

The 2008 SNA - concepts in brief

A complement to the System of National Accounts 2008

World Bank

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Preface

The System of National Accounts (SNA) aims to cover all aspects of all economies necessary to measure economic activity comprehensively and in a manner that will be comparable over time and across countries. This is ambitious and because large, complex economies must be covered as well as smaller and less complex ones, the resulting manual is large and may seem daunting to someone trying to determine how to approach the task of compiling the accounts for the first time. Further, some of the detail in the SNA is simply not applicable to all economies, in particular the detailed treatment of complex financial instruments. In addition, when a staff member of a statistical office comes to the national accounts for the first time, especially if there is little experience of compiling accounts in the office, the fact that the SNA concentrates on concepts with much less discussion of practical compilation problems, may be disappointing and frustrating.

The System of National Accounts (SNA) was first adopted by the UN Statistical Commission (UNSC) as an international standard in 1953. This version of the SNA included rudimentary sector accounts, which were considerably elaborated in the 1968 SNA. The development of balance sheets and their integration with the rest of the system was proposed in a national accounting handbook in 1977 and fully integrated in the 1993 SNA, along with the integration of measurement in constant price terms. The 2008 SNA took consideration of the integration of various sectors of the economy and the role of assets further. Until the late 1980s, centrally planned economies used an alternative system, the System of Material Balances, but all countries in the world now accept the SNA standard.

However, not all countries have been able to implement the SNA in its entirety or incorporated the elaborations of later version of the SNA. In the early 1990's, many developing countries were still mainly using the guidance in the 1953 SNA. Thus these countries were implementing a very small subset of the whole system, basically just the various estimates of the GDP aggregate with little if any information on income flows and capital accumulation relating to the main sectors of the economy.

At various points the UNSC has considered why greater progress to implement the whole system has not been made. Calls are regularly made to provide more technical assistance and training materials but despite the positive response by many donors, the situation has not improved dramatically over the last two or three decades. In the national accounts data base posted on the UN web site in November 2010, data for only 80 countries appears, of which only about 25 are not members of the OECD, in Europe or were part of the former Soviet Union. Of these, only about a dozen, mostly in Latin America, provide information on income flows by sector.

From time to time the idea of devising a simplified SNA has been floated for developing countries. This has not been pursued because the range of developing countries is extensive; some are close in economic sophistication and statistical resources to many OECD countries, possibly further advanced than some of these. At

the other end of the range, however, are very many countries with relatively small populations, economies that are still concentrated in a few areas and with a limited number of skilled professionals.

With this background the World Bank has undertaken the preparation of two handbooks to help extend the implementation of the SNA in countries such as these. The proposition here is that the problem is not that the SNA is too complex for developing countries or that staff in developing countries are unaware of the guidelines it contains. Rather it is that statistical offices do not have the resources available to both collect and analyse all the data required for an exhaustive implementation of the system and that some of the recommendations in the SNA have marginal consequences for many small countries without sophisticated financial markets.

One of the new handbooks is described as *Concepts in Brief*. It is not only strictly consistent with the full text of the 2008 SNA, but uses that text. However, by setting aside some aspects of limited (or possibly no) relevance to many small developing countries, such as a description of sophisticated financial instruments and some possible elaboration of links to other systems, the 600 pages of the full text of the 2008 SNA is reduced to one third of this. The document carefully enumerates what has been omitted so that the reader is aware of these and able to turn to the more extended volume if required.

The second of the World Bank handbooks, described as *Compilation in Brief*, suggests that the way to extend the range of implementation of the whole system, however, is not a simplification of the basic theory of the SNA but a simplification of compilation practices. Ideally this should be a first step towards a more extensive coverage of the accounts but even the simplified accounts should serve to make users aware of the potential of the whole system and give the compilers courage to build on these first steps.

Countries with abundant resources (of both staff and data) produce annual accounts consisting of:

Estimates of GDP from three perspectives in value and volume terms,

Supply and use tables (and possibly an input-output table) detailing which goods and services are used to produce other goods and services,

Sets of accounts for the four major domestic sectors and the rest of the world,

Balance sheets of financial and non-financial assets for the same sectors

In addition they will produce quarterly accounts of the three estimates of GDP.

The simplifications suggested in *Compilation in Brief* are to reduce the detail underlying the supply and use tables, not to proceed to calculate an input-output table and to simplify the demarcation of sectors. Input-output tables were a key feature of the 1968 SNA and reflected the policy interest at the time in trying to mimic the technology of production within a statistical table. Although the technological applications have diminished since the 1970s, supply and use tables still provide a very powerful tool with which to assess the quality of the statistics emerging from the national accounts tables. However, working with a relatively small table and abandoning the attempt to identify the technology-based establishments necessary for a formal input-output table preserves the quality control aspects at very greatly reduced resource cost.

Sector accounts show the different roles of enterprises, government and households in the economy. Who benefits from government spending and the payment of benefits? How are these financed by tax revenue and borrowing? Are households living within their means or on credit? Are enterprises sufficiently profitable to be able to afford new investment? These are the questions on every commentator's mind but most developing countries can give no answers from their national accounts. In all economies the borderline between small enterprises and household activity is fuzzy and difficult to draw in strict statistical terms. It is arguably the difficulty of drawing this line that has inhibited the development of sector accounts in many countries. The proposal made here is to concentrate in the first instance on large companies which are small in number but account for the overwhelming majority of corporate activity. This makes the borderline with households fuzzier but enables the process of drawing up accounts to start. Once some figures are available the compiler gains confidence to go further and the analyst sees what is available and learns how to use these more elaborate accounts to answer the questions of the moment

With these two steps, it is argued, it is possible for even a country with limited resources to produce a set of accounts that is recognisable as portraying the whole economy in the sort of detail envisaged in the SNA. Obviously, in an ideal world with unlimited resources neither of these approximations would be desirable but it is close to half a century since many African countries and Pacific islands achieved independence and not only have plentiful resources still not become available but they do not appear to be on the horizon. These publications suggest an alternative strategy whereby staff in developing countries can themselves take the initiative to redirect limited resources towards a slimmed down but complete implementation of the SNA that is still able to produce more policy-relevant statistics than existing approaches.

The first of the World Bank publications, the present volume, is entitled *The 2008 SNA – concepts in brief*. This is an abbreviated version of the full manual leaving out aspects that may be less

relevant to a small developing country, or, even if relevant, may be too resource intensive to attempt in the first instance. The second publication is entitled *The 2008 SNA – compilation in brief*. This does not aim to be comprehensive but to give indications of how to approach the problem in a country where resources are strictly limited yet the demands for a comprehensive set of national accounts still exists.

The present document is based on the text of the first 16 chapters of the full text of the 2008 SNA. In particular the chapter numbering corresponds exactly to those in the full manual. Further this is true of the paragraph numbering as well as the table and figure numbers. However, although the paragraph numbers and table and figure numbers run in ascending order, there are gaps and a deliberate decision has been made not to renumber these to be consecutive. In this way where there is a gap in the numbering it is clear to the reader that some material in the full manual has been omitted. Where the omissions cover different topics this is indicated by a remark in italics. Some material which is especially relevant for compilation has been moved to the second publication, *The 2008 SNA - compilation in brief* and where this has happened it is so indicated. In some cases references to parts of the full text remain in the text included in this document even though the section or paragraph referred to is not, enabling those who wish to follow up in the extended text to do so.

Initially, the first 16 chapters of the 2008 SNA, together with chapter 17, were referred to as “volume 1” of the SNA and the remaining chapters from 18 to 29 were referred to as “volume 2”. Chapters 17 to 29 are not given in detail here but a brief description of what is in each chapter is given in a new chapter 17. These chapters aim to show how the SNA can be applied flexibly to give greater weight to particular aspects of the economy and to indicate links to other systems. As such they are themselves introductory material rather than comprehensive descriptions of each of the subjects concerned. The choice therefore was whether to include them in their entirety or to make very brief reference to them and the choice has been made to go with the second alternative. This is not to underplay the importance of these chapters, but simply to illustrate that it is difficult, and perhaps not very useful, to try to cover all the material in the chapters in a much more compact manner. The full chapters remain available within the full text of the 2008 SNA. The full set of references given in the 2008 SNA, including documents referred to in the omitted chapters, is included in this publication for convenience.

An annex to this publication shows which topics have been omitted from chapters 1 to 16 on a chapter by chapter basis.

This document and the companion one were prepared for the World Bank by the editor of the 2008 SNA, Anne Harrison.

List of abbreviations and acronyms

BIS	Bank for International Settlements	ILO	International Labour Organization
BOOT	Build, own, operate, transfer	IMF	International Monetary Fund
BOP	Balance of payments	IMTS	International Merchandise Trade Statistics: Concepts and Definitions
BPM	Balance of Payments and International Investment Position Manual	IPSASB	International Public Sector Accounting Standards Board
CIF	Cost, insurance and freight	ISIC	International Standard Industrial Classification of All Economic Activities
COFOG	Classification of the Functions of Government	ISWGNA	Inter-Secretariat Working Group on National Accounts
COICOP	Classification of Individual Consumption by Purpose	ITC	Invitation to comment
COPNI	Classification of the Purposes of Non-profit Institutions Serving Households	KAU	Kind-of-activity unit
COPP	Classification of Outlays of Producers by Purpose	KLEMS	Capital-labour-energy-materials-service inputs
CPC	Central Product Classification	L _p	Laspeyres price index
CPD	Country-product-dummy (method)	L _Q	Laspeyres volume index
CPI	Consumer price index	MFP	Multifactor productivity
DBMS	Database management system	MFSM	Monetary and Financial Statistics Manual
EEZ	Exclusive economic zone	MMF	Money market fund
EKS	Eltető-Köves-Szulec (method)	MNE	Multinational enterprise
FDI	Foreign direct investment	MPI	Import price index
FISIM	Financial intermediation services indirectly measured	n.e.c.	Not elsewhere classified
FOB	Free on board	NDP	Net domestic product
F _p	Fisher price index	n.i.e.	not included elsewhere
F _Q	Fisher volume index	NNDI	Net national disposable income
GDI	Gross domestic income	NNI	Net national income
GDP	Gross domestic product	NOE	Non-Observed Economy
GFS	Government finance statistics	NPI	Non-profit institution
GFSM	Government Finance Statistics Manual	NPISH	Non-profit institution serving households
GK	Geary Khamis (method)	NPV	Net present value
GNI	Gross national income	OECD	Organisation for Economic Cooperation and Development
HS	Harmonized commodity description and coding System	OEEC	Organisation for European Economic Cooperation
IASB	International accounting standards board	PAYE	Pay-as-you-earn
IC	Insurance corporation	PF	Pension fund
ICLS	International Conference of Labour Statisticians	PFI	Private finance initiative
ICNPO	International Classification of Non-Profit Organizations	PIM	Perpetual inventory method
ICP	International Comparison Program	PIM	Perpetual inventory model
ICPF	Insurance corporations and pension funds	P _p	Paasche price index
ICSE	Resolution concerning the International Classification of Status in Employment	PPI	Producer price index
ICT	Information, communication and telecommunications	PPP	Public/private partnership
IFRS	International Financial Reporting Standards	PPP	Purchasing power parity
IIP	International investment position	P _Q	Paasche volume index
		R&D	Research and development
		SAM	Social accounting matrix

The 2008 SNA - concepts in brief

SDR	Special drawing right	TSA	Tourism satellite account
SEEA	System of Environmental and Economic Accounts	WHO	World Health Organization
SITC	Standard Industrial Trade Classification	XMPI	Export and import price indices
SNA	System of National Accounts		
SPD	Structured product description		
SPE	Special purpose entity	XPI	Export price index

Chapter 1: Introduction

A. What is the System of National Accounts?

- 1.1 The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity in accordance with strict accounting conventions based on economic principles. The recommendations are expressed in terms of a set of concepts, definitions, classifications and accounting rules that comprise the internationally agreed standard for measuring such items as gross domestic product (GDP), the most frequently quoted indicator of economic performance. The accounting framework of the SNA allows economic data to be compiled and presented in a format that is designed for purposes of economic analysis, decision-taking and policymaking. 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. The framework of the SNA provides accounts that are:
- comprehensive, in that all designated activities and the consequences for all agents in an economy are covered;
 - consistent, because identical values are used to establish the consequences of a single action on all parties concerned using the same accounting rules;
 - integrated, in that all the consequences of a single action by one agent are necessarily reflected in the resulting accounts, including the impact on measurement of wealth captured in balance sheets.
- 1.2 The accounts of the SNA provide more than a snapshot of the economy at a point in time, since 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 taking place within a period but also about the levels of an economy's assets and liabilities, and thus the wealth of its inhabitants, at particular points of time. In addition, the SNA includes an external account that displays the links between an economy and the rest of the world.
- 1.3 Certain key aggregate statistics, such as GDP, that are widely used as indicators of economic activity at the level of the total economy, are defined within the SNA, but the calculation of such aggregates has long ceased to be the primary purpose for compiling the accounts. 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 different sectors of the economy. The SNA is designed to be implemented at different levels of aggregation: at the level of individual economic agents, or institutional units as they are called in the SNA; for groups of such units, or institutional sectors; or at the level of the total economy.
- 1.4 The SNA is designed for economic analysis, decision-taking and policymaking, whatever the industrial structure or stage of economic development reached by a country. The basic concepts and definitions of the SNA 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 meant to be universally applicable. There is no justification, for example, for seeking to define parts of the SNA 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 SNA might become superfluous in certain circumstances (for example, if there were no inflation), but it is nevertheless necessary for a general system to include definitions and rules covering as wide a range of circumstances as possible.
- 1.5 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 considerably from one country to another. In practice, priorities can only be established country by country by economic analysts or policymakers familiar with the particular 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 or indeed between two developed countries.

B. The conceptual elements of the SNA

1.6 The SNA measures what takes place in the economy, between which agents, and for what purpose. At the heart of the SNA is the production of goods and services. These may be used for consumption in the period to which the accounts relate or may be accumulated for use in a later period. In simple terms, the amount of value added generated by production represents GDP. The income corresponding to GDP is distributed to the various agents or groups of agents as income and it is the process of distributing and redistributing income that allows one agent to consume the goods and services produced by another agent or to acquire goods and services for later consumption. The way in which the SNA captures this pattern of economic flows is to identify the activities concerned by recognizing the institutional units in the economy and by specifying the structure of accounts capturing the transactions relevant to one stage or another of the process by which goods and services are produced and ultimately consumed.

1. Activities and transactions

1.7 The SNA is designed to provide information about the behaviour of institutional units and the activities in which they engage, namely production, consumption and the accumulation of assets, in an analytically useful form. This is achieved by recording the exchange of goods, services and assets between institutional units in the form of transactions. At the same time, other transactions are recorded that represent the form of payment for the exchange which may be a good, service or asset of similar value but is often some form of financial claim including notes and coins.

1.8 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. The first of these is that 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 SNA. 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 book-keeping 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 takes place between different units on markets.

2. The institutional sectors of the economy

1.9 Two main kinds of institutional units, or transactors, are distinguished in the SNA; households and legal entities. Legal entities are either entities created for purposes of production, mainly corporations and non-profit institutions (NPIs), or entities created by political processes, specifically government units. The defining characteristic of an institutional unit is that it is capable of owning goods and assets, incurring liabilities and engaging in economic activities and transactions with other units in its own right.

1.10 For the purposes of the SNA, institutional units that are resident in the economy are grouped together into five mutually exclusive sectors composed of the following types of units:

- a. Non-financial corporations;
- b. Financial corporations;
- c. Government units, including social security funds;
- d. NPIs serving households (NPISHs);
- e. Households.

The five sectors together make up the total economy. Each sector may be further divided into subsectors; 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 SNA makes provision for a complete set of flow accounts and balance sheets to be compiled for each sector, and subsector 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 subsectors 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.

- 1.11 Institutional units that are resident abroad form the rest of the world. The SNA 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

C. Uses of the SNA

- 1.27 The main objective of the SNA is to provide a comprehensive conceptual and accounting framework that 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 policymaking and decision-taking. Some of the more specific uses of the SNA are described in the following sections.

1. Monitoring the behaviour of the economy

- 1.28 Certain key aggregates of the SNA, 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.

D. The boundaries of the SNA

1. Non-monetary transactions

- 1.36 When goods and services produced within the economy are sold in monetary transactions, their values are automatically included in the accounts of the SNA. 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.
- 1.39 In practice the SNA 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 confined

3. Accounts and their corresponding economic activities

Paragraphs 1.12 to 1.26 give a summary of the accounts of the system. This is an abbreviated version of the summary given in chapter 2.

2. Macroeconomic analysis

- 1.30 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 in both value and volume terms 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 SNA 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 SNA is based.

Paragraphs 1.33 to 1.35 cover international comparisons

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.

2. The production boundary

- 1.40 The activity of production is fundamental. In the SNA, 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 SNA 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.

Household production

- 1.42 The SNA is designed to meet a wide 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 SNA therefore includes all production of goods for own use within its production boundary, as the decision whether goods are to be sold or retained for own use can be made 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). The services are excluded because the decision to consume them within the household is made even before the service is provided. The location of the production boundary in the SNA is a compromise, but a deliberate one that takes account of the needs of most users.

Other production boundary problems

- 1.43 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 the high seas not subject to international quotas 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.
- 1.44 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 pro-

duction of a country but it is not a process of production whose output can be included in GDP.

3. The consumption boundary

- 1.45 The coverage of production in the SNA 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, such as cleaning materials, are included in household final consumption expenditures.

4. The asset boundary

- 1.46 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 SNA 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 natural resources are treated as assets in the SNA. Natural resources 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 SNA. Resources such as the atmosphere or high seas, over which no ownership rights can be exercised, or mineral or fuel deposits that have not been discovered or that are unworkable, are not included as they are not capable of bringing any benefits to their owners, given the technology and relative prices existing at the time.

5. National boundaries

- 1.48 The accounts of the SNA are compiled for resident institutional units grouped into institutional sectors and subsectors. The concept of residence is the same as that used in the *Balance of Payments and International Investment Position*

Manual, Sixth Edition (International Monetary Fund (IMF), 2008), known as *BPM6*. An institutional unit is said to be resident within the economic territory of a country when it maintains a centre of predominant 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.

Paragraphs 1.51 to 1.56 discuss briefly the borderline between capital formation and final consumption and between capital formation and intermediate consumption.

E. The SNA as a coordinating framework for statistics

1. Harmonization between different statistical systems

1.57 The SNA has a very important statistical function by serving as a coordinating framework for economic statistics in two different senses. In the first place, the SNA is seen as the conceptual framework for ensuring the consistency of the definitions and classifications used in different, but related, fields of statistics. Secondly, the SNA acts as an accounting framework to ensure the numerical consistency of data drawn from different sources, such as industrial inquiries, household surveys, merchandise trade statistics, VAT returns and other administrative sources.

1.58 Consistency between different statistical systems enhances the analytical usefulness of all the statistics involved. The SNA has 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. The need for harmonization of the SNA and related statistical systems, such as financial statistics or balance of payments statistics, leads to the practice of revising other statistical systems in parallel with, and in close collaboration with, that of the SNA. This coordination eliminates 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 proved to be largely successful and has been achieved by making changes to the SNA as well as to the other systems.

2. The use of microdata for macroeconomic accounting

1.59 The sequence of accounts and balance sheets of the SNA could, in principle, be compiled at any level of aggregation, even that of an individual institutional unit.

1.60 In practice, however, macroeconomic accounts can seldom be built up by simply aggregating the relevant microdata. 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.

1.61 Most households are unlikely to keep accounts of the kind needed by the SNA. Microdata 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 macrodata from other sources, such as imports. The systematic exploitation of microdata may also be restricted by the increasing concerns about confidentiality and possible misuse of such databases.

1.62 It may be concluded therefore that, for various reasons, it may be difficult, if not impossible, to achieve microdatabases 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.

F. Links with business accounting

1.63 The accounting rules and procedures used in the SNA 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.

1.64 The design and structure of the SNA 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 SNA is designed primarily for purposes of economic analysis and policymaking.

- 1.65 Business accounts commonly (but not invariably) record costs on an historic basis, partly to ensure that they are completely objective.
- 1.69 Unlike commercial accounting, the SNA 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 events not connected with produc-

tion, such as earthquakes or other natural disasters, or acts of war. Real holding gains or losses on assets or liabilities due to changes in their relative prices are also excluded from income generated by production.

1. International accounting standards

- 1.70 A feature of the 2008 update of the SNA is recognition of the increasing use of international accounting standards by corporations and in the public sector. Subsequent chapters make reference to International Accounting Standards Board (IASB) and the International Public Sector Accounting Standards Board (IPSASB) norms. In several cases, notably on pension liabilities and intangible assets, the feasibility of including certain items in the SNA is dependent on the application of the international accounting standards.

G. Expanding the scope of the SNA

- 1.71 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 SNA that 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. For example, classifications of institutional units, transactions and assets may be implemented flexibly by introducing further aggregation or disaggregation 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 SNA.
- 1.73 Ways in which the SNA may be adapted to meet differing circumstances and needs are addressed in chapters 18 to 29. Chapter 29 shows how flexibility may be taken a stage further by developing satellite accounts that are closely linked

to the main SNA 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 SNA in the course of time, in the way that input-output analysis, for example, has been integrated into the SNA.

- 1.74 Another way in which the SNA 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 SNA which some users and analysts find more informative and powerful for both monitoring and modelling social and economic development.

H. The SNA and measures of welfare

- 1.75 GDP is often taken as a measure of welfare, but the SNA makes no claim that this is so and indeed there are several

conventions in the SNA that argue against the welfare interpretation of the accounts.

Chapter 2: Overview

A. Introduction

- 2.1 This chapter provides an overview of the accounting framework of the SNA and in doing so gives an overview of most of the following chapters also.
- It introduces the conceptual elements that form the building blocks of the accounting system and the rules of accounting to be followed. They are further elaborated in section B and C and in their full detail in chapters 3, 4 and 5.
 - It describes the standard view of the central framework of main accounting structure. Each account is introduced with a description of the nature of the account and an insight into the sort of analysis the account can yield. The accounts are described in section D and then in chapters 6 to 17.
 - Thereafter, the chapter shows some of the ways in which the central framework may be applied flexibly, depending on specific country requirements. In particular satellite accounts are introduced. These extensions and applications of the SNA are described briefly in section E and in chapters 18 to 29.
- 2.2 As explained in chapter 1, the central framework describes the essential phenomena which constitute economic behaviour: production, consumption, accumulation and the associated concepts of income and wealth. The SNA aims to provide a representation of this set of phenomena and their interrelations that is simplified to aid comprehension but still covers all important considerations. To achieve this, the central framework must satisfy two conditions; it must be integrated and consistent.
- 2.3 To be integrated, the same concepts, definitions and classifications must be applied to all accounts and sub-accounts. For example, once it is decided dwellings are treated as assets, all dwellings must give rise to housing services that are included within the production boundary, regardless of whether the dwellings are occupied by the owners or are rented on the market. Equally, all give rise to income that must be treated in the same way in the SNA, regardless of the relationship between the owner and the occupier.
- 2.4 To be consistent, each economic flow or stock level appearing in the SNA must be measured identically for the parties involved. This consistency is achieved by applying

throughout the SNA the same concepts and definitions and also by using a single set of accounting rules for all entries in the SNA. In practice, the actual data coming from the accounts or statistics provided by elementary units will not be fully consistent for various reasons and so achieving the consistency required by the SNA requires a large amount of additional work.

1. Analysing flows and stocks

- 2.5 Basically, the purpose of a system of national accounts is to record economic flows and stocks. Economic flows can be thought of in various ways. Consider the question “*Who does what?*” “Who” refers to the economic agent engaged in doing something, the operator. “What” is connected with the kind of action this agent is undertaking. In a few cases, the answer to this simple question provides a good preliminary characterization of an economic flow. However, in general the question is too simple to provide even a rough economic description of a specific flow. Take the example of somebody buying a loaf of bread. In order to characterize the flow, it is necessary to consider from whom this loaf of bread is bought (a baker or a supermarket) and what is given in exchange (a coin or a note). So the starting question is transformed into “Who does what *with whom in exchange for what?*” This rather simple flow involves two operators (a buyer, a seller), two main actions (a purchase, a sale), two secondary actions (a payment, a receipt) and two objects (bread, a coin or a note). Again, a complete description would require more information, at least the weight, kind and price of the bread.
- 2.6 The picture in the real world is still more complicated. Before this flow occurred, the seller had a certain quantity of bread in his shop; afterwards he has less bread but more money. The buyer had a certain amount of money, now he has less money but some bread (before eating it). So the flow between them has changed their initial situations. This means that flows cannot be looked at in isolation; the situations before and after a flow occurs need to be considered. At those two points in time, one must ask the question “*Who has what?*” The baker not only has bread and currency, he also has a house with the shop, baking equipment, some flour, a deposit in a bank, a car, etc. In other words, he has (he owns) a certain stock of objects. The same is true for the buyer. In addition to what they are in themselves, flows modify stocks. Flows and changes in stocks are

intrinsically connected. The previous question is again transformed into “Who does what with whom in exchange for what *with what changes in stocks?*”

2.7 However, the various ways of looking at this example have not yet been exhausted. Before the baker can sell bread, he has to bake it. He uses flour, water, electricity, baking equipment, etc. So, an additional question is “*Who does what by what means?*” What he does can also be characterized in two ways: his activity (to bake) and the result of it (a product: bread). With respect to the buyer one can ask “*Why does he buy bread?*” The obvious purpose is to eat, as food; however, it could be to give to a beggar, as charity. This raises the question “Who does what *for what purpose?*”

2.8 Adding all the questions together results in a rather complex combination of simple links: “Who does what, with whom, in exchange for what, by what means, for what purpose, with what changes in stocks?” Answering these questions for all economic flows and stocks and operators in a given economy would provide an enormous amount of information describing the complete network of economic interrelations. However, it would require an enormous amount of basic information, which is not always available nor complete in that it may cover only certain aspects of the complex chain of questions. Further, it is necessary to organize the recording of economic flows and stocks in a comprehensible way, as discussed in the next section.

2. Recording flows and stocks

2.9 Users’ needs set certain requirements for the accounting framework. The first requirement is that it should provide a picture of the economy, but the picture must be simplified in order to be both comprehensible and manageable. The second requirement is that it should faithfully represent economic behaviour by covering all important aspects in a balanced way without neglecting or giving too little emphasis to some aspects or giving others too much prominence. Finally, it should portray all significant economic interrelations and the results of economic activity. Although meeting these requirements is necessary, they are somewhat contradictory. Achieving the right balance between them is not easy. Too great a simplification can lose sight of or neglect important aspects of economic behaviour; too detailed a portrayal of reality can overburden the picture and reduce insight; too much sophistication can lower comprehension and mislead some users; and so on.

2.10 To meet these requirements, the SNA uses a limited number of basic categories to analyse and aggregate certain aspects (Who? What? What purpose? What stocks?) of the very numerous elementary flows. However, the SNA simplifies the picture it gives of the economic interrelations by not recording the “from-whom-to-whom?” question in a fully systematic way; that is, it does not always depict the

network of flows between the various types of operators. Consider three units, A, B and C, each of which makes payments of the same type to the other two; they might be three shopkeepers, for example, who sell different types of goods. Suppose A buys 2 from B and 3 from C; B buys 6 from A and 1 from C; C buys 4 from each of A and B. A full articulation of the flows could be captured in a three-by-three table as follows::

	A	B	C	Total purchases
A		2	3	5
B	6		1	7
C	4	4		8
Total sales	10	6	4	20

2.11 Although only the purchases were specified, it follows that the receipts of each unit are also available in the table. The totals in the right-most column show the total purchases of each of the three units and the bottommost row shows the total receipts by each of the three units. The sum of each must, obviously, be the same since each is the sum of all entries within the table. Within the central framework, the full detail of the flows from each of A, B and C to each of the others is not generally shown; it is sufficient to show only the totals in the right-most column and the bottommost row and know that these must balance.

2.12 In some presentations, particularly those using a matrix format of presentation, some of these extra details may be shown. Discussion of this appears in chapters 14, 28 and 29. Even in the central framework, the full detail may be available. For example if in some case A, B and C do not interact with one another but only with another unit G, as is the case in the payment of taxes, then there are only four entries to be shown; the payments by each of A, B and C and the receipts by G.

2.13 Another case where the SNA introduces a simplification is in terms of the “what in exchange for what?” question; that is, it does not indicate, for example, the specific nature of the financial counterpart (currency or deposit or short-term loan, etc.) for the purchases of goods and services or the payment of taxes.

2.14 The fact that the SNA is integrated, although articulated in only two and not three dimensions, does not reduce its consistency requirements. In effect, the purpose of the SNA is to derive national accounts that are as consistent as they would be if they were fully articulated; each economic flow or stock should be measured identically for both parties involved. The consistency in the SNA is achieved by applying the same concepts and definitions throughout and also by using a single strict set of accounting rules.

A. The conceptual elements of the SNA

2.15 The SNA contains a number of conceptual elements that determine the accounting framework of the SNA and permit various aspects of the questions raised above to be answered. These concepts are:

- a. Institutional units and sectors (*who?*);
- b. Transactions and other flows (*what?*);
- c. Assets and liabilities (*what stocks?*);
- d. Products and producing units (other aspects of *who* and *what?*);
- e. Purposes (*why?*).

They are presented in turn.

1. Institutional units and sectors

2.16 The fundamental units identified in the SNA are the economic units that can engage in the full range of transactions and are capable of owning assets and incurring liabilities on their own behalf. These units are called institutional units. Further, because they have legal responsibility for their actions, institutional units are centres of decision-making for all aspects of economic behaviour. In practice, some institutional units are controlled by others and thus in such cases autonomy of decision is not total and may vary over time. Legally independent holding of assets and liabilities and autonomous behaviour do not always coincide. In the SNA, preference is generally given to the first aspect because it provides a better way to organize the collection and presentation of statistics even if its usefulness is limited in some cases.

Institutional sectors

2.17 The institutional units are grouped together to form institutional sectors, on the basis of their principal functions, behaviour and objectives:

- a. *Non-financial corporations* are institutional units that are principally engaged in the production of market goods and non-financial services.
- b. *Financial corporations* are institutional units that are principally engaged in financial services including financial intermediation.
- c. *General government* consists of institutional units that, in addition to fulfilling their political responsibilities and their role of economic regulation, produce services (and possibly goods) for individual or collective consumption mainly on a non-market basis and redistribute income and wealth.

d. *Households* are institutional units consisting of one individual or a group of individuals. All physical persons in the economy must belong to one and only one household. The principal functions of households are to supply labour, to undertake final consumption and, as entrepreneurs, to produce market goods and non-financial (and possibly financial) services. The entrepreneurial activities of a household consist of unincorporated enterprises that remain within the household except under certain specific conditions.

e. *Non-profit institutions serving households (NPISHs)* are legal entities that are principally engaged in the production of non-market services for households or the community at large and whose main resources are voluntary contributions.

2.18 Each sector contains a number of subsectors distinguished according to a hierarchical classification (described in chapter 4). A subsector comprises entire institutional units, and each institutional unit belongs to only one subsector though alternative groupings are possible. The distinction between public, national private and foreign controlled corporations and between various socio-economic groups of households is included in the SNA in order to respond to policy concerns.

Delimitation of the total economy and the rest of the world

2.19 The total economy is defined in terms of institutional units. It consists of all the institutional units which are resident in the economic territory of a country. The economic territory of a country, although consisting essentially of the geographical territory, does not coincide exactly; some additions and subtractions are made (see chapter 26). The concept of residence in the SNA is not based on nationality or legal criteria. An institutional unit is said to be a resident unit of a country when it has a centre of predominant economic interest in the economic territory of that country; that is, when it engages for an extended period (one year or more being taken as a practical guideline) in economic activities on this territory. The institutional sectors referred to above include only resident units.

2.20 Resident units engage in transactions with non-resident units (that is, units that are residents of other economies). These transactions are the external transactions of the economy and are grouped in the account of the rest of the world. Strictly speaking, the rest of the world is the account of transactions occurring between resident and non-resident units, but it may also be seen as the whole group of non-resident units that enter into transactions with resident units. In the accounting structure of the SNA, the rest of the world plays a role similar to that of an institutional sector, although non-resident units are included only in so far as they are engaged in transactions with resident institutional units.

2. Transactions and other flows

2.21 Institutional units fulfil various economic functions; that is, they produce, consume, save, invest, etc. They may engage in various types of production (agriculture, manufacturing, etc.) as entrepreneurs, providers of labour or suppliers of capital. In all aspects of their economic functions and activities, they undertake a great number of elementary economic actions. These actions result in economic flows, which, however they are characterized (wages, taxes, fixed capital formation, etc.), create, transform, exchange, transfer or extinguish economic value; they involve changes in the volume, composition or value of an institutional unit's assets or liabilities. The economic value may take the form of ownership rights on physical objects (a loaf of bread, a dwelling) or intangible assets (a film original) or of financial claims (liabilities being understood as negative economic value). In all cases, economic value is potentially usable to acquire goods or services, pay wages or taxes, etc.

