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Updated System of National Accounts (SNA):

Chapter 1: Introduction

This chapter has not yet been updated for inclusion in volume 1 of the *1993 SNA Rev. 1*. The text here is from the *1993 SNA*. It will be updated to bring it into alignment with chapters 3 to 17; the changes foreseen for chapters 1 and 2 will not involve substantive change and will take into consideration the views expressed in an AEG consultation in late 2007. The updated chapters 1 and 2 will be ready for the pre-edited (white cover) publication of volume 1.

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Chapter 1: Introduction

A. The SNA as a System

- 1.1 The System of National Accounts (SNA) consists of a coherent, consistent and integrated set of macroeconomic accounts, balance sheets and tables based on a set of internationally agreed concepts, definitions, classifications and accounting rules. It provides a comprehensive accounting framework within which economic data can be compiled and presented in a format that is designed for purposes of economic analysis, decision-taking and policy-making. The accounts themselves present in a condensed way a great mass of detailed information, organized according to economic principles and perceptions, about the working of an economy. They provide a comprehensive and detailed record of the complex economic activities taking place within an economy and of the interaction between the different economic agents, and groups of agents, that takes place on markets or elsewhere. In practice the accounts are compiled for a succession of time periods, thus providing a continuing flow of information that is indispensable for the monitoring, analysis and evaluation of the performance of an economy over time. The SNA provides information not only about economic activities, but also about the levels of an economy's productive assets and the wealth of its inhabitants at particular points of time. Finally, the SNA includes an external account that displays the links between an economy and the rest of the world.
- 1.2 The SNA may be implemented at different levels of aggregation: at the level of individual economic agents, or institutional units as they are called in the System; for groups of such units, or institutional sectors; or at the level of the total economy. Although traditionally described as a system of national accounts, for analytical purposes the SNA has to be implemented at lower levels of aggregation. In order to understand the workings of the economy, it is essential to be able to observe and analyse the economic interactions taking place between the different sectors of the economy. Certain key aggregate statistics, such as gross domestic product (GDP), that are widely used as indicators of economic activity at the level of the total economy, are defined within the System, but the calculation of such aggregates has long ceased to be the primary purpose for compiling the accounts.
- 1.3 The System is built around a sequence of interconnected flow accounts linked to different types of economic activity taking place within a given period of time, together with balance sheets that record the values of the stocks of assets and liabilities held by institutional units or sectors at the beginning and end of the period. Each flow account relates to a particular kind of activity such as production, or the generation, distribution, redistribution or use of income. Each account is balanced by introducing a balancing item defined residually as the difference between the total resources and uses recorded on the two sides of the account. The balancing item from one account is carried forward as the first item in the following account, thereby making the sequence of accounts an articulated whole. The balancing items typically encapsulate the net result of the activities covered by the accounts in question and are therefore economic constructs of considerable interest and analytical significance - for example, value added, disposable income and saving. There is also a strong link between the flow accounts and the balance sheets, as all the changes occurring over time that affect the assets or liabilities held by institutional units or sectors are systematically recorded in one or another of the flow accounts. The closing balance sheet is fully determined by the opening balance sheet and the transactions or other flows recorded in the sequence of accounts.

B. Accounts and their corresponding economic activities

1.4 The purpose of this section is to give a very brief summary of the main sequence of accounts in order to describe the main features of the System before discussing other related issues. It is impossible to do justice to the wealth of information contained in the System in a short section of this kind, and reference should be made to chapter II for a comprehensive overview of the System. Before summarizing the sequence of accounts, it should be noted that although it is necessary to present the accounts in a particular order, the activities they describe should not be interpreted as taking place sequentially in time. For example, incomes are generated continuously by processes of production, while expenditures on the outputs produced may also be taking place more or less simultaneously. An economy is a general equilibrium system in which interdependent economic activities involving countless transactions between different institutional units are carried out simultaneously. Feedbacks are continually taking place from one type of economic activity to another.

1. The sequence of accounts

Current accounts

1.5 These accounts record the production of goods and services, the generation of incomes by production, the subsequent distribution and redistribution of incomes among institutional units, and the use of incomes for purposes of consumption or saving.

Production account

1.6 The production account records the activity of producing goods and services as defined within the System. Its balancing item, gross value added, is defined as the value of output less the value of intermediate consumption and is a measure of the contribution to GDP made by an individual producer, industry or sector. Gross value added is the source from which the primary incomes of the System are generated and is therefore carried forward into the primary distribution of income account. Value added may also be measured net by deducting consumption of fixed capital.

Distribution and use of income accounts

1.7 These consist of a set of articulated accounts showing how incomes are:

Generated by production

Distributed to institutional units with claims on the value added created by production

Redistributed among institutional units, mainly by government units through social security contributions and benefits and taxes

Eventually used by households, government units or non-profit institutions serving households (NPISHs) for purposes of final consumption or saving.

1.8 The balancing item emerging from the complete set of income accounts is saving. The income accounts have considerable intrinsic economic interest in themselves. In particular, they are needed to explain the behaviour of institutional units as final consumers - that is, as users of the goods and services emanating from production for the satisfaction of the individual and collective needs and wants of households and the community. The balancing item, saving, is carried forward into the capital account, the first in the System's sequence of accumulation accounts.

Accumulation accounts

1.9 These are flow accounts that record the acquisition and disposal of financial and non-financial assets and liabilities by institutional units through transactions or as a result of other events:

The capital account records acquisitions and disposals of non-financial assets as a result of transactions with other units or internal bookkeeping transactions linked to production (changes in inventories and consumption of fixed capital).

The financial account records acquisitions and disposals of financial assets and liabilities, also through transactions.

A third account, the other changes in assets account, consists of two sub-accounts. The first, the other changes in volume of assets account, records changes in the amounts of the assets and liabilities held by institutional units or sectors as a result of factors other than transactions; for example, destruction of fixed assets by natural disasters. The second, the revaluation account, records those changes in the values of assets and liabilities that result from changes in their prices.

- 1.10 The link between the accumulation accounts and the income accounts is provided by the fact that saving - that is, disposable income that is not spent on consumption goods or services - must be used to acquire financial or non-financial assets of one kind or another, if only cash, the most liquid financial asset. When saving is negative, the excess of consumption over disposable income must be financed by disposing of assets or incurring liabilities. The financial account shows the way in which funds are channelled from one group of units to another, especially through financial intermediaries. Access to finance is a prerequisite for engaging in many types of economic activities.

Balance sheets

- 1.11 The balance sheets show the values of the stocks of assets and liabilities held by institutional units or sectors at the beginning and end of an accounting period. As already noted, the values of the assets and liabilities held at any moment in time vary automatically whenever any transactions, price changes or other changes affecting the volume of assets or liabilities held take place. These are all recorded in one or another of the accumulation accounts so that the difference between the values in the opening and closing balance sheets is entirely accounted for within the System, provided, of course, that the assets and liabilities recorded in the balance sheets are valued consistently with the transactions and other changes - that is, at current prices.

