carried out in a number of countries. The pros and cons of the two methods should be tested during the exercise. Particular attention should be given to the analytical use of the SNA and MPS framework in developing countries. The feasibility of a specific type of analysis (such as delineation of material and non-material flows) should also be tested in developing countries during the case studies. Alternative and additional sources of data needed for the intersystem comparisons (at the national and international level) should also be investigated.

59. Work on revision of the MPS questionnaire should be carried out with the close co-operation of the CMEA Statistical Division. Efforts should be made to revise the questionnaire in order to collect and uniformly publish reported data from countries with centrally planned economies on an annual basis.

60. Efforts to encourage bilateral intersystem comparisons should be continued extending, if possible, to the conversion of aggregates not dealt with in earlier exercises. The valuable results obtained by France, Hungary, Bulgaria and Finland from both the theoretical and practical points of view would hopefully encourage other countries to begin joint comparisons.

61. Work on the revision of the glossary of SNA/MPS terminology should resume taking into account the latest developments in each of the two systems.

62. Since the third revision of ISIC has been completed, work on revision of the publication Correspondence Table Between the International Standard Industrial Classification of All Economic Activities of the United Nations (ISIC) and the Classification of Branches of the National Economy of the Council for Mutual Economic Assistance (CBNE) 13/ should be started by the Statistical Office of the United Nations Secretariat and the Statistical Division of ECE in close co-operation with the CMEA Statistical Division. The possibility of using the Central Product Classification (CPC) for intersystem comparisons may also be considered.

#### IV. POINTS FOR DISCUSSION

63. The Commission may wish to comment on the main streams of the programme of work on linking SNA and MPS, including:

(a) The new orientation of work, attempting to adaptation of the two systems of national accounting to the realities of countries with different economic and social organizations;

(b) Take note of the preparatory work on the Expert Group on the Reconciliation of SNA/MPS Standards on National Accounting;

(c) Any needed changes in work on the revision of Comparisons ... Part One;

(d) Revision of the MPS questionnaire;

(e) Progress of the work on quantitative comparisons.

The Commission may also wish to comment on the proposals with regard to the future work in the field of SNA/MPS links.

#### Notes

1/ Official Records of the Economic and Social Council, 1987, Supplement No. 6 (E/1987/19), para. 56 (a).

2/ Series F, No. 2, Rev.3, United Nations publication, Sales No. E.69.XVII.3.

Notes (continued)

- 3/ Series F, No. 17, United Nations publication, Sales No. E.71.XVII.10.
- 4/ For detailed information on the latest development of the SNA revision, refer to document E/CN.3/1989/4.
- 5/ The System of Balances of the National Economy is a system of economic tables and concepts designed to give in generalized form a description of the economic process as a whole and its components.
- 6/ PROVISIONAL, ST/ESA/STAT/SER.F/17/Rev.1, vols. I and II.
- 7/ Series F, No. 20, United Nations publication, Sales No. E.81.XVII.15.
- 8/ M. Personnaz, J. Milot and P. Horvath, "The France/Hungary comparison of national accounting concepts and data", August 1981.
- 9/ V. Drjuchin, "Trends in national accounting and their effect on links between SNA and MPS", September 1987.
- 10/ Statistical Commission and Economic Commission for Europe, Conference of European Statisticians, Twenty-ninth Plenary Session, document CES/451.
- 11/ The format of the conversion table is presented in detail in Comparisons of the System of National Accounts and the System of Balances of the National Economy: Part One, Conceptual Relationships, Series F, No. 20 (United Nations publication, Sales No. E.77.XVII.6), p. 77.
- 12/ In the present report, the derivation of NMP form data on final disposition is used as an example.
- 13/ United Nations publication, Sales No. E/R.85.II.E.29.

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