2.22 Most economic actions are undertaken by mutual agreement between institutional units. They are either an exchange of economic value or a voluntary transfer by one unit to another of a certain amount of economic value without a counterpart. These actions undertaken by mutual agreement between two institutional units are called transactions in the SNA. The SNA also treats certain economic actions involving only a single institutional unit as transactions. They are described as internal, or intra-unit, transactions. For example, own-account fixed capital formation is treated as a transaction between a unit in its capacity as a producer with itself in its capacity as an acquirer of fixed capital. Such transactions are similar in nature to actions undertaken by mutual agreement by two different institutional units.

2.23 However, not all economic flows are transactions. For example, certain actions undertaken unilaterally by one institutional unit have consequences on other institutional units without the latter's consent. The SNA records such actions only to a limited extent, essentially when governments or other institutional units take possession of the assets of other institutional units, including non-resident units, without full compensation. In fact, unilateral economic actions bearing consequences, either positive or negative, on other economic units (externalities) are much broader but such externalities are not recorded in the SNA. Human action may result in the transfer of natural assets to economic activities and the subsequent transformation of these assets. These phenomena are recorded in the SNA as economic flows, bringing in economic value. Non-economic phenomena, such as wars and natural disasters, may destroy economic assets, and this extinction of economic value must be accounted for. The value of economic assets and liabilities may change during the time they are held as stocks, as a consequence of changes in prices. These and similar flows that are not transactions, which are called other economic flows in the SNA, are described in chapter 12.

2.24 Economic flows can be actual, observable flows or they can be built up or estimated for analytical purposes. Certain flows may be directly observed in value terms. This is the case for monetary transactions between two institutional units, such as a purchase or sale of a good or the payment of a tax. Other two-unit flows are observable but cannot be immediately valued. These flows include barter of goods and services or education services consumed by students and provided free of charge by government; a value in money terms has to be attributed to them. Barter is an example of a two-unit flow involving a "quid pro quo" that is, a flow in one direction is linked to a counterpart flow in the opposite direction; a social assistance benefit in cash is a two-unit flow that does not involve a quid pro quo. Another kind of flow involves only one institutional unit. Such flows may be physically observable, as in the case of output for own-account consumption or capital formation, or destruction by natural catastrophes. A value has to be attributed to them (this may be fairly easy in certain cases, such as when output is mostly sold). Other intra-unit, or internal, flows may not be observable as such; accounting entries are then constructed in order to measure economic performance correctly. This is the case for the consumption of fixed capital or the revaluation of assets and liabilities. Certain inter-units flows, such as reinvested earnings on foreign direct investment, are also accounting entries created for analytical purposes. Finally, some observable monetary transactions are not recorded as they are observed in practice because they are of a composite nature (nominal interest, total insurance premiums) or their legal nature does not correspond to their economic one (financial leasing). Consequently, for the SNA, they are split up into various components and their classification and routing are modified.

2.25 Although monetary transactions have a basic role in the valuation of flows in the SNA, non-monetary transactions are also significant. They include flows of goods and services that take place between institutional units for which values have to be estimated and also some flows that are assumed to take place within units. The relative importance of non-monetary transactions varies according to the type of economy and the objectives pursued by the accounting system. Although the volume of non-monetary flows is generally greater for less developed economies than for developed ones, even for the latter it is not negligible.

Main types of transactions and other flows

2.26 Elementary transactions and other flows are very numerous. They are grouped into a relatively small number of types according to their nature. The main classification of transactions and other flows in the SNA includes four first-level types, with each subdivided according to a hierarchical classification. It is designed to be used systematically in the accounts and tables of the central framework and cross-classified with institutional sectors, industry and product, and purpose classifications. A full set of transactions and their codes appear in annex 1.

- 2.27 *Transactions in goods and services (products)* describe the origin (domestic output or imports) and use (intermediate consumption, final consumption, capital formation or exports) of goods and services. By definition, goods and services in the SNA are always a result of production, either domestically or abroad, in the current period or in a previous one. The term products is thus a synonym for goods and services.
- 2.28 *Distributive transactions* consist of transactions by which the value added generated by production is distributed to labour, capital and government and transactions involving the redistribution of income and wealth (taxes on income and wealth and other transfers). The SNA draws a distinction between current and capital transfers, with the latter deemed to redistribute saving or wealth rather than income. (This distinction is discussed in detail in chapter 8.)
- 2.29 *Transactions in financial instruments* (or financial transactions) refer to the net acquisition of financial assets or the net incurrence of liabilities for each type of financial instrument. Such changes often occur as counterparts of non-financial transactions. They also occur as transactions involving only financial instruments. Transactions in contingent assets and liabilities are not considered transactions in the SNA (see chapter 11).
- 2.30 *Other accumulation entries* cover transactions and other economic flows not previously taken into account that change the quantity or value of assets and liabilities. They include acquisitions less disposals of non-produced non-financial assets, other economic flows of non-produced assets, such as discovery or depletion of subsoil resources or transfers of other natural resources to economic activities, the effects of non-economic phenomena such as natural disasters and political events (wars for example) and finally, they include holding gains or losses, due to changes in prices, and some minor items (see chapter 12).

Characteristics of transactions in the SNA

- 2.31 In order to provide more useful answers to the questions raised in the analysis of flows, some transactions are not recorded in the SNA as they might be directly observed. The SNA often uses categories which are more closely identified with an economic concept. For example, gross fixed capital formation, a subcategory of transactions in goods and services, is broader than the limited coverage thought of as “purchases of fixed assets”. In order to be closer to an economic concept, it covers the acquisition of new and existing fixed assets, through purchases, barter transactions or own-account capital formation, less the disposal of existing assets, through sales or barter transactions.
- 2.32 As the previous example shows, the SNA also often uses categories which are compacted, that is, are the result of combining a number of elementary transactions. The term changes in inventories, for example, refers to the difference between entries into and withdrawals from inventories and recurrent losses. The same netting happens for transactions in financial instruments. All transactions in an instrument

held as an asset (or as a liability) are grouped under the heading of this instrument. The item “loans,” for example, covers issuance of new loans, conversions, and redemptions or cancellations of existing loans. Finally, some categories of transactions in the SNA, such as distributive transactions concerning interest and net non-life insurance premiums, require an actual transaction to be split into parts.

3. Assets and liabilities

- 2.33 Assets and liabilities are the components of the balance sheets of the total economy and institutional sectors. In contrast to the accounts that show economic flows, a balance sheet shows the stocks of assets and liabilities held at one point in time by each unit or sector or the economy as a whole. Balance sheets are normally constructed at the start and end of an accounting period but they can in principle be constructed at any point in time. However, stocks result from the accumulation of prior transactions and other flows, and they are modified by future transactions and other flows. Thus stocks and flows are closely related.
- 2.34 The coverage of assets is limited to those assets which are subject to ownership rights and from which economic benefits may be derived by their owners by holding them or using them in an economic activity as defined in the SNA. Consumer durables, human capital and those natural resources that are not capable of bringing economic benefits to their owners are outside the scope of assets in the SNA.
- 2.35 The classification of assets distinguishes, at the first level, financial and non-financial (produced and non-produced) assets (see chapter 10). Most non-financial assets generally serve two purposes. They are primarily objects usable in economic activity and, at the same time, serve as stores of value. Financial assets are necessarily and primarily stores of value, although they may also fulfil other functions.

4. Products and producing units

Products

- 2.36 Goods and services, also called products, are the result of production. They are exchanged and used for various purposes; as inputs in the production of other goods and services, as final consumption or for investment. The SNA makes a conceptual distinction between market, own final use and non-market goods and services, allowing in principle any kind of good or service to be any of these three types.

Producing units

- 2.37 Institutional units such as corporations may produce various types of goods and services. These goods and services result from processes of production which may differ as regards materials and supplies consumed, kind of equipment and labour employed and techniques used. In other

words, they may come from different production activities. In order to study transactions in goods and services in detail, the SNA uses the *Central Product Classification Version 2 (CPC) 2* (United Nations 2008b).

- 2.38 To study production and production functions in detail, it is necessary to refer to more homogeneous units. The ideal solution would be to be able to identify and observe units that engaged in only one production activity. As it is also necessary to give a picture of the distribution of production in space, this unit should also be in a single location or nearby sites. In practice, it is not always feasible to distinguish units of production engaged in a single activity, and for which the necessary data are available, inside multiactivity units. Inevitably, therefore, some secondary activities that cannot be separated are covered. For that reason, for the detailed study of production, the SNA uses a unit which, in addition to its principal activity, may cover secondary activities. This unit is the establishment.
- 2.39 Establishments that have the same principal activity are grouped into industries according to the *International Standard Industrial Classification of All Economic Activities Revision 4 (ISIC, Rev.4)* (United Nations, 2008a).
- 2.40 Given the fundamental role played by the market in modern economies, the SNA distinguishes, as an essential feature

B. Rules of accounting

1. Introduction

Terminology for the two sides of the accounts

- 2.43 The SNA utilizes the term *resources* for transactions which add to the amount of economic value of a unit or a sector. For example, wages and salaries are a resource for the unit or sector receiving them. Resources are by convention shown on the right-hand side of the current accounts. The left-hand side of the accounts, which includes transactions that reduce the amount of economic value of a unit or sector, is termed *uses*. To continue the example, wages and salaries are a use for the unit or sector that must pay them.
- 2.44 Balance sheets are presented with *liabilities and net worth* (the difference between assets and liabilities) on the right-hand side and *assets* on the left-hand side. Comparing two successive balance sheets gives changes in liabilities and net worth and changes in assets.
- 2.45 The accumulation accounts and balance sheets being fully integrated, the right-hand side of the accumulation accounts is called *changes in liabilities and net worth* and their left-hand side is called *changes in assets*. In the case of transactions in financial instruments, the changes in liabilities are

of its structure, between establishments that are market producers, producers for own final use and non-market producers. Market establishments produce goods and services mostly for sale at prices that are economically significant. Producers for own final use produce goods and services mostly for final consumption or fixed capital formation by the owners of the enterprises in which they are produced. Non-market establishments supply most of the goods and services they produce without charge or at prices that are not economically significant.

- 2.41 There is a hierarchical relationship between institutional units and establishments. An institutional unit contains one or more entire establishment(s); an establishment belongs to one and only one institutional unit.

5. Purposes

- 2.42 The concept of purpose, or function, relates to the type of need a transaction or group of transactions aims to satisfy or the kind of objective it pursues. Transactions are first analysed in the SNA according to their nature. Then, for certain sectors or kind of transactions, they are analysed from the expenditure side, by purpose, answering the earlier question “for what purpose?” Classification by purpose is described in the context of the supply and use tables in chapter 14.

often referred to as (net) incurrence of liabilities and the changes in assets as (net) acquisition of financial assets.

Change of ownership and the recording of transactions in goods and services

- 2.46 A good may be held and be processed by a unit that does not have title to the ownership of the good. One example is a good given to a unit for repair. The activity of the repairer is only the cost incurred to effect the repair and the cost of the good being repaired does not feature in the accounts of the repairer. This is obvious and uncontroversial for every day types of repairs such as repairing shoes or a vehicle. However, the same principle also applies when one unit processes goods on behalf of another unit. For example, one unit may receive a set of components from another unit and return the assembled product.
- 2.47 Within the SNA, a distinction is made between legal ownership and economic ownership. The criterion for recording the transfer of products from one unit to another in the SNA is that the economic ownership of the product changes from the first unit to the second. The legal owner is the unit entitled in law to the benefits embodied in the value of the product. A legal owner may, though, contract with another unit for the latter to accept the risks and rewards of using the product in production in return for an agreed amount

that has a smaller element of risk in it. Such an example is when a bank legally owns a plane but allows an airline to use it in return for an agreed sum. It is the airline that then must take all the decisions about how often to fly the plane, to where and at what cost to the passengers. The airline is then said to be the economic owner of the plane even though the bank remains the legal owner. In the accounts, it is the airline and not the bank that is shown as purchasing the plane. At the same time, a loan, equal in value to payments due to the bank for the duration of the agreement between them is imputed as being made by the bank to the airline.

- 2.48 The same principle applies to goods sent abroad for processing. If the processor is not concerned about how and where and for how much the item he is assembling is sold, the economic ownership remains with the legal owner. Even though the goods may physically pass from one country to another, they are not treated as imports and exports because the economic ownership has not changed.
- 2.49 Within a large enterprise with several specialized establishments, it is not immediately obvious whether a delivery of goods from one establishment to another is to be recorded or not. Since all the establishments have the same ownership, the distinction between economic and legal ownership needs refining. The criterion used is to record a delivery when the receiving unit assumes the responsibility, in terms of economic risks and rewards, of the items delivered. If the receiving unit does not accept this responsibility, for example by returning the processed items to the original sending unit, then it is only performing a service on the items and they are not recorded as being delivered from the first unit to the second.

Double entry or quadruple entry accounting

- 2.50 For a unit or sector, national accounting is based on the principle of double entry, as in business accounting. Each transaction must be recorded twice, once as a resource (or a change in liabilities) and once as a use (or a change in assets). The total of transactions recorded as resources or changes in liabilities and the total of transactions recorded as uses or changes in assets must be equal, thus permitting a check of the consistency of the accounts. Economic flows that are not transactions have their counterpart directly as changes in net worth. This is shown in section D below (and also in chapter 12, which describes the other changes in the volume of assets account and the revaluation account).
- 2.51 The implications of the double entry principle are easy to grasp in a number of cases. A household's purchase on credit of a consumer good will appear as a use under final consumption expenditure and as an incurrence of a liability under loans. If this good is paid for in cash, however, the picture is less simple. The counterpart of a use under final consumption is now a negative acquisition of assets, under currency and deposits. Other transactions are more complicated. Output of goods is recorded as a resource in the account of a producer, its counterpart among uses is

recorded as a positive change in inventories. When the output is sold, there is a negative change in inventories, that is, a negative acquisition of non-financial assets, balanced by a positive acquisition of financial assets, for instance under currency and deposits. In many instances, as explained earlier, the difficulty of seeing how the double entry principle applies is due to the fact that the categories of transactions in the SNA are compacted.

- 2.52 In principle, the recording of the consequences of an action as it affects all units and all sectors is based on a principle of quadruple entry accounting, because most transactions involve two institutional units. Each transaction of this type must be recorded twice by each of the two transactors involved. For example, a social benefit in cash paid by a government unit to a household is recorded in the accounts of government as a use under the relevant type of transfers and a negative acquisition of assets under currency and deposits; in the accounts of the household sector, it is recorded as a resource under transfers and an acquisition of assets under currency and deposits. The principle of quadruple entry accounting applies even when the detailed from-whom-to-whom relations between sectors are not shown in the accounts. Correctly recording the four transactions involved ensures full consistency in the accounts.
- 2.53 As noted in the introduction, the data available to the national accounts compiler may not in practice initially satisfy the consistency requirements of the SNA. The accounts of the nation are not kept in the same way as a business unit or government, that is, by actually recording all flows occurring in a given period. They rely on accounts of various units that are not always consistent, complete or even available. For household accounts in particular, other statistics such as those from household surveys have to be used. Reconciling disparate data sources within the consistency constraints imposed by the quadruple entry accounting principle is fundamental to compiling a complete set of accounts.

2. Time of recording

- 2.54 One implication of the quadruple entry accounting principle is that transactions, or other flows, have to be recorded at the same point of time in the various accounts in question for both units involved. The same applies to stocks of financial assets and liabilities.
- 2.55 The general principle in national accounting is that transactions between institutional units have to be recorded when claims and obligations arise, are transformed or are cancelled. This time of recording is called an accrual basis. Transactions internal to one institutional unit are equivalently recorded when economic value is created, transformed or extinguished. Generally speaking, all transactions, however they are described, can always be viewed as dealing with economic value.
- 2.56 One has thus to distinguish carefully between the point in time at which a transaction and the corresponding cash movement take place. Even when a transaction (a purchase

or sale of a good, for example) and the payment or receipt are simultaneous, the two aspects exist. The purchaser incurs a liability, the seller acquires a claim as a counterpart of the delivery of the good. Then the liability and the claim are cancelled by the payment. In most cases there is a delay between the actual transaction and the corresponding payment or receipt. In principle, national accounts record actual transactions on an accrual basis, not on a cash basis. Conceptually national accounts follow the same principle as business accounting.

2.57 Although the principle is clear, its implementation is far from simple. Institutional units do not always apply the same rules. Even when they do, differences in actual recording may occur for practical reasons such as delays in communication. Consequently, transactions may be recorded at different times by the transactors involved, sometimes even in a different accounting period. Discrepancies exist which national accounts must eliminate by after-the-fact adjustments. In addition, because the time at which a claim or liability arises is not always unambiguous, further implementation problems arise. The rules and conventions adopted in the SNA for particular transactions are specified in subsequent chapters, in particular in chapter 3.

3. Valuation

General principles

2.58 It also follows from the quadruple entry accounting principle that a transaction must be recorded at the same value through all the accounts of both sectors involved. The same principle applies to assets and liabilities. It means that a financial asset and its liability counterpart have to be recorded for the same amount in the creditor and the debtor accounts.

2.59 Transactions are valued at the actual price agreed upon by the transactors. Market prices are thus the basic reference for valuation in the SNA. In the absence of market transactions, valuation is made according to costs incurred (for example, non-market services produced by government) or by reference to market prices for analogous goods or services (for example, services of owner-occupied dwellings).

2.60 Assets and liabilities are recorded at current values at the time to which the balance sheet relates, not at their original valuation. Theoretically, national accounts are based on the assumption that the values of assets and liabilities are continuously updated to current values, even if in fact up-rating occurs only periodically. The appropriate valuation basis for assets and liabilities is the value at which they might be bought in markets at the time the valuation is required. Ideally, values observed in markets or estimated from observed market values should be used. When this is not possible, current values may be approximated for balance sheet valuation in two other ways, by accumulating and revaluing transactions over time or by estimating the discounted present value of future returns expected from a given asset (see also chapter 13).

2.61 Internal transactions are valued at current values at the time these transactions occur, not at the original valuation. These internal transactions include entries into inventories, withdrawals from inventories, intermediate consumption and consumption of fixed capital.

Methods of valuation

2.62 Various methods exist of treating the effect of taxes on products, subsidies and trade and transport margins on the valuation of transactions on products (goods and services).

2.63 The preferred method of valuation of output is at basic prices, although producers' prices may be used when valuation at basic prices is not feasible. The distinction is related to the treatment of taxes and subsidies on products. Basic prices are prices before taxes on products are added and subsidies on products are subtracted. Producers' prices include, in addition to basic prices, taxes less subsidies on products other than value added type taxes. Thus three valuations of output may be encountered; at basic prices, at producers' prices in the absence of value added type taxes, and at producers' prices in the presence of value added type taxes.

2.64 In the same set of accounts and tables, all transactions on the uses of goods and services (such as final consumption, intermediate consumption, capital formation) are valued at purchasers' prices. Purchasers' prices are the amounts paid by the purchasers, excluding the deductible part of value added type taxes. Purchasers' prices are the actual costs to the users.

2.65 The various methods of valuing output, with intermediate consumption always at purchasers' prices, imply consequences for the content and uses of value added (the difference between output and intermediate consumption) by a producer, a sector or an industry. When output is valued at basic prices, value added includes besides primary incomes due to labour and capital, only taxes less subsidies on production other than taxes less subsidies on products; when output is valued at producers' prices, value added includes taxes, less subsidies, on products other than value added type taxes (which means all taxes, less subsidies, on products when value added type taxes do not exist). A complementary definition of value added is at factor cost, which excludes taxes on production of any kind, though this concept is not used explicitly in the SNA.

Volume measures and measures in real terms

2.66 Up until this point, only current values have been described. In addition, the SNA includes calculation of some transactions in volume terms, that is, the use of the systems of prices which prevailed in a past period. The changes over time in the current values of flows of goods and services and of many kinds of assets can be decomposed into changes in the prices of these goods and services or assets and changes in their volumes. Flows or stocks in volume terms take into account the changes in the price of

each item covered. However, many flows or stocks do not have price and quantity dimensions of their own. Their current values may be deflated by taking into account the change in the prices of some relevant basket of goods and services or assets, or the change in the general price level. In the latter case, flows or stocks are said to be in real terms (that is, they represent values at constant purchasing power). For example, the SNA provides for the calculation of income in real terms. Interspatial comparisons raise similar but even more complex problems than inter-temporal comparisons because countries at different stages of development are involved.

- 2.67 Both inter-temporal and interspatial measures are discussed in chapter 15.

4. Consolidation and netting

Consolidation

- 2.68 Consolidation may cover various accounting procedures. In general, it refers to the elimination from both uses and resources of transactions which occur between units that are grouped together and to the elimination of financial assets and the counterpart liabilities.
- 2.69 As a matter of principle, flows between constituent units within subsectors or sectors are not consolidated. However, consolidated accounts may be compiled for complementary presentations and analyses. Even then, transactions appearing in different accounts are never consolidated so that the balancing items are not affected by consolidation. Consolidation may be useful, for example, for the government sector as a whole, thus showing the net relations between government and the rest of the economy. This possibility is elaborated in chapter 22.

C. The accounts

1. Introduction

- 2.73 With the tools introduced in sections B and C above, all flows and stocks can be recorded. This is done in the accounts of the SNA. Each account relates to a particular aspect of economic behaviour. It contains flows or stocks and shows the entries for an institutional unit, a group of units such as a sector or the rest of the world. Typically the entries in the account do not conceptually balance so a balancing item must be introduced. Balancing items are meaningful measures of economic performance in themselves. When calculated for the whole economy, they constitute significant aggregates.
- 2.74 The accounts can be divided into two main classes:
 - a. The integrated economic accounts; and

- 2.70 Accounts for the total economy, when fully consolidated, give rise to the rest of the world account (external transactions account).

Netting

- 2.71 Consolidation must be distinguished from netting. For current transactions, netting refers to offsetting uses against resources. The SNA does this only in a few specific instances; for example, taxes on products may be shown net of subsidies on products. For changes in assets or changes in liabilities, netting may be envisaged in two ways. The first case is where various types of changes in assets (for example, entries in inventories and withdrawals from inventories) or various types of liabilities (for example, incurrence of a new debt and redemption of an existing debt) are netted. The second case is where changes in financial assets and changes in liabilities (or, in the balance sheet, financial assets and liabilities themselves) related to a given financial instrument are netted. As a matter of principle, the SNA discourages netting beyond the degree shown in the classifications of the SNA. Netting financial assets (changes in financial assets) against liabilities (changes in liabilities) is especially to be avoided. Netting is discussed in chapters 3 and 11.

The use of “net”

- 2.72 With very few exceptions, in the SNA the term “net” is used only in connection with the balancing items of the accounts in juxtaposition to the term “gross”. The exceptions are the use of the expressions net worth, net borrowing and net lending in relation to the accumulation accounts and net premiums in the context of insurance.

- b. The other parts of the accounting structure.

- 2.75 The integrated economic accounts use the first three of the conceptual elements of the SNA described in section B, (institutional units and sectors, transactions and assets and liabilities) together with the concept of the rest of the world to form a wide range of accounts.
- 2.76 The other parts of the accounting system bring in the three other conceptual elements from section B, that is, establishments, products and purposes as well as population and employment. The accounts covered here include the supply and use framework, which is the subject of chapter 14, population and employment tables which are described in chapter 19, the three dimensional analysis of financial transactions and stocks of financial assets and liabilities, showing the relations between sectors (from-whom-to-

whom) described in chapter 27 and functional analyses, whereby certain transactions of institutional sectors are presented according to the purpose they serve. These appear in a number of chapters including chapter 14.

2.77 The sections following are devoted to:

- a. The full sequence of accounts;
- b. An integrated presentation of the accounts including the goods and services account, the accounts for the rest of the world and an examination of the aggregates of the SNA; and
- c. The other parts of the accounting structure.

2. The full sequence of accounts

2.78 Before presenting the full

2.79 Another remark relates to the way the classification of transactions is used when presenting the general structure of the accounts. Section B above shows only the main categories of transactions, not the detailed ones which are displayed in the relevant chapters of the publication. However, in order to make the accounts clear, it is necessary to include a number of specific transactions. This is done by using the actual classification of transactions in the SNA at a level of detail sufficient for a good understanding of the accounts. Definitions of these transactions are not given at this stage unless absolutely necessary but appear in subsequent chapters.

2.80 It is also worth noting that balancing items can be expressed gross or net, the difference being the consumption of fixed capital. Conceptually, net balancing items are much more meaningful. However, gross concepts, specifically gross aggregates, are widely used and gross accounts are often estimated more easily, accurately and promptly than the net ones. In order to accommodate both solutions and to ease the integrated presentation of the accounts and aggregates, a double presentation of balancing items is allowed.

2.81 Finally, it has to be said that the sequence of accounts shows the accounting structure of the SNA; it is not necessarily a format for publishing the results.

The three sections of the sequence of accounts

2.82 The accounts are grouped into three categories: current accounts, accumulation accounts and balance sheets.

2.83 Current accounts deal with production, the generation, distribution and use of income. Each account after the first starts with the balancing item of the previous one recorded as resources. The last balancing item is saving which, in the context of the SNA, is that part of income originating in production, domestically or abroad that is not used for final consumption.

2.84 Accumulation accounts cover changes in assets and liabilities and changes in net worth (the difference for any institutional unit or group of units between its assets and liabilities). The accounts concerned are the capital account, financial account, the other changes in the volume of assets account and the revaluation account. The accumulation accounts show all changes that occur between two balance sheets.

2.85 Balance sheets present stocks of assets and liabilities and net worth. Opening and closing balance sheets are included with the full sequence of accounts. Even when balance sheets are not compiled, a clear understanding of the conceptual relationship between accumulation accounts and balance sheets is necessary if the accumulation accounts themselves are to be correctly elaborated.

The production account

2.86 The production account (shown in table 2.1) is designed to show value added as one of the main balancing items in the SNA. Consequently, it does not cover all transactions linked with the production process, but only the result of production (output) and the using up of goods and services when producing this output (intermediate consumption). Intermediate consumption does not cover the progressive wear and tear of fixed capital. The latter is recorded as a separate transaction (consumption of fixed capital) which is the difference between the gross and net balancing items.

2.87 As already explained in section C, different types of valuation of output may be used according to the choice made between basic prices and producers' prices and, in the latter case, the existence or absence of value added type taxes. Consequently, the extent to which taxes (less subsidies) on products are included in value added differs.

2.88 All institutional sectors have a production account. However, in the production account of institutional sectors, output and intermediate consumption are shown in total only, not broken down by products.

2.89 The balancing item of the production account is value added. Like all balancing items in the current accounts, value added may be measured gross or net.

Table 2.1: The production account

Uses	Resources
Intermediate consumption	Output
Value added	

The distribution of income accounts

2.90 The process of distribution and redistribution of income is so important that it is worth distinguishing various steps and depicting them separately in different accounts. The distribution of income is decomposed into three main steps: primary distribution, secondary distribution and redistribution in kind. As long as all kinds of distributive current transactions included in the SNA are actually measured, increasing the number of accounts adds very little to the work already done, but it allows the introduction of balancing items that are meaningful concepts of income.

The primary distribution of income account

2.91 The primary distribution of income account shows how gross value added is distributed to labour, capital, government and, where necessary, flows to and from the rest of the world. In fact the primary distribution of income account is never presented as a single account but always as two sub-accounts. The first of these is the generation of income account (shown in table 2.2) in which value added is distributed to labour (compensation of employees), capital and government (taxes on production and imports less subsidies as far as they are included in the valuation of output). The distribution to capital appears in the balancing item in this account, operating surplus or mixed income.

2.92 The allocation of primary income account (table 2.3) shows the remaining part of the primary distribution of income. It contains operating surplus or mixed income as a resource. It records, for each sector, property income receivable and payable, and compensation of employees and taxes, less subsidies, on production and imports receivable by households and government, respectively. Since transactions of this kind may appear in the rest of the world account, these must be included also.

2.93 The balancing item of the allocation of primary income account (and of the complete primary distribution of income account) is the balance of primary income.

2.94 For non-financial and financial corporations, the allocation of primary income account is further subdivided in order to show an additional balancing item, entrepreneurial income, which is closer to the concept of current profit before tax familiar in business accounting. This balancing item and the related sub-accounts are shown in chapter 7.

The secondary distribution of income account

2.95 The secondary distribution of income account (table 2.4) covers redistribution of income through current transfers. The secondary distribution of income account records as resources, in addition to balance of primary incomes, current taxes on income, wealth, etc. and other current transfers except social transfers in kind. On the uses side, the same types of transfers are also recorded. Since these transfers are resources for some sectors and uses for others also, their precise content varies from one sector to another.

2.97 The balancing item of the secondary distribution of income account is disposable income. For households, this is the income that can be used for final consumption expenditure and saving. For non-financial and financial corporations, disposable income is income not distributed to owners of equity remaining after taxes on income are paid.

The use of income accounts

2.101 The use of income account exists in two variants, the use of disposable income account (table 2.6) and the use of adjusted disposable income account (table 2.7). The use of disposable income account has the balancing item from the secondary distribution of income account, disposable income, as a resource. The use of adjusted disposable income account has the balancing item from the redistribution of income in kind account, adjusted disposable income,

Table 2.2: The allocation of primary income account

Uses	Resources
Property income	Operating surplus, net
<i>Balance of primary incomes</i>	Mixed income, net
	Compensation of employees
	Taxes on production and imports
	Subsidies (-)
	Property income

Table 2.3: The generation of income account

Uses	Resources
Compensation of employees	Value added
Taxes on production and imports	
Subsidies (-)	
<i>Operating surplus, net</i>	
<i>Mixed income, net</i>	

as a resource. Both accounts show how, for those sectors that undertake final consumption (that is, government, NPISHs and households), disposable income or adjusted disposable income is allocated between final consumption and saving. In addition, both variants of the use of income account include, for households and for pension funds, an adjustment item for the change in pension entitlements which relates to the way transactions between households and pension funds are recorded in the SNA. This adjustment item, which is explained in chapter 9, is not discussed here.

- 2.102 The difference between the resources of the two variants of the use of income account depends on which balancing item is carried down from an earlier account. In terms of uses, the difference is between whether final consumption expenditure or actual final consumption is recorded. The former is recorded in the use of disposable income account; the latter in the use of adjusted disposable income account.
- 2.103 Final consumption expenditure covers transactions in final consumption of goods and services for which a sector is the ultimate bearer of the expense. Government and NPISHs produce non-market goods and services in their production account, where intermediate consumption and compensation of employees are recorded as uses. Final consumption expenditure of these producers relates to the value of their output of non-market goods and services, less their receipts from the sale of non-market goods and services at prices which are not economically significant. However, it also covers goods and services that are purchased by government or NPISHs for ultimate transfer, without transformation, to households.
- 2.104 Actual final consumption of households covers goods and services which are effectively available for individual consumption by households, regardless of whether the ultimate bearer of the expense is government, NPISHs or households themselves. Actual final consumption of government

and NPISHs is equal to consumption expenditure less social transfers in kind, or, in other words, collective consumption.

- 2.105 At the level of total economy, disposable income and adjusted disposable income are equal, as are final consumption expenditure and actual final consumption. They differ only when considering the relevant sectors. For each sector, the difference between final consumption expenditure and actual final consumption is equal to social transfers in kind, provided or received. It is also equal to the difference between disposable income and adjusted disposable income. Thus the figures for saving are the same in both variants of the use of income account as income on the resources side and consumption on the uses side differ by the same amount.
- 2.106 The balancing item of the use of income account, in its two variants, is saving. Saving ends the subsequence of current accounts.

The accumulation accounts

- 2.107 Saving, being the balancing item of the last current account is the starting element of accumulation accounts.
- 2.108 A first group of accounts covers transactions which would correspond to all changes in assets or liabilities and net worth if saving and capital transfers were the only sources of changes in net worth. The accounts concerned are the capital account and the financial account. These two accounts are distinguished in order to show a balancing item which is useful for economic analysis, that is, net lending or net borrowing.
- 2.109 A second group of accounts relates to changes in assets, liabilities and net worth due to other factors. Examples are discoveries or depletion of subsoil resources, destruction by

Table 2.4: The secondary distribution of income account

Uses	Resources
Current transfers	<i>Balance of primary incomes</i>
Current taxes on income, wealth, etc.	Current transfers
Net social contributions	Current taxes on income, wealth, etc.
Social benefits other than social transfers in kind	Net social contributions
Other current transfers	Social benefits other than social transfers in kind
Disposable income	Other current transfers

Table 2.6: The use of disposable income account

Uses	Resources
Final consumption expenditure	<i>Disposable income</i>
Adjustment for the change in pension entitlements	Adjustment for the change in pension entitlements
Saving	

political events, such as war, or by natural disasters, such as earthquakes. Such factors actually change the volume of assets, either physically or quantitatively. Other changes in assets may also be linked with changes in the level and structure of prices. In the latter case, only the value of assets and liabilities is modified, not their volume. Thus the second group of accumulation accounts is subdivided between an account for other changes in volume of assets and an account for revaluation.