2. Activities and transactions

- 1.12 The accounts of the System are designed to provide analytically useful information about the behaviour of institutional units and the activities in which they engage, such as production, consumption and the accumulation of assets. They usually do this by recording the values of the goods, services or assets involved in the transactions between institutional units that are associated with these activities rather than by trying to record or measure the physical processes directly. For example, the accounts do not record the physical consumption of goods and services by households - the eating of food or the burning of fuel within a given time period. Instead, they record the expenditures that households make on final consumption goods and services or, more generally, the values of the goods and services they acquire through transactions with other units, whether purchased or not. Data on transactions provide the basic source material from which the values of the various elements in the accounts are built up or derived. The use of transactions data has important advantages. First, the prices at which goods and services are exchanged in transactions between buyers and sellers on markets provide the information needed for valuing, directly or indirectly, all the items in the accounts. Secondly, a transaction that takes place between two different institutional units has to be recorded for both parties to the transaction and therefore generally appears twice in a system of macroeconomic accounts. This enables important linkages to be established in the System. For example, output is obtained by summing the amounts sold, bartered or transferred to other units plus the amounts entered into, less the amounts withdrawn from inventories. In effect, the value of output is obtained by recording the various uses of that output by means of data on transactions. In this way, flows of goods and services can be traced through the economic system from their producers to their eventual users. Some transactions are only internal bookkeeping transactions that are needed when a single unit engages in two activities, such as the production and consumption of the same good or service, but the great majority of transactions take place between different units on markets.

C. The institutional sectors of the economy

1.13 The purpose of this section is to indicate very briefly what are the main sectors of the economy for which it is possible to compile the full sequence of accounts summarized in the previous section. Two main kinds of institutional units, or transactors, are distinguished in the System - households and legal entities. The latter are either entities created for purposes of production, mainly corporations and non-profit institutions (NPIs), or government units, including social security funds. Institutional units are essentially units that are capable of owning goods and assets, incurring liabilities and engaging in economic activities and transactions with other units in their own right. For the purposes of the System, institutional units that are resident in the economy are grouped together into five mutually exclusive sectors composed of the following types of units:

Non-financial corporations

Financial corporations

Government units, including social security funds

NPIs serving households (NPISHs)

Households.

The five sectors together make up the total economy. Each sector is also divided into sub-sectors. For example, the non-financial and financial corporations sectors are divided to distinguish corporations subject to control by Governments or foreign units from other corporations. The System makes provision for a complete set of flow accounts and balance sheets to be compiled for each sector, and sub-sector if desired, as well as for the total economy. The total number of accounts that may be compiled is therefore potentially quite large, depending upon the level of disaggregation that is required and feasible. Only by disaggregation into sectors and sub-sectors is it possible to observe the interactions between the different parts of the economy that need to be measured and analysed for purposes of policy-making. The complete set of accounts at the level of the five main sectors is shown in annex V at the end of this manual.

1.14 Institutional units that are resident abroad form the rest of the world. The System does not require accounts to be compiled in respect of economic activities taking place in the rest of the world, but all transactions between resident and non-resident units have to be recorded in order to obtain a complete accounting for the economic behaviour of resident units. Transactions between residents and non-residents are grouped together in a single account, the rest of the world account.

D. Other features of the System

1.15 The SNA is a rich and detailed economic accounting system that extends well beyond the main sequence of accounts to encompass other accounts or tables that either contain information that cannot be included in the main accounts or present information in alternative ways, such as matrices, that may be more appropriate for certain types of analysis. It is not proposed to list all these various elements at this point, as they are described in chapter II, but it is useful to draw attention to two specific elements which play a major role in the System.

1. Supply and use tables

1.16 In addition to the flow accounts and balance sheets described earlier, the central framework of the System also contains detailed supply and use tables in the form of matrices that record how supplies of different kinds of goods and services originate from domestic industries and imports and how those supplies are allocated between various intermediate or final uses, including exports. These tables involve the compilation of a set of integrated production and generation of income accounts for industries - that is, groups of establishments as distinct from institutional units - that are able to draw

upon detailed data from industrial censuses or surveys. The supply and use tables provide an accounting framework within which the commodity flow method of compiling national accounts - in which the total supplies and uses of individual types of goods and services have to be balanced with each other - can be systematically exploited. The supply and use tables also provide the basic information for the derivation of detailed input-output tables that are extensively used for purposes of economic analysis and projections.

2. Price and volume measures

1.17 The System also provides specific guidance about the methodology to be used to compile an integrated set of price and volume indices for flows of goods and services, gross value added and GDP that are consistent with the concepts and accounting principles of the System. It is recommended that annual chain indices

E. Concepts and classifications

1.19 The contents of the SNA depend not only on the accounting structure itself - that is, on the type and format of the accounts - but also on the ways in which the items included in the accounts are defined and classified. The issues involved are not simply of a technical nature but raise fundamental questions of economic theory and principles. The concepts and classifications used in the System have a considerable impact on the ways in which the data may be used and the interpretations placed on them.

1. The production boundary

1.20 The activity of production is fundamental. In the System, production is understood to be a physical process, carried out under the responsibility, control and management of an institutional unit, in which labour and assets are used to transform inputs of goods and services into outputs of other goods and services. All goods and services produced as outputs must be such that they can be sold on markets or at least be capable of being provided by one unit to another, with or without charge. The System includes within the production boundary all production actually destined for the market, whether for sale or barter. It also includes all goods or services provided free to individual households or collectively to the community by government units or NPISHs.

should be used where possible, although fixed base indices may also be used when the volume measures for components and aggregates have to be additively consistent for purposes of economic analysis and modelling.

1.18 Rates of inflation and economic growth appropriately measured by price and volume indices for the main aggregates of the System are key variables both for the evaluation of past economic performance and as targets for the formulation of economic policy-making. They are an essential part of the System, especially given the emergence of inflation as an endemic economic problem in many countries. The System also recognizes that the growth in the volume of GDP and the growth of an economy's real income are not the same because of trading gains or losses resulting from changes in international terms of trade.

Household production

1.21 The main problem for defining the range of activities recorded in the production accounts of the System is to decide upon the treatment of activities that produce goods or services that could have been supplied to others on the market but are actually retained by their producers for their own use. These cover a very wide range of productive activities, in particular:

- (a) The production of agricultural goods by household enterprises for own final consumption;
- (b) The production of other goods for own final use by households: the construction of dwellings, the production of foodstuffs and clothing, etc.;
- (c) The production of housing services for own final consumption by owner occupiers;
- (d) The production of domestic and personal services for consumption within the same household: the preparation of meals, care and training of children, cleaning, repairs, etc.