The capital account

- 2.110 The capital account (table 2.8) records transactions linked to acquisitions of non-financial assets and capital transfers involving the redistribution of wealth. The right-hand side includes saving, net, and capital transfers receivable and capital transfers payable (with a minus sign) in order to arrive at that part of changes in net worth due to saving and capital transfers. The capital account includes among uses the various types of investment in non-financial assets. Because consumption of fixed capital is a negative change in fixed assets, it is recorded, with a negative sign, on the left-hand side of the account. Recording gross fixed capital formation less consumption of fixed capital on the same side is equivalent to recording net fixed capital formation.
- 2.111 The balancing item of the capital account is called net lending when positive and measuring the net amount a unit or a sector finally has available to finance, directly or indirectly, other units or sectors, or net borrowing when negative, cor-

responding to the amount a unit or a sector is obliged to borrow from others.

The financial account

- 2.112 The financial account (table 2.9) records transactions in financial instruments for each financial instrument. These transactions in the SNA show net acquisition of financial assets on the left-hand side or net incurrence of liabilities on the right-hand side.
- 2.113 The balancing item of the financial account is again net lending or net borrowing, which appears this time on the right-hand side of the account. In principle, net lending or net borrowing is measured identically in both the capital and financial accounts. In practice, achieving this identity is one of the most difficult tasks in compiling national accounts.

The other changes in the volume of assets account

- 2.114 The other changes in the volume of assets account (table 2.10) records the effect of exceptional events that cause not only the value but also the volume of assets and liabilities to vary. In addition to the kind of events referred to above, such as the consequences of war or earthquakes, this account also includes some adjustment elements such as changes in classification and structure which may or may not have an influence on net worth (see chapter 12). The balancing item, changes in net worth due to other changes in the volume of assets, is recorded on the right-hand side.

Table 2.8: The capital account

Changes in assets	Changes in liabilities and net worth
Gross fixed capital formation	<i>Saving</i>
Consumption of fixed capital (-)	
Changes in inventories	
Acquisitions less disposals of valuables	Capital transfers, receivable (+)
Acquisitions less disposals of non-produced assets	Capital transfers payable (-)
	<i>Changes in net worth due to saving and capital transfers</i>
<i>Net lending (+) / net borrowing (-)</i>	

Table 2.9: The financial account

Changes in assets	Changes in liabilities and net worth
Net acquisition of financial assets	<i>Net lending (+) / net borrowing (-)</i>
Monetary gold and SDRs	Net acquisition of financial liabilities
Currency and deposits	Monetary gold and SDRs
Debt securities	Currency and deposits
Loans	Debt securities
Equity and investment fund shares	Loans
Insurance, pension and standardized guarantee schemes	Equity and investment fund shares
Financial derivatives and employee stock options	Insurance, pension and standardized guarantee schemes
Other accounts receivable/payable	Financial derivatives and employee stock options
	Other accounts receivable/payable

The revaluation account

- 2.115 The revaluation account (table 2.11) records holding gains or losses. It starts with nominal holding gains and losses. This item records the full change in value of the various assets or liabilities due to the change in the prices of those assets and liabilities since the beginning of the accounting period or the time of entry into stock and the time of exit from stock or the end of the accounting period.
- 2.116 Just as transactions and other flows in assets appear on the left of the account and transactions in liabilities on the right, so nominal gains or losses on assets appear on the left-hand side of the revaluation account, while nominal gains and losses on financial liabilities are recorded on the right-hand side. A positive revaluation of financial liabilities is equivalent to a nominal holding loss; a negative revaluation of liabilities is equivalent to a nominal holding gain.
- 2.117 The balancing item of the revaluation account is changes in net worth due to nominal holding gains and losses.

Balance sheets

- 2.121 The opening and closing balance sheets (table 2.12), display assets on the left-hand side, liabilities and net worth on the right-hand side. Assets and liabilities, as previously explained, are valued at the prices of the date a balance sheet is established.
- 2.122 The balancing item of a balance sheet is net worth, the difference between assets and liabilities. Net worth is equivalent

to the present value of the stock of economic value a unit or a sector holds.

- 2.123 The changes in the balance sheet recapitulate the content of the accumulation accounts, that is, the entry for each asset or liability is the sum of the entries in the four accumulation accounts corresponding to that asset or liability. The changes in net worth can be calculated from these entries but must by definition be equal to the changes in net worth due to saving and capital transfers from the capital account plus changes in net worth due to other changes in the volume of assets from the other changes in the volume of assets account plus nominal holding gains and losses from the revaluation account.
- 2.124 Conceptually, the entries for the closing balance sheet are equal, asset by asset and liability by liability to the entries in the opening balance sheet plus the changes recorded in the four accumulation accounts.

Paragraphs 2.125 to 2.129 discuss an alternative presentation of the accounts shown in tables 2.13, 2.14 and figure 2.1. These are not included in this publication.

The rest of the world accounts

- 2.130 The rest of the world account covers transactions between resident and non-resident institutional units and the related stocks of assets and liabilities where relevant.
- 2.131 As the rest of the world plays a role in the accounting structure similar to that of an institutional sector, the rest of the world account is established from the point of view of the rest of the world. A resource for the rest of the world is a

Table 2.10: The other changes in the volume of assets account

Changes in assets	Changes in liabilities and net worth
Economic appearance of assets	Economic appearance of assets
Economic disappearance of non-produced assets	Economic disappearance of non-produced assets
Catastrophic losses	Catastrophic losses
Uncompensated seizures	Uncompensated seizures
Other changes in volume n.e.c.	Other changes in volume n.e.c.
Changes in classification	Changes in classification
Total other changes in volume	Total other changes in volume
Produced assets	Produced assets
Non-produced assets	Non-produced assets
Financial assets	Financial assets
	<i>Changes in net worth due to other changes in volume of assets</i>

Table 2.11: The revaluation account

Changes in assets	Changes in liabilities and net worth
Nominal holding gains and losses	Nominal holding gains and losses
Non-financial assets	Non-financial assets
Produced assets	Produced assets
Non-produced assets	Non-produced assets
Financial assets/liabilities	Financial assets/liabilities
	<i>Changes in net worth due to nominal holding gain and losses</i>

use for the total economy and vice versa. If a balancing item is positive, it means a surplus of the rest of the world and a deficit of the total economy, and vice versa if the balancing item is negative.

- 2.132 The external account of goods and services is shown at the same level as the production account for institutional sectors. Imports of goods and services (499) are a resource for the rest of the world, exports (540) are a use. The external balance of goods and services is (-41). With a positive sign, it is a surplus of the rest of the world (a deficit of the nation) and vice versa. To this are added or deducted the various kinds of taxes, compensation of employees and other current transfers payable to, and receivable from, the rest of the world. The current external balance is -32, indicating a deficit for the rest of the world but a surplus for the total economy. Again, if it had a positive sign, it would be a surplus of the rest of the world (a deficit of the total economy).

The goods and services account

- 2.133 As noted above, the integrated presentation of the account includes a column on each side labelled goods and services. Entries in these columns reflect the various transactions in goods and services that appear in the accounts of the institutional sectors. Uses of goods and services in the institutional sectors accounts are reflected on the right-hand column for goods and services; resources of goods and services in the institutional sectors accounts are reflected on the left-hand column for goods and services. On the resources side of the table, the figures appearing in the column for goods and services are the counterparts of the uses made by the various sectors and the rest of the world: exports (540), intermediate consumption (1 883), final consumption (1 399), gross fixed capital formation (376), changes in inventories (28) and acquisitions less disposals

of valuables (10). On the use side of the table, the figures in the column for goods and services are the counterparts of the resources of the various sectors and the rest of the world: imports (499) and output (3 604). Taxes on products (less subsidies) are also included on the resource side of the accounts. The coverage of this item varies according to the way output is valued (see the discussion on valuation in section C). The part (possibly the total) of taxes on products (less subsidies on products), that is not included in the value of output does not originate in any specific sector or industry; it is a resource of the total economy. In the numerical example taxes, less subsidies, on products (133) are shown directly in the column for goods and services. They are a component of the value of the supply of goods and services which has no counterpart in the value of the output of any institutional sector.

- 2.134 The goods and services account is a particularly important account as it forms the basis of the most familiar definition of GDP. Table 2.15 shows the account in the same format as earlier tables in the chapter (though with numeric values included).

The aggregates

- 2.135 The aggregates of the SNA, such as value added, income, consumption and saving, are composite values which measure one aspect of the activity of the entire economy. They are summary indicators and key magnitudes for purposes of macroeconomic analysis and comparisons over time and space. The SNA aims to provide a simplified but complete and detailed picture of complex economies, so the calculation of the aggregates is neither the sole nor the main purpose of national accounting; nevertheless summary figures are very important.

Table 2.12: The opening balance sheet, changes in assets and liabilities and closing balance sheet

Stocks and changes in assets	Stocks and changes in liabilities
<hr/>	
Opening balance sheet	Opening balance sheet
Non-financial assets	Non-financial assets
Produced assets	Produced assets
Non-produced assets	Non-produced assets
Financial assets/liabilities	Financial assets/liabilities
<hr/>	
Total transactions and other flows	Total transactions and other flows
Non-financial assets	Non-financial assets
Produced assets	Produced assets
Non-produced assets	Non-produced assets
Financial assets/liabilities	Financial assets/liabilities
<hr/>	
	Changes in net worth, total
	Saving and capital transfers
	Other changes in volume of assets
	Nominal holding gains and losses
<hr/>	
Closing balance sheet	Closing balance sheet
Non-financial assets	Non-financial assets
Produced assets	Produced assets
Non-produced assets	Non-produced assets
Financial assets/liabilities	Financial assets/liabilities
<hr/>	
	Net worth
<hr/>	

- 2.136 Some aggregates may be obtained directly as totals of particular transactions in the SNA; examples are final consumption, gross fixed capital formation and social contributions. Others may result from aggregating balancing items for the institutional sectors; examples are value added, balance of primary incomes, disposable income and saving. They may need some further elaboration. However, some of them are so commonly used that they deserve additional explanation at this early stage.
- 2.137 An overview of the aggregates in the SNA and the accounts in which they appear is given in figure 2.2.

Gross domestic product (GDP)

- 2.138 Basically, GDP derives from the concept of value added. Gross value added is the difference between output and intermediate consumption. GDP is the sum of gross value added of all resident producer units plus that part (possibly the total) of taxes on products, less subsidies on products, that is not included in the valuation of output.
- 2.139 Next, GDP is also equal to the sum of the final uses of goods and services (all uses except intermediate consumption) measured at purchasers' prices, less the value of imports of goods and services.
- 2.140 Finally, GDP is also equal to the sum of primary incomes distributed by resident producer units.

Net and gross measures

- 2.141 In principle, the concept of value added should exclude the allowance for consumption of fixed capital. The latter, in effect, is not newly created value, but a reduction in the value of previously created fixed assets when they are used up in the production process. Thus, theoretically, value added is a net concept. This conclusion applies to domestic product as well; theoretically, domestic product should be a net concept. Net domestic product (NDP) is obtained by deducting the consumption of fixed capital from GDP.
- 2.142 However, gross measures of product and income are commonly used for various reasons. The depreciation of fixed assets as calculated in business accounting does not generally meet the requirements of the SNA. The calculation of consumption of fixed capital requires that statisticians estimate the present value of the stock of fixed assets, the life-

time of various types of assets, patterns of depreciation, etc. Not all countries make such calculations, and when they do there may be differences in methodology (with some of them using business data even when inadequate). Consequently, gross figures are more often available, or available earlier, and they are generally considered more comparable between countries. So GDP is broadly used even if it is, on a conceptual basis, economically inferior to NDP. However, NDP should also be calculated, with improved estimates of consumption of fixed capital when necessary, in order to provide a significant tool for various types of analysis.

Gross national income (GNI)

- 2.143 Primary incomes generated in the production activity of resident producer units are distributed mostly to other resident institutional units; however, part of them may go to non-resident units. Symmetrically, some primary incomes generated in the rest of the world may come from resident units. This leads to the definition and measurement of gross national income (GNI). GNI is equal to GDP less primary incomes payable to non-resident units plus primary incomes receivable from non-resident units. In other words, GNI is equal to GDP less taxes (less subsidies) on production and imports, compensation of employees and property income payable to the rest of the world plus the corresponding items receivable from the rest of the world. Thus GNI is the sum of gross primary incomes receivable by resident institutional units or sectors. In contrast to GDP, GNI is not a concept of value added, but a concept of income.

- 2.144 By deducting the consumption of fixed capital from GNI, net national income (NNI) is obtained. The remarks above about the conceptual relevance of the net concept in case of product apply even more strongly to national income.

National disposable income

- 2.145 Primary incomes receivable by resident institutional units may be used in part to make transfers to non-resident units and resident units may receive transfers originating out of primary incomes in the rest of the world. Gross national disposable income is equal to GNI less current transfers (other than taxes, less subsidies, on production and imports) payable to non-resident units, plus the corresponding transfers receivable by resident units from the rest of the world. Gross national disposable income measures the income available to the total economy for final consumption and

Table 2.15: The goods and services account

Uses		Resources	
Intermediate consumption	1 883	Output	3 604
Final consumption expenditure	1 399	Imports of goods and services	499
Gross capital formation	414	Taxes on products	141
Gross fixed capital formation	376	Subsidies on products (-)	- 8
Changes in inventories	28		
Acquisitions less disposals of valuables	10		
Exports of goods and services	540		
Total uses	4 236	Total resources	4 236

gross saving. By deducting the consumption of fixed capital from gross national disposal income, net national disposable income is obtained. National disposable income is the sum of disposable income of all resident institutional units or sectors.

Accounts in volume terms

- 2.146 All the aggregates referred to above are calculated in current values. The influence of changes in prices may also be eliminated. Domestic product is calculated in volume terms in order to measure the real change that occurs from one period to another. This is possible because output, intermediate consumption and taxes on products, less subsidies on products can all be calculated in volume terms. On the other

hand, aggregates of income may not be expressed in volume terms because income flows may not, strictly speaking, be broken down into a quantity and a price component. They may, however, be calculated at constant purchasing power, which is described as being in real terms. When moving from domestic product in volume terms to national income in real terms, the effect of changes in the terms of trade between the total economy and the rest of the world must be taken into account. The necessary adjustment is described in chapter 15.

Paragraphs 2.147 to 2.168 discuss ways of using the SNA flexibly. This material is included in chapter 17 of this publication.

Figure 2.2: Summary of the main accounts, balancing items and main aggregates

Account	Balancing item	Main aggregates
Current accounts		
<i>Production account</i>		
Production account	Value added	Domestic product (GDP,NDP)
<i>Distribution and use of income accounts</i>		
Primary distribution of income accounts		
Generation of income account	Operating surplus/ mixed income	
Allocation of primary income account	Balance of primary income	National income (GNI,NNI)
Entrepreneurial income account	Entrepreneurial income	
Allocation of other primary income account	Balance of primary income	
Secondary distribution of income account	Disposable income	National disposable income
Redistribution of income in kind account	Adjusted disposable income	
<i>Use of income accounts</i>		
Use of disposable income account	Saving	
Use of adjusted disposable income account	Saving	National saving
Accumulation accounts		
Capital account	Net borrowing(+)/ net lending (-)	
Financial account	Net borrowing(+)/ net lending (-)	
<i>Other changes in assets accounts</i>		
Other changes in the volume of assets account		
Revaluation account		
Balance sheets		
Opening balance sheet	Net worth	National wealth
Changes in assets and liabilities	Changes in net worth	
Closing balance sheet	Net worth	National wealth
<i>Contributions to change in net worth</i>		
Capital account	<i>Change in net worth due to saving and capital transfers</i>	
Other changes in the volume of assets account	<i>Change in net worth due to other changes in the volume of assets</i>	
Revaluation account	<i>Changes in the value of net worth due to nominal holding gains and</i>	

Chapter 3: Stocks, flows and accounting rules

A. Introduction

- 3.1 The SNA is a system of accounts designed to measure stocks of, and changes in, economic value and to identify the person, group of persons, legal or social entity with claims on the economic value. This chapter discusses the concept of stocks of economic value, the flows that reflect changes in economic value and the accounting rules applied to the recording of stocks and flows. In order to portray stocks and flows in an accounting system, it is necessary to identify the parties with a claim to economic value measured in stocks or affected by flows. These parties are the persons, groups of persons, legal and social entities already referred to. They are described as institutional units in the SNA and are grouped into institutional sectors according to their economic objectives, functions and behaviour. Units and sectors are the subject of chapter 4.
- 3.2 Stocks measure economic value at a point in time. Flows measure changes in economic value over a period of time. Stocks appear in the balance sheets and related tables (and, for certain stocks, with the use table in an input-output context). Flows appear in all the other accounts and tables of the SNA. The flow accounts in the full sequence of accounts for institutional sectors consist of the current accounts, which deal with production, income and use of income, and the accumulation accounts, which show all changes between two balance sheets.
- 3.3 In order to have a system that is complete and consistent, all changes in economic value between stock measures at two points in time must be captured in flows. The first requirement in specifying the accounting conventions is thus to define precisely what is meant by stocks and flows. Once that is done, the rules to set the changes in economic value within an accounting system need to be specified. These rules are defined so as to ensure that the SNA is consistent in terms of value, time of recording and classification.
- 1. Stocks and flows**
- 3.4 *Stocks are a position in, or holdings of, assets and liabilities at a point in time.* The SNA records stocks in accounts, usually referred to as balance sheets, compiled in respect of the beginning and end of the accounting period. However, stocks are connected with flows: they result from the accumulation of prior transactions and other flows, and they are changed by transactions and other flows in the period. They result in fact from a continuum of entries and withdrawals, with some changes in volume or in value occurring during the time a given asset or liability is held.
- 3.5 *An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another.* Assets may be financial in nature or not. For almost all financial assets, there is a corresponding [financial] liability. *A liability is established when one unit (the debtor) is obliged, under specific circumstances, to provide a payment or series of payments to another unit (the creditor).* An elaboration of these definitions and the concepts embodied in them as well as a typology of the different assets and liabilities in the SNA is given in section B of this chapter.
- 3.6 *Economic flows reflect the creation, transformation, exchange, transfer or extinction of economic value; they involve changes in the volume, composition, or value of an institutional unit's assets and liabilities.* Mirroring the diversity of the economy, economic flows have specific natures as wages, taxes, interest, capital flows, etc., that record the ways in which a unit's assets and liabilities are changed.
- 3.7 Economic flows consist of transactions and other flows. *A transaction is an economic flow that is an interaction between institutional units by mutual agreement or an action within an institutional unit that it is analytically useful to treat like a transaction, often because the unit is operating in two different capacities.* The value of an asset or a liability may be affected by economic flows that do not satisfy the requirements of a transaction. Such flows are described as "other flows". *Other flows are changes in the value of assets and liabilities that do not result from transactions.* Examples are losses due to natural disasters and the effect of price changes on the value of assets and liabilities.
- 3.8 There is a discussion of the different types of economic flows in section C of this chapter.
- 2. Balancing items**
- 3.9 Economic flows are grouped together into accounts with outflows (which may be called debit entries, uses or changes in assets) on the left-hand side and inflows (credit entries, resources, or changes in liabilities or net worth) on the right-hand side. *A balancing item is an accounting construct obtained by subtracting the total value of the entries on one side of an account (resources or changes in liabilities) from the total value of the entries on the other*

side (uses or changes in assets). It cannot be measured independently of the entries in the accounts; as a derived entry, it reflects the application of the general accounting rules to the specific entries on the two sides of the account. There is also a balancing item for the balance sheet where the difference between assets and liabilities is known as net worth.

- 3.10 Balancing items are constructed because they convey interesting economic information. Many of the key aggregates of the SNA including GDP actually emerge as balancing items. Balancing items are discussed in section D.

3. Grouping stocks and flows into accounts

- 3.11 The accounts and tables of the SNA contain information relating to the economic actions or events that take place within a given period of time and the effect of these events on the stocks of assets and liabilities at the beginning and end of that period.

- 3.12 The flows and stocks are grouped according to the classification hierarchy of the SNA, shown in annex 1. The classification of transactions and other flows has five headings at the highest level, dealing with

- a. transactions in products,
- b. transactions showing how income is distributed and redistributed within the SNA,
- c. transactions in non-produced assets, financial assets and liabilities, and
- d. other accumulation entries.

In the accumulation accounts, the hierarchy may show both the transaction and the type of asset it applies to.

- 3.13 The flows and stocks are entered in the accounts of the institutional units involved and thus in the accounts of the sectors into which the institutional units are grouped. Institutional units and sectors are the subject of chapter 4. In general, flows and stocks are entered in the accounts of the institutional units that own or owned the goods and assets involved, in the accounts of units that deliver or take delivery of services, or in the accounts of units that provide

B. Stocks

- 3.18 Stocks relate to the total level of assets or liabilities in an economy at a point of time. (In balance of payments methodology, the levels of stocks are referred to as positions.) In order to discuss stocks, it is necessary to define assets and liabilities and these definitions depend crucially on the concepts of benefits and ownership.

labour and capital or use them in production. For some purposes, an institutional unit participating in production is viewed as one or more establishments and establishments may be grouped into industries. Establishments and industries are defined and discussed in chapter 5.

4. Accounting rules

- 3.14 All entries in the accounts have to be measured in terms of money, and therefore the elements from which the entries are built up must be measured in terms of money. In some cases, the amounts entered are the actual payments that form part of flows that involve money; in other cases the amounts entered are estimated by reference to actual monetary values. Money is thus the unit of account in which all stocks and flows are recorded.

- 3.16 The SNA covers all economic activity in such a way that it is possible to derive accounts for individual groups of units or for all units in the economy. To permit this, the accounting rules ensure consistency with respect to valuation, timing, classification and grouping of flows and stocks. These rules are summarized below to provide a context for the discussion of the nature of stocks, flows, and balancing items in sections B, C and D.

- a. Flows and stocks must be recorded consistently with respect to their valuation.
- b. Flows and stocks must be recorded consistently with respect to timing.
- c. Individual flow and stock entries must be recorded consistently with respect to their classification, both in respect of the categories in the classifications of transactions, other flows and assets and the categories in the classification of transactors as (sub) sectors or industries.

- 3.17 The basic accounting framework of the SNA is one of quadruple accounting. This implies that a transaction gives rise to two entries for each party to the transaction. There is vertical consistency within each unit and horizontal consistency between the two units for each type of entry. The principles of quadruple accounting are explained in more detail in section E in this chapter.

1. Benefits

- 3.19 The heart of the SNA describes how labour, capital and natural resources including land are used to produce goods and services. These goods and services are used for the three economic activities recognized in the SNA, production, consumption and accumulation. An economic benefit is defined as denoting a gain or positive utility arising from an action. It implies a comparison between two states. This

can be elaborated within the SNA so that benefits are seen as rewards for providing services, such as those of labour and capital to production and also the means of acquiring goods and services for production, consumption or accumulation in the current period or in future periods.

- 3.20 Sometimes the immediate benefit is in terms of goods and services directly, for example own account production or wages and salaries in kind. More often a benefit is in the form of the medium of exchange (money), for example as wages and salaries. Consumption is an activity that takes place in the current period only but may be financed from past benefits. Production and accumulation also involve benefits postponed to future periods. Thus, means of allowing benefits to be moved from one accounting period to another have to be recognized. These take the form of assets and liabilities where a benefit in one period is converted to a benefit in one or more future periods. Similarly goods and services, or current benefits, may be acquired by committing future benefits in the form of financial liabilities.

2. Ownership

- 3.21 Two types of ownership can be distinguished, legal ownership and economic ownership. *The legal owner of entities such as goods and services, natural resources, financial assets and liabilities is the institutional unit entitled in law and sustainable under the law to claim the benefits associated with the entities.*
- 3.22 Sometimes government may claim legal ownership of an entity on behalf of the community at large. No entity that does not have a legal owner, either on an individual or collective basis, is recognized in the SNA.
- 3.23 The acts of production, consumption and accumulation involve varying degrees of risk. Two main forms of risk can be identified. The first sort refers to production. These arise because of such uncertainties as the demand for goods and services once produced, developments in the economy in general and technical innovation that affects the benefits to be earned from capital and natural resources. The consequence is that benefits from capital, natural resources and labour in the form of operating surplus and income from employment are not wholly predictable in advance, but embody a degree of risk.
- 3.24 The second type of risk refers to the process of transferring benefits between time periods. It arises because of uncertainty over interest rates in future periods, which in turn affects the comparative performance of different types of benefits.
- 3.25 When economic agents make decisions about consumption or accumulation, they have to make a judgement about the relative advantages of benefits being converted to goods and services in the current period as against conversion in a later period. Thus all economic activity involves both benefits and risks. Transferring benefits between time periods inevitably involves transferring risks also. An agent may opt for a lower but more certain benefit in future rather than a benefit that might be higher but is less certain. Of particular interest is the case when an agent swaps benefits and

risks associated with production with those associated with financial assets and liabilities.

- 3.26 *The economic owner of entities such as goods and services, natural resources, financial assets and liabilities is the institutional unit entitled to claim the benefits associated with the use of the entity in question in the course of an economic activity by virtue of accepting the associated risks.*

- 3.27 Every entity has both a legal owner and an economic owner, though in many cases the economic owner and the legal owner of an entity are the same. Where they are not, the legal owner has handed responsibility for the risk involved in using the entity in an economic activity to the economic owner along with associated benefits. In return the legal owner accepts another package of risks and benefits from the economic owner. In general within the SNA, when the expression “ownership” or “owner” is used and the legal and economic owners are different, the reference should be understood to be to the economic owner. Part 5 of chapter 17, on contracts, leases and licences, discusses a number of cases where legal and economic ownership are different.

- 3.28 When government claims legal ownership of an entity on behalf of the community at large, the benefits also accrue to the government on behalf of the community at large. Thus government is both the legal and economic owner of these entities.

- 3.29 The benefits inherent in financial assets and liabilities are seldom transferred from a legal owner to an economic owner in exactly the same state. They are usually transformed to new forms of financial assets and liabilities by the intermediation of a financial institution that assumes some of the risk and benefits while passing the balance on to other units.

3. The definition of an asset

- 3.30 Leading on from the above it is possible to define an asset as follows. *An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another.*

- 3.31 All assets in the SNA are economic assets. Attributes such as reputation or skill, which are sometimes described in common parlance as an asset, are not recognized as such in the SNA because they are not economic in nature in the sense described under ownership.

4. Financial assets and liabilities

- 3.32 A particularly important mechanism in the economy is the device whereby one economic unit exchanges a particular set of benefits with another economic unit. Benefits are exchanged by means of payments. From this a financial claim, and hence a liability, can be defined. There are no non-financial liabilities recognized in the SNA, thus the term liability necessarily refers to a liability that is financial in nature.

3.33 *A liability is established when one unit (the debtor) is obliged, under specific circumstances, to provide a payment or series of payments to another unit (the creditor).* The most common circumstance in which a liability is established is a legally binding contract that specifies the terms and conditions of the payment(s) to be made and payment according to the contract is unconditional.

3.34 In addition, a liability may be established not by contract but by long and well-recognized custom that is not easily refuted. In these cases, the creditor has a valid expectation of payment, despite the lack of a legally binding contract. Such liabilities are called constructive liabilities.

3.35 Whenever either of these types of liability exists, there is a corresponding financial claim that the creditor has against the debtor. *A financial claim is the payment or series of payments due to the creditor by the debtor under the terms of a liability.* Like the liabilities, the claims are unconditional. In addition, a financial claim may exist that entitles the creditor to demand payment from the debtor but whereas the payment by the debtor is unconditional if demanded, the demand itself is discretionary on the part of the creditor.

3.36 *Financial assets consist of all financial claims, shares or other equity in corporations plus gold bullion held by monetary authorities as a reserve asset.* Gold bullion held by monetary authorities as a reserve asset is treated as a financial asset even though the holders have no claim over other designated units. Shares are treated as financial assets even though the financial claim their holders have on the corporation is not a fixed or predetermined monetary amount.

5. The asset boundary and the first-level classification of assets

3.37 All entities that meet the definition of an asset given above are included in the asset boundary of the SNA. Assets that are not financial assets are non-financial assets. Non-financial assets are further subdivided into those that are produced and those that are non-produced.

3.38 Because assets represent a store of future benefits, all assets can be represented by a monetary value. This value represents the market's view of the total of the benefits embodied by the asset. Where a direct market view of this value is not available, it must be approximated by other means. There is a discussion of this topic in chapter 11.

3.39 The only non-financial assets included in the asset boundary of an economy are those whose economic owners are resident in the economy. However, in the case of most natural resources and immobile fixed capital, which physically cannot leave the economy, a notional resident unit is established if the economic owner is technically a non-resident unit. In this way the assets in question do become those with resident economic owners and so are included within the asset boundary and are included on the balance sheet. Portable non-financial assets that are physically located in an economy but are owned by non-residents are excluded from the balance sheet; those that are physically located in the rest of the world but owned by residents are included in

the asset boundary. For example, planes belonging to a domestic airline are always assets of the domestic economy regardless of where in the world they happen to be.

6. Entry and exit of assets from the balance sheet

3.42 All assets appear on the balance sheet of the economy. The first level of classification of assets is important since the process by which assets enter and leave the balance sheet differs for the three types of assets.

3.43 Produced non-financial assets come into being via the production process or as imports. Produced non-financial assets leave the asset boundary by being exhausted or by being sold to resident units that will not continue to use the asset in production as a source of future benefits or by being sold to non-resident units.

3.44 Non-produced non-financial assets are of three types; natural resources; contracts, leases and licences; and purchased goodwill and marketing assets. The borderline determining which natural resources are considered assets and which are not depends on a number of factors described in chapter 10. Contracts, leases and licences may represent an asset to the holder when the agreement restricts the general use or supply of products covered by the agreement and thus enhances the benefits accruing to the party to the agreement beyond what would accrue in the case of unrestricted supply. These assets come into existence when the agreement is made and the enhanced benefits become apparent. They leave the balance sheet when the conditions restricting access are lifted or when there is no longer a benefit to be earned from having restricted access to the asset. Goodwill and marketing assets are only recognized as assets in the SNA when they are evidenced by a sale.

3.45 Financial assets and liabilities come into being when a commitment is made by one unit to make a payment to another unit. They cease to exist when there is no longer a commitment for one unit to make payments to the other. This may be because the term of the agreement specified in the commitment has expired or for other reasons.

7. Exclusions from the asset boundary

3.46 The coverage of assets is limited to those assets used in economic activity and that are subject to ownership rights; thus for example, consumer durables and human capital, as well as natural resources that are not owned, are excluded.

3.47 Consumer durables are not regarded as assets in the SNA because the services they provide are not within the production boundary. Because the information on the stock of durables is of analytical interest, though, it is suggested that this information appear as a memorandum item in the balance sheet but not be integrated into the totals of the table.

3.48 Human capital is not treated by the SNA as an asset. It is difficult to envisage "ownership rights" in connection with people, and even if this were sidestepped, the question of valuation is not very tractable.

- 3.49 There are some environmental resources excluded from the SNA asset boundary. These are usually of the same type as those within the boundary but are of no economic value.

C. Flows

- 3.50 Economic flows are of two kinds. Most flows are transactions. Flows included in the SNA that do not meet the characteristics of transactions as described below are called “other flows”. Transactions appear in all of the accounts and tables in which flows appear except the other changes in the volume of assets account and the revaluation account. Other flows appear in only these two accounts. More meaning can be given to the definition of flows by describing the two kinds.

1. Transactions

- 3.51 *A transaction is an economic flow that is an interaction between institutional units by mutual agreement or an action within an institutional unit that it is analytically useful to treat like a transaction, often because the unit is operating in two different capacities.*

- 3.52 Institutional units, referred to in the definition, are the fundamental economic units of the SNA. They are described and defined in chapter 4. The following are the main attributes of institutional units that are relevant to their engaging in transactions:

- a. They are entitled to own goods or assets in their own right, and therefore are able to exchange them;
- b. They are able to take economic decisions and engage in economic activities for which they are held to be directly responsible and accountable at law;
- c. They are able to incur liabilities on their own behalf, to take on other obligations or future commitments and to enter into contracts.

- 3.53 The definition of a transaction stipulates that an interaction between institutional units be by mutual agreement. When a transaction is undertaken by mutual agreement, the prior knowledge and consent of the institutional units is implied. This does not mean, however, that both units necessarily enter a transaction voluntarily, because some transactions are imposed by force of law, such as payments of taxes or other compulsory transfers. Although individual institutional units are not free to fix the amounts of taxes they pay, there is nevertheless collective recognition and acceptance by the community of the obligation to pay taxes. Thus, payments of taxes are considered transactions despite being compulsory.

- 3.54 Transactions take so many different forms that, even with these explanations, any general definition is inevitably rather imprecise. To give more precision, the various kinds of transactions have to be systematically described and

classified. A first distinction is between monetary and non-monetary transactions. Other distinctions, such as between transactions with and without a quid pro quo, are drawn within each of these kinds of transactions. Frequently the individual, identifiable transactions of everyday economic life are simply grouped together in the accounts; sometimes they are subdivided and rearranged in order to form the transaction categories of the SNA.

Monetary transactions

- 3.55 *A monetary transaction is one in which one institutional unit makes a payment (receives a payment) or incurs a liability (receives an asset) stated in units of currency.* In the SNA, all flows are recorded in monetary terms, but the distinguishing characteristic of a monetary transaction is that the parties to the transaction express their agreement in monetary terms. For example, a good is purchased or sold at a given number of units of currency per unit of the good, or labour is hired or provided at a given number of units of currency per hour or day.

- 3.56 All monetary transactions are interactions between institutional units; that is, all monetary transactions are two-party transactions. The following is a list of common monetary transactions:

- a. Expenditure on consumption of goods and services,
- b. Acquisition of a security,
- c. Wages and salaries,
- d. Interest, dividends and rent,
- e. Taxes,
- f. Social assistance benefits in cash.

Transactions with and without a recompense

- 3.57 The expenditure on consumption goods and services, the acquisition of a security, wages and salaries, and interest, dividends, and rent are two-party transactions in which one party provides a good, service, labour or asset to the other and receives a recompense of commensurate value in return. This kind of transaction is sometimes called a “something for something” transaction or a transaction with a quid pro quo. Such transactions are sometimes called exchanges.

- 3.58 Taxes and social assistance benefits are examples of two-party transactions in which one party provides a good, serv-

ice or asset to the other but does not receive a recompense in return. This kind of transaction, sometimes called a “something for nothing” transaction, or a transaction without a quid pro quo, is called a transfer in the SNA.

3.59 The scope of the recompenses mentioned in describing exchanges and transfers does not cover entitlement to contingent benefits or collective services. Such benefits are generally uncertain or not quantifiable, or both. Moreover, the amount of benefit that may eventually be received by an individual unit is not proportional to the amount of the previous payment and may be very much greater or smaller than the latter. Thus, payments such as a social insurance contribution or a non-life insurance premium may entitle the unit making the payment to some contingent future benefits, and a household paying taxes may be able to consume certain collective services provided by government units, but these payments are regarded as transfers rather than exchanges.

3.60 A distinction is made between current and capital transfers. A capital transfer is one in which the ownership of an asset (other than cash or inventories) is transferred or which obliges one or both parties to acquire, or dispose of, an asset (other than cash or inventories). Capital transfers redistribute wealth but leave saving unaffected. They include, for example, capital taxes and investment grants. Other transfers are described as current. Current transfers redistribute income. They include, for example, taxes on income and social benefits. A fuller description of transfers appears in chapter 8.

Rearrangements of transactions

3.61 Monetary transactions may not always be recorded in the accounts in the same way as they appear to the institutional units involved. The values of these actual, or observed, transactions are already available in the accounts of the units concerned, but the SNA rearranges certain transactions to bring out the underlying economic relationships more clearly. The three kinds of rearrangements affect the channels through which the transactions are seen as taking place, the number of transactions that are seen as taking place, or the units that are seen as being involved. The three sections below illustrate the main characteristics of these rearrangements and the kind of analytical purpose they serve.

Rerouting transactions

3.62 Rerouting records a transaction as taking place through channels that differ from the actual ones or as taking place in an economic sense when it does not take place in fact. In the first kind of rerouting, a direct transaction between unit A and unit C is recorded as taking place indirectly through a third unit B, usually, however, with some change in the transaction category. In the second kind of rerouting, a transaction of one kind from unit A to unit B is recorded with a matching transaction of a different kind from unit B to unit A.

Partitioning transactions

3.66 Partitioning records a transaction that is a single transaction from the perspective of the parties involved as two or more differently classified transactions.

Units facilitating a transaction on behalf of other parties

3.69 Many service activities consist of one unit arranging for a transaction to be carried out between two other units in return for a fee from one or both parties to the transaction. In such a case, the transaction is recorded exclusively in the accounts of the two parties engaging in the transaction and not in the accounts of the third party facilitating the transaction. Some service output may be recognized with the facilitator.

Non-monetary transactions

3.75 ***Non-monetary transactions are transactions that are not initially stated in units of currency.*** The entries in the SNA therefore represent values that are indirectly measured or otherwise estimated. In some cases, the transaction may be an actual one and a value has to be estimated to record it in the accounts. Barter is an obvious example. In other cases, the entire transaction must be constructed and then a value estimated for it. Consumption of fixed capital is an example.

3.77 Non-monetary transactions can be either two-party transactions or actions within an institutional unit. The two-party transactions consist of barter, remuneration in kind, payments in kind other than compensation in kind and transfers in kind. These two-party transactions are discussed first, followed by a discussion of internal transactions.

3.78 Although two-party transactions in kind do exist in practice, in the SNA they are frequently recorded in the same way as a monetary transaction with an associated expenditure of the item provided in kind. This ensures that there is a change in wealth of the donor without the donor acquiring the product transferred while the recipient acquires the product without any change in wealth. There is further discussion on this in respect of current transfers in chapter 8 and of capital transfers in chapter 10.

Paragraphs 3.79 to 3.90 list different types of transactions in kind, including barter.

Externalities and illegal actions

3.91 The sections above describe the kinds of actions that are considered transactions in the SNA. This section focuses on externalities and illegal actions, explaining why externalities are not considered transactions and distinguishing among kinds of illegal actions that are and are not considered transactions.

Externalities

3.92 Certain economic actions carried out by institutional units cause changes in the condition or circumstances of other

units without their consent. These are externalities; they can be regarded as unsolicited services, or disservices, delivered without the agreement of the units affected. It is an uncooperative action, usually with undesirable consequences, which is the antithesis of a market transaction.

Illegal actions

- 3.96 Illegal actions that fit the characteristics of transactions (notably the characteristic that there is mutual agreement between the parties) are treated the same way as legal actions. The production or consumption of certain goods or services, such as narcotics, may be illegal but market transactions in such goods and services have to be recorded in the accounts.

2. Other flows

- 3.99 ***Other flows are changes in the value of assets and liabilities that do not result from transactions.*** The reason that these flows are not transactions is linked to their not meeting one or more of the characteristics of transactions. For example, the institutional units involved may not be acting by mutual agreement, as with an uncompensated seizure of assets. Or the change may be due to a natural event such as an earthquake rather than a purely economic phenomenon. Alternatively the value of an asset expressed in foreign currency may change as a result of an exchange rate change.
- 3.100 The entries for other flows appear in one of the two accounts that comprise the other changes in assets accounts. The other changes in the volume of assets account includes changes that lead to a change in value of an asset because of a change in the quantity or physical characteristics of the asset in question. The revaluation account includes changes in the value of assets, liabilities, and net worth due to only changes in the level and structure of prices, which are reflected in holding gains and losses.

D. Balancing items

- 3.107 ***A balancing item is an accounting construct obtained by subtracting the total value of the entries on one side of an account from the total value for the other side.*** It cannot be measured independently of the other entries; as a derived entry, it reflects the application of the general accounting rules to the specific entries on the two sides of the account. It does not relate to any specific set of transactions, or any set of assets, and so it cannot be expressed in terms of its own price or quantity units.

Balancing items in the flow accounts

- 3.108 Balancing items are not simply devices introduced to ensure that accounts balance. They are often used as key macroeconomic indicators to assess economic performance. They encapsulate a great deal of information and

Other changes in the volume of assets

- 3.101 Other changes in the volume of assets fall into three main categories.
- 3.102 The first category relates to the appearance and disappearance of assets and liabilities other than by transactions.
- 3.103 The second category relates to the effects of externalities and disasters.
- 3.104 The third category relates to changes in assets and liabilities that reflect changes in the classification of institutional units among sectors and in the structure of institutional units, or in the classification of assets and liabilities.

Holding gains and losses

- 3.105 Positive or negative nominal holding gains accrue during the accounting period to the owners of assets and liabilities as a result of a change in their prices. Holding gains are sometimes described as “capital gains”, but “holding gain” is preferred here because it emphasizes that holding gains accrue purely as a result of holding assets or liabilities over time without transforming them in any way. Holding gains include not only gains on “capital” such as fixed assets, land and financial assets but also gains on inventories of all kinds of goods held by producers, including work-in-progress, often described as “stock appreciation”. Holding gains may accrue on assets held for any length of time during the accounting period, not only on assets held throughout the period and may thus appear for assets appearing on neither the opening or closing balance sheet.
- 3.106 Nominal holding gains depend upon changes in the prices of assets and liabilities over time. The prices in question are the prices at which the assets may be sold on the market. Nominal holding gains may be further decomposed into neutral holding gains, which reflect changes in the general price level, and real holding gains which reflect changes in the relative prices of assets.

include some of the most important entries in the accounts, as can be seen by the examples of balancing items for the accounts containing flows reproduced below:

- a. Value added or domestic product,
- b. Operating surplus,
- c. Disposable income,
- d. Saving,
- e. Net lending or net borrowing,
- f. Current external balance.

Balancing items in the balance sheets

3.109 Net worth, which is defined as the value of all the non-financial and financial assets owned by an institutional unit or sector less the value of all its outstanding liabilities, is the balancing item in the balance sheets. As is true for other balancing items in the SNA, net worth cannot be measured independently of the other entries, nor does it relate to any specific set of transactions.

3.110 As well as net worth appearing as a stock level, changes in net worth due to different sorts of transactions and other flows may also be derived. Just as the changes in the levels of any asset can be traced through changes in transactions and other flows throughout the period, so changes in total net worth can be exhaustively described according to the transactions and other flows that led to changes in the total level of assets and liabilities.

E. Accounting rules

3.111 As noted in the introduction, this section covers the quadruple entry accounting principle, valuation, time of recording, classification of accounting entries and grouping of transactions. The application of each of these to the individual flows and stocks is explained in detail in the chapters that describe the entries in the various tables and accounts of the central framework. The details on classifications of accounting entries are discussed, account by account, in chapters 6 to 13.

1. Quadruple-entry accounting

3.112 The accounting system underlying the SNA derives from broad bookkeeping principles. To understand the accounting system for the SNA, three bookkeeping principles can be distinguished:

- a. Vertical double-entry bookkeeping, also known as double-entry bookkeeping used in business accounting,
- b. Horizontal double-entry bookkeeping, and
- c. Quadruple-entry bookkeeping.

3.113 The main characteristic of vertical double-entry bookkeeping is that each transaction leads to at least two entries, traditionally referred to as a credit entry and a debit entry, in the books of the transactor. This principle ensures that the total of all credit entries and that of all debit entries for all transactions are equal, thus permitting a check on consistency of accounts for a single unit. Each transaction requires two entries.

3.114 Other flows have their counterpart entries directly in changes in net worth. As a result, vertical double-entry bookkeeping ensures the fundamental identity of a unit's balance sheet, that is, the total value of assets equals the total value of liabilities plus net worth. The total value of the assets owned by an entity minus the total value of liabilities provides net worth.

3.115 The concept of horizontal double-entry bookkeeping is useful for compiling accounts that reflect the mutual economic relationships between different institutional units in a con-

sistent way. It implies that if unit A provides something to unit B, the accounts of both A and B show the transaction for the same amount: as a payment in A's account and as a receipt in B's account. Horizontal double-entry bookkeeping ensures the consistency of recording for each transaction category by counterparties. For example, dividends payable throughout the economy should be equal to dividends receivable throughout the economy once transactions with the rest of the world are taken into account.

3.116 The simultaneous application of both the vertical and horizontal double-entry bookkeeping results in a quadruple-entry bookkeeping, which is the accounting system underlying the recording in the SNA. It deals in a coherent way with multiple transactors or groups of transactors, each of which satisfies vertical double-entry bookkeeping requirements. A single transaction between two counterparties thus gives rise to four entries. In contrast to business bookkeeping, national accounts deal with interactions among a multitude of units in parallel, and thus require special care from a consistency point of view. As a liability of one unit is mirrored in a financial asset of another unit, for instance, they should be identically valued, allocated in time and classified to avoid inconsistencies in aggregating balance sheets of units by sectors or for the total economy. The same is also true for all transactions and other flows that affect balance sheets of two counterparties.

3.117 The SNA uses the following conventions and terminologies for recording flows with the rest of the world. Imports, for instance, are a resource of the rest of the world used in the domestic economy and payments for imports represent a drawdown of wealth for the domestic economy but a financial resource for the rest of the world. By treating the rest of the world account as a pseudo-sector, the quadruple entry accounting principle can be applied and all stocks and flows within the economy and with the rest of the world are completely balanced. The balance of payments accounts show the consolidated position of all domestic sectors relative to the rest of the world. It is thus an exact mirror image of the accounts for the rest of the world within the SNA. However, despite the reversal of the sides of the accounts on which items are shown, there is equality in coverage, measurement and classification between the two systems. This is discussed further in chapter 24.

2. Valuation

General rules

- 3.118 The power of the SNA as an analytical tool stems largely from its ability to link numerous, very varied economic phenomena by expressing them in a single accounting unit. The SNA does not attempt to determine the utility of the flows and stocks that come within its scope. Rather, it measures the current exchange value of the entries in the accounts in money terms, that is, the values at which goods, services, labour or assets are in fact exchanged or else could be exchanged for cash (currency or transferable deposits).

Valuation of transactions

- 3.119 Market prices for transactions are defined as amounts of money that willing buyers pay to acquire something from willing sellers; the exchanges are made between independent parties and on the basis of commercial considerations only, sometimes called “at arm’s length.” Thus, according to this strict definition, a market price refers only to the price for one specific exchange under the stated conditions. A second exchange of an identical unit, even under circumstances that are almost exactly the same, could result in a different market price. A market price defined in this way is to be clearly distinguished from a price quoted in the market, a world market price, a going price, a fair market price, or any price that is intended to express the generality of prices for a class of supposedly identical exchanges rather than a price actually applying to a specific exchange. Furthermore, a market price should not necessarily be construed as equivalent to a free market price; that is, a market transaction should not be interpreted as occurring exclusively in a purely competitive market situation. In fact, a market transaction could take place in a monopolistic, monopsonistic, or any other market structure. Indeed, the market may be so narrow that it consists of the sole transaction of its kind between independent parties.
- 3.120 When a price is agreed by both parties in advance of a transaction taking place, this agreed, or contractual, price is the market price for that transaction regardless of the prices that prevail when the transaction takes place.
- 3.121 Actual exchange values in most cases will represent market prices as described in the preceding paragraph. Transactions that involve dumping and discounting represent market prices. Transaction prices for goods and services are inclusive of appropriate taxes and subsidies. A market price is the price payable by the buyer after taking into account any rebates, refunds, adjustments, etc. from the seller.
- 3.122 Transactions in financial assets and liabilities are recorded at the prices at which they are acquired or disposed of. Transactions in financial assets and liabilities should be recorded exclusive of any commissions, fees, and taxes whether charged explicitly, included in the purchaser’s price, or deducted from the seller’s proceeds. This is because both debtors and creditors should record the same amount for the same financial instrument. The commissions, fees, and taxes should be recorded separately from the transaction in the financial asset and liability, under appropriate categories. The valuation of financial instru-

ments, which excludes commission charges, differs from the valuation of non-financial assets, which includes any costs of ownership transfer.

- 3.123 When market prices for transactions are not observable, valuation according to market-price-equivalents provides an approximation to market prices. In such cases, market prices of the same or similar items when such prices exist will provide a good basis for applying the principle of market prices. Generally, market prices should be taken from the markets where the same or similar items are traded currently in sufficient numbers and in similar circumstances. If there is no appropriate market in which a particular good or service is currently traded, the valuation of a transaction involving that good or service may be derived from the market prices of similar goods and services by making adjustments for quality and other differences.

Agricultural products sold from the farm

- 3.124 A significant qualification to the foregoing remark is necessary in the case of agricultural products sold directly from the farm. The so-called farm-gate price may be significantly lower than a price in the nearest market where prices can be observed since the latter include the costs of bringing the goods to market. Further, if only a small fraction of a crop gets to the market, it may command a higher price than would be the case if all the available crop were traded. Such considerations are to be understood by the qualification that observed market prices are appropriate only when similar products are traded in sufficient number and in similar circumstances. When these conditions do not hold, adjustments must be made to the observed prices.

Paragraphs 3.125 to 3.159 discuss other valuation issues. These are covered again as the particular items concerned are discussed in later chapters.

3. Time of recording

Choice of time of recording

- 3.159 When discussing timing in the SNA, an essential distinction should be made between stock data as recorded in balance sheets, on the one hand, and flow data as recorded in the accounts, on the other. Balance sheets, by definition, refer to specific points in time. In contrast, flows are aggregations, over some chosen accounting period, of individual transactions or other flows, which are themselves scattered over the accounting period.
- 3.163 Clearly, making entries for all successive stages discernible within the activities of institutional units, although theoretically possible, would severely overburden the SNA. A choice has to be made, recognizing (a) the needs of macroeconomic analysis, (b) microeconomic views, and (c) commonly available sources. Often, in this respect, a distinction is drawn between recording flows on a cash basis, due-for-payment basis, the commitment basis and accrual basis. There may be other timing bases, such as physical movement or administrative process, used in some data sources. The SNA recommends recording on an accrual basis throughout.

Choice for recording on an accrual basis

3.164 Cash accounting records only cash payments and records them at the times these payments occur. This method is widely used for certain business purposes. A practical advantage is the avoidance of problems connected with valuing non-monetary flows. Yet, cash accounting cannot be used generally for economic and national accounting as the times at which payments take place may diverge significantly from the economic activities and transactions to which they relate and it is these underlying activities and transactions that the SNA seeks to portray. Moreover, cash recording cannot be applied to the many non-monetary flows included in the SNA.

3.165 Due-for-payment recording shows flows that give rise to cash payments at the latest times they can be paid without incurring additional charges or penalties and, in addition to these, actual cash payments at the moments they occur. The period of time (if any) between the moment a payment becomes due and the moment it is actually made is bridged by recording a receivable or a payable in the financial accounts. Due-for-payment recording furnishes a more comprehensive description of monetary flows than does cash accounting. A disadvantage is, of course, that the registration is still limited to monetary flows.

3.166 Accrual accounting records flows at the time economic value is created, transformed, exchanged, transferred or extinguished. This means that flows that imply a change of ownership are entered when the change occurs, services are recorded when provided, output at the time products are created and intermediate consumption when materials and supplies are being used. The SNA favours accrual accounting because:

- a. The timing of accrual accounting is in full agreement with the way economic activities and other flows are defined in the SNA. This agreement allows the profitability of productive activities to be evaluated correctly (that is, without the disturbing influence of leads and lags in cash flows) and a sector's net worth to be calculated correctly at any point in time;
- b. Accrual accounting can be applied to non-monetary flows.

Time of recording of acquisitions of goods and services

3.169 The time of recording of the acquisition of goods is the moment when the economic ownership of those goods changes hands. When change of ownership is not obvious, the moment of entering in the books of the transaction partners may be a good indication and, failing that, the moment when physical possession and control is acquired.

3.170 Services are recorded in the SNA when they are provided. Some services are special in the sense that they are characteristically supplied on a continuous basis. Examples are operating leasing, insurance and housing services (including those of owner-occupied dwellings). These services are

recorded as provided continuously over the whole period the contract lasts or the dwelling is available.

Time of recording of redistributive transactions

3.171 Following the general rule, distributive transactions are recorded at the moment the related claims arise.

Time of recording of transactions in financial assets and liabilities

3.172 Transactions in financial assets (including payments of cash) are recorded in the SNA on a change-of-ownership basis.

Time of recording of output and intermediate consumption

3.176 The principle of recording on an accrual basis implies that output is recorded over the period in which the process of production takes place. Thus, additions to work-in-progress are recorded continuously as work proceeds. When the production process is terminated, the whole of the work-in-progress accumulated up to that point is effectively transformed into a stock of finished product ready for delivery or sale.

3.177 Similarly, the intermediate consumption of a good or service is recorded at the time when the good or service enters the process of production, as distinct from the time it was acquired by the producer.

Time of recording of changes in inventories and consumption of fixed capital

3.178 Inventories may be materials and supplies held as inputs by producers, output as yet unsold, or products held by wholesale and retail traders. In all cases, additions to inventories are recorded when products are purchased, produced or otherwise acquired. Deductions from inventories are recorded when products are sold, used up as intermediate consumption or otherwise relinquished.

3.179 The timing of consumption of fixed capital is inextricably linked with the question of its valuation. Consumption of fixed capital is a cost category that accrues over the whole period the fixed asset in question is available for productive purposes. The exact proportioning to accounting periods depends on the rate of depreciation.

Time of recording of composite transactions and balancing items

3.180 Transactions that are measured as the balance of two or more other transactions follow the timing of the constituent basic flows. For example, financial intermediation services indirectly measured (FISIM) are recorded as interest on loans and deposits accrues.

3.181 The same rule for time of recording applies to balancing items. However, due to the variety of transactions and other flows covered, each with its own characteristics, some

thought is needed in interpreting balancing items. For instance, in analysing the balancing item “saving” of non-financial corporations, one should be aware that the time when the operating surplus arises does not necessarily tally with the timing of the other factors, such as when dividends are payable.

Time of recording of other flows

- 3.182 Other changes in the volume of assets are usually discrete events that accrue at precise moments or within fairly short periods of time.

Time of recording of holding gains and losses

- 3.183 Changes in prices often have a more continuous character, particularly in respect of assets for which active markets exist. In practice, nominal holding gains or losses will be computed between two points in time:

a. The moment at which:

- The accounting period begins; or
- Ownership is acquired from other units (through purchase or a transaction in kind); or
- An asset is produced; and

b. The moment at which:

- The accounting period ends; or
- The ownership of an asset is relinquished (through sale or a transaction in kind); or
- An asset is consumed in the production process.

- 3.185 Changes in structure and classification should be entered at the moment when, according to the rules adopted in the SNA, a unit or an asset is moved to a different category than that to which it was classified previously. An integrated stock-flow system like the SNA requires that all reclassifications are recorded and all entries for the reclassification are recorded at the same time.

Balance sheet items

- 3.189 Balance sheets can be drawn up for any point in time. The SNA defines balance sheets for all sectors at the moment when one accounting period ends and a new accounting period begins. The closing balance sheet of one period is identical to the opening balance sheet of the next one, so there remain no price changes, reclassifications or other economic flows that are not duly recognized by the SNA.

4. Aggregation, netting, consolidation

Aggregation

- 3.190 The immense number of individual transactions, other flows and assets within the scope of the SNA have to be arranged in a manageable number of analytically useful groups.

Netting

- 3.193 Individual units or sectors may have the same kind of transaction both as a use and as a resource (for example, they both pay and receive interest) and the same kind of financial instrument both as an asset and as a liability. Combinations in which all elementary items are shown for their full values are called gross recordings. Combinations whereby the values of some elementary items are offset against items on the other side of the account or which have an opposite sign are called net recordings.

- 3.194 The SNA recommends gross recording apart from the degree of netting that is inherent in the classifications themselves.

Consolidation

- 3.197 Consolidation is a special kind of cancelling out of flows and stocks that should be distinguished from other kinds of netting. It involves the elimination of those transactions or debtor or creditor relationships that occur between two transactors belonging to the same institutional sector or subsector. Consolidation should not be seen as a sheer loss of information; it entails an elementary specification by the transaction partner. Consolidation may be most relevant for financial institutions and general government.

Chapter 4: Institutional units and sectors

A. Introduction

- 4.1 This chapter is concerned with the definition and description of institutional units and the way in which they are grouped to make up the sectors and subsectors of the SNA. Another key concept to be discussed is residence since the total economy consists of the entire set of resident institutional units.
- #### 1. Institutional units
- 4.2 *An institutional unit is an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities.* The main attributes of institutional units may be described as follows:
- An institutional unit is entitled to own goods or assets in its own right; it is therefore able to exchange the ownership of goods or assets in transactions with other institutional units;
 - It is able to take economic decisions and engage in economic activities for which it is itself held to be directly responsible and accountable at law;
 - It is able to incur liabilities on its own behalf, to take on other obligations or future commitments and to enter into contracts;
 - Either a complete set of accounts, including a balance sheet of assets and liabilities, exists for the unit, or it would be possible and meaningful, from an economic viewpoint, to compile a complete set of accounts if they were to be required.
- 4.3 There are two main types of units in the real world that may qualify as institutional units, namely persons or groups of persons in the form of households, and legal or social entities.
- 4.4 For purposes of the SNA, *a household is a group of persons who share the same living accommodation, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food.* As well as individual households, there are units described as institutional households that comprise groups of persons staying in hospitals, retirement homes, convents, prisons, etc. for long periods of time.
- 4.5 The individual members of multiperson households are not treated as separate institutional units. Many assets are owned, or liabilities incurred, jointly by two or more members of the same household while some or all of the income received by individual members of the same household may be pooled for the benefit of all members. Moreover, many expenditure decisions, especially those relating to the consumption of food, or housing, may be made collectively for the household as a whole. It may be impossible, therefore, to draw up meaningful balance sheets or other accounts for members of the household on an individual basis. For these reasons, the household as a whole rather than the individual persons in it must be treated as the institutional unit.
- 4.6 The second type of institutional unit is a legal or social entity that engages in economic activities and transactions in its own right, such as a corporation, non-profit institution (NPI) or government unit. *A legal or social entity is one whose existence is recognized by law or society independently of the persons, or other entities, that may own or control it.* Such units are responsible and accountable for the economic decisions or actions they take, although their autonomy may be constrained to some extent by other institutional units; for example, corporations are ultimately controlled by their shareholders. Some unincorporated enterprises belonging to households or government units may behave in much the same way as corporations, and such enterprises are treated as quasi-corporations when they have complete sets of accounts.
- 4.7 In the legal sense, corporations may be described by different names: corporations, incorporated enterprises, public limited companies, public corporations, private companies, joint-stock companies, limited liability companies, limited liability partnerships, and so on. Conversely, some legal entities that are non-profit institutions may sometimes be described as “corporations”. The status of an institutional unit cannot always be inferred from its name, and it is necessary to examine its objectives and functions. In the SNA, *the term corporation covers legally constituted corporations and also cooperatives, limited liability partnerships, notional resident units and quasi-corporations.* The description of these various institutional units is given in section B.
- 4.8 *Non-profit institutions (NPIs) are legal or social entities created for the purpose of producing goods and services but whose status does not permit them to be a source of income, profit or other financial gain for the units that establish, control or finance them.* In practice, their pro-

ductive activities are bound to generate either surpluses or deficits but any surpluses they happen to make cannot be appropriated by other institutional units. The articles of association by which they are established are drawn up in such a way that the institutional units that control or manage them are not entitled to a share in any profits or other income they generate. For this reason, they are frequently exempted from various kinds of taxes. A description of the treatment of NPIs within the SNA is given in section C.

- 4.9 ***Government units are unique kinds of legal entities established by political processes that have legislative, judicial or executive authority over other institutional units within a given area.*** Viewed as institutional units, the principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes; to redistribute income and wealth by means of transfers; and to engage in non-market production.

2. Residence

- 4.10 ***The residence of each institutional unit is the economic territory with which it has the strongest connection, in other words, its centre of predominant economic interest.***

The concept of economic territory in the SNA coincides with that of the *BPM6*. Some key features are as follows. In its broadest sense, an economic territory can be any geographic area or jurisdiction for which statistics are required. The connection of entities to a particular economic territory is determined from aspects such as physical presence and being subject to the jurisdiction of the government of the territory. The most commonly used concept of economic territory is the area under the effective economic control of a single government. However economic territory may be larger or smaller than this, as in a currency or economic union or a part of a country or the world.

- 4.11 The economic territory includes the land area, airspace, territorial waters, including jurisdiction over fishing rights and rights to fuels or minerals. In a maritime territory, the economic territory includes islands that belong to the territory. The economic territory also includes territorial enclaves in the rest of the world. These are clearly demarcated land areas (such as embassies, consulates, military bases, scientific stations, information or immigration offices, aid agencies, central bank representative offices with diplomatic immunity, etc.) located in other territories and used by governments that own or rent them for diplomatic, military, scientific, or other purposes with the formal agreement of governments of the territories where the land areas are physically located.
- 4.12 Economic territory has the dimensions of physical location as well as legal jurisdiction. The concepts of economic territory and residence are designed to ensure that each institutional unit is a resident of a single economic territory. The use of an economic territory as the scope of economic statistics means that each member of a group of affiliated enterprises is resident in the economy in which it is located, rather than being attributed to the economy of location of the head office.

- 4.14 An institutional unit has a centre of predominant economic interest in an economic territory when there exists, within the economic territory, some location, dwelling, place of production, or other premises on which or from which the unit engages and intends to continue engaging, either indefinitely or over a finite but long period of time, in economic activities and transactions on a significant scale. The location need not be fixed so long as it remains within the economic territory. Actual or intended location for one year or more is used as an operational definition; while the choice of one year as a specific period is somewhat arbitrary, it is adopted to avoid uncertainty and facilitate international consistency.

- 4.15 The concept of residence in the SNA is exactly the same as in *BPM6*. Further elaboration of borderline cases is given in chapter 26 and in *BPM6*.

3. Sectoring and economic behaviour

- 4.16 The institutional sectors of the SNA group together similar kinds of institutional units. Corporations, NPIs, government units and households are intrinsically different from each other in that their economic objectives, functions and behaviour are different.

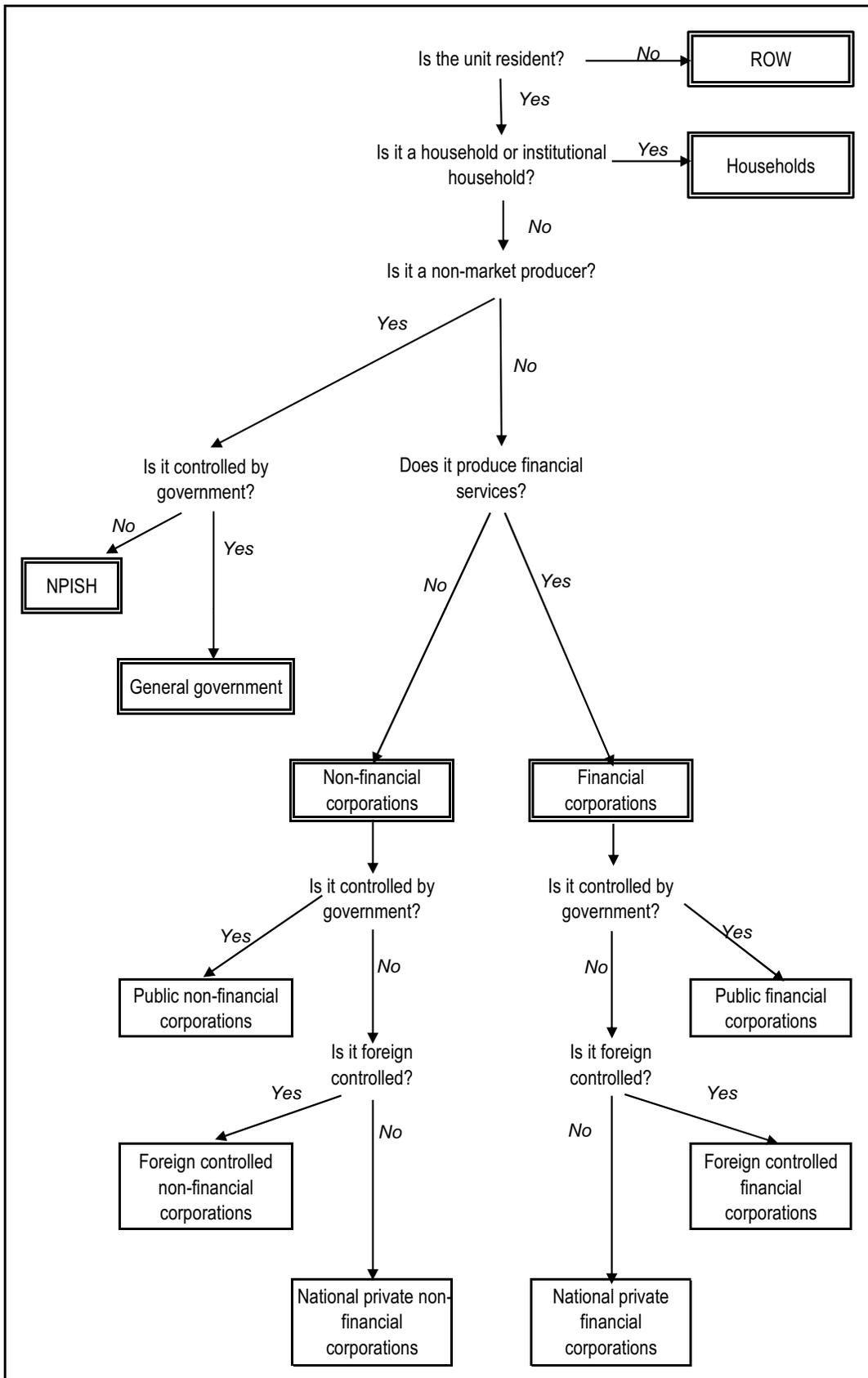
- 4.17 Institutional units are allocated to sector according to the nature of the economic activity they undertake. The three basic economic activities recorded in the SNA are production of goods and services, consumption to satisfy human wants or needs and accumulation of various forms of capital. Corporations undertake either production or accumulation (or both) but do not undertake (final) consumption. Government undertakes production (but mainly of a different type from corporations), accumulation and final consumption on behalf of the population. All households undertake consumption on their own behalf and may also engage in production and accumulation. NPIs are diverse in nature. Some behave like corporations, some are effectively part of government and some undertake activities similar to government but independently of it.