All of these activities are productive in an economic sense. However, inclusion in the System is not simply a matter of estimating monetary values for the outputs of these

activities. If values are assigned to the outputs, values have also to be assigned to the incomes generated by their production and to the consumption of the output. It is clear that the economic significance of these flows is very different from that of monetary flows. For example, the incomes generated are automatically tied to the consumption of the goods and services produced; they have little relevance for the analysis of inflation or deflation or other disequilibria within the economy. The inclusion of large non-monetary flows of this kind in the accounts together with monetary flows can obscure what is happening on markets and reduce the analytic usefulness of the data.

- 1.22 The SNA is a multi-purpose system. It is designed to meet wide a range of analytical and policy needs. A balance has to be struck between the desire for the accounts to be as comprehensive as possible and the need to prevent flows used for the analysis of market behaviour and disequilibria from being swamped by non-monetary values. The System therefore includes all production of goods for own use within its production boundary, as goods can be switched between market and non-market use even after they have been produced, but it excludes all production of services for own final consumption within households (except for the services produced by employing paid domestic staff and the own-account production of housing services by owner occupiers). These services are consumed as they are produced and the links between their production and market activities are more tenuous than for goods production, such as agricultural goods which households may produce partly for own final consumption and partly for sale, or barter, on the market. The location of the production boundary in the System is a compromise, but a deliberate one that takes account of the needs of most users. In this context it may be noted that in labour force statistics economically active persons are defined as those engaged in productive activities as defined in the SNA. If the production boundary were extended to include the production of personal and domestic services by members of households for their own final consumption, all persons engaged in such activities would become self-employed, making unemployment virtually impossible by definition. This illustrates the need to confine the production boundary in the SNA and other related statistical systems to market activities or fairly close substitutes for market activities.

Other production boundary problems

- 1.23 Certain natural processes may or may not be counted as production depending upon the circumstances in which

they occur. A necessary condition for an activity to be treated as productive is that it must be carried out under the instigation, control and responsibility of some institutional unit that exercises ownership rights over whatever is produced. For example, the natural growth of stocks of fish in open seas is not counted as production: the process is not managed by any institutional unit and the fish do not belong to any institutional unit. On the other hand, the growth of fish in fish farms is treated as a process of production in much the same way that rearing livestock is a process of production. Similarly, the natural growth of wild, uncultivated forests or wild fruits or berries is not counted as production, whereas the cultivation of crop-bearing trees, or trees grown for timber or other uses, is counted in the same way as the growing of annual crops. However, the deliberate felling of trees in wild forests, and the gathering of wild fruit or berries, and also firewood, counts as production. Similarly, rainfall and the flow of water down natural watercourses are not processes of production, whereas storing water in reservoirs or dams and the piping, or carrying, of water from one location to another all constitute production.

- 1.24 These examples show that many activities or processes that may be of benefit to institutional units, both as producers and consumers, are not processes of production in an economic sense. Rainfall may be vital to the agricultural production of a country but it is not a process of production whose output can be included in GDP.

2. The consumption boundary

- 1.25 The coverage of production in the System has ramifications that extend considerably beyond the production account itself. The boundary of production determines the amount of value added recorded and hence the total amount of income generated by production. The range of goods and services that are included in household final consumption expenditures, and actual consumption, is similarly governed by the production boundary; for example, these expenditures include the estimated values of the agricultural products consumed by households that they have produced themselves and also the values of the housing services consumed by owner occupiers, but not the values of “do-it-yourself” repairs and maintenance to vehicles or household durables, the cleaning of dwellings, the care and training of children, or similar domestic or personal services produced for own final consumption. Only the expenditures on goods utilized for these purposes - e.g.,

cleaning materials - are included in household final consumption expenditures.

3. The asset boundary

- 1.26 Balance sheets are compiled for institutional units, or sectors, and record the values of the assets they own or the liabilities they have incurred. Assets as defined in the System are entities that must be owned by some unit, or units, and from which economic benefits are derived by their owner(s) by holding or using them over a period of time. Financial assets and fixed assets, such as machinery, equipment and structures which have themselves been produced as outputs in the past, are clearly covered by this definition. However, the ownership criterion is important for determining which naturally occurring - i.e., non-produced - assets are included in the System. Naturally occurring assets such as land, mineral deposits, fuel reserves, uncultivated forests or other vegetation and wild animals are included in the balance sheets provided that institutional units are exercising effective ownership rights over them - that is, are actually in a position to be able to benefit from them. Assets need not be privately owned and could be owned by government units exercising ownership rights on behalf of entire communities. Thus, many environmental assets are included within the System. Assets that are not included are those such as the atmosphere or open seas, over which no ownership rights can be exercised, or mineral or fuel deposits that have not been discovered or that are unworkable - i.e., incapable of bringing any benefits to their owners, given the technology and relative prices existing at the time.
- 1.27 Changes in the values of naturally occurring assets owned by institutional units between one balance sheet and the next are recorded in the accumulation accounts of the System. For example, the depletion of a natural

F. Uses of the SNA

- 1.29 The SNA is a multi-purpose system, as stated above, designed for economic analysis, decision-taking and policy-making, whatever the industrial structure or stage of economic development reached by a country. The basic concepts and definitions of the System depend upon economic reasoning and principles which should be universally valid and invariant to the particular economic circumstances in which they are applied. Similarly, the classifications and accounting rules are

asset as a result of its use in production is recorded in the other changes in volume of assets account, together with losses of fixed assets due to their destruction by natural disasters (floods, earthquakes, etc.). Conversely, when deposits or reserves of minerals or fuels are discovered or previously unworkable deposits become workable, their appearance is recorded in this account and they enter the balance sheets in this way.

4. National boundaries

- 1.28 The accounts of the System are compiled for resident institutional units grouped into institutional sectors and sub-sectors. The concept of residence is the same as that used in the Balance of Payments Manual of the International Monetary Fund (IMF). An institutional unit is said to be resident within the economic territory of a country when it maintains a centre of economic interest in that territory - that is, when it engages, or intends to engage, in economic activities or transactions on a significant scale either indefinitely or over a long period of time, usually interpreted as one year. As an aggregate measure of production, the GDP of a country is equal to the sum of the gross values added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). This is not exactly the same as the sum of the gross values added of all productive activities taking place within the geographical boundaries of the national economy. Some of the production of a resident institutional unit may take place abroad - for example, the installation of some exported machinery or equipment or a consultancy project undertaken by a team of expert advisers working temporarily abroad. Conversely, some of the production taking place within a country may be attributable to foreign institutional units.

meant to be universally applicable. There is no justification, for example, for seeking to define the components of a production account - output, intermediate consumption and gross value added - differently in less developed than in more developed economies, or in large relatively closed economies than in small open economies, or in high-inflation economies than in low-inflation economies. Certain definitions, or accounting rules, specified in the System may become

superfluous in certain circumstances (e.g., when there is no inflation), but it is nevertheless necessary for a general system such as the SNA to include definitions and rules covering as wide a range of circumstances as possible.