- 4.18 Fundamental to the distinction between corporations and government is the basis on which production is undertaken. Corporations produce for the market and aim to sell their products at economically significant prices. Prices are said to be economically significant if they have a significant effect on the amount that producers are willing to supply and the amounts purchasers wish to buy. These prices normally result when the producer has an incentive to adjust supply either with the goal of making a profit in the long run (or at a minimum, covering capital and other costs) and consumers have the freedom to purchase or not purchase and make the choice on the basis of the prices charged. There is more extensive discussion of the definition of economically significant prices and the meaning of market and non-market production in chapters 6 and 22.

- 4.19 Corporations are divided between those mainly providing financial services and those mainly providing goods and other services. The two groups are known as financial corporations and non-financial corporations respectively. The distinction is made because of the special role that financial corporations play in the economy.

- 4.20 The economic objectives, functions and behaviour of government units are quite distinct. They organize and finance the provision of goods and services, to individual households and the community at large and therefore incur expenditures on final consumption. They may produce most of these goods and services themselves but the products are usually either provided free or at prices determined by considerations other than purely market forces. Government units are also concerned with distribution and redistribution of income and wealth through taxation and other transfers. Government units include social security funds.
- 4.21 The economic objectives, functions and behaviour of households are different again. Although primarily consumer units, they can also engage in production. Often this production activity is relatively small scale and includes informal and subsistence activities. When the production units of households are not legal entities (and cannot be treated as such) they are described as unincorporated enterprises. They remain part of the same institutional unit as the household to which they belong.
- 4.22 NPIs are institutional units created for the purpose of producing or distributing goods or services but not for the purpose of generating any income or profit for the units that control or finance them. Nevertheless, some NPIs deliver goods and services to customers at economically significant prices and, when they do, these NPIs are treated in the same way as corporations in the SNA. Other NPIs that are controlled by government are treated as government units. The remaining NPIs, those that produce goods and services but do not sell them at economically significant prices and are not controlled by government, are treated as a special group of units called non-profit institutions serving households (NPISHs). They are in effect non-governmental social institutions.
- 4. The total economy**
- 4.23 *The total economy is defined as the entire set of resident institutional units.* The resident institutional units that make up the total economy are grouped into five mutually exclusive institutional sectors. Sectors are groups of institutional units and the whole of each institutional unit must be classified to one or other sector of the SNA. The full sequence of accounts of the SNA may be constructed for a single institutional unit or a group of units. The attributes of an institutional unit described in paragraph 4.2 explain why it is not possible to compile a full set of accounts for only part of a unit. However, it is possible, useful and common practice to compile some accounts for sub-divisions of corporations, discriminating on the basis of the type of production the parts undertake. This is the subject of chapter 5. For the present chapter attention focuses on the allocation of complete units to one sector or another.
- 5. An overview of institutional sectors**
- 4.24 All resident institutional units are allocated to one and only one of the following five institutional sectors:
- The non-financial corporations sector;
 - The financial corporations sector;
 - The general government sector;
 - The non-profit institutions serving households sector;
 - The households sector.
- 4.25 The conceptual basis for the allocation of a unit to the appropriate sector can be seen in figure 4.1. The boxes for the sectors of the total economy, plus the box for the rest of the world, appear with double borders. Once non-resident units and households are set aside, only resident legal and social entities remain. Three questions determine the sectoral allocation of all such units. The first is whether the unit is a market or non-market producer. This depends on whether the majority of the unit's production is offered at economically significant prices or not.
- 4.26 The second question determining sectoral allocation applies to non-market units, all of which, including non-market NPIs, are allocated either to general government or to the NPISH sector. The determining factor is whether the unit is part of, or controlled by, government. The criteria to establish control are discussed in section C below.
- 4.27 The third question determining sectoral allocation applies to market units, all of which, including market NPIs, are allocated to either the non-financial corporations sector or the financial corporations sector. In the context of sectors as elsewhere in the SNA, the term "corporation" is used to encompass cooperatives, limited liability partnerships, notional resident units and quasi-corporations as well as legally constituted corporations.
- 4.28 All resident non-financial corporations are included in the non-financial corporations sector and make up most of the sector in practice. In addition, the sector includes non-profit institutions (NPIs) engaged in the market production of goods and non-financial services: for example, hospitals, schools or colleges that charge fees that enable them to recover their current production costs, or trade associations financed by subscriptions from non-financial corporate or unincorporated enterprises whose role is to promote and serve the interests of those enterprises. The non-financial corporations sector is described further in section D.
- 4.29 The financial corporations sector includes all resident corporations whose principal activity is providing financial services including financial intermediation, insurance and pension fund services, and units that provide activities that facilitate financial intermediation. In addition, the sector includes NPIs engaged in market production of a financial nature such as those financed by subscriptions from financial enterprises whose role is to promote and serve the interests of those enterprises. The financial corporations sector is described further in section E.
- 4.30 The general government sector consists mainly of central, state and local government units together with social security funds imposed and controlled by those units. In addition, it includes NPIs engaged in non-market production that are controlled by government units or social security funds.

Figure 4: Illustrative allocation of units to institutional sectors



4.31 The non-profit institutions serving households sector consists of all resident NPIs, except those controlled by government, that provide non-market goods or services to households or to the community at large.

4.32 The households sector consists of all resident households. These include institutional households made up of persons staying in hospitals, retirement homes, convents, prisons, etc. for long periods of time. As already noted, an unincorporated enterprise owned by a household is treated as an integral part of the latter and not as a separate institutional unit unless the accounts are sufficiently detailed to treat the activity as that of a quasi-corporation.

6. Subsectors

4.33 Each of the five institutional sectors listed above may be divided into subsectors. No single method of subsectoring may be optimal for all purposes or all countries, so that alternative methods of subsectoring are recommended for certain sectors. Dividing the total economy into sectors enhances the usefulness of the accounts for purposes of economic analysis by grouping together institutional units with similar objectives and types of behaviour. Sectors and subsectors are also needed in order to be able to target or monitor particular groups of institutional units for policy purposes.

Public and foreign control

4.34 One common subsectoring is to identify those non-financial and financial corporations that are controlled by the government, called public corporations, and those that are controlled from abroad. The remaining corporations form the national private corporations in an economy. The criteria

B. Corporations in the SNA

1. Types of corporations

4.38 In the SNA, the term corporation is used more broadly than in just the legal sense. In general, all entities that are:

- a. capable of generating a profit or other financial gain for their owners,
- b. recognized at law as separate legal entities from their owners who enjoy limited liability,
- c. set up for purposes of engaging in market production,

are treated as corporations in the SNA, however they may describe themselves or whatever they may be called. As well as legally constituted corporations the term corporations is used to include cooperatives, limited liability partnerships, notional resident units and quasi-corporations. Whenever the term corporation is used, the broader coverage rather than the narrow legal definition is intended

for determining control by government and from abroad are discussed in section B. Figure 4.1 includes this type of subsectoring for both groups of corporations.

Non-profit institutions

4.35 As described above, the SNA assigns NPIs to different sectors according to whether they produce for the market or not, regardless of motivation, status of employees or the activity they are engaged in. However, there is increasing interest in considering the full set of NPIs as evidence of “civil society” so it is recommended that NPIs within the corporate and government sectors be identified in distinct subsectors so that supplementary tables summarizing all NPI activities can be derived in a straightforward manner as and when required.

Other subsectoring

4.36 The question of subsectoring is included in the more extensive consideration of each institutional sector in following sections. Particular subsectors are suggested for general government, financial corporations and households.

7. The rest of the world

4.37 On occasion it is convenient to refer to non-resident households or corporations as units that are resident in the rest of the world. Whenever accounts are drawn up for institutional sectors, as well as an account for the total economy, a further account is shown showing the relationship with the rest of the world. In effect, therefore transactions with the rest of the world are recorded as if the rest of the world is a de facto sixth sector.

unless otherwise stated. Each of the main components of the broader coverage is discussed in turn below.

Legally constituted corporations

4.39 Legally constituted corporations may be described by different names: corporations, incorporated enterprises, public limited companies, private companies, joint-stock companies, limited liability companies, limited liability partnerships, and so on. *A legally constituted corporation is a legal entity, created for the purpose of producing goods or services for the market, that may be a source of profit or other financial gain to its owner(s); it is collectively owned by shareholders who have the authority to appoint directors responsible for its general management.*

4.40 The laws governing the creation, management and operations of legally constituted corporations may vary from country to country so that it is not feasible to provide a precise, legal definition of a corporation that would be universally valid. It is possible, however, to indicate in more

detail the typical features of corporations that are most relevant from the point of view of the SNA. They may be summarized as follows:

- a. A corporation is an entity created by process of law whose existence is recognized independently of the other institutional units that may own shares in its equity. The existence, name and address of a corporation are usually recorded in a special register kept for this purpose. A corporation may normally be expected to have a centre of predominant economic interest (that is, to be resident) in the country in which it is created and registered.
- b. A corporation that is created for the purpose of producing goods or services for sale on the market does so at prices that are economically significant. This implies that it is a market producer. (A description of economically significant prices and the difference between market and non-market production is given in chapters 6 and 22.)
- c. A corporation is fully responsible and accountable at law for its own actions, obligations and contracts, this being an essential attribute of an institutional unit in the SNA. A corporation is subject to the tax regime of the country where it is resident in respect of its productive activities, income or assets.
- d. Ownership of a corporation is vested in the shareholders collectively. The amount of income actually distributed to shareholders as dividends in any single accounting period is decided by the directors of the corporation. Income is usually distributed to shareholders in proportion to the value, or amounts, of the shares or other capital participations they own. There may be different kinds of shares in the same corporation carrying different entitlements.
- e. In the event of a corporation being wound up, or liquidated, the shareholders are similarly entitled to a share in the net worth of the corporation remaining after all assets have been sold and all liabilities paid. If a corporation is declared bankrupt because its liabilities exceed the value of its assets, the shareholders are not liable to repay the excess liabilities.
- f. Control of a corporation is ultimately exercised by the shareholders collectively. A corporation has a board of directors that is responsible for the corporation's policy and appoints the senior management of the corporation. The board of directors is usually appointed by the collective vote of the shareholders.
- g. In practice, however, some shareholders may exert much more influence or control over the policies and operations of a corporation than others.
- h. The voting rights of shareholders may not be equal. Some types of shares may carry no voting rights, while others may carry exceptional rights, such as the right to make specific appointments to the board of directors or the right to veto other appointments made on a majority vote. Such exceptional rights may be held by the government when it is a shareholder in a corporation.
- i. Many shareholders with voting rights do not choose to exercise them, so that a small, organized minority of active shareholders may be in a position to control the policy and operations of a corporation.

Cooperatives, limited liability partnerships, etc.

- 4.41 Cooperatives are set up by producers for purposes of marketing their collective output. The profits of such cooperatives are distributed in accordance with their agreed rules and not necessarily in proportion to shares held, but effectively they operate like corporations. Similarly, partnerships whose members enjoy limited liability are separate legal entities that behave like corporations. In effect, the partners are at the same time both shareholders and managers.

Quasi-corporations

- 4.42 Some unincorporated enterprises function in all (or almost all) respects as if they were incorporated. These are termed quasi-corporations in the SNA and are included with corporations in the non-financial and financial corporations sectors. *A quasi-corporation is:*

- a. *either an unincorporated enterprise owned by a resident institutional unit that has sufficient information to compile a complete set of accounts and is operated as if it were a separate corporation and whose de facto relationship to its owner is that of a corporation to its shareholders, or*
- b. *an unincorporated enterprise owned by a non-resident institutional unit that is deemed to be a resident institutional unit because it engages in a significant amount of production in the economic territory over a long or indefinite period of time.*

- 4.43 Three main kinds of quasi-corporations are recognized in the SNA:

- a. Unincorporated enterprises owned by government units that are engaged in market production and that are operated in a similar way to publicly owned corporations;
- b. Unincorporated enterprises, including unincorporated partnerships or trusts, owned by households that are operated as if they were privately owned corporations;
- c. Unincorporated enterprises that belong to institutional units resident abroad, referred to as "branches".

Paragraphs 4.44 to 4.48 elaborate these bullet points.

Notional resident units

4.49 Immovable assets such as land and other natural resources, and buildings and structures are treated as being owned by resident units except in one particular circumstance. If the legal owner is actually non-resident, an artificial unit, called a notional resident unit, is created in the SNA. The notional resident unit is recorded as owning the asset and receiving the rent or rentals that accrue to the asset. The legal owner owns the equity in the notional resident unit and then receives income from the notional resident unit in the form of property income paid abroad. The only exception is made for land and buildings in extraterritorial enclaves of foreign governments (such as embassies, con-

sulates and military bases) that are subject to the laws of the home territory and not those of the territory where they are physically situated.

4.50 A long-term lease to use immovable assets such as land and other natural resources must also be held by a resident. If necessary, a notional resident unit is identified in this case also.

Paragraphs 4.52 to 4.82 discuss special types of corporations, including the difference between holding companies and head offices and the treatment of special purpose entities, and how to determine whether a corporation is controlled by government or by a unit in the rest of the world.

C. Non-profit institutions

4.83 ***Non-profit institutions are legal or social entities, created for the purpose of producing goods and services, whose status does not permit them to be a source of income, profit or other financial gain for the units that establish, control or finance them.*** In practice, their productive activities are bound to generate either surpluses or deficits but any surpluses they happen to make cannot be appropriated by other institutional units. The articles of association by which they are established are drawn up in such a way that the institutional units that control or manage them are not entitled to a share in any profits or other income they receive. For this reason, they are frequently exempted from various kinds of taxes.

4.84 NPIs may be created by households, corporations, or government but the motives leading to their creation are varied. For example, NPIs may be created to provide services for the benefit of the households or corporations who control or finance them; or they may be created for charitable, philanthropic or welfare reasons to provide goods or services to other persons in need; or they may be intended to provide health or education services for a fee, but not for profit; or they may be intended to promote the interests of pressure groups in business or politics; etc.

1. The characteristics of NPIs

4.85 The main features of NPIs may be summarized as follows:

a. Most NPIs are legal entities created by process of law whose existence is recognized independently of the persons, corporations or government units that establish, finance, control or manage them. The purpose of the NPI is usually stated in the articles of association or similar document drawn up at the time of its establishment. In some countries, especially developing countries, an NPI may be an informal entity whose existence is recognized by society but does not have any formal legal status; such NPIs may be created for the purpose

of producing non-market goods or services for the benefit of individual households or groups of households.

b. Many NPIs are controlled by associations whose members have equal rights, including equal votes on all major decisions affecting the affairs of the NPI. Members enjoy limited liability with respect to the NPI's operations.

c. There are no shareholders with a claim on the profits or equity of the NPI. The members are not entitled to a share in any profits, or surplus, generated by the productive activities of the NPI, such profits being retained within the NPI.

d. The direction of an NPI is usually vested in a group of officers, executive committee or similar body elected by a simple majority vote of all the members. These officers are the counterpart of the board of directors of a corporation and are responsible for appointing any paid managers.

e. The term "non-profit institution" derives from the fact that the members of the association controlling the NPI are not permitted to gain financially from its operations and cannot appropriate any surplus that it may make. It does not imply that an NPI cannot make an operating surplus on its production.

4.86 In some countries NPIs are subject to preferential tax treatment, possibly to exemption from income tax, but this is not necessarily so and is not a determining factor in the identification of an NPI.

4.87 As in the case of producer units owned by government units, it is important to distinguish between NPIs engaged in market and non-market production as this affects the sector of the economy to which an NPI is allocated. NPIs do not necessarily engage in non-market production.

2. NPIs engaged in market production

4.88 Market producers are producers that sell most or all of their output at prices that are economically significant, that is, at prices that have a significant influence on the amounts the producers are willing to supply and on the amounts purchasers wish to buy. Schools, colleges, universities, clinics, hospitals, etc. constituted as NPIs are market producers when they charge fees that are based on their production costs and that are sufficiently high to have a significant influence on the demand for their services. Their production activities must generate an operating surplus or loss. Any surpluses they make must be retained within the institutions as their status prevents them from distributing them to others. On the other hand, because of their status as “non-profit institutions” they are also able to raise additional funds by appealing for donations from persons, corporations or government. In this way, they may be able to acquire assets that generate significant property income in addition to their revenues from fees, thereby enabling them to charge fees below average costs. However, they must continue to be treated as market producers so long as their fees are determined mainly by their costs of production and are high enough to have a significant impact on demand. Such NPIs are not charities, their real objective often being to provide educational, health or other services of a very high quality using their incomes from endowments merely to keep down somewhat the high fees they have to charge.

Market NPIs serving enterprises

4.89 Some market NPIs restrict their activities to serving a particular subset of other market producers. Most market NPIs serving enterprises are created by associations of the enterprises whose interests they are designed to promote. They consist of chambers of commerce, agricultural, manufacturing or trade associations, employers’ organizations, research or testing laboratories or other organizations or institutes that engage in activities that are of common interest or benefit to the group of enterprises that control and finance them. The NPIs often engage in publicity on behalf of the group, lobby politicians or provide advice or assistance to individual members in difficulty for one reason or another. The NPIs are usually financed by contributions or subscriptions from the group of enterprises concerned. The subscriptions are treated not as transfers but as payments

for services rendered and these NPIs are, therefore, classed as market producers. However, as explained below, when chambers of commerce or similar organizations intended for the benefit of enterprises are controlled by government units, they are classified as non-market NPIs and allocated to the general government sector.

3. NPIs engaged in non-market production

4.90 The majority of NPIs in most countries are non-market rather than market producers. Non-market producers are producers that provide most of their output to others free or at prices that are not economically significant. Thus, NPIs engaged mainly in non-market production may be distinguished not only by the fact that they are incapable of providing financial gain to the units that control or manage them, but also by the fact that they must rely principally on funds other than receipts from sales to cover their costs of production or other activities. Their principal source of finance may be regular subscriptions paid by the members of the association that controls them or transfers or donations from third parties, including government or from property income.

4.91 NPIs engaged mainly in non-market production are divided into two groups: those NPIs controlled by government and those that are not. The former are included in the general government sector. The latter are described as “non-profit institutions serving households” (NPISHs) and constitute a separate sector in the SNA.

Government control of non-profit institutions

4.92 Control of an NPI is defined as the ability to determine the general policy or programme of the NPI.

NPIs serving households (NPISHs)

4.93 *Non-profit institutions serving households (NPISHs) consist of non-market NPIs that are not controlled by government.* They provide goods and services to households free or at prices that are not economically significant. Most of these goods and services represent individual consumption but it is possible for NPISHs to provide collective services.

D. The non-financial corporations sector and its subsectors

4.94 *Non-financial corporations are corporations whose principal activity is the production of market goods or non-financial services.* The non-financial corporations sector is composed of the following set of resident institutional units:

a. All resident non-financial corporations (as understood in the SNA and not just restricted to legally constituted corporations), regardless of the residence of their shareholders;

b. The branches of non-resident enterprises that are engaged in non-financial production on the economic territory on a long-term basis;

c. All resident NPIs that are market producers of goods or non-financial services.

4.95 Some non-financial corporations or quasi-corporations may have secondary financial activities: for example, producers or retailers of goods may provide consumer credit directly to their own customers. As explained more fully below,

such corporations or quasi-corporations are nevertheless classified as belonging in their entirety to the non-financial corporate sector provided their principal activity is non-financial. Sectors are groups of institutional units, and the whole of each institutional unit must be classified to one or other sector of the SNA even though that unit may be engaged in more than one type of economic activity.

- 4.96 Two classification criteria are used to subsector the non-financial corporations sector. One criterion is to show NPIs separately from other units in the sector. These units other than NPIs may be described as for profit institutions (FPIs). The second criterion is that of control to show:
- a. Public non-financial corporations,
 - b. National private non-financial corporations, and

- c. Foreign controlled non-financial corporations.

The criteria for control of corporations and NPIs by government and non-resident units are described in detail in section B. Corporations controlled by non-resident units are described as being foreign controlled.

- 4.97 The full subsectoring of the non-financial corporations sector can be seen as a two-way table as shown in table 4.1. The exact form of presentation of the subsectors will depend on both analytical and statistical considerations. It may be that the number of NPIs is such that some control categories are empty or sufficiently sparse that the detail cannot be shown for reasons of confidentiality. At the least, though, it is useful, and should be feasible, to distinguish the entries for the left-most column and bottom row of table 4.1.

E. The financial corporations sector and its subsectors

- 4.98 *Financial corporations consist of all resident corporations that are principally engaged in providing financial services, including insurance and pension funding services, to other institutional units.* The financial corporations sector is composed of the following set of resident institutional units:

- a. All resident financial corporations (as understood in the SNA and not just restricted to legally constituted corporations), regardless of the residence of their shareholders;
- b. The branches of non-resident enterprises that are engaged in financial activity on the economic territory on a long-term basis;
- c. All resident NPIs that are market producers of financial services.

The production of financial services is the result of financial intermediation, financial risk management, liquidity transformation or auxiliary financial activities. Because the provision of financial services is typically subject to strict regulation, it is usually the case that units providing financial services do not produce other goods and services and financial services are not provided as secondary production.

- 4.99 One form of financial innovation has seen a substantial growth in activity of a kind traditionally carried out by, or through, financial corporations but that may also be done directly by non-financial enterprises themselves. For example, there is a tendency in some countries for producers or retailers of goods to provide consumer credit directly to their customers. Another example is the tendency for non-financial enterprises in some countries to raise funds themselves by selling their own obligations directly on the money or capital markets. However, the enterprise as a

whole must continue to be classified as non-financial provided that:

- a. A non-financial enterprise does not create a new institutional unit, such as a subsidiary corporation, to carry out the financial activity; and
- b. The financial activity remains secondary to the principal activity of the enterprise.

- 4.100 The same principle applies to the subsectoring of financial corporations. For example, many central banks also engage in some commercial banking. However, as a single institutional unit, the central bank as a whole, including its commercial banking activities, is classified in the subsector "central banks". For the same reason, central bank or monetary authority-type functions carried out by agencies within the central government that are not separate institutional units from government are not allocated to the central bank subsector. (This is discussed further in the following section and in chapter 22.)

- 4.101 Financial corporations can be divided into three broad classes namely, financial intermediaries, financial auxiliaries and other financial corporations. *Financial intermediaries are institutional units that incur liabilities on their own account for the purpose of acquiring financial assets by engaging in financial transactions on the market.* They include insurance corporations and pension funds. *Financial auxiliaries are institutional units principally engaged in serving financial markets, but do not take ownership of the financial assets and liabilities they handle. Other financial corporations are institutional units providing financial services, where most of their assets or liabilities are not available on open financial markets.*

- 4.102 The financial corporations sector can be divided into nine subsectors according to its activity in the market and the liquidity of its liabilities. These nine subsectors are shown in table 4.2. Subsector 6 corresponds to financial auxilia-

ries; subsector 7 corresponds to other financial corporations. All the other subsectors are financial intermediaries of one sort or another.

- 4.103 As well as being subsectored according to the nature of the financial activity being undertaken, the financial corporations sector can also be subsectored in the same manner as the non-financial corporations sector to show the difference between NPIs and FPIs and to show which units are subject to public control, which are national private corporations

and which are foreign controlled. Thus in principle each of the rows in table 4.2 may be further disaggregated in the manner of table 4.1 though it is unlikely that all possible cross-classifications exist and a compressed subsectoring based on local circumstance and particular analytical interest may be sufficient.

Paragraphs 4.104 to 4.116 describe the nine sub-sectors of financial corporations

F. The general government sector and its subsectors

1. Government units as institutional units

- 4.117 Government units are unique kinds of legal entities established by political processes that have legislative, judicial or executive authority over other institutional units within a given area. Viewed as institutional units, the principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes, to redistribute income and wealth by means of transfers, and to engage in non-market production. In general terms:

- a. A government unit usually has the authority to raise funds by collecting taxes or compulsory transfers from other institutional units. In order to satisfy the basic requirements of an institutional unit in the SNA, a government unit, whether at the level of the total economy, a region or a locality, must have funds of its own either raised by taxing other units or received as transfers from other government units and the authority to disburse some, or all, of such funds in the pursuit of its policy objectives. It must also be able to borrow funds on its own account;

- b. Government units typically make three different kinds of final outlays:

· The first group consists of actual or imputed expenditures on the free provision to the community of collective services such as public administration, defence, law enforcement, public health, etc. that are organized collectively by government and financed out of general taxation or other income;

· The second group consists of expenditures on the provision of goods or services free, or at prices that are not economically significant, to individual households. These expenditures are deliberately incurred and financed out of taxation or other income by government in the pursuit of its social or political objectives, even though individuals could be charged according to their usage;

· The third group consists of transfers paid to other institutional units, mostly households, in order to redistribute income or wealth.

- 4.118 Within a single territory there may be many separate government units when there are different levels of government, specifically central, state or local governments. In addition, social security funds also constitute government units. These different kinds of government units are described later when the subsectoring of the general government sector is explained.

Government units as producers

- 4.119 The fact that governments choose to supply not only collective services but also many goods and individual services free, or at prices that are not economically significant, to households or other units does not necessitate that they produce them themselves. Even in the case of most collective services, or so-called “public goods”, governments are obliged only to assume responsibility for organizing and financing their production. They are not obliged to produce them. However, government units do usually engage in a wide range of productive activities in practice, covering not only collective services but also many other goods and individual services. Because it is largely a matter of political choice, the range of goods and services produced by government units varies greatly from one country to another. Apart from some collective services such as public administration and defence, it is therefore difficult to categorize certain types of production, such as the production of education or health services, as intrinsically governmental, even though they are often produced by government units.

- 4.120 When a government unit wishes to intervene in the sphere of production it has three options:

c. it may create a public corporation whose corporate policy, including pricing and investment, it is able to control;

d. it may create an NPI that it controls;

- e. it may produce the goods or services itself in an establishment that it owns but that does not exist as a separate legal entity from the government unit itself.
- 4.121 However, a government establishment, or group of establishments engaged in the same kind of production under common management, should be treated as a quasi-corporation if the following three criteria hold:
- f. the unit charges prices for its outputs that are economically significant;
 - g. the unit is operated and managed in a similar way to a corporation; and
 - h. the unit has a complete set of accounts that enable its operating surpluses, savings, assets and liabilities to be separately identified and measured.

Such quasi-corporations are market producers that are treated as separate institutional units from the government units that own them. They are classified, sectored and subsectored in the same way as public corporations.

- 4.122 In order to be treated as a quasi-corporation the government must allow the management of the enterprise considerable discretion not only with respect to the management of the production process but also the use of funds. Government quasi-corporations must be able to maintain their own working balances and business credit and be able to finance some or all of their capital formation out of their own savings, depreciation reserves or borrowing. The ability to distinguish flows of income and capital between quasi-corporations and government implies that their operating and financing activities are not fully integrated with government revenue or finance statistics in practice, despite the fact that they are not separate legal entities.
- 4.123 Producer units of government that cannot be treated as quasi-corporations, like all unincorporated enterprises that cannot be separated from their owners, remain in the same institutional unit as the owner, in this case within the general government sector. They are likely to consist largely, or entirely, of non-market producers: that is, producers most or all of whose output is supplied to other units free, or at prices that are not economically significant. In addition to providing non-market goods or services to the general public, such units may include government producers supplying non-market goods or services to other government units for purposes of intermediate consumption or gross fixed capital formation: for example, munitions factories, government printing offices, transport agencies, computer or communications agencies, etc. However, it is possible for an unincorporated enterprise within a government to be a market producer. The example often quoted is that of a bookshop within a museum.

Social security schemes and social security funds

- 4.124 Social security schemes are social insurance schemes that cover the community as a whole or large sections of the community and are imposed and controlled by government

units. The schemes cover a wide variety of programmes, providing benefits in cash or in kind for old age, invalidity or death, survivors, sickness and maternity, work injury, unemployment, family allowance, health care, etc. There is not necessarily a direct link between the amount of the contribution paid by an individual and the benefits he or she may receive.

- 4.125 When social security schemes are separately organized from the other activities of government units and hold their assets and liabilities separately from the latter and engage in financial transactions on their own account, they qualify as institutional units that are described as social security funds. However, institutional arrangements in respect of social security schemes differ from country to country and in some countries they may become so closely integrated with the other finances of government as to bring into question whether they should be treated as separate institutional units.

2. The general government sector

- 4.127 The general government sector consists of the following groups of resident institutional units:
- a. All units of central, state or local government (as described immediately below);
 - b. All non-market NPIs that are controlled by government units.

The sector also includes social security funds, either as separate institutional units or as part of any or all of central, state or local government. The sector does not include public corporations, even when all the equity of such corporations is owned by government units. Nor does it include quasi-corporations that are owned and controlled by government units. However, unincorporated enterprises owned by government units that are not quasi-corporations remain integral parts of those units and, therefore, must be included in the general government sector.

3. Subsectors of the general government sector

- 4.128 A full subsectoring of the general government would allow for both NPIs and social security funds to be distinguished for each of central, state and local government. In practice, though, it is usual to show all social security funds together as one subsector or to merge them all with their appropriate level of government and not show social security funds by level of government separately. Further, NPIs may be shown as an "of which" item for general government as a whole or for central, state and local government individually.
- 4.129 The first method of subsectoring general government is as follows:
- a. Central government;
 - b. State government;
 - c. Local government;

d. Social security funds;

where it is understood that each of the subsectors a, b and c include NPIs but exclude social security funds at that level of government.

4.130 The second method of subsectoring general government is as follows:

a. Central government;

b. State government;

c. Local government;

where it is understood that each of the subsectors a, b and c include both NPIs and social security funds at that level of government.

4.131 Under either method of subsectoring, NPIs should be shown as an “of which” heading under the appropriate level of government.

4.132 The choice between the two methods of subsectoring depends mainly on the size, or importance, of social security funds within a country and on the way in which they are managed.

4.133 In some countries there may not exist a proper intermediate level of government between central and local government, in which case the subsector “state government” is not distinguished. In others there may be more than two levels of government below the central government. In that case, the lower levels should be aggregated with state or local government as appropriate.

Paragraphs 4.134 to 4.148 describe the sub-sectors of general government in detail.

G. The households sector and its subsectors

1. Households as institutional units

4.149 For the purposes of the SNA, a household is defined as a group of persons who share the same living accommodation, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food. In general, each member of a household should have some claim upon the collective resources of the household. At least some decisions affecting consumption or other economic activities must be taken for the household as a whole.

4.150 Households often coincide with families, but members of the same household do not necessarily have to belong to the same family so long as there is some sharing of resources and consumption. Households may be of any size and take a wide variety of different forms in different societies or cultures depending on tradition, religion, education, climate, geography, history and other socio-economic factors. The definition of a household that is adopted by survey statisticians familiar with the socio-economic conditions within a given country is likely to approximate closely to the concept of a household as defined in the SNA, although survey statisticians may add more precise, or operational, criteria within a particular country.

4.151 Domestic staff who live on the same premises as their employer do not form part of their employer’s household even though they may be provided with accommodation and meals as remuneration in kind. Paid domestic employees have no claim upon the collective resources of their employers’ households and the accommodation and food they consume are not included with their employer’s consumption. They should therefore be treated as belonging to separate households from their employers.

4.152 Persons living permanently in an institution, or who may be expected to reside in an institution for a very long, or indef-

inite, period of time are treated as belonging to a single institutional household when they have little or no autonomy of action or decision in economic matters. Some examples of persons belonging to institutional households are the following:

- a. Members of religious orders living in monasteries, convents or similar institutions;
- b. Long-term patients in hospitals, including mental hospitals;
- c. Prisoners serving long sentences;
- d. Persons living permanently in retirement homes.

4.153 On the other hand, persons who enter hospitals, clinics, convalescent homes, religious retreats, or similar institutions for short periods, who attend residential schools, colleges or universities, or who serve short prison sentences should be treated as members of the individual households to which they normally belong.

4.154 The residence of individual persons is determined by that of the household of which they form part and not by their place of work. All members of the same household have the same residence as the household itself, even though they may cross borders to work or otherwise spend periods of time abroad. If they work and reside abroad so long that they acquire a centre of economic interest abroad, they cease to be members of their original households.

2. Unincorporated enterprises within households

4.155 As noted in the introduction, households are unlike corporations in that they undertake final consumption. However,

like corporations, they may also engage in production. Household unincorporated market enterprises are created for the purpose of producing goods or services for sale or barter on the market. They can be engaged in virtually any kind of productive activity: agriculture, mining, manufacturing, construction, retail distribution or the production of other kinds of services. They can range from single persons working as street traders or shoe cleaners with virtually no capital or premises of their own through to large manufacturing, construction or service enterprises with many employees.

- 4.156 Household unincorporated market enterprises also include unincorporated partnerships that are engaged in producing goods or services for sale or barter on the market. The partners may belong to different households. When the liability of the partners for the debts of the enterprises is unlimited, the partnerships must be treated as unincorporated enterprises and remain within the household sector since all the assets of the household, including the dwelling itself, are at risk if the enterprise goes bankrupt. However, unincorporated partnerships with many partners, such as some large legal, accounting or architectural firms, are likely to behave like corporations and should be treated as quasi-corporations assuming complete sets of accounts are available for

the partnerships. Partnerships whose partners enjoy limited liability are effectively separate legal entities and, as already noted, are treated as corporations.

- 4.157 An unincorporated enterprise can only be treated as a corporation if it is possible to separate all assets, including financial assets down to the level of cash, into those that belong to the household in its capacity as a consumer from those belonging to the household in its capacity as a producer.

3. The household sector and its subsectors

- 4.158 The household sector consists of all resident households. There are many useful ways in which the households sector may be subsectored and statistical agencies are advised to give due consideration to the various possibilities. More than one method may be adopted if there is a demand for different breakdowns of the households sector from different users, analysts or policymakers.

Paragraphs 4.159 to 4.165 describe possible ways of subsectoring the households sector.

H. The non-profit institutions serving households sector

- 4.166 Previous sections have explained that NPIs are allocated to the corporations sectors when they are engaged in market production and to the general government sector if they are engaged in non-market production but subject to government control. The remaining NPIs are termed non-profit institutions serving households (NPISHs). All provide goods and services free or at prices that are not economically significant.

households collaborate on communal construction projects (such as construction of buildings, roads, bridges, ditches, dykes, etc.), they should be treated as informal partnerships engaged on own-account construction rather than NPISHs. NPISHs should normally have a continuing role to play and not be deemed to be created for single projects of limited duration.

- 4.167 One type of NPISHs consists of those that are created by associations of persons to provide goods or, more often, services primarily for the benefit of the members themselves. The services are usually provided free, being financed by regular membership subscriptions or dues. They include NPISHs such as professional or learned societies, political parties, trades unions, consumers' associations, churches or religious societies, and social, cultural, recreational or sports clubs. They do not include bodies serving similar functions that are controlled by government units. Religious institutions are treated as NPISHs even when mainly financed by government units if this majority financing is not seen as empowering control by government. Political parties in countries with one-party political systems that are controlled by government units by means of providing the necessary finance are included in the general government sector.

- 4.169 A second type of NPISH consists of charities, relief or aid agencies that are created for philanthropic purposes and not to serve the interests of the members of the association controlling the NPISH. Such NPISHs provide goods or services on a non-market basis to households in need, including households affected by natural disasters or war. The resources of such NPISHs are provided mainly by donations in cash or in kind from the general public, corporations or governments. They may also be provided by transfers from non-residents, including similar kinds of NPISHs resident in other countries.

- 4.168 In some communities, NPISHs may be found that do not possess any legal status or formal articles of association. They should be treated as NPISHs when they perform the same kinds of functions as the societies, political parties, trades unions, etc., described above, even if they are not legally constituted as NPISHs. However, when groups of

- 4.170 The third type of NPISHs consist of those that provide collective services, such as research institutions that make their results freely available, environmental groups, etc. These are less common than the first two types of NPISHs and may not always be significantly represented in a country.

- 4.171 If the number or size of NPISHs funded from abroad is significant, it may be useful to disaggregate NPISHs into those that are mainly funded domestically and those that are mainly funded from abroad.

I. The rest of the world

4.172 For purposes of the SNA, *the rest of the world consists of all non-resident institutional units that enter into transactions with resident units, or have other economic links with resident units*. It is not a sector for which complete sets of accounts have to be compiled, although it is often convenient to describe the rest of the world as if it were a sector. The accounts, or tables, for the rest of the world are confined to those that record transactions between residents and non-residents or other economic relationships, such as claims by residents on non-residents, and vice versa. The rest of the world includes certain institutional units that may be physically located within the geographic boundary of a country; for example, foreign enclaves such as embassies, consulates or military bases, and also international organizations.

1. International organizations

4.173 Certain international organizations have all the essential attributes of institutional units. The special characteristics of an “international organization” as this term is used in the SNA may be summarized as follows:

- a. The members of an international organization are either national states or other international organizations whose members are national states; they thus derive their authority either directly from the national states that are their members or indirectly from them through other international organizations;
- b. They are entities established by formal political agreements between their members that have the status of international treaties; their existence is recognized by law in their member countries;
- c. Because they are established by international agreement, they are accorded sovereign status; that is, international organizations are not subject to the laws or regulations of the country, or countries, in which they

are located; they are not treated as resident institutional units of the countries in which they are located;

- d. International organizations are created for various purposes including, among others, the following types of activities:
 - The provision of non-market services of a collective nature for the benefit of their members;
 - Financial intermediation at an international level, that is, channelling funds between lenders and borrowers in different countries.

4.174 Formal agreements concluded by all the member countries of an international organization may sometimes carry the force of law within those countries.

4.175 Most international organizations are financed wholly or partly by contributions (transfers) from their member countries, but some organizations may raise funds in other ways such as borrowing on financial markets or by subscriptions to the capital stock of international organizations and lending by member countries. For purposes of the SNA, international organizations are treated as units that are resident in the rest of the world.

2. Central banks of currency unions

4.176 The central bank of a currency union is treated as a special kind of international organization. The members of the international organization of which the central bank is part are the governments or the national central banks of the countries in the currency union. The central bank is treated as being non-resident in any of the member countries of the currency union but is resident in the currency area as a whole. More on the treatment of currency and economic unions can be found in appendix 3 of BPM6.

Chapter 5: Enterprises, establishments and industries

A. Introduction

- 5.1 Institutional units are defined in chapter 4. The present chapter is concerned with production activities and the units that undertake them, starting with institutional units and then considering parts of institutional units. ***An enterprise is the view of an institutional unit as a producer of goods and services.*** The term enterprise may refer to a corporation, a quasi-corporation, an NPI or an unincorporated enterprise. Since corporations and NPIs other than NPISHs are primarily set up to engage in production, the whole of their accounting information relates to production and associated accumulation activities. Government, households and NPISHs necessarily engage in consumption and may engage in production also; indeed government and NPISHs always engage in production and many, but not all, households do. As explained in chapter 4, whenever the necessary accounting information exists, the production activity of these units is separated from their other activities into a quasi-corporation. It is when this separation is not possible that an unincorporated enterprise exists within the government unit, household or NPISH. It is thus possible to define an unincorporated enterprise as follows. ***An unincorporated enterprise represents the production activity of a government unit, NPISH or household that cannot be treated as the production activity of a quasi-corporation.***
- 5.2 The majority of enterprises by number engages in only one sort of production. The majority of production, though, is carried out by a relatively small number of large corporations that undertake many different kinds of production, there being virtually no upper limit to the extent of diversity of production in a large enterprise. If enterprises are grouped together on the basis of their principal activities, at least some of the resulting groupings are likely to be very heterogeneous with respect to the type of production processes carried out and also the goods and services produced. Thus, for analyses of production in which the technology of

production plays an important role, it is necessary to work with groups of producers that are engaged in essentially the same kind of production. This requirement means that some institutional units must be partitioned into smaller and more homogeneous units, which the SNA defines as establishments. ***An establishment is an enterprise, or part of an enterprise, that is situated in a single location and in which only a single productive activity is carried out or in which the principal productive activity accounts for most of the value added.*** Further, the SNA defines industries in terms of establishments. ***An industry consists of a group of establishments engaged in the same, or similar, kinds of activity.*** In the SNA, production accounts and generation of income accounts are compiled for industries as well as sectors.

- 5.3 This chapter first discusses productive activity and its classification in order to lay the ground for defining establishments and subsequently industries. All enterprises require some basic, routine services to support their production activities. When they are provided in house they are called ancillary activities. The recording of ancillary activities follows a number of conventions depending on exactly how they are provided. Ancillary activities are described in section D.
- 5.4 The definitions that emerge, as well as the underlying definitions of kinds of activities and of statistical units other than establishments, are consistent with the definitions in ISIC, Rev. 4. Any slight differences in wording between this chapter and the "Introduction" to the *ISIC* are noted and explained in the appropriate places below. Here and elsewhere reference is also made to the CPC 2, which is the classification of products used in the SNA.

A. Productive activities

- 5.5 Production in the SNA, as will be discussed in detail in chapter 6, consists of processes or activities carried out under the control and responsibility of institutional units that use inputs of labour, capital, goods and services to produce outputs of goods and services. Any such activity may be described, and classified, with reference to various characteristics, for example:
- Type of goods or services produced as outputs,
 - Type of inputs used or consumed,
 - Technique of production employed,
 - Ways in which the outputs are used.

The same goods or services may be produced using different methods of production. Certain types of goods may be produced from quite different inputs; for example, sugar may be produced from sugar cane or from sugar beet, or electricity from coal, oil, nuclear power stations or from hydroelectric plants. Many production processes also produce joint products, such as meat and hides, whose uses are quite different.

1. The classification of activities in the SNA

5.6 The classification of production activities used in the SNA is *ISIC* (Rev.4). The criteria used in *ISIC* to delineate each of its four levels of the classification are complex. The structure consists of 21 Sections, 88 Divisions, 238 Groups and 419 Classes. At the Division and Group levels, substantial weight is placed on the nature of the good or service that is produced as the principal product of the activity in question by referring to the physical composition and stage of fabrication of the item and the needs served by the item. This criterion furnishes the basis for grouping producer units according to similarities in, and links between, the raw materials consumed and the sources of demand for the items. As well, two other major criteria are considered at these levels: the uses to which the goods and services are put, and the inputs, the process and the technology of production.

5.7 While it is not necessary for purposes of this chapter to explain the concept of an activity in any detail, it is necessary to clarify the fundamental distinction between principal and secondary activities on the one hand and ancillary activities on the other.

2. Principal and secondary activities

Principal activities

5.8 *The principal activity of a producer unit is the activity whose value added exceeds that of any other activity car-*

ried out within the same unit. (The producer unit may be an enterprise or an establishment as defined below.) The classification of the principal activity is determined by reference to *ISIC*, first at the highest level of the classification and then at more detailed levels. The principal activity of an enterprise consists of the principal product and any by-products, that is, products necessarily produced together with principal products. The output of the principal activity must consist of goods or services that are capable of being delivered to other units even though they may be used for own consumption or own capital formation.

Secondary activities

5.9 *A secondary activity is an activity carried out within a single producer unit in addition to the principal activity and whose output, like that of the principal activity, must be suitable for delivery outside the producer unit.* The value added of a secondary activity must be less than that of the principal activity, by definition of the latter. The output of the secondary activity is a secondary product. Most producer units produce at least some secondary products.

3. Ancillary activities

5.10 As its name implies, an ancillary activity is incidental to the main activity of an enterprise. It facilitates the efficient running of the enterprise but does not normally result in goods and services that can be marketed. For enterprises that are relatively small and have only a single location, ancillary activities are not separately identified. For larger enterprises with multiple locations, it may be useful to treat ancillary activities in the same way as a secondary or even a principal product. A detailed discussion of the recording of ancillary activities is given in section D after the discussion on the recording of primary and secondary production is complete.

B. Partitioning enterprises into more homogeneous units

5.11 Although it is possible to classify enterprises according to their principal activities using the *ISIC* and to group them into “industries”, some of the resulting “industries” are likely to be very heterogeneous because some enterprises may have several secondary activities that are quite different from their principal activities. In order to obtain groups of producers whose activities are more homogeneous, enterprises have to be partitioned into smaller and more homogeneous units.

kind-of-activity unit (KAU). *A kind-of-activity unit is an enterprise, or a part of an enterprise, that engages in only one kind of productive activity or in which the principal productive activity accounts for most of the value added.* Each enterprise must, by definition, consist of one or more kind-of-activity units. When partitioned into two or more kind-of-activity units, the resulting units must be more homogeneous with respect to output, cost structure and technology of production than the enterprise as a whole.

1. Types of production units

Kind-of-activity units

5.12 One way to partition an enterprise is by reference to activities. A unit resulting from such a partitioning is called a

Local units

5.13 Enterprises often engage in productive activity at more than one location, and for some purposes it may be useful to partition them accordingly. Thus, *a local unit is an enterprise, or a part of an enterprise, that engages in productive activity at or from one location.* The definition has only

one dimension in that it does not refer to the kind of activity that is carried out. Location may be interpreted according to the purpose, narrowly, such as a specific address, or more broadly, such as within a province, state, county, etc.

Establishments

- 5.14 The establishment combines both the kind-of-activity dimension and the locality dimension. *An establishment is an enterprise, or part of an enterprise, that is situated in a single location and in which only a single productive activity is carried out or in which the principal productive activity accounts for most of the value added.* Establishments are sometimes referred to as local kind-of activity units (local KAUs).
- 5.15 Although the definition of an establishment allows for the possibility that there may be one or more secondary activities carried out, they should be on a small scale compared with the principal activity. If a secondary activity within an enterprise is as important, or nearly as important, as the principal activity, then that activity should be treated as taking place within a separate establishment from that in which the principal activity takes place.
- 5.16 Thus, establishments are designed to be units that provide data that are more suitable for analyses of production in which the technology of production plays an important role. However, it may still be necessary to transform the resulting data subsequently for purposes of input-output analysis, as explained briefly below in describing the unit of homogeneous production and in more detail in chapter 28.
- 5.17 In practice, an establishment may usually be identified with an individual workplace in which a particular kind of productive activity is carried out: an individual farm, mine, quarry, factory, plant, shop, store, construction site, transport depot, airport, garage, bank, office, clinic, etc.

2. Data and accounts for establishments

- 5.18 The only data that can meaningfully be compiled for an establishment relate to its production activities. They include the following:
- a. The items included in the production account and the generation of income account;

C. Ancillary activities

- 5.35 As noted in section B, ancillary activities require special consideration because of the different ways of recording that are recommended depending on circumstances. As a preliminary step, though, it is as well to review exactly what is meant by an ancillary activity. Essentially, they are the basic services that every enterprise needs to have in order to operate effectively. The sorts of services referred to include keeping records, files or accounts in written form or on computers; providing electronic and traditional writ-

- b. Statistics of numbers of employees, types of employees and hours worked;
- c. Estimates of the stock of non-financial capital and natural resources used;
- d. Estimates of changes in inventories and gross fixed capital formation undertaken.

- 5.19 The compilation of a production account and a generation of income account implies that it must be feasible to calculate output and intermediate consumption and thus value added and also compensation of employees, taxes on production and imports, subsidies and the operating surplus or mixed income. In principle, it must be feasible to collect at least the above kinds of statistics for an establishment, even if they may not always be available, or needed, in practice.

3. Application of the principles in specific situations

- 5.20 The application of the principles given above for partitioning an enterprise into establishments is not always straightforward. This section discusses several situations in which the organization of production is such that the application is particularly difficult.

Paragraphs 5.21 to 5.28 discuss the treatment of horizontally and vertically integrated enterprises.

Establishments owned by general government

- 5.29 Government units, especially central governments, may be particularly large and complex in terms of the kinds of activities in which they engage. The principles outlined above have to be applied consistently and systematically to government units. The procedures to be followed when dealing with the main kinds of producer units owned by government may be summarized as follows.
- 5.30 If an unincorporated enterprise of government is a market producer and there is sufficient information available to treat it as a quasi-corporation, it should be treated as a publicly controlled unit in the non-financial or financial corporations sectors as appropriate. The usual conventions about distinguishing different establishments within the quasi-corporation apply.

ten communication facilities; purchasing materials and equipment; hiring, training, managing and paying employees; storing materials or equipment: warehousing; transporting goods or persons inside or outside the producer unit; promoting sales; cleaning and maintenance of buildings and other structures; repairing and servicing machinery and equipment; and providing security and surveillance.

5.36 These types of services can be produced in house or can be purchased on the market from specialist service producers though, in practice, the requisite services may not be readily available in the right quantities on local markets. When the services are produced in house, they are termed ancillary activities. *An ancillary activity is a supporting activity undertaken within an enterprise in order to create the conditions within which the principal or secondary activities can be carried out.* In addition, ancillary activities have certain common characteristics related to their output. These additional characteristics include:

- a. The output of an ancillary activity is not intended for use outside the enterprise.
- b. Ancillary activities typically produce outputs that are commonly found as inputs into almost any kind of productive activity;
- c. Ancillary activities produce services (and, as exceptions, goods that do not become a physical part of the output of the principal or secondary activity) as output;
- d. The value of ancillary activity output is likely to be small compared with that of the principal or secondary activities of an enterprise.

5.37 The defining characteristics that ancillary activities support the principal and secondary activities of an enterprise and are used within the enterprise are by no means sufficient to identify an ancillary activity. There are many kinds of activities whose outputs are entirely consumed within the same enterprise but which could not possibly be considered as ancillary. Goods are not commonly used as inputs in the same way as services such as accounting, transportation or cleaning. For example, an enterprise may produce milk, all of which is processed into butter or cheese within the same enterprise. However, milk production cannot be considered an ancillary activity, because milk is a particular kind of

input found only in special types of productive activity. In general, goods that become embodied in the output of the principal or secondary activities are not outputs of ancillary activities.

5.38 Certain activities, although common, are not so common as to be considered ancillary. Many enterprises produce their own machinery and equipment, build their own structures and carry out their own research and development. These activities are not to be treated as ancillary, whether carried out centrally or not, as they are not found frequently and extensively in all kinds of enterprises, small as well as large.

Paragraphs 5.39 to 5.44 discuss whether or not, and how, to record ancillary activity.

The role of ancillary activities in the SNA

5.45 The production accounts of the SNA do not provide comprehensive information about the production of services treated in some cases as ancillary services. It is therefore difficult to obtain information about their role in the economy. For example, it is difficult to know how much output is produced, how many persons are engaged in such activities, how many resources are consumed, etc. This may be regarded as a serious disadvantage for certain purposes, such as analysing the impact of “information technology” on productivity when the processing and communication of information are typical ancillary activities or when looking at the role of freight transport. For some purposes, a satellite account may be compiled that makes estimates of all activities of a certain type regardless of whether they are ancillary or not. The overall measure of value added does not alter because both output and intermediate consumption increase by the same amount but a more inclusive picture of the role of the activity in the economy can be obtained. There is a discussion on the role of satellite accounts in chapter 29.

E. Industries

5.46 Industries are defined in the SNA in the same way as in *ISIC: an industry consists of a group of establishments engaged in the same, or similar, kinds of activity.* At the most detailed level of classification, an industry consists of all the establishments falling within a single Class of *ISIC*. At higher levels of aggregation corresponding to the Groups, Divisions and, ultimately, Sections of the *ISIC*, industries consist of a number of establishments engaged on similar types of activities.

1. Market, own account and non-market producers

5.47 The term “industry” is not reserved for market producers. An industry, as defined in the *ISIC* and in the SNA, consists of a number of establishments engaged in the same type of production, whether the institutional units to which they

belong are market producers or not. The distinction between market and other production is a different dimension of production and economic activity. For example, the health industry in a particular country may consist of a number of establishments, some of which are market producers while others are non-market producers. Because the distinction between market and other kinds of production is based on a different criterion from the nature of activity itself, it is possible to cross-classify establishments by type of activity and by whether they are market producers, non-market producers or producers for own final use.

2. Industries and products

5.48 As already mentioned, a one-to-one correspondence does not exist between activities and products and hence between industries and products. Certain activities produce

- more than one product simultaneously, while the same product may sometimes be produced by using different techniques of production.
- 5.49 When two or more products are produced simultaneously by a single productive activity they are “joint products”. Examples of joint products are meat and hides produced by slaughtering animals or sugar and molasses produced by refining sugar canes. The by-product from one activity may also be produced by other activities, but there are examples of by-products, such as molasses, that are produced exclusively as the by-products of one particular activity.
- 5.50 The relationship between an activity and a product classification is exemplified by that between the *ISIC* and the *CPC*. The *CPC* is a classification based on the physical characteristics of goods or on the nature of the services rendered, while the *ISIC* also takes into account the inputs in the production process and the technology used in the production process. In the development of the *CPC*, it is intended that each good or service distinguished in the *CPC* is defined in such a way that it is normally produced by only one activity as defined in *ISIC*. However, due to different types of criteria employed, this is not always possible. An example would be the product of mushrooms, which can be produced by controlled growing, that is, an activity classified in Agriculture in *ISIC*, or by simply gathering wild growing mushrooms, an activity classified in Forestry. More detailed national classifications may distinguish different forms of energy production in *ISIC*, based on different technologies, resulting in separate activities for the operation of hydroelectric power plants, nuclear power plants etc. The output of all these activities, however, would be the single product electricity.
- 5.51 Conversely, each activity of the *ISIC*, no matter how narrowly defined, will tend to produce a number of products as defined in the *CPC*, although they are often clustered within the *CPC* structure and could be perceived as one “type” of product. As far as practically possible, an attempt is made to establish a correspondence between the two classifications, by allocating to each category of the *CPC* a reference to the *ISIC* class in which the good or service is mainly produced. However, due to the reasons outlined above, this typically does not result in a one-to-one correspondence. The majority of links between *ISIC* and *CPC* will tend to be one-to-many links, with a few cases requiring many-to-one links. It is possible to force this correspondence into a stricter relationship by selecting one link out of the many-to-one correspondence. This selection may facilitate data conversion, but is not a real description of the link between the two classifications.

Chapter 6: The production account

A. Introduction

- 6.1 The production account is the starting point for the sequence of accounts for institutional units and sectors displaying how income is generated, distributed and used throughout the economy. Activities defined as production therefore determine the extent of GDP and the level of income for the economy. In concept, the economy-wide production account is the aggregation of a similar account for each production unit. Importantly, while production accounts can be compiled for an individual institutional unit as well as for sectors, they can also be compiled for establishments and thus for industries. It is this feature that allows the study of industrial activity in the economy and permits the compilation of supply and use tables and input-output tables.
- 6.2 The production account is linked to the definition of production. *Production is an activity, carried out under the responsibility, control and management of an institutional unit, that uses inputs of labour, capital, and goods and services to produce outputs of goods and services.* The production account shows the output of production and the various inputs to it. To do this, three concepts need clarifying.
- 6.3 The first concept to be clarified is what constitutes production within the SNA. This delineation is referred to as the production boundary of the SNA. Thereafter several key types of production need to be identified depending on whether production is for sale, for own use or is made available to others at little or no cost.
- 6.4 The next concept to be addressed is how output is to be valued. Key to this question is the role played by the various types of taxes imposed by (and subsidies given by) government on products and on the activity of production.
- 6.5 The third major concept to be considered is how the production process adds to the value of goods and services and leads to the generation of income. Does the whole contribution of labour and capital add to the value of these goods and services or should the fact that most capital declines in value as it is used need to be taken into account?
- 6.7 The production account for institutional units and sectors is illustrated in table 6.1. It contains only three items apart from the balancing item. The output from production is recorded under resources on the right-hand side of the account. This item may be disaggregated to distinguish different kinds of output. For example, non-market output should be shown separately from market output and output for own final use in the sector accounts, when possible. The uses recorded on the left-hand side of the account consist of intermediate consumption and consumption of fixed capital. Both of these may also be disaggregated.
- 6.8 The balancing item in the production account is value added. It can be measured either gross or net, that is, before or after deducting consumption of fixed capital:
- Gross value added is the value of output less the value of intermediate consumption;*
 - Net value added is the value of output less the values of both intermediate consumption and consumption of fixed capital.*

B. The concept of production

1. Production as an economic activity

- 6.10 Production can be described in general terms as an activity in which an enterprise uses inputs to produce outputs. The economic analysis of production is mainly concerned with activities that produce outputs of a kind that can be delivered or provided to other institutional units. Unless outputs are produced that can be supplied to other units, either individually or collectively, there can be no division of labour, no specialization of production and no gains from trading. There are two main kinds of output, namely goods and services, and it is necessary to examine their characteristics in order to be able to delineate activities that are productive

in an economic sense from other activities. Collectively, goods and services are described as products.

6.14 **Products are goods and services (including knowledge-capturing products) that result from a process of production.**

Goods

6.15 **Goods are physical, produced objects for which a demand exists, over which ownership rights can be established and whose ownership can be transferred from one institutional unit to another by engaging in transactions on markets.** They are in demand because they may be used to satisfy the needs or wants of households or the community or used to produce other goods or services. The production and exchange of goods are quite separate activities. Some goods may never be exchanged while others may be bought and sold numerous times. The production of a good can always be separated from its subsequent sale or resale.

Services

6.16 The production of services must be confined to activities that are capable of being carried out by one unit for the benefit of another. Otherwise, service industries could not develop and there could be no markets for services. It is also possible for a unit to produce a service for its own consumption provided that the type of activity is such that it could have been carried out by another unit.

6.17 **Services are the result of a production activity that changes the conditions of the consuming units, or facilitates the exchange of products or financial assets.** These types of service may be described as change-effecting services and margin services respectively. Change-effecting services are outputs produced to order and typically consist of changes in the conditions of the consuming units realized by the activities of producers at the demand of the consumers. Change-effecting services are not separate entities over which ownership rights can be established. They cannot be traded separately from their production. By the time their production is completed, they must have been provided to the consumers.

6.18 The changes that consumers of services engage the producers to bring about can take a variety of different forms as follows:

- a. Changes in the condition of the consumer's goods: the producer works directly on goods owned by the consumer by transporting, cleaning, repairing or otherwise transforming them;
- b. Changes in the physical condition of persons: the producer transports the persons, provides them with accommodation, provides them with medical or surgical treatments, improves their appearance, etc.;
- c. Changes in the mental condition of persons: the producer provides education, information, advice, entertainment or similar services in a face to face manner.

6.21 Margin services result when one institutional unit facilitates the change of ownership of goods, knowledge-capturing products, some services or financial assets between two other institutional units. Margin services are provided by wholesalers and retailers and by many types of financial institutions. Margin services resemble change-effecting services in that they are not separate entities over which ownership rights can be established. They cannot be traded separately from their production. By the time their production is completed they must have been provided to the consumers.

Knowledge-capturing products

6.22 Knowledge-capturing products concern the provision, storage, communication and dissemination of information, advice and entertainment in such a way that the consuming unit can access the knowledge repeatedly. The industries that produce the products are those concerned with the provision, storage, communication and dissemination of information, advice and entertainment in the broadest sense of those terms including the production of general or specialized information, news, consultancy reports, computer programs, movies, music, etc. The outputs of these industries, over which ownership rights may be established, are often stored on physical objects (whether on paper or on electronic media) that can be traded like ordinary goods. They

Table 6.1: The production account - uses

Uses	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items									
Output								3 604	3 604
Market output								3 077	3 077
Output for own final use								147	147
Non-market output								380	380
Intermediate consumption	1 477	52	222	115	17	1 883			1 883
Taxes on products								141	141
Subsidies on products (-)								- 8	- 8
Value added, gross / Gross domestic product	1 331	94	126	155	15	1 854			1 854
Consumption of fixed capital	157	12	27	23	3	222			222
Value added, net / Net domestic product	1 174	82	99	132	12	1 632			1 632

have many of the characteristics of goods in that ownership rights over these products can be established and they can be used repeatedly. Whether characterized as goods or services, these products possess the essential common characteristic that they can be produced by one unit and supplied to another, thus making possible division of labour and the emergence of markets.

2. The production boundary

The general production boundary

- 6.24 Economic production may be defined as an activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods or services. There must be an institutional unit that assumes responsibility for the process of production and owns any resulting goods or knowledge-capturing products or is entitled to be paid, or otherwise compensated, for the change-effecting or margin services provided. A purely natural process without any human involvement or direction is not production in an economic sense. For example, the unmanaged growth of fish stocks in international waters is not production, whereas the activity of fish farming is production.

The production boundary in the SNA

- 6.26 The production boundary in the SNA is more restricted than the general production boundary. For reasons explained below, activities undertaken by households that produce services for their own use are excluded from the concept of production in the SNA, except for services provided by owner-occupied dwellings and services produced by employing paid domestic staff. Otherwise, the production boundary in the SNA is the same as the more general one defined in the previous paragraphs.

6.27 **The production boundary of the SNA includes the following activities:**

- a. **The production of all goods or services that are supplied to units other than their producers, or intended to be so supplied, including the production of goods or**

services used up in the process of producing such goods or services;

- b. *The own-account production of all goods that are retained by their producers for their own final consumption or gross capital formation;*
- c. *The own-account production of knowledge-capturing products that are retained by their producers for their own final consumption or gross capital formation but excluding (by convention) such products produced by households for their own use;*
- d. *The own-account production of housing services by owner occupiers; and*
- e. *The production of domestic and personal services by employing paid domestic staff.*

The production boundary within households

Paragraphs 6.28 to 6.48 discuss the exclusion of most services produced for own use by households; own-account production of goods; the services provided by owner-occupied dwellings; the production of domestic and personal services by employing paid domestic staff; “Do-it-yourself” decoration, maintenance and small repairs and the use of consumption goods

The “non-observed” economy

- 6.39 There is considerable interest in the phenomenon of the non-observed economy. This term is used to describe activities that, for one reason or another, are not captured in regular statistical enquiries. The reason may be that the activity is informal and thus escapes the attention of surveys geared to formal activities; it may be that the producer is anxious to conceal a legal activity, or it may be that the activity is illegal. Chapter 25 discusses measurement of the informal economy within households.

- 6.40 Certain activities may clearly fall within the production boundary of the SNA and also be quite legal (provided cer-

Table 6.1 (cont): The production account - resources

	Resources								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items									
Output	2 808	146	348	270	32	3 604			3 604
Market output	2 808	146	0	123	0	3 077			3 077
Output for own final use	0	0	0	147	0	147			147
Non-market output			348		32	380			380
Intermediate consumption								1 883	1 883
Taxes on products						141			141
Subsidies on products (-)						- 8			- 8

tain standards or regulations are complied with) but deliberately concealed from public authorities for the following kinds of reasons:

- a. To avoid the payment of income, value added or other taxes;
- b. To avoid the payment of social security contributions;
- c. To avoid having to meet certain legal standards such as minimum wages, maximum hours, safety or health standards, etc.;
- d. To avoid complying with certain administrative procedures, such as completing statistical questionnaires or other administrative forms.

6.41 Because certain kinds of producers try to conceal their activities from public authorities, it does not follow that they are not included in national accounts in practice. Many countries have had considerable success in compiling estimates of production that cover the non-observed economy as well as the ordinary economy. In some industries, such as agriculture or construction, it may be possible by using various kinds of surveys and the commodity flow method to make satisfactory estimates of the total output of the industry without being able to identify or measure that part of it that is not observed. Because the non-observed economy may account for a significant part of the total economy of some countries, it is particularly important to try to make estimates of total production that include it, even if it cannot always be separately identified as such.

6.42 There may be no clear borderline between the non-observed economy and illegal production. For example, production that does not comply with certain safety, health or other standards could be described as illegal. Similarly, the evasion of taxes is itself usually a criminal offence. However, it is not necessary for the purposes of the SNA to try to fix the precise borderline between non-observed and illegal production as both are included within the production boundary in any case. It follows that transactions on unofficial markets that exist in parallel with official markets (for example, for foreign exchange or goods subject to official price controls) must also be included in the accounts, whether or not such markets are actually legal or illegal.

6.43 There are two kinds of illegal production:

- a. The production of goods or services whose sale, distribution or possession is forbidden by law;

- b. Production activities that are usually legal but become illegal when carried out by unauthorized producers; for example, unlicensed medical practitioners.

6.44 Examples of activities that may be illegal but productive in an economic sense include the manufacture and distribution of narcotics, illegal transportation in the form of smuggling of goods and of people, and services such as prostitution.