- 1.30 The fact that data needs and priorities, and also statistical capabilities, may vary considerably between different kinds of countries does not justify the construction of different systems with different concepts, definitions, classifications or accounting rules. Some countries may be able, at least initially, to calculate only a small number of accounts and tables for the total economy with little or no disaggregation into sectors, but a reduced set of accounts or tables does not constitute an alternative system. It is not appropriate to try to lay down general priorities for data collection when economic circumstances may vary so much from one country to another. In practice, priorities can only be established country by country by economic analysts or policy-makers familiar with the economic situation, needs and problems of the individual countries in question. It is not useful, for example, to try to specify general priorities for developing countries when they constitute a very heterogeneous group of countries at a world level. Data priorities may vary as much between one developing country and another as between a developing and a developed country.

1. Specific uses

- 1.31 The main objective of the SNA is to provide a comprehensive conceptual and accounting framework which can be used to create a macroeconomic database suitable for analysing and evaluating the performance of an economy. The existence of such a database is a prerequisite for informed, rational policy-making and decision-taking. Some of the more specific uses of the SNA are described in the following sections.

Monitoring the behaviour of the economy

- 1.32 National accounts data provide information covering both different types of economic activities and the different sectors of the economy. It is possible to monitor the movements of major economic flows such as production, household consumption, government consumption, capital formation, exports, imports, wages, profits, taxes, lending, borrowing, etc., the flows of goods and services being recorded at both current and constant prices. Moreover, information is provided about certain key balancing items and ratios which can only be defined and measured within an accounting

framework - for example, the budget surplus or deficit, the share of income which is saved, or invested, by individual sectors of the economy or the economy as a whole, the trade balance, etc. National accounts also provide the background against which movements of short-term indicators, such as monthly indices of industrial production or of consumer or producer prices, can be interpreted and evaluated. The monitoring of the behaviour of the economy may be significantly improved if at least some of the main aggregates of the System are compiled quarterly as well as annually, although many of the accounts, tables or balance sheets of the System are not usually compiled more frequently than once a year.

Macroeconomic analysis

- 1.33 National accounts are also used to investigate the causal mechanisms at work within an economy. Such analysis usually takes the form of the estimation of the parameters of functional relationships between different economic variables by applying econometric methods to time series of data at both current and constant prices compiled within a national accounting framework. The types of macroeconomic models used for such investigations may vary according to the school of economic thought of the investigator as well as the objectives of the analysis, but the System is sufficiently flexible to accommodate the requirements of different economic theories or models, provided only that they accept the basic concepts of production, consumption, income, etc. on which the System is based.

- 1.34 Advances in computer technology have made it possible for the econometric analysis of large macroeconomic models to be carried out on microcomputers. Many econometric software packages have been developed for this purpose so that this kind of modelling is no longer confined to a few government departments, research institutes or universities with large mainframe computers. It is increasingly being undertaken by private corporations or institutions with only limited resources available for these purposes.

Economic policy-making and decision-taking

- 1.35 Economic policy in the short term is formulated on the basis of an assessment of the recent behaviour and current state of the economy and a view, or precise forecast, about likely future developments. Short-term forecasts are typically made using econometric models of the type just described. Over the medium- or long-term, economic policy has to be formulated in the

context of a broad economic strategy which may need to be quantified in the form of a plan. Most of the elements which make up a medium- or long-term economic plan consist of national accounts flows, and it may be impossible to draw up such a plan without them. A good macroeconomic model which accurately reflects the past performance of the economy may be indispensable for planning as well as forecasting.

- 1.36 Economic policy-making and decision-taking take place at all levels of government and also within public and private corporations. Large corporations such as multinationals have the ability to build their own macroeconomic models tailored to their own requirements, for which they need national accounts data. The investment programmes of major corporations must be based on long-term expectations about future economic developments that require national accounts data. There are also, of course, specialist agencies that provide forecasts for individual clients in return for fees. Such agencies typically require very detailed national accounts data.

International comparisons

- 1.37 The SNA is the system used for reporting to international or supranational organizations national accounts data that conform to standard, internationally accepted concepts, definitions and classifications. The resulting data are widely used for international comparisons of the volumes of major aggregates, such as GDP or GDP per head, and also for comparisons of structural statistics, such as ratios of investment, taxes or government expenditures to GDP. Such comparisons are used by economists, journalists or other analysts to evaluate the performance of one economy against that of other similar economies. They can influence popular and political judgements about the relative success of economic programmes in the same way as developments over time within a single country. Databases consisting of sets of national accounts for groups of countries can also be used for econometric analyses in which time-series and cross-section data are pooled to provide a broader range of observations for the estimation of functional relationships.

- 1.38 Levels of GDP or, alternatively, gross national income (GNI) per head in different countries are also used by international organizations to determine eligibility for loans, aid or other funds or to determine the terms or conditions on which such loans, aid or funds are made available. When the objective is to compare the volumes of goods or services produced or consumed per

head, data in national currencies must be converted into a common currency by means of purchasing power parities and not exchange rates. It is well known that, in general, neither market nor fixed exchange rates reflect the relative internal purchasing powers of different currencies. When exchange rates are used to convert GDP, or other statistics, into a common currency the prices at which goods and services in high-income countries are valued tend to be higher than in low-income countries, thus exaggerating the differences in real incomes between them. Exchange rate converted data must not, therefore, be interpreted as measures of the relative volumes of goods and services concerned. Levels of GDP, or GDP per head, in different countries are also used to determine, in whole or in part, the size of the contributions which the member countries of an international organization make to finance the operations of the organization.

- 1.39 Although international organizations use the SNA in order to be able to collect internationally comparable national accounts data, the SNA has not been created for this purpose. It has become the standard, or universal, system used with little or no modification by most countries in the world for their own national purposes. National statistical offices and government agencies have a strong vested interest in ensuring that the SNA meets their own analytic and policy requirements and have taken an active part in the development of the System for this reason.

2. Flexibility of implementation and use

- 1.40 The SNA is designed to be sufficiently comprehensive that individual countries, whatever their economic structures, institutional arrangements or level of development, can select from within it those parts of the System which are considered to be most relevant and useful to implement in the light of their own needs and capabilities. The SNA is meant to be implemented in a flexible manner and the accounts and tables, classifications and sectoring presented in this volume should not be regarded as fixed. In some cases, the System explicitly insists on flexibility. For example, two alternative methods of sub-sectoring the general government sector are proposed in chapter IV without either being assigned priority. Similarly, although the System suggests sub-sectoring the households sector on the basis of the household's principal source of income, it stresses that this is only one possible criterion for sub-sectoring. In some cases, it may be more appropriate to sub-sector on the basis of socio-economic criteria or the type of area in which the household is located or,

indeed, to carry the disaggregation of the households sector further by using two or more criteria together in a hierarchical manner.

- 1.41 Ways in which the System may be adapted to meet differing circumstances and needs are specifically addressed in chapter XIX. For example, classifications of institutional units, transactions and assets may be implemented flexibly in order to adapt them to the data availability and special circumstances of different countries. The flexible use of classifications does not change the basic concepts and definitions of the System. However, as explained in chapter XXI, flexibility may be taken a stage further by developing satellite accounts that are closely linked to the main System but are not bound to employ exactly the same concepts or restricted to data expressed in monetary terms. Satellite accounts are intended for special purposes such as monitoring the community's health or the state of environment. They may also be used to explore new methodologies and to work out new accounting procedures that, when fully developed and accepted, may become absorbed into the main System in the course of time, in the way that input-output analysis, for example, has been integrated into the System.

- 1.42 Another way in which the System may be implemented flexibly is by rearranging the data in the accounts in the form of a social accounting matrix in order better to serve particular analytical and policy needs. Such matrices should not be construed as constituting different systems but as alternative ways of presenting the mass of information contained in the System which many users and analysts find more informative and powerful for both monitoring and modelling social and economic development.

3. The SNA as a coordinating framework for statistics

- 1.43 The System also has a very important statistical function by serving as a coordinating framework for economic statistics in two different senses: first, as the conceptual framework for ensuring the consistency of the definitions and classifications used in different, but related, fields of statistics, and secondly, as an accounting framework for ensuring the numerical consistency of data drawn from different sources, such as industrial inquiries, household surveys, merchandise trade statistics, VAT returns and other administrative sources.

G. Harmonization between different statistical systems

- 1.44 The SNA and related statistical systems need to be as consistent as possible in respect of their basic concepts, definitions and classifications. National accounts have always occupied a central position in economic statistics because the data from more specialized systems, such as balance of payments or labour force statistics, typically have to be used in conjunction with national accounts data. Consistency between the different systems enhances the analytical usefulness of all the statistics involved. The harmonization of the SNA and related statistical systems, such as financial statistics or balance of payments statistics, has been one of the driving forces behind the revision of the System.
- 1.45 Revisions of other statistical systems have been conducted in parallel with, and in close collaboration with, that of the SNA in order to eliminate conceptual differences between them other than a few exceptions that can be specifically justified in terms of the special characteristics of different kinds of data, or the special requirements of different kinds of users. Harmonization

between the SNA and other major systems has been largely successful and has been achieved by making changes to the SNA as well as to the other systems.

- 1.46 Because of the active involvement of the IMF in the revision of the SNA, the harmonization process has been particularly effective in respect of balance of payments statistics, government finance statistics and money and banking statistics, for which the IMF has responsibility. Revisions of each of these three systems are being undertaken by the IMF in order not only to update these systems but also to make them consistent with the SNA to the fullest extent possible. Revised manuals on these systems are being published at about the same time as, or in the years immediately following, the 1993 SNA.
- 1.47 Various other revised international guidelines are being issued at about the same time as the revised SNA. These include, the third revision of the United Nations International Standard Industrial Classification of All Economic Activities (ISIC), the industrial classification

that is used in the SNA. The establishment as described in ISIC is also the statistical unit used to compile the production accounts by industry that make up supply and use tables of the SNA, the concept of the establishment being the same in both the SNA and ISIC. The International Labour Organisation (ILO) has issued revised standards on labour statistics that define employment in a way that is consistent with the boundary of production in the SNA, as summarized earlier in this chapter. An extract from the resolution of the Fifteenth International Conference of Labour Statisticians concerning the distinction between the formal and informal sectors is reproduced as an annex to

chapter IV. Another example is provided by the revised Handbook on Agricultural Accounts, prepared by the Food and Agricultural Organization of the United Nations (FAO), which has been brought into line with the treatment of agricultural products and activities in the SNA. It is neither necessary nor feasible to list here all the revisions to international statistical systems and standards that are being undertaken or planned as it is the policy of all the various international agencies involved at a world level to harmonize these systems with each other and with the SNA to the fullest extent possible.

H. Implementation of concepts and classifications

- 1.48 The contents of the accounts are determined not only by the conceptual framework, definitions and classifications of the System but also by the ways in which they are interpreted and implemented in practice. However simple and precise concepts and classifications may appear in principle, there are inevitably difficult borderline cases which cannot easily be fitted into predetermined categories. These points may be illustrated by considering a fundamental distinction in economics and in the System, namely, the distinction between consumption and gross fixed capital formation (or gross fixed investment, as it is often described in other contexts).
- 1.50 The general nature and purpose of the distinction between gross fixed capital formation and consumption, whether intermediate or final, is clear. The distinction is fundamental for economic analysis and policy-making. Nevertheless, the borderline between consumption and gross fixed capital formation is not always easy to determine in practice. Certain activities contain some elements that appear to be consumption and at the same time others that appear to be capital formation. In order to try to ensure that the System is implemented in a uniform way decisions have to be taken about the ways in which certain difficult, even controversial, items are to be classified. Some examples are given below.

1. Final consumption, intermediate consumption and gross fixed capital formation

- 1.49 Consumption is an activity in which institutional units use up goods or services. There are two quite different kinds of consumption. Intermediate consumption consists of inputs into processes of production that are used up within the accounting period. Final consumption consists of goods and services used by individual households or the community to satisfy their individual or collective needs or wants. The activity of gross fixed capital formation, on the other hand, is restricted to institutional units in their capacity as producers, being defined as the value of their acquisitions less disposals of fixed assets. Fixed assets are produced assets (mostly machinery, equipment, buildings or other structures but also including some intangible assets) that are used repeatedly or continuously in production over several accounting periods (more than one year).
- 1.51 Expenditures by enterprises on activities such as staff training or research and development are not the type of intermediate inputs whose consumption is determined by the level at which production is carried out in the current period but are designed to raise productivity or increase the range of production possibilities in the future, in much the same way as expenditures on machinery, equipment, buildings and other structures. However, expenditures on training and research or development do not lead to the acquisition of assets that can be easily identified, quantified and valued for balance sheet purposes. Such expenditures continue to be classified as intermediate consumption, therefore, even though it is recognized that they may bring future benefits. In fact, many other expenditures undertaken by enterprises may also have impacts in future periods as well as the current period - for example, market research, advertising and expenditures on health and

Training, research and development

safety that affect the well-being and attitudes of the workforce.