6.45 Both kinds of illegal production are included within the production boundary of the SNA provided they are genuine production processes whose outputs consist of goods or services for which there is an effective market demand. The units that purchase smuggled goods, for example, may not be involved in any kind of illegal activities and may not even be aware that the other party to the transaction is behaving illegally. Transactions in which illegal goods or services are bought and sold need to be recorded not simply to obtain comprehensive measures of production and consumption but also to prevent errors appearing elsewhere in the accounts. The incomes generated by illegal production may be disposed of quite legally, while conversely, expenditures on illegal goods and services may be made out of funds obtained quite legally. The failure to record illegal transactions may lead to significant errors within the accounts if the consequences of the activity are recorded in the financial account and the external accounts, say, but not in the production and income accounts.

6.46 Regular thefts of products from inventories are not included in the value of output. Suppose a shop suffers regular theft from inventories. In calculating the value of output of the shop, part of the margin on the goods sold must cover the cost of the goods stolen. Thus the margin is calculated as the value received for the goods sold less the cost of both the goods sold and the goods stolen. If the stolen products are sold elsewhere, for example on a street stall, the value of the output of the street trader is still calculated as the difference between the value received for the goods and the value paid for them. In this case, though, if nothing is paid for the goods, the whole of the sales value appears as the margin.

6.47 Illegal production does not refer to the generation of externalities such as the discharge of pollutants. Externalities may result from production processes that are themselves quite legal. Externalities are created without the consent of the units affected and no values are imputed for them in the SNA.

6.48 Although non-observed and illegal activities require special consideration, it is not necessarily the case that they are excluded from normal data collection processes.

C. Basic, producers' and purchasers' prices

6.49 More than one set of prices may be used to value outputs and inputs depending upon how taxes and subsidies on products, and also transport charges, are recorded. More-

ver, value added taxes (VAT), and similar deductible taxes may also be recorded in more than one way. The methods of valuation used in the SNA are explained in this section.

6.50 The detailed discussion of taxes related to production appears in section C of chapter 7 but it is important in the context of discussing alternative price measures to make the distinction between taxes (and subsidies) on products and other taxes (and subsidies) on production. As the name implies, taxes on products are payable per unit of the product. The tax may be a flat amount dependent on the physical quantity of the product or may be a percentage of the value at which the product is sold. Other taxes on production are taxes imposed on the producer that do not apply to products nor are levied on the profits of the producer. Examples include taxes on land or premises used in production or on the labour force employed. The distinction between subsidies on products and other subsidies on production is made on similar grounds.

1. Basic and producers' prices

6.51 The SNA utilizes two kinds of prices to measure output, namely, basic prices and producers' prices:

a. The basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable, and plus any subsidy receivable, by the producer as a consequence of its production or sale. It excludes any transport charges invoiced separately by the producer.

b. The producer's price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any VAT, or similar deductible tax, invoiced to the purchaser. It excludes any transport charges invoiced separately by the producer.

Neither the producer's nor the basic price includes any amounts receivable in respect of VAT, or similar deductible tax, invoiced on the output sold.

6.52 Unlike the basic price, the producer's price includes taxes on products (taxes payable per unit of output) and excludes subsidies on products (subsidies receivable per unit of output). The producer's price is the price, excluding VAT, that the producer invoices to the purchaser. The basic price measures the amount retained by the producer and is, therefore, the price most relevant for the producer's decision-taking. It is becoming increasingly common in many countries for producers to itemize taxes separately on their invoices so that purchasers are informed about how much they are paying to the producer and how much as taxes to the government.

6.53 Basic prices exclude any taxes on products the producer receives from the purchaser and passes on to government but include any subsidies the producer receives from government and uses to lower the prices charged to purchasers.

6.54 Both producers' and basic prices are actual transaction prices that can be directly observed and recorded. Basic prices are often reported in statistical inquiries and some official "producer price" indices actually refer to basic prices rather than to producers' prices as defined here.

VAT and similar deductible taxes

6.55 Many countries have adopted some form of VAT. VAT is a wide-ranging tax usually designed to cover most or all goods and services. In some countries, VAT may replace most other forms of taxes on products, but VAT may also be levied in addition to some other taxes on products, such as excise duties on tobacco, alcoholic drink or fuel oils.

6.56 VAT is a tax on products collected in stages by enterprises. Producers are required to charge certain percentage rates of VAT on the goods or services they sell. The VAT is shown separately on the sellers' invoices so that purchasers know the amounts they have paid. However, producers are not required to pay to the government the full amounts of the VAT invoiced to their customers because they are usually permitted to deduct the VAT that they themselves have paid on goods and services purchased for their own intermediate consumption, resale or gross fixed capital formation. Producers are obliged to pay only the difference between the VAT on their sales and the VAT on their purchases for intermediate consumption or capital formation, hence the expression value added tax. The percentage rate of VAT is liable to vary between different categories of goods and services and also according to the type of purchaser. For example, sometimes goods purchased by visiting non-residents, which count as exports, may be exempt from VAT.

6.57 Other tax regimes exist, not called VAT, that operate in a similar manner. Within the SNA, the term VAT is used to apply to any similar deductible tax scheme even if the scope is narrower than a full system of VAT.

6.58 The following terminology needs to be defined:

a. Invoiced VAT is the VAT payable on the sales of a producer; it is shown separately on the invoice that the producer presents to the purchaser.

b. Deductible VAT is the VAT payable on purchases of goods or services intended for intermediate consumption, gross fixed capital formation or for resale that a producer is permitted to deduct from his own VAT liability to the government in respect of VAT invoiced to his customers.

c. Non-deductible VAT is VAT payable by a purchaser that is not deductible from his own VAT liability, if any.

Thus, a market producer is able to recover the costs of any deductible VAT payable on his own purchases by reducing the amount of his own VAT liability in respect of the VAT invoiced to his own customers. On the other hand, the VAT paid by households for purposes of final consumption or fixed capital formation in dwellings is not deductible. The VAT payable by non-market producers owned by government units or NPISHs may also not be deductible.

Gross and net recording of VAT

6.61 The SNA requires that the net system of recording VAT should be followed. In the net system:

- d. Outputs of goods and services are valued excluding invoiced VAT; imports are similarly valued excluding invoiced VAT;
- b. Purchases of goods and services are recorded including non-deductible VAT.

Under the net system, VAT is recorded as being payable by purchasers, not sellers, and then only by those purchasers who are not able to deduct it. Almost all VAT is therefore recorded in the SNA as being paid on final uses, mainly on household consumption. However, small amounts of VAT may be paid by businesses in respect of certain kinds of purchases on which VAT may not be deductible.

2. Purchasers' prices

6.64 *The purchaser's price is the amount paid by the purchaser, excluding any VAT or similar tax deductible by the purchaser, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place.*

6.65 When a purchaser buys directly from the producer, the purchaser's price may exceed the producer's price by:

- a. The value of any non-deductible VAT, payable by the purchaser; and
- b. The value of any transport charges on a good paid separately by the purchaser and not included in the producer's price.

It follows that the purchaser's price may exceed the basic price by the amount of the two items just listed plus the value of any taxes less subsidies on the product (other than VAT).

6.66 If purchasers buy output not from the producer directly but from a wholesaler or retailer, it is necessary to include their

margins in the difference between basic and purchasers' prices also.

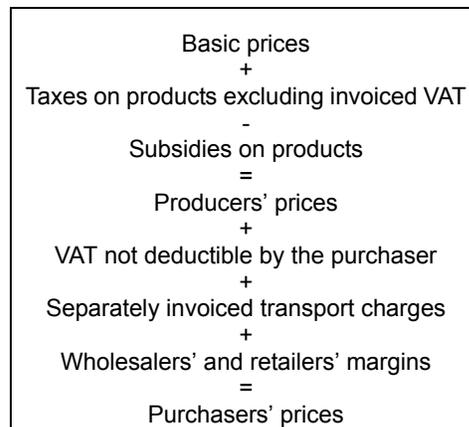
6.67 For certain purposes, including input-output analysis, it may be convenient to consider that the purchase of a product consists of two separate transactions. The first of these is the purchase of the product from the producer and the second is the margin paid to the wholesaler or retailer of the product. The margin represents the difference between the price paid by the final purchaser of a product after it has passed through the wholesale and retail distribution chains and the producer's price received by its original producer.

6.68 The traditional concept of the "market" price becomes somewhat blurred under a system of VAT or similar deductible taxes because there may be two different prices for a single transaction: one from the seller's point of view and another from the purchaser's, depending upon whether or not the tax is deductible. It is recommended in the SNA that the term "market prices" should be avoided when referring to value added and the price basis used, (basic, producers' or purchasers'), be specified to avoid ambiguity.

3. Basic, producers' and purchasers' prices – a summary

6.69 Figure 6.1 gives an overview of the essential differences between basic, producers' and purchasers' prices.

Figure 6.1: Basic, producers' and purchasers' prices



D. Value added and GDP

1. Gross and net value added

6.70 The balancing item of a current account is the excess of resources over uses. The rationale for dividing transactions into sets of accounts is that the balancing item of each account is of economic interest. The balancing item of the production account is value added, so called because it measures the value created by production. Because a pro-

duction account may be compiled for an institutional unit or sector, or establishment or industry, so value added may be derived for any of these. Value added is of analytical interest because when the value of taxes on products (less subsidies on products) is added, the sum of value added for all resident units gives the value of gross domestic product (GDP).

6.71 Value added represents the contribution of labour and capital to the production process. Once the amount of value added appropriated by government in the form of other taxes on production is deducted from value added and the value of subsidies is added, the compensation of labour and capital is revealed. However, capital in the form of fixed capital has a finite life length. Some part of value added should therefore be regarded as the reduction in value of fixed capital due to its use in production. This allowance is called consumption of fixed capital.

6.72 Consumption of fixed capital is one of the most important elements in the SNA. In most cases, when a distinction is drawn between “gross” and “net” recording, “gross” means without deducting consumption of fixed capital while recording “net” means after deducting consumption of fixed capital. In particular, all the major balancing items in the accounts from value added through to saving may be recorded gross or net, that is, before or after deducting consumption of fixed capital. It should also be noted that consumption of fixed capital is typically quite large compared with most of the net balancing items. It may account for 10 per cent or more of GDP.

6.73 Consumption of fixed capital is one of the most difficult items in the accounts to define conceptually and to estimate in practice. Further, consumption of fixed capital does not represent the aggregate value of a set of transactions. It is an imputed value whose economic significance is different from entries in the accounts based mainly on market transactions. For these reasons, the major balancing items in national accounts have always tended to be recorded both gross and net of consumption of fixed capital. This tradition is continued in the SNA where provision is made for balancing items from value added through to saving to be recorded both ways. In general, the gross figure is the easier to estimate and so may be more reliable, but the net figure is usually the one that is conceptually more appropriate and relevant for analytical purposes.

6.74 As stated above:

a. Gross value added is defined as the value of output less the value of intermediate consumption;

b. Net value added is defined as the value of output less the values of both intermediate consumption and consumption of fixed capital.

To avoid repetition, only gross value added will be cited in the following sections when the corresponding conclusions for net value added are obvious.

Paragraphs 6.75 to 6.81 discuss value added at basic prices, producers' prices and factor cost. These measures are not generally used, however.

3. Gross domestic product (GDP)

6.82 The underlying rationale behind the concept of gross domestic product (GDP) for the economy as a whole is that it should measure the total gross value added from all institutional units resident in the economy. However, while the concept of GDP is based on this principle, GDP as defined

in the SNA is such that an identity exists between a measure built on value added, a measure built on income and one based on final expenditures. To achieve this, it is important that the same contribution to GDP is made by taxes on production under all three measures. The expenditure measure of GDP includes all taxes on production and taxes on imports since ultimately these are included in the purchasers' prices of the final users.

6.83 Given this definition of GDP, the following identities hold when the summations are taken over all resident producers:

a. $GDP =$ the sum of the gross value added at producers' prices,

plus taxes on imports,

less subsidies on imports,

plus non-deductible VAT.

b. $GDP =$ the sum of the gross value added at basic prices,

plus all taxes on products,

less all subsidies on products.

c. $GDP =$ the sum of the gross value added at factor cost

plus all taxes on products,

less all subsidies on products,

plus all other taxes on production,

less all other subsidies on production

In cases (b) and (c), the items taxes on products and subsidies on products includes taxes and subsidies on imports as well as on outputs.

4. Domestic production

6.84 GDP measures the production of all resident producers. This does not necessarily coincide with all production taking place within the geographical boundary of the economic territory. Some of the production of a resident producer may take place abroad, while some of the production taking place within the geographical boundary of the economy may be carried out by non-resident producer units. For example, a resident producer may have teams of employees working abroad temporarily on the installation, repair or servicing of equipment. This output is an export of a resident producer and the productive activity does not contribute to the GDP of the country in which it takes place. Thus, the distinction between resident and non-resident institutional units is crucial to the definition and coverage of GDP. In practice most of the productive activity of resident producers takes place within the country in which they are resident. However, producers in service industries that typically have to deliver their outputs directly to their

clients wherever they are located are increasingly tending to engage in production in more than one country, a practice that is encouraged by rapid transportation and instantaneous communication facilities. Geographical boundaries

between adjacent countries are becoming less significant for mobile service producers, especially in small countries bordered by several other countries.

E. The measurement of output

1. Production versus output

6.85 Production is an activity carried out by an establishment. It may not always be clear whether an establishment is producing a good or is providing a service. For example, an oil refinery processing crude oil that it owns is producing a good (refined petroleum); if the same refinery processes crude oil belonging to another unit, then it is providing a refinery service to that unit. This lack of clarity may often appear for goods passing between establishments of the same enterprise and it is important to know when to record the output of a good and when of a change-effecting service. When the establishments belong to different enterprises (that is to different institutional units), the defining principle is that of economic ownership. If an establishment has no discretion about the level of production, the price to be charged for the good or the destination of the good, there is evidence that the establishment has not taken economic ownership of the goods being processed and the value of the output should be treated as the processing element only. This is the case for the refinery service cited above.

6.86 When the establishments involved belong to the same enterprise, there is no change of ownership since both establishments have the same owner. However, the principle of transferring risk, which accompanies change of ownership, can still be applied. Suppose, for example, that an establishment receives coal from another establishment in the same enterprise, uses it to generate electricity and then sells the electricity on the open market. The electricity generator has discretion about the amount of coal it demands, the amount of electricity to be generated and the prices to be charged. In such a case, the value of electricity generated should be measured including the cost of the coal consumed in the process even though there is no legal change in ownership given that both establishments belong to the same enterprise.

6.87 In general, all goods and services that are produced and used by the same establishment are excluded from the measure of output. However, there are exceptions here also. For example, output is recorded if the goods and services being produced are used for capital formation of the establishment. Similarly output is recorded for products entering inventories even if eventually they are withdrawn from inventories for use as intermediate consumption in the same establishment in a later period. If the establishment is a household unincorporated enterprise growing maize, the value of maize produced includes maize kept for household consumption.

6.88 An establishment may produce goods and services that are used as its own intermediate consumption. An example is

unglazed china that is only delivered to other units after glazing. In general the unglazed china is not recorded as output but if there is some china remaining unglazed at the end of the production period, it should be recorded as being produced and entering inventories. In the subsequent period, the unglazed china is withdrawn from inventories and the act of glazing constitutes output in the second period.

6.89 Although production is related to activities and thus the output of one production process is one set of products, output is measured for an establishment and may include the output of several production processes. Thus ***output is defined as the goods and services produced by an establishment,***

a. excluding the value of any goods and services used in an activity for which the establishment does not assume the risk of using the products in production, and

b. excluding the value of goods and services consumed by the same establishment except for goods and services used for capital formation (fixed capital or changes in inventories) or own final consumption.

2. Time of recording

6.90 The output of most goods or services is usually recorded when their production is completed. However, when it takes a long time to produce a unit of output, it becomes necessary to recognize that output is being produced continuously and to record it as “work-in-progress”. For example, the production of certain agricultural goods or large durable goods such as ships or buildings may take months or years to complete. In such cases, it would distort economic reality to treat the output as if it were all produced at the moment of time when the process of production happens to terminate. Whenever a process of production extends over two or more accounting periods, it is necessary to calculate the work-in-progress completed within each of the periods in order to be able to measure how much output is produced in each period.

6.91 On the other hand, goods and services may be completed in an accounting period but not delivered (sold) to a user in that period. Output is recorded when the work is completed and not when sold. There is thus a significant difference between the value of output in a period and the value of sales, the difference being accounted for by changes in inventories of finished goods and work-in-progress.

3. Valuation of output

- 6.92 Goods and services produced for sale on the market at economically significant prices may be valued either at basic prices or at producers' prices. The preferred method of valuation is at basic prices, especially when a system of VAT, or similar deductible tax, is in operation. Producers' prices should be used only when valuation at basic prices is not feasible.
- 6.93 Output produced by market producers for own final use should be valued at the average basic prices of the same goods or services sold on the market, provided they are sold in sufficient quantities to enable reliable estimates to be made of those average prices. If not, the output should be valued by the total production costs incurred, including consumption of fixed capital, plus any taxes (less subsidies) on production other than taxes or subsidies on products, plus a net return on the fixed capital and natural resources used in production. The concept of the net return to capital is introduced in section H and discussed more fully in chapter 20.
- 6.94 The non-market output produced by government units and NPISHs that is supplied free, or at prices that are not economically significant, to other institutional units or the community as a whole is valued by total production costs, including consumption of fixed capital, plus taxes (less subsidies) on production other than taxes or subsidies on products. By convention, no net return to capital is included for non-market production. Similarly, no net return to capital is included in the estimates of production for own final use by non-market producers when these are estimated as the sum of costs.

4. Market output, output for own final use and non-market output

- 6.95 A fundamental distinction is drawn in the SNA between market output and non-market output because of the way the output of each is valued. Market output is the normal situation in a market economy where producers make decisions about what to produce and how much to produce in response to expected levels of demand and expected costs of supply. The determining factor behind production decisions is that economically significant prices prevail. ***Economically significant prices are prices that have a significant effect on the amounts that producers are willing to supply and on the amounts purchasers wish to buy. These prices normally result when:***
- a. The producer has an incentive to adjust supply either with the goal of making a profit in the long run or, at a minimum, covering capital and other costs; and***
 - b. Consumers have the freedom to purchase or not purchase and make the choice on the basis of the prices charged.***
- 6.96 There is further discussion on economically significant prices in chapter 22.

- 6.97 Non-market output is output undertaken by general government and NPISHs that takes place in the absence of economically significant prices. A price is said to be not economically significant when it has little or no influence on how much the producer is prepared to supply and is expected to have only a marginal influence on the quantities demanded. It is a price that is not quantitatively significant from the point of view of either supply or demand. Such prices are likely to be charged in order to raise some revenue or achieve some reduction in the excess demand that may occur when services are provided completely free, but they are not intended to eliminate such excess demand. Once a decision has been taken on administrative, social or political grounds about the total amount of a particular non-market good or service to be supplied, its price is deliberately fixed below the equilibrium price that would clear the market. The difference between a price that is not economically significant and a zero price is, therefore, a matter of degree. The price merely deters those units whose demands are the least pressing without greatly reducing the total level of demand.

- 6.98 Non-market output may be produced for two reasons:
- a. It may be technically impossible to make individuals pay for collective services because their consumption cannot be monitored or controlled. The pricing mechanism cannot be used when transactions costs are too high and there is market failure. The production of such services has to be organized collectively by government units and financed out of funds other than receipts from sales, namely taxation or other government incomes;
 - b. Government units and NPISHs may also produce and supply goods or services to individual households for which they could charge but choose not to do so as a matter of social or economic policy. The most common examples are the provision of education or health services, free or at prices that are not economically significant, although other kinds of goods and services may also be supplied.

Market output

- 6.99 ***Market output consists of output intended for sale at economically significant prices.*** The value of market output is determined as the sum of the following items:
- a. The value of goods and services sold at economically significant prices;
 - b. The value of goods or services bartered in exchange for other goods, services or assets;
 - c. The value of goods or services used for payments in kind, including compensation in kind;
 - d. The value of goods or services supplied by one establishment to another belonging to the same market enterprise to be used as intermediate inputs where the risk

associated with continuing the production process is transferred along with the goods;

- e. The value of changes in inventories of finished goods and work-in-progress intended for one or other of the above uses;
- f. The margins charged on the supply of goods and services, transport margins, margins on the acquisition and disposal of financial assets, etc.

Paragraphs 6.100 to 113 discuss the recording of sales, barter, intra-enterprise deliveries, and changes in inventories

Output for own final use

6.114 **Output for own final use consists of products retained by the producer for his own use as final consumption or capital formation.** The value of output for own final use is determined as the sum of the following:

- a. The value of goods produced by an unincorporated enterprise and consumed by the same household;
- b. The value of services provided to households by paid domestic staff;
- c. The value of the imputed services of owner-occupied dwellings;
- d. The value of the fixed assets produced by an establishment that are retained within the same enterprise for use in future production (own-account gross fixed capital formation);
- e. The value of changes in inventories of finished goods and work-in-progress intended for one or other of the above uses;
- f. In exceptional cases, as described later in this section, there may be output for own intermediate use.

Paragraphs 6.115 to 127 discuss goods produced by households, services of domestic staff, services of owner-occupied dwellings, own gross fixed capital formation, changes in inventories, own intermediate consumption and the valuation of output for own final use.

Non-market output

6.128 **Non-market output consists of goods and individual or collective services produced by non-profit institutions serving households (NPISHs) or government that are supplied free, or at prices that are not economically significant, to other institutional units or the community as a whole.** Although this output is shown as being acquired by government and NPISHs in the use of income account, it should not be confused with production for own use. The

expenditure is made by government and by NPISHs but the use of individual goods and services is by households, and the use of collective services by households or other resident institutional units. Thus non-market output should never be confused with output for own use where the producer unit not only has imputed expenditure on the output but also actually uses the output. Chapter 9 discusses the difference between expenditure and use in more detail.

6.130 The value of the non-market output provided without charge to households is estimated as the sum of costs of production, as follows:

- a. Intermediate consumption;
- b. Compensation of employees;
- c. Consumption of fixed capital;
- d. Other taxes (less subsidies) on production.

6.132 Government units and NPISHs may be engaged in both market and non-market production. Whenever possible, separate establishments should be distinguished for these two types of activities, but this may not always be feasible. Thus, a non-market establishment may have some receipts from sales of market output produced by a secondary activity: for example, sales of reproductions by a non-market museum. However, even though a non-market establishment may have sales receipts, its total output covering both its market and its non-market output is still valued by the production costs. The value of its market output is given by its receipts from sales of market products, the value of its non-market output being obtained residually as the difference between the values of its total output and its market output. The value of receipts from the sale of non-market goods or services at prices that are not economically significant remains as part of the value of its non-market output.

Market and non-market producers

6.133 **Market producers are establishments, all or most of whose output is market production. Non-market producers consist of establishments owned by government units or NPISHs that supply goods or services free, or at prices that are not economically significant, to households or the community as a whole.** These producers may also have some sales of secondary market output whose prices are intended to cover their costs or earn a surplus: for example, sales of reproductions by non-market museums. Though government and NPISHs may have establishments undertaking market production, including own account capital construction, most of their activity will be undertaken on a non-market basis.

6.134 When production for own final use is undertaken by a unit in the general government or NPISHs sector it is treated as being undertaken by a non-market producer. It may also be undertaken by market producers or by units outside general government and NPISHs who produce only for own final use.

F. The output of particular industries

1. Introduction

- 6.135 The rules governing the recording and valuation of output are not sufficient to determine the way in which the output of certain kinds of industries, mostly service industries, such as wholesale and retail trade and financial institutions, is measured. The following sections provide further information about the measurement of the output of a number of specific industries. For convenience, the industries concerned are given in the same order as they appear in the *ISIC*.

2. Agriculture, forestry and fishing

- 6.136 The growth and regeneration of crops, trees, livestock or fish which are controlled by, managed by and under the responsibility of institutional units constitute a process of production in an economic sense. Growth is not to be construed as a purely natural process that lies outside the production boundary. Many processes of production exploit natural forces for economic purposes, for example, hydroelectric plants exploit rivers and gravity to produce electricity.

- 6.137 The measurement of the output of agriculture, forestry and fishing is complicated by the fact that the process of production may extend over many months, or even years. Many agricultural crops are annual with most costs incurred at the beginning of the season when the crop is sown and again at the end when it is harvested. However, immature crops have a value depending on their closeness to harvest. The value of the crop has to be spread over the year and treated as work-in-progress. Often the final value of the crop will differ from the estimate made of it and imputed to the growing crop before harvest. In such cases revisions to the early estimates will have to be made to reflect the actual outcome. When the crop is harvested, the cumulated value of work-in-progress is converted to inventories of finished goods that is then run down as it is used by the producer, sold or is lost to vermin.

- 6.138 Some plants and many animals take some years to reach maturity. In this case, the increase in their value is shown as output and treated as increases in fixed capital or inventories depending on whether the plant or animal yields repeat products or not. (There is more discussion of this distinction in chapter 10.) The value of the increase in the plants or animals should take account of the delay before the yield from them is realized as explained in chapter 20. Once the plant or animal has reached maturity, it will decline in value and this decline should be recorded as consumption of fixed capital.

3. Machinery, equipment and construction

- 6.139 The production of high value capital goods such as ships, heavy machinery, buildings and other structures may take several months or years to complete. The output from such production must usually be measured by work-in-progress and cannot be recorded simply at the moment in time when the process of production is completed. The way in which

work-in-progress is to be recorded and valued is explained in chapter 20.

4. Transportation and storage

Transportation

- 6.141 The output of transportation is measured by the value of the amounts receivable for transporting goods or persons. In economics a good in one location is recognized as being a different quality from the same good in another location, so that transporting from one location to another is a process of production in which an economically significant change takes place even if the good remains otherwise unchanged. The volume of transport services may be measured by indicators such as tonne-kilometres or passenger-kilometres, which combine both the quantities of goods, or numbers of persons, and the distances over which they are transported. Factors such as speed, frequency or comfort also affect the quality of services provided.

Storage

- 6.142 Although the production of storage for the market may not be very extensive, the activity of storage is important in the economy as a whole as it is carried out in many enterprises. During storage the inventories of goods have to be physically stored somewhere. Many goods have to be stored in a properly controlled environment and the activity of storage can become an important process of production in its own right whereby goods are “transported” from one point of time to another. In economics, it is generally recognized that the same goods available at different times, or locations, may be qualitatively different from each other and command different prices for this reason. The increase in price of a product due to the fact that it has been in storage and storage costs have been incurred is a production process. However, it is important that the increase in price due to storage is clearly distinguished from holding gains and losses, which must be excluded from the value of production in the case of storage as in other activities.

- 6.143 When goods are first produced, they may be held in store for a time in the expectation that they may be sold, exchanged or used more advantageously in the future. If the increase in value simply reflects a rise in price with no change in quality resulting from being held in storage, then there is no further production during the period in addition to the costs of storage just described. However, there are three reasons why the increase in value can be construed as further production. The first is that the production process is sufficiently long that discounting factors should be applied to work put in place significantly long before delivery. The second reason is that the quality of the good may improve with the passage of time (such as wine). The third reason is that there may be seasonal factors affecting the supply or the demand for the good that lead to regular, predictable variations in its price over the year, even though its physical qualities may not have changed otherwise. In all these circumstances, storage can be regarded as an extension of the production process over time. The storage services become incorporated in the goods, thereby increasing

their value while being held in store. Thus, in principle, the values of additions to inventories should include not only the values of the goods at the time they are stored but also the value of the additional output produced while the goods are held in store.

6.144 However, most manufactured goods are produced and sold continuously throughout the year and are not subject to regular changes in supply or demand conditions. Nor do they “mature” while being stored. Changes in the prices of such goods while in inventories cannot be treated as additions to work-in-progress. In order to estimate the increase in the value of goods stored over and above the storage costs, use may be made of the expected increase in value over and above the general rate of inflation over a predetermined period. Any gain that occurs outside the predetermined period continues to be recorded as a holding gain or loss. Further explanation of the calculation of the value of storage and its separation from holding gains and losses is given in the annex to this chapter.

6.145 This inclusion of output due to storage applies only to goods that take a long time to complete, those that have an established annual seasonal pattern or those where maturing is part of the regular production process. It does not apply to holding financial assets, valuables or other non-financial assets including land and buildings. Even if anticipated increases in value result in these cases, the motive for holding the items is speculation. The increases in value are treated as holding gains and not as part of the production process.

5. Wholesale and retail distribution

6.146 Although wholesalers and retailers actually buy and sell goods, the goods purchased are not treated as part of their intermediate consumption when they are resold with only minimal processing such as grading, cleaning, packaging, etc. Wholesalers and retailers are treated as supplying services to their customers by storing and displaying a selection of goods in convenient locations and making them easily available for customers to buy. Their output is measured by the total value of the trade margins realized on the goods they purchase for resale. *A trade margin is defined as the difference between the actual or imputed price realized on a good purchased for resale and the price that would have to be paid by the distributor to replace the good at the time it is sold or otherwise disposed of.* The margins realized on some goods may be negative if their prices have to be marked down. They must also be negative on goods that are never sold because they go to waste or are stolen.

6.147 The standard formula for measuring output has to be modified for wholesalers or retailers by deducting from the value of the goods sold or otherwise used the value of the goods that would need to be purchased to replace them. The latter includes the additional goods needed to make good recurrent losses due to normal wastage, theft or accidental damage. In practice, the output of a wholesaler or retailer is given by the following identity:

the value of output = the value of sales,

plus the value of goods purchased for resale and used for intermediate consumption, compensation of employees, etc.,

minus the value of goods purchased for resale,

plus the value of additions to inventories of goods for resale,

minus the value of goods withdrawn from inventories of goods for resale,

minus the value of recurrent losses due to normal rates of wastage, theft or accidental damage.

6.148 The following points should be noted:

a. Goods sold are valued at the prices at which they are actually sold, even if the trader has to mark their prices down to get rid of surpluses or avoid wastage. Allowance should also be made for the effect of reductions in price due to loyalty programmes or other schemes to offer reduced prices to certain customers in certain circumstances.

b. Goods provided to employees as remuneration in kind should be valued at the current purchasers’ prices payable by the traders to replace them; that is, the realized margins are zero. Similarly, goods withdrawn by the owners of unincorporated enterprises for their own final consumption should be valued at the current purchasers’ prices payable by the traders to replace them.

c. Goods purchased for resale should be valued excluding any transport charges invoiced separately by the suppliers or paid to third parties by wholesalers or retailers: these transport services form part of the intermediate consumption of the wholesalers or retailers.

d. Additions to inventories of goods for resale should be valued at the prices prevailing at the time of entry into inventories.

e. The value of goods withdrawn from inventories of goods for resale depends on whether the goods were acquired with the intention of making a real holding gain over a given period in storage. In the general case, when the goods being resold were not expected to realize a real holding gain while in storage, the value of the goods on withdrawal from inventories should be the cost to the wholesaler or retailer at the time of the withdrawal of acquiring exactly similar replacement goods for later sale. This valuation is necessary to exclude holding gains and losses from the measurement of output, as is the general rule in the SNA. However, when the goods have been stored for reasons of seasonal variation in prices or as part of the maturing process, the expected real holding gain over the anticipated period is deducted from the replacement value of goods withdrawn from inventories. This deduction is fixed in value at the time the goods enter storage and is not

altered in the light of actual holding gains, real or nominal.

- f. The value of recurrent losses due to wastage, theft or accidental damage; goods lost are valued in the same way as goods withdrawn from inventories. For this reason, the two terms are often combined.
- 6.149 The costs of storage incurred by wholesalers and retailers are not added to the value of the goods when they are withdrawn from inventories but are treated as part of intermediate consumption.
- 6.150 The margins realized on goods purchased for resale thus vary according to their eventual use. The margins realized on goods sold at the full prices intended by the traders could be described as the normal margins. In fixing these margins, traders take account not only of their ordinary costs such as intermediate consumption and compensation of employees but also of the fact that some goods may ultimately have to be sold off at reduced prices while others may go to waste or be stolen. The margins realized on goods whose prices have to be marked down are obviously less than the normal margins and could be negative. The margins on goods used to pay employees as compensation in kind or withdrawn for final consumption by owners are zero because of the way these goods are valued. Finally, the margins on goods wasted or stolen are negative and equal to the current purchasers' prices of replacements for them. The average margin realized on goods purchased for resale may be expected to be less than the normal margin, possibly significantly less for certain types of goods such as fashion goods or perishable goods.

6. Output of the central bank

- 6.151 Before discussing financial services more generally, it is helpful to discuss the output of the central bank. There are three broad groups of central bank services. These are monetary policy services, financial intermediation and borderline cases. Monetary policy services are collective in nature, serving the community as a whole, and thus represent non-market output. Financial intermediation services are individual in nature and in the absence of policy intervention in the interest rates charged by the central banks, would be treated as market production. The borderline cases, such as supervisory services may be classified as market or non-market services depending on whether explicit fees are charged that are sufficient to cover the costs of providing the services.
- 6.152 In principle, a distinction should be made between market and non-market output but in practice the possible resource intensiveness of the exercise and the relative importance of making the distinction should be considered before implementing the conceptual recommendations. In cases where market output is not separated from non-market output, the whole of the output of the central bank should be treated as non-market and valued at the sum of costs.