Education

- 1.52 It is often proposed that expenditures on education should also be classified as gross fixed capital formation as a form of investment in human capital. The acquisition of knowledge, skills and qualifications increases the productive potential of the individuals concerned and is a source of future economic benefit to them. However, while knowledge, skills and qualifications are clearly assets in a broad sense of the term, they cannot be equated with fixed assets as understood in the System. They are not produced because they are acquired through learning, studying and practising - activities that are not themselves processes of production. The education services produced by schools, colleges, universities, etc. are consumed by students in the process of their acquiring knowledge and skills. Education assets are embodied in individuals as persons. They cannot be transferred to others and cannot be shown in the balance sheets of the enterprises in which the individuals work (except in rare cases when certain highly skilled individuals are under contract to work for particular employers for specified periods). Education assets could possibly be shown in balance sheets for the individuals in which they are embodied, but individuals are not enterprises. They would be difficult to value, bearing in mind that the remuneration received by a skilled worker depends upon the amount of time and effort expended and is not simply a return payable to the owner of an asset.
- 1.53 It may also be noted that final consumption consists of the use of goods and services for the direct satisfaction of human needs or wants, individually or collectively. Education services are undoubtedly consumed in this sense. They increase the welfare and improve the general quality of life of those consuming them. Moreover, they are not the only services consumed by individuals to bring long- as well as short-term benefits. For example, the consumption of health services brings long-term benefits and even the consumption of basic items such as food and housing is necessary in order to keep an individual in good health - and good working order.

Repairs, maintenance and gross fixed capital formation

- 1.54 Another, less familiar, example of the intrinsic difficulty of trying to draw a dichotomy between consumption and

gross fixed capital formation is provided by repairs and maintenance. Ordinary maintenance and repairs undertaken by enterprises to keep fixed assets in good working order are intermediate consumption. However, major improvements, additions or extensions to fixed assets, both machinery and structures, which improve their performance, increase their capacity or prolong their expected working lives count as gross fixed capital formation. In practice it is not easy to draw the line between ordinary repairs and major improvements, although the System provides certain guidelines for this purpose. Some analysts, however, consider that the distinction between ordinary repairs and maintenance and major improvements and additions is neither operational nor defensible and would favour a more "gross" method of recording in which all such activities are treated as gross fixed capital formation.

2. Interpretation of the distinction between consumption and gross fixed capital formation

- 1.55 The examples given above show that a simple dichotomy between consumption and gross fixed capital formation inevitably presents problems when dealing with flows of goods and services that do not fit comfortably under either heading. The issue is not simply how to classify certain flows, but also how to achieve an economically meaningful and feasible set of accounting procedures for the assets acquired through gross fixed capital formation within an integrated, coherent set of accounts encompassing past and future periods as well as the present.
- 1.56 Some care and sophistication is needed in using the accounts. For example, goods and services "consumed" by households - i.e., acquired for the satisfaction of their needs or wants - are not suddenly "used up" and do not "vanish" at the moment of acquisition. In particular, households "consuming" services such as health and education may continue to derive benefits over long periods of time. The "consumption" of such services therefore has points of similarity with "investment" in assets. Similarly, enterprises may continue to benefit over long periods of time from the intermediate consumption of services such as maintenance and repairs, training, research and development, market research, etc. Thus, while the acquisition of fixed assets by enterprises - that is, gross fixed capital formation - is undertaken specifically to enhance future production possibilities, they are not the only types of expenditure that may be expected to bring future benefits.

1.57 The decision whether to classify certain types of expenditure by households or government, such as education or health services, as final consumption expenditures or gross fixed capital formation does not affect the size of GDP, as both are final expenditures. On the other hand, the decision to classify certain expenditures by enterprises as intermediate consumption rather than gross fixed capital formation does reduce the gross value added and operating surplus of the enterprise

and hence GDP as a whole. However, treating certain expenditures as intermediate reduces not only gross fixed capital formation but also consumption of fixed capital in subsequent periods. It is therefore an open question as to how net value added and net domestic product (NDP) are affected in the longer term, depending upon the pattern of the relevant expenditures over time.

I. Links with business accounting and economic theory

1.58 The accounting rules and procedures used in the System are based on those long used in business accounting. The traditional double-entry bookkeeping principle, whereby a transaction gives rise to a pair of matching debit and credit entries within the accounts of each of the two parties to the transaction, is a basic axiom of economic or national accounting. For example, recording the sale of output requires not only an entry in the production account of the seller but also an entry of equal value, often described as the counterpart, in the seller's financial account to record the cash, or short-term financial credit, received in exchange for the output sold. As two entries are also needed for the buyer, the transaction must give rise to four simultaneous entries of equal value in a system of macroeconomic accounts covering both the seller and the buyer. In general, a transaction between two different institutional units always requires four equal, simultaneous entries in the accounts of the System - i.e., quadruple entry accounting - even if the transaction is a transfer and not an exchange and even if no money changes hands. These multiple entries enable the economic interactions between different institutional units and sectors to be recorded and analysed. However, transactions within a single unit (such as the consumption of output by the same unit that produced it) require only two entries whose values have to be estimated.

and economic theory can be illustrated by the concept of cost of production used in the System.

1.60 Business accounts commonly (but not invariably) record costs on an historic basis, partly to ensure that they are completely objective. Historic cost accounting requires goods or assets used in production to be valued by the expenditures actually incurred to acquire those goods or assets, however far back in the past those expenditures took place. In the System, however, the concept of opportunity cost as defined in economics is employed. In other words, the cost of using, or using up, some existing asset or good in one particular process of production is measured by the amount of the benefits that could have been secured by using the asset or good in alternative ways. Opportunity cost is calculated with reference to the opportunities foregone at the time the asset or resource is used, as distinct from the costs incurred at some time in the past to acquire the asset. The best practical approximation to opportunity cost accounting is current cost accounting, whereby assets and goods used in production are valued at their actual or estimated current market prices at the time the production takes place. Current cost accounting is sometimes described as replacement cost accounting, although there may be no intention of actually replacing the asset in question after it has been used.

1.59 The design and structure of the System draws heavily on economic theory and principles as well as business accounting practices. Basic concepts such as production, consumption and capital formation are meant to be rooted in economic theory. When business accounting practices conflict with economic principles, priority is given to the latter, as the System is designed primarily for purposes of economic analysis and policy-making. The difference between business accounting

1.61 When there is persistent inflation, even moderate inflation, the use of historic costs tends to underestimate the opportunity costs of production in an economic sense so that historic cost profit may be much greater than the operating surplus as defined in the System. Profits at historic costs are liable to give very misleading signals as to the profitability of the production processes to which they relate by systematically undervaluing inputs compared with outputs. They can lead to

mistaken decisions at both a microeconomic and macroeconomic level.

- 1.62 Current cost accounting has ramifications that permeate the entire System. It affects all the accounts and balance sheets and their balancing items. A fundamental principle underlying the measurement of gross value added, and hence GDP, is that output and intermediate consumption must be valued at the prices current at the time the production takes place. This implies that goods withdrawn from inventories by producers must be valued at the prices prevailing at the times the goods are withdrawn and not at the prices at which they entered inventories. This method of recording changes in inventories is not commonly used in business accounting, however, and may sometimes give very different results - especially when inventory levels fluctuate while prices are rising. Similarly, consumption of fixed capital in the System is calculated on the basis of the estimated opportunity costs of using the assets at the time they are used, as distinct from the prices at which the assets were acquired. When there is persistent inflation, the value of consumption of fixed capital is liable to be much greater than depreciation at historic costs, even if the same assumptions are made in the System and in business accounts about the service lives of the assets and their rates of wear and tear and obsolescence. To avoid confusion, the term "consumption of fixed capital" is used in the System to distinguish it from "depreciation" as typically measured in business accounts, just as the term "operating surplus" is used instead of "profit" or "operating profit".
- 1.63 Measuring consumption of fixed capital at current costs is equivalent to measuring the operating surplus from production after deducting the costs of maintaining intact the stock of fixed assets used in production - that is, after deducting the costs of replacing assets used up in production (as distinct from the costs of replacing assets destroyed by events not connected with production, such as earthquakes or other natural disasters, or acts of war, such losses being recorded elsewhere in the System in the capital accumulation accounts). Even when the fixed assets used up are not actually replaced, the amount of consumption of fixed capital charged as a cost of production should be sufficient to enable the assets to be replaced, if desired. Similarly, the concept of disposable income used in the System is based on the underlying idea that it represents the maximum amount available to a household for purposes of consumption after maintaining its net worth intact, i.e., its assets minus its liabilities valued at current prices. However, the System excludes from the

calculation of income any assets received or disposed of as a result of capital transfers that merely redistribute wealth between different units, and also any assets received or disposed of as a result of "other volume changes" as described in chapter XII. It also excludes any real holding gains or losses on assets or liabilities due to changes in their relative prices. At a macro level, the aggregate income of a group of units is not changed by redistributing wealth within the group. The System takes account of capital transfers, other volume changes and real holding gains or losses by recording them in the accumulation accounts of the units concerned and not in their income accounts.

1. Micro-macro links

- 1.64 The sequence of accounts and balance sheets of the System could, in principle, be compiled at any level of aggregation, even that of an individual institutional unit. It might therefore appear desirable if the macroeconomic accounts for sectors or the total economy could be obtained directly by aggregating corresponding data for individual units. There would be considerable analytical advantages in having micro-databases that are fully compatible with the corresponding macroeconomic accounts for sectors or the total economy. Data in the form of aggregates, or averages, often conceal a great deal of useful information about changes occurring within the populations to which they relate. For example, economic theory indicates that changes in the size of distribution of income may be expected to have an impact on aggregate consumption over and above that due to changes in the aggregate level of income. Information relating to individual units may be needed not only to obtain a better understanding of the working of the economy but also to monitor the impact of government policies, or other events, on selected types of units about which there may be special concern, such as households with very low incomes. Micro-data sets also make it possible to follow the behaviour of individual units over time. Given the continuing improvements in computers and communications, the management and analysis of very large micro-databases is becoming progressively easier. Data can be derived from a variety of different sources, such as administrative and business records, as well as specially conducted censuses and surveys.
- 1.65 In practice, however, macroeconomic accounts can seldom be built up by simply aggregating the relevant micro-data. Even when individual institutional units keep accounts or records the concepts that are needed or appropriate at a micro level may not be suitable at a

macro level. Individual units may be obliged to use concepts designed for other purposes, such as taxation. The accounting conventions and valuation methods used at a micro level typically differ from those required by the System. For example, as already noted, the widespread use of historic cost accounting means that the accounts of individual enterprises may differ significantly from those used in the System. Depreciation as calculated for tax purposes may be quite arbitrary and unacceptable from an economic viewpoint. In such situations, it is impractical to try to adjust the individual accounts of thousands of enterprises before aggregating them. It may be much easier to adjust the data after they have been aggregated to some extent. Of course, the data do not have to be aggregated to the level of the total economy, or even complete sectors or industries, before being adjusted and it is likely to be more efficient to make the adjustments for smaller and more homogenous groups of units. This may involve compiling so-called intermediate systems of accounts. At whatever level of aggregation the adjustments are made, the inevitable consequence is to make the resulting macro-data no longer equivalent to simple aggregations of the micro-data from which they are derived. When the micro-data are not derived from business accounts or administrative records but from censuses or surveys designed for statistical purposes, the concepts used should be closer to those required, but the results may still require adjustment at a macro level

because of incomplete coverage (the surveys being confined to enterprises above a certain size, for example) and bias from response errors.

1.66 Most households are unlikely to keep accounts of the kind needed by the System. Micro-data for households are typically derived from sample surveys that may be subject to significant response and reporting errors. It may be particularly difficult to obtain reliable and meaningful data about the activities of small unincorporated enterprises owned by households. Aggregates based on household surveys have to be adjusted for certain typical biases, such as the under-reporting of certain types of expenditure (on tobacco, alcoholic drink, gambling, etc.) and also to make them consistent with macro-data from other sources, such as imports. The systematic exploitation of micro-data may also be restricted by the increasing concerns about confidentiality and possible misuse of such databases.

1.67 It may be concluded therefore that, for various reasons, it may be difficult, if not impossible, to achieve micro-databases and macroeconomic accounts that are fully compatible with each other in practice. Nevertheless, as a general objective, the concepts, definitions and classifications used in economic accounting should, so far as possible, be the same at both a micro and macro level to facilitate the interface between the two kinds of data.

J. The aggregates of the system as indicators of economic activity and welfare

1. Introduction

1.68 The SNA consists of a coherent, consistent set of macroeconomic accounts and tables designed for a variety of analytical and policy purposes. Nevertheless, certain key aggregates of the System, such as GDP and GDP per head of population, have acquired an identity of their own and are widely used by analysts, politicians, the press, the business community and the public at large as summary, global indicators of economic activity and welfare. Movements of such aggregates, and their associated price and volume measures, are used to evaluate the overall performance of the economy and hence to judge the relative success or failure of economic policies pursued by Governments.

1.69 GDP is a measure of production. The level of production is important because it largely determines

how much a country can afford to consume and it also affects the level of employment. The consumption of goods and services, both individually and collectively, is one of the most important factors influencing the welfare of a community, but it is only one of several factors. There are also others, such as epidemics, natural disasters or wars, that can have major negative impacts on welfare, while others, such as scientific discoveries, inventions or simply good weather, may have significant positive impacts. These factors obviously do not enter into the measurement of GDP, which refers only to the flow of goods and services produced within a given period. Thus, movements of GDP on their own cannot be expected to be good indicators of changes in total welfare unless all the other factors influencing welfare happen to remain constant, which history shows is never the case. These points are elaborated further in this section because of common

misunderstandings about GDP as an indicator of welfare.

- 1.70 There are two aspects that need to be separated. The first is the adequacy of the main aggregates of the System as summary indicators of economic activities taking place within the economy as a whole and flows of goods and services produced or consumed. The second is the more general question of the validity of using measures of aggregate production or consumption as indicators of welfare.

2. The coverage of GDP and the role of estimates and imputations

- 1.71 A distinction needs to be drawn between activities such as production and consumption taking place in the economy and the transactions associated with those activities that are recorded in the accounts. As noted, transactions are interactions between institutional units, such as the exchange of ownership of a good. The physical process by which a good is produced is quite separate from the subsequent transaction in which it may be sold or supplied to another unit.
- 1.72 When goods and services produced are sold in monetary transactions, their values are automatically included in the accounts of the System. Many goods or services are not actually sold but are nevertheless supplied to other units: for example, they may be bartered for other goods or services or provided free as transfers in kind. Such goods and services must be included in the accounts even though their values have to be estimated. The goods or services involved are produced by activities that are no different from those used to produce goods or services for sale. Moreover, the transactions in which the goods and services are supplied to other units are also proper transactions even though the producers do not receive money in exchange. It is misleading to describe such output as “imputed”. For example, the services of financial intermediaries which are indirectly measured in the System are not imputed. However, their values have to be estimated.
- 1.73 When goods or services are retained for own use, no transactions with other units take place. In such cases, in order to be able to record the goods or services in the accounts, internal transactions have to be imputed whereby producers allocate the goods or services for their own consumption or capital formation and values also have to be estimated for them. Nevertheless, as in the case of non-monetary transactions between units, the goods and services themselves are not imputed.

- 1.74 Thus, estimates and imputations are needed in order to be able to record in the accounts productive activities whose outputs are not disposed of in monetary transactions with other units. Such estimates and imputations should therefore not be interpreted as introducing hypothetical activities or flows of goods and services into the System. Their purpose is the opposite - namely, to capture in the accounts major flows of goods and services actually taking place in the economy that would otherwise be omitted. In order to obtain comprehensive measures, values have to be estimated for all outputs of goods and services that are not sold but disposed of in other ways.

- 1.75 In practice the System does not record all outputs, however, because domestic and personal services produced and consumed by members of the same household are omitted. Subject to this one major exception, GDP is intended to be a comprehensive measure of the total gross value added produced by all resident institutional units. GDP is, of course, confined to outputs produced by economic activities that are capable of being provided by one unit to another. Not all activities that require the expenditure of time and effort by persons are productive in an economic sense - for example, activities such as eating, drinking or sleeping cannot be produced by one person for the benefit of another. Consistent with this principle, the activity of studying and learning also does not qualify as production, as already noted. Pupils and students are consumers of the educational services produced by teachers and educational establishments.

3. Changes in welfare

- 1.76 In a market economy, the prices used to value different goods and services should reflect not only their relative costs of production but also the relative benefits or utilities to be derived from using them for production or consumption. This establishes the link between changes in aggregate production and consumption and changes in welfare. However, changes in the volume of consumption, for example, are not the same as changes in welfare. The distinction between the quantity of some good or service and the utility derived from consuming it is clear enough at the level of an individual good or service. For example, the quantity of sugar consumed by households is measured in physical units. It is measured quite independently of any utility that the households may, or may not, derive from consuming it.

Interaction with non-economic factors

- 1.77 As already noted, total welfare depends on many other factors besides the amounts of goods and services consumed. Apart from natural events such as epidemics, droughts or floods, welfare also depends on political factors, such as freedom and security. Obviously, as a measure of production, GDP is not intended to embrace non-economic events, such as political revolutions, wars, natural disasters or epidemics.
- 1.78 Consider the effects of an exceptionally severe winter combined with an influenza epidemic. Other things being equal, the production and consumption of a number of goods and services may be expected to rise in response to extra demands created by the cold and the epidemic; the production and consumption of fuels, clothing and medical services will tend to increase. As compared with the previous year, people may consider themselves to be worse off overall because of the exceptionally bad weather and the epidemic, notwithstanding the fact that production and consumption may have increased in response to the additional demand for heating and health services. Total welfare could fall even though GDP could increase in volume terms.
- 1.79 This kind of situation does not mean that welfare cannot be expected to increase as GDP increases, other things being equal. Given the occurrence of the cold and the epidemic, the community presumably finds itself much better off with the extra production and consumption of heating and health services than without them. There may even be a general tendency for production to rise to remedy the harmful effects of events that reduce people's welfare in a broad sense. For example, production may be expected to increase in order to repair the damage caused by such natural disasters as earthquakes, hurricanes and floods. Given that the disaster has occurred, the extra production presumably increases welfare.
- 1.80 GDP may also be expected to rise in response to disasters other than natural ones. In particular, the production and consumption of goods and services typically rises as a result of wars. The same reasoning applies as for natural disasters. Given that a state of war exists, any consequential increase in the production and consumption of armaments or defence services may well increase welfare by affording extra protection to the community. Whether such increased welfare is sufficient to compensate for the loss of welfare caused

by the war itself is quite another matter. The fact that the volume of GDP may increase as a result of the outbreak of war when the consumption of individual goods and services by households may be falling does not expose a deficiency in national accounts' concepts, as is sometimes maintained. It has been argued that collective defence services should be classified as intermediate rather than final consumption, but there are in fact no further processes of production in which such services are consumed. It is clear that the total level of production in the economy is likely to rise in response to the community's increased consumption of collective defence services, even though the community would presumably prefer the output to be used for other purposes if there were no war.

- 1.81 Similar considerations arise with respect to so-called "regrettable necessities" in general. When production and consumption increase in order to compensate for the loss of welfare created by damage or "bads" that did not previously exist, the community may be no better off than if the damage had not occurred. However, this should not be allowed to obscure the fact that without the extra production and consumption the community would actually be worse off still. The extra production and consumption, in itself, actually increases welfare. Goods and services are consumed by households to satisfy their needs and wants. Some of these needs or wants may be created or increased by factors or events over which households have little or no control and which they may resent - bad weather, natural disasters, pollution, etc., - but this in no way diminishes the fact that they do derive benefits from consuming the goods and services in question. Quite ordinary consumer goods such as food and drink could be characterized as "regrettable necessities" which merely satisfy the recurrent basic needs of hunger and thirst without leaving the individuals any better off than before the onset of the hunger and thirst. Pushed to its logical conclusion, scarcely any consumption improves welfare in this line of argument.

Welfare, economic analysis and policy-making

- 1.82 Although movements in GDP and other aggregates for the total economy can be useful indicators of changes in both economic activity and welfare, the calculation of such aggregates is not the main reason for compiling national accounts. The SNA is an integrated system of accounts embracing different kinds of activities and sectors. It is intended for purposes of economic analysis, decision-taking and policy-making. It is a multi-purpose system designed to meet the requirements

of different kinds of users: governments, businesses, research institutes, universities, the press and the general public. No single user, or group of users, can take priority over all others. The use of one or two aggregates to gauge changes in welfare may be one of the more important uses of the System, but it is only one use. The System is primarily intended to provide data at different levels of aggregation to meet the needs of

analysts and policy makers interested in the behaviour of the economy and the factors responsible for major market disequilibria, such as inflation and unemployment. The System is inevitably a compromise intended to yield the maximum benefits to different kinds of users and may not therefore be optimal for any one purpose taken in isolation.