Provision of market output

- 6.156 If the financial intermediation services provided by the central bank are significant, and if it is possible and worthwhile

to compile data for a separate establishment providing them, these services should be shown as payable by the units to whom they are delivered. Supervisory services treated as market output are recorded similarly.

7. Financial services other than those associated with insurance and pension funds

- 6.157 A comprehensive discussion of the contribution of financial assets and liabilities to the generation and distribution of income and changes in wealth in an accounting period is given in part 4 of chapter 17. What follows is a summary of the main aspects affecting the measurement of the output of financial services. There are three types of financial activities; financial intermediation, the services of financial auxiliaries and other financial services. Financial services include monitoring services, convenience services, liquidity provision, risk assumption, underwriting and trading services.
- 6.160 Financial services may be paid for explicitly or implicitly. Some transactions in financial assets may involve both explicit and implicit charges. Four main ways in which financial services are provided and charged for may be considered:
- Financial services provided in return for explicit charges;
 - Financial services provided in association with interest charges on loans and deposits;
 - Financial services associated with the acquisition and disposal of financial assets and liabilities in financial markets;
 - Financial services associated with insurance and pension schemes.

The following sections look at each of these in turn. In chapter 17 there is an overview of the transactions and other flows associated with each type of financial instrument. The recording of investment income is described in chapter 7 and the acquisition and disposal of financial assets and liabilities in chapter 11. Changes in the value of financial assets and liabilities not arising from transactions are described in chapter 12.

Financial services provided in return for explicit charges

- 6.161 Many services come under this heading and may be provided by different categories of financial institutions. Deposit taking institutions, such as banks, may charge households to arrange a mortgage, manage an investment portfolio, give taxation advice, administer an estate, and so on. Specialized financial institutions may charge non-financial corporations to arrange a flotation of shares or to administer a restructuring of a group of corporations. However, the most pervasive and probably largest direct fee is likely to be that charged by credit card issuers to the units that accept credit cards as a means of payment for the goods and services they provide. The charge is usually cal-

culated as a percentage of the sale; in the case of retailers the sale value corresponds to turnover and not output. Although the percentage is usually small in absolute terms, maybe one or two percent, the fact that it is applied to such large totals means that the total value of the charge is very large. The charge represents output of the credit card companies and intermediate consumption of the corporations that accept credit cards as means of payment. Ignoring the role of the credit card company does not affect the measurement of the expenditure (usually final consumption or exports) on the goods and services concerned but does underestimate the costs of the provider of goods and services and the output of the credit card company. This in turn leads to a misallocation of value added from the credit card company to the provider of the goods and services paid for by credit card.

Financial services provided in association with interest charges on loans and deposits

- 6.163 One traditional way in which financial services are provided is by means of financial intermediation. This is understood to refer to the process whereby a financial institution such as a bank accepts deposits from units wishing to receive interest on funds for which the unit has no immediate use and lends them to other units whose funds are insufficient to meet their needs. The bank thus provides a mechanism to allow the first unit to lend to the second. Each of the two parties pays a fee to the bank for the service provided, the unit lending funds by accepting a rate of interest lower than that paid by the borrower, the difference being the combined fees implicitly charged by the bank to the depositor and to the borrower. From this basic idea the concept emerges of a “reference” rate of interest. The difference between the rate paid to banks by borrowers and the reference rate plus the difference between the reference rate and the rate actually paid to depositors represent charges for financial intermediation services indirectly measured (FISIM).
- 6.164 However, it is seldom the case that the amount of funds lent by a financial institution exactly matches the amount deposited with them. Some money may have been deposited but not yet loaned; some loans may be financed by the bank’s own funds and not from borrowed funds. However, the depositor of funds receives the same amount of interest and service whether or not his funds are then lent by the bank to another customer, and the borrower pays the same rate of interest and receives the same service whether his funds are provided by intermediated funds or the bank’s own funds. For this reason an indirect service charge is to be imputed in respect of all loans and deposits offered by a financial institution irrespective of the source of the funds. The reference rate applies to both interest paid on loans and interest paid on deposits so that the amounts of interest recorded as such in the SNA are calculated as the reference rate times the level of loan or deposit in question. The difference between these amounts and the amounts actually paid to the financial institution are recorded as service charges paid by the borrower or depositor to the financial institution. For clarity the amounts based on the reference rate recorded in the SNA as interest are described as “SNA interest” and the total amounts actually paid to or by the financial institution are described as “bank interest”. The implicit service charge is thus the sum of the bank interest

on loans less the SNA interest on the same loans plus the SNA interest on deposits less the bank interest on the same deposits. The service charge is payable by or to the unit in receipt of the loan or owning the deposit as appropriate.

- 6.165 By convention within the SNA, these indirect charges in respect of interest apply only to loans and deposits and only when those loans and deposits are provided by, or deposited with, financial institutions. The financial institutions in question need not be resident; nor need the clients of the financial institution be resident. Thus imports and exports of this type of financial service are possible. Nor need the financial institution necessarily offer deposit-taking facilities as well as making loans. The financial subsidiaries of retailers are examples of financial institutions that make loans without accepting deposits. A money lender who has sufficiently detailed accounts to be treated as an actual or quasi-corporation may receive this sort of charge; indeed since money lenders usually charge especially high rates of interest, their service charges may exceed the SNA interest payments by significant amounts.

Financial services associated with the acquisition and disposal of financial assets and liabilities in financial markets

- 6.174 Although no property income flows are involved, margins between buying and selling prices also apply to purchases of foreign currencies (including transactions denominated in foreign currencies such as payments for imports and exports as well as the acquisition of physical notes and coins of a foreign currency). Again these margins should be treated as the provision of financial services in a manner similar to that described for securities.

8. Financial services associated with insurance and pension schemes.

- 6.175 Five types of activities are covered under this heading:

Non-life insurance;

Life insurance and annuities;

Reinsurance;

Social insurance schemes;

Standardized guarantee schemes.

- 6.176 All these schemes lead to redistribution of funds, which are recorded in either the secondary distribution of income account or the financial account. For non-life insurance and standardized guarantee schemes, most of the redistribution takes place between different units in the same period. Many client units pay relatively small policy premiums or fees and a small number of them receive relatively large claims or payments. For life insurance, annuities and pension schemes, the redistribution is primarily, though not entirely, between different periods for a single client. In fulfilling their responsibilities as managers of these funds, insurance companies and pension funds are involved in

- both risk management and liquidity transformation, the prime functions of financial institutions.
- 6.177 Non-life insurance provides cover to the policyholder against loss or damage suffered as a result of an accident. A premium is paid to the insurance corporation and a claim is paid to the policyholder only if the event insured against occurs. If the event occurs then the maximum amount to be paid is specified in the policy so that the uncertainty concerns whether a payment will take place, not the amount of it.
- 6.178 Under a life insurance policy, many small payments are made over a period of time and either a single lump sum or a stream of payments is made at some pre-agreed time in the future. There is little conditionality involved in life insurance, usually the fact that a payment will be made is certain but the amount may be uncertain.
- 6.179 Annuities are offered by insurance corporations and are a means for an individual person to convert a lump sum into a stream of payments in the future.
- 6.180 Just as an individual may limit their exposure to risk by taking out an insurance policy, so may insurance corporations themselves. Insurance between one insurance corporation and another is called reinsurance. (Insurance other than reinsurance is called direct insurance.) Many reinsurance transactions are with specialized institutions in a few international financial centres. Reinsurers may also take out a further reinsurance policy. This practice is known as “retrocession”.
- 6.181 A social insurance scheme is one where a third party, usually an employer or the government, encourages or obliges individuals to participate in a scheme to provide benefits for a number of identified circumstances, including pensions in retirement. Social insurance schemes have much in common with direct insurance and may be run by insurance corporations. This is not necessarily the case, however, and there are special variations in how the payment of contributions (corresponding to premiums in the case of direct insurance) and benefits are recorded.
- 6.182 In some circumstances a unit, possibly but not necessarily within general government, may offer very many guarantees of very similar nature. One example is export guarantees and another is student loans. Because the guarantees are very similar and numerous, it is possible to make robust statistical estimates of the number of defaults the guarantor will have to cover and so these also are treated in a manner similar to direct non-life insurance.
- 6.183 The detailed recording for each of these activities, including the measurement of output, the recording of flows between the insurance corporations or pension funds on the one hand and policyholders or beneficiaries on the other, and the implications for changes in the balance sheets of both sets of institutions are described in part 3 of chapter 17. What follows is a summary of the key features of measuring output for the various activities listed above.
- ### Non-life insurance
- 6.185 The basic method for measuring non-life insurance output is the following:
- Total premiums earned,
- plus* premium supplements,
- less* adjusted claims incurred.
- 6.186 ***The actual premium is the amount payable to the direct insurer or reinsurer to secure insurance cover for a specific event over a stated time period.*** Cover is frequently provided for one year at a time with the premium due to be paid at the outset, though cover may be provided for shorter (or longer) periods and the premium may be payable in instalments, for example monthly.
- 6.187 ***The premium earned is the part of the actual premium that relates to cover provided in the accounting period.*** For example, if an annual policy with a premium of 120 units comes into force on April 1 and accounts are being prepared for a calendar year, the premium earned in the calendar year is 90. ***The unearned premium is the amount of the actual premium received that relates to the period past the accounting point.*** In the example just given, at the end of the accounting period there will be an unearned premium of 30, intended to provide cover for the first three months of the next year. ***A claim (benefit) is the amount payable to the policyholder by the direct insurer or reinsurer in respect of an event covered by the policy occurring in the period for which the policy is valid.*** Claims normally become due when the event occurs, even if the payment is made some time later. (The exception to this time of recording is described in paragraph 8.121.) Claims that become due are described as claims incurred. In some contested cases the delay between the occurrence of the event giving rise to the claim and the settlement of the claim may be several years. ***Claims outstanding cover claims that have not been reported, have been reported but are not yet settled or have been both reported and settled but not yet paid.***
- 6.188 The insurance corporation has at its disposal reserves consisting of unearned premiums and claims outstanding. These reserves are called technical reserves and are used by the insurance company to generate investment income. Because the technical reserves are a liability of the insurance corporation to the policyholders, the investment income they generate is treated as being attributed to the policyholders. However, the amounts remain with the insurance corporation and are in effect a hidden supplement to the apparent premium. This income is therefore treated as a premium supplement paid by the policyholder to the insurance corporation.
- ### Life insurance
- 6.192 A life insurance policy is a sort of saving scheme. For a number of years, the policyholder pays premiums to the insurance corporation against a promise of benefits at some future date. These benefits may be expressed in terms of a formula related to the premiums paid or may be dependent

on the level of success the insurance corporation has in investing the funds.

6.193 The insurance corporation cumulates premiums paid until the promised date when benefits become payable and in the meantime uses the reserves to produce investment income. Some of the investment income is added to the life insurance reserves belonging to the policyholders to meet benefits in future. This allocation is an asset of the policyholders but is retained by the insurance corporation which continues to invest the amounts until benefits become payable. The remainder of the investment income not allocated to the policyholders is retained by the insurance corporation as its fee for the service they provide.

6.194 The method of calculating output for life insurance follows the same general principles as for non-life insurance but because of the time interval between when premiums are received and when benefits are paid, special allowances must be made for changes in the technical reserves.

6.195 The output of life insurance is derived as:

Premiums earned,

plus premium supplements,

less benefits due,

less increases (*plus* decreases) in life insurance technical reserves.

6.196 Premiums are defined in exactly the same way for life insurance as for non-life insurance.

6.197 Premium supplements are more significant for life insurance than for non-life insurance. They consist of all the investment income earned on the reserves of the policyholders. The amount involved is earnings forgone by the policyholders by putting the funds at the disposal of the insurance corporation and are thus recorded as property income in the distribution of primary income account.

6.198 Benefits are recorded as they are awarded or paid. There is no need under life insurance to derive an adjusted figure since there is not the same unexpected volatility in the payment due under a life policy. It is possible for the insurance corporation to make robust estimates of the benefits due to be paid even years in advance.

6.199 Life insurance technical reserves increase each year because of new premiums paid, new investment income allocated to the policyholders (but not withdrawn by them) and decrease because of benefits paid. It is thus possible to express the level of output of life insurance as the difference between the total investment income earned on the life insurance technical reserves less the part of this investment income actually allocated to the policyholders and added to the insurance technical reserves.

Paragraphs 6.200 to 6.212 discuss reinsurance, standardized guarantee schemes, research and development and the production of originals and copies.

G. Intermediate consumption

1. Coverage of intermediate consumption

6.213 *Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital.* The goods or services may be either transformed or used up by the production process. Some inputs re-emerge after having been transformed and incorporated into the outputs, for example, grain may be transformed into flour which in turn may be transformed into bread. Other inputs are completely consumed or used up, for example, electricity and most services.

2. The timing and valuation of intermediate consumption

6.216 The intermediate consumption of a good or service is recorded at the time when the good or service enters the process of production, as distinct from the time it was acquired by the producer. In practice, establishments do not usually record the actual use of goods in production directly. Instead, they keep records of purchases of materials and supplies intended to be used as inputs and also of any changes in the amounts of such goods held in invento-

ries. An estimate of intermediate consumption during a given accounting period can then be derived by subtracting the value of changes in inventories of materials and supplies from the value of purchases made. Changes in inventories of materials and supplies are equal to entries less withdrawals and recurrent losses on goods held in inventories. Thus, by reducing the value of changes in inventories, recurrent losses increase intermediate consumption. Even if they are consistently large, as long as they occur regularly, losses are treated as increasing intermediate consumption. Goods entering and leaving inventories are valued at the purchasers' prices prevailing at the times the entries, withdrawals or recurrent losses take place. This is exactly the same method as that used to value changes in inventories of goods produced as outputs from the production process. Thus, the earlier discussion of the properties and behaviour of the PIM applies to inventories of inputs.

6.217 A good or service consumed as an intermediate input is normally valued at the purchaser's price prevailing at the time it enters the process of production; that is, at the price the producer would have to pay to replace it at the time it is used.

6.218 Intermediate inputs treated as being acquired from other establishments belonging to the same enterprise should be

valued at the same prices as were used to value them as outputs of those establishments plus any additional transport charges not included in the output values.

- 6.219 When goods or services produced within the same establishment are fed back as inputs into the production within the same establishment, they are only recorded as part of the intermediate consumption if they have been recorded as part of the output of that establishment. There is discussion on when this might be appropriate in section E. Deliveries of goods and services between different establishments belonging to the same enterprise are recorded as outputs by the producing establishments and intermediate inputs by the receiving establishments only when the receiving establishment effectively assumes all risks for completing the production process.

Paragraphs 6.220 to 232 discuss the boundary between intermediate consumption and compensation of employees and the boundary between intermediate consumption and gross fixed capital consumption.

5. Services provided by government to producers

- 6.233 Government may provide services to producers. To the extent that a charge is made for these services, the charges form part of the intermediate consumption of the producer. However, when the charge does not represent an economically significant price, the value of the service to the producer is greater than the cost. However, no estimation of this benefit is made and the costs of the services not covered by the charges made are included in collective consumption of government.

6. Social transfers in kind

- 6.234 Expenditures by government or NPISHs on goods or services produced by market producers that are provided directly to households, individually or collectively, without any further processing constitute final consumption expenditures by government or NPISHs and not intermediate consumption. The goods and services in question are treated as social transfers in kind and enter into the actual consumption of households.

- 6.235 By convention, non-financial and financial corporations do not make social transfers in kind, nor engage in final consumption.

7. Services of business associations

- 6.236 Non-profit institutions in the form of business associations that exist to protect the interests of their members and are

financed by them are market producers. The subscriptions paid by the businesses constitute payments for services rendered. These services are consumed as intermediate inputs by the members of the association and are valued by the amounts paid in subscriptions, contributions or dues.

8. Outsourcing

- 6.237 It is increasingly common for producers to change the way in which a production activity is completed. Different stages in the process or different support activities such as office cleaning or assembly of electronic components may be contracted out to another producer, in the same country or abroad. This changes the pattern of intermediate inputs even though the underlying technology may be the same. The impact of this on input-output tables is discussed in chapters 14 and 28.

9. Leasing fixed assets

- 6.238 The decision to rent buildings, machinery or equipment under an operating lease, rather than purchase them, can have a major impact on the ratio of intermediate consumption to value added and the distribution of value added between producers. Rentals paid on buildings or on machinery or equipment under an operating lease constitute purchases of services that are recorded as intermediate consumption. However, if an enterprise owns its buildings, machinery and equipment, most of the costs associated with their use are not recorded under intermediate consumption. The consumption of fixed capital on the assets forms part of gross value added while interest costs, both actual and implicit, have to be met out of the net operating surplus. Only the costs of the materials needed for maintenance and repairs appear under intermediate consumption. Decisions to rent rather than purchase may be influenced by factors quite unrelated to the technology of production, such as taxation, the availability of finance, or the consequences for the balance sheet.

- 6.239 There is a significant difference between rentals of fixed assets under an operating lease and the acquisition of an asset under a financial lease. Under an operating lease, the lessor has a productive activity that involves the equipment in question and is responsible for the production risks associated with the operational status of the asset. Payments by the lessee are treated as payments for a service. Under a financial lease, the lessee accepts all risks and rewards associated with the use of the asset in production. A financial lease is thus treated as a loan by the lessor to the lessee and purchase of the equipment by the lessee. Subsequent payments are treated as payments of interest and repayments of principal by the lessee to the lessor. Further details on the treatment of operating and financial leases are given in chapter 17.

H. Consumption of fixed capital

1. The coverage of consumption of fixed capital

- 6.240 *Consumption of fixed capital is the decline, during the course of the accounting period, in the current value of*

the stock of fixed assets owned and used by a producer as a result of physical deterioration, normal obsolescence or normal accidental damage. The term depreciation is often used in place of consumption of fixed capital but it is avoided in the SNA because in commercial accounting the term depreciation is often used in the context of writing off historic costs whereas in the SNA consumption of fixed capital is dependent on the current value of the asset.

- 6.241 Consumption of fixed capital is calculated for all fixed assets owned by producers, but not for valuables (precious metals, precious stones, etc.) that are acquired precisely because their value, in real terms, is not expected to decline over time. Fixed assets must have been produced as outputs from processes of production as defined in the SNA. Consumption of fixed capital does not, therefore, cover the depletion or degradation of natural assets such as land, mineral or other deposits, coal, oil, or natural gas, or contracts, leases and licences.
- 6.242 The value of assets may decline not merely because they deteriorate physically but because of a decrease in the demand for their services as a result of technical progress and the appearance of new substitutes for them. In practice, many structures, including roads and railway tracks, are scrapped or demolished because they have become obsolete. Even though the estimated service lives may be very long for some structures, such as roads, bridges, dams, etc., they cannot be assumed to be infinite. Thus, capital consumption needs to be calculated for all types of structures, including those owned and maintained by government units, as well as machinery and equipment.
- 6.243 Losses of fixed assets due to normal or expected levels of accidental damage are also included under consumption of fixed capital; that is, damage caused to assets used in production resulting from their exposure to the risk of fires, storms, accidents due to human error, etc. When these kinds of accidents occur with predictable regularity they are taken into account in calculating the average service lives of the goods in question. For an individual unit, or group of units, any difference between the average and the actual normal accidental damage within a given period is recorded in the other changes in the volume of assets account. However, at the level of the economy as a whole, the actual normal accidental damage within a given accounting period may be expected to be equal, or close, to the average.
- 6.244 On the other hand, losses due to war or to major natural disasters that occur very infrequently, such as major earthquakes, volcanic eruptions, tidal waves or exceptionally severe hurricanes, are not included under consumption of fixed capital. There is no reason for such losses to be charged in the production account as costs of production. The values of the assets lost in these ways are recorded in the other changes in the volume of assets account. Similarly, although consumption of fixed capital includes reductions in the value of fixed assets resulting from normal, expected rates of obsolescence, it should not include losses due to unexpected technological developments that may significantly shorten the service lives of a group of existing fixed assets. Such losses are treated in the same way as losses due to above average rates of normal accidental damage.

Paragraphs 6.245 to 6.247 discuss the different consequences for measurement in the accounts of acquiring an asset as fixed capital formation and renting the asset.

3. The calculation of consumption of fixed capital

- 6.248 Fixed assets may have been purchased in the past at times when both relative prices and the general price level were very different from prices in the current period. In order to be consistent with the other entries in the same production account, consumption of fixed capital must be valued with reference to the same overall set of current prices as that used to value output and intermediate consumption. Consumption of fixed capital should reflect underlying resource costs and relative demands at the time the production takes place. It should therefore be calculated using the actual or estimated prices and rentals of fixed assets prevailing at that time and not at the times the goods were originally acquired. The “historic costs” of fixed assets, that is, the prices originally paid for them, become quite irrelevant for the calculation of consumption of fixed capital as prices change over time.
- 6.249 For these reasons, depreciation as recorded in business accounts may not provide the right kind of information for the calculation of consumption of fixed capital. If data on depreciation are used, they must, at the very least, be adjusted from historic costs to current prices. However, depreciation allowances for tax purposes have often been grossly manipulated in quite arbitrary ways to try to influence rates of investment and are best ignored altogether in many cases. It is recommended that independent estimates of consumption of fixed capital should be compiled in conjunction with estimates of the capital stock. These can be built up from data on gross fixed capital formation in the past combined with estimates of the rates at which the efficiency of fixed assets decline over their service lives.
- 6.250 Whenever possible, the initial value of a new fixed asset should be that prevailing on the market when the asset is acquired. If assets of all ages and specifications were regularly traded on markets, these prices should be used to value every asset as it ages. However, there is scarce information on the prices of second-hand assets and faced with this lack, a more theoretical approach to determining the price of an asset as it ages must be adopted.
- 6.251 Conceptually, market forces should ensure that the purchaser’s price of a new fixed asset is equivalent to the present value of the future benefits that can be derived from it. Given the initial market price, therefore, and knowledge of the characteristics of the asset in question, it is possible to project the stream of future benefits and continually update the remaining present value of these. This method of building up estimates of the capital stock and changes in the capital stock over time is known as the perpetual inventory method, or PIM. Estimates of consumption of fixed capital are obtained as a by-product of the PIM.

4. The perpetual inventory method

- 6.252 A brief explanation of how consumption of fixed capital may be calculated as a by-product of the perpetual inven-

tory method of calculating the capital stock is given in this section. An overview of the link between the calculation of consumption of fixed capital, the return to capital and the stock of assets is given in chapter 20. Much more guidance on the way to calculate capital stock estimates appears in the manual *Measuring Capital*. (OECD, 2009).

Calculation of the gross capital stock

- 6.253 The perpetual inventory method requires an estimate to be made of the stock of fixed assets in existence and in the hands of producers. The first step is to estimate how many of the fixed assets installed as a result of gross fixed capital formation undertaken in previous years have survived to the current period. Average service lives, or survival functions, based on observations or technical studies may be applied to past investments for this purpose. Fixed assets purchased at different prices in the past have then to be revalued at the prices of the current period by utilizing appropriate price indices for fixed assets. The construction of suitable price indices covering long periods of time raises difficult conceptual and practical problems, but these technical problems of price measurement must be faced in any case in developing balance sheet values of assets. The stock of fixed assets surviving from past investment and revalued at the purchasers' prices of the current period is described as the gross capital stock. The gross capital stock can also be measured at the prices of a given base year if it is desired to have annual time series for the gross capital stock in volume terms.

Relative efficiencies

- 6.254 The inputs into production obtained from the use of a given fixed asset tend to diminish over time. The rate at which the efficiency declines may vary from one type of asset to another. The simplest case to consider is one where the efficiency of the asset remains constant until it disintegrates, like a light bulb. Other simple cases include the case where the efficiency declines linearly or exponentially over its life. Other methods employ a hyperbolic rate of efficiency loss with relatively little decline in the initial years but increasingly steeper decline as time progresses. However, in practice calculations are not undertaken asset by asset individually but for cohorts of assets of similar ages and

characteristics. Individual assets within the cohort will retire at different moments but the efficiency-retirement profile for the cohort as a whole is typically convex to the origin.

- 6.255 The efficiency profiles of fixed assets determine the profiles of the benefits they command over their service lives. Once the profiles of the benefits over the service lives of the fixed asset have been determined, it becomes possible to calculate the consumption of fixed capital, period by period.

Rates of consumption of fixed capital

- 6.256 Consumption of fixed capital is derived as the reduction in the present value of the remaining benefits, as explained earlier. This reduction, and the rate at which it takes place over time, must be clearly distinguished from the decline in the efficiency of the capital assets themselves. Although the efficiency, and hence the benefit, of an asset with the efficiency characteristics of a light bulb may remain constant from period to period until it disintegrates, the value of the asset declines over time. It also follows that the consumption of fixed capital is not constant. It can easily be shown in this case that the decline in the present value of the remaining benefits from period to period is considerably lower earlier in the life of the asset than when the asset is approaching the end of its life. Consumption of fixed capital tends to increase as the asset gets older even though the efficiency and benefits remain constant to the end.

Values of consumption of fixed capital

- 6.257 Consumption of fixed capital should not be estimated in isolation from the derivation of a set of capital stock data. Such data are needed for the balance sheet and, as shown in chapter 20, trying to identify consumption of fixed capital in isolation from the level of the stock of the asset and its patterns of price and efficiency decline is likely to be error prone.

The annex to chapter 6 contains very detailed explanation about how to distinguish output due to storage from holding gains and losses.

Chapter 7: The distribution of income accounts

A. Introduction

- 7.1 There are two accounts that record how income arising from involvement in processes of production or from ownership of assets needed for production are distributed among institutional units and the second of these is further subdivided in two also:
- The generation of income account;
 - The allocation of primary income account;
 - The entrepreneurial income account; and
 - The allocation of other primary income account.
- 7.2 Basic to all these accounts is the concept of primary income. **Primary incomes are incomes that accrue to institutional units as a consequence of their involvement in processes of production or ownership of assets that may be needed for purposes of production.** A major item of primary income is compensation of employees that represents the income accruing to individuals in return for their labour input into production processes. Property income is that part of primary incomes that accrues by lending or renting financial or natural resources, including land, to other units for use in production. Receipts from taxes on production and imports (less subsidies on production and imports) are treated as primary incomes of governments even though not all of them may be recorded as payable out of the value added of enterprises. Primary incomes do not include the payments of social contributions to social insurance schemes and the receipt of benefits from them, current taxes on income, wealth, etc. and other current transfers, such current transfers being recorded in the secondary distribution of income account.
- #### 1. The generation of income account
- 7.3 The generation of income account (shown in table 7.1) represents a further extension or elaboration of the production account in which the primary incomes accruing to government units and to the units participating directly in production are recorded. Like the production account, it may be compiled for establishments and industries as well as for institutional units and sectors. The generation of income account shows the sectors, subsectors or industries in which the primary incomes originate, as distinct from the sectors or subsectors destined to receive such incomes. For example, the only compensation of employees recorded in the generation of income account for the household sector consists of the compensation of employees payable by unincorporated enterprises owned by households. This item is very different from the compensation of employees receivable by the household sector, which is recorded in the account below, the allocation of primary income account.
- 7.4 The resources, listed on the right-hand side of the generation of income account, consist of only a single item, value added, the balancing item carried forward from the production account. As stated in chapter 6, value added may be measured before the deduction of consumption of fixed capital (gross) or after the deduction of consumption of fixed capital (net). Provision must also be made throughout the remaining accounts of the SNA for the relevant balancing items to be measured gross or net of consumption of fixed capital. The concept and measurement of consumption of fixed capital have already been explained in detail in chapter 6. For simplicity, it will be assumed that value added is measured net, except when the context requires gross value added to be referred to explicitly.
- 7.5 The left-hand side of the generation of income account records the uses of value added. There are only two main types of charges that producers have to meet out of value added: compensation of employees payable to workers employed in the production process and any taxes, less subsidies, on production payable or receivable as a result of engaging in production. **Compensation of employees is defined as the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period. Taxes less subsidies on production consist of taxes payable or subsidies receivable on goods or services produced as outputs and other taxes or subsidies on production, such as those payable on the labour, machinery, buildings or other assets used in production.** Taxes on production do not include any income taxes payable by the recipients of incomes accruing from production, whether employers or employees.
- 7.6 The content of the item taxes less subsidies on production payable out of value added varies according to the way in which output is valued. Value added tax (VAT), or other similar deductible tax, invoiced on output is never treated as part of the price receivable by the producer from the purchaser. Invoiced VAT is always omitted from value of output, whether output is valued at producers' or basic prices. Hence, invoiced VAT is not a charge against value added and is not recorded as a payable in the producer's generation of income account. However, when output is valued at producers' prices, any other tax on products payable on the output is treated as an integral part of the price receivable

by the producer from the purchaser. The tax is recorded as being payable by the producer out of value added at producers' prices in the generation of income account, that is, as a component of the item "taxes less subsidies on production". Similarly, any subsidy on products receivable on the output is recorded as being receivable by the producer from government in the generation of income account as a supplement to value added at producers' prices. By convention, it is not recorded under resources but as a component of "taxes less subsidies on production" as if it were a negative tax on output.

- 7.7 As explained in chapter 6, the basic price is obtained from the producer's price by deducting any tax on products payable on a unit of output (other than invoiced VAT already omitted from the producer's price) and adding any subsidy on products receivable on a unit of output. In consequence, no taxes on products or subsidies on products are to be recorded as payables or receivables in the producer's generation of income account when value added is measured at basic prices, the preferred valuation basis in the SNA. When basic prices are used to value output, the item "taxes less subsidies on production" refers only to other taxes or subsidies on production.
- 7.8 After deducting compensation of employees and taxes, less subsidies, on production from value added, the balancing item of the generation of income account is obtained. The balancing item is shown on the left-hand side of the account under uses. It measures the surplus or deficit accruing from production before taking account of any interest, rent or similar charges payable on financial assets or natural resources borrowed or rented by the enterprise, or any interest, rent or similar receipts receivable on financial assets or natural resources owned by the enterprise.

Operating surplus and mixed income

- 7.9 The balancing item is described as operating surplus except for unincorporated enterprises owned by households in which the owner(s) or members of the same household may contribute unpaid labour inputs of a similar kind to those that could be provided by paid employees. In the latter case, the balancing item is described as mixed income because it implicitly contains an element of remuneration for work

done by the owner, or other members of the household, that cannot be separately identified from the return to the owner as entrepreneur. In many cases, though, the element of remuneration may dominate the value of mixed income. In practice, all unincorporated enterprises owned by households that are not quasi-corporations are deemed to have mixed income as their balancing item, except owner-occupiers in their capacity as producers of housing services for own final consumption, households leasing dwellings and households employing paid domestic staff. For owner-occupiers and those leasing dwellings, all value added is operating surplus. For domestic staff all value added is compensation of employees (unless any taxes or subsidies on production are payable or receivable on the output).

- 7.10 As noted in chapter 6, gross domestic product (GDP) at market prices is equal to the sum of the gross value added of all resident enterprises plus those taxes, less subsidies, on products that are not payable on the values of the outputs of those enterprises, that is, taxes or subsidies on imports plus non-deductible VAT when output is valued at producers' prices, and all taxes or subsidies on products when output is valued at basic prices. For this reason, taxes and subsidies on imports and VAT must also be recorded under uses of GDP in the generation of income account for the total economy, even though they do not appear in the generation of income account for individual institutional units or sectors.
- 7.11 As already noted, the preferred measure of value added is after deducting consumption of fixed capital, that is, net value added. However, provision is made in the accounts of the SNA for value added, and all subsequent balancing items that depend on value added, to be measured gross or net of consumption of fixed capital. Operating surplus and mixed income may therefore both be expressed as gross or net.
- 7.12 Operating surplus or mixed income is a measure of the surplus accruing from processes of production before deducting any explicit or implicit interest charges, rent or other property incomes payable on the financial assets, land or other natural resources required to carry on the production. It is, therefore, invariant as to whether:

Table 7.1: The generation of income account - concise form - uses

Uses									
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Compensation of employees	986	44	98	11	11	1 150			1 150
Taxes on production and imports						235			235
Subsidies						-44			-44
Operating surplus, gross	292	46	27	84	3	452			452
Mixed income, gross				61		61			61
Consumption of fixed capital on gross operating surplus	157	12	27	15	3	214			
Consumption of fixed capital on gross mixed income				8		8			
<i>Operating surplus, net</i>	135	34	0	69	0	238			238
<i>Mixed income, net</i>				53		53			53

- a. The land or other natural resources used in production are owned or rented by the enterprise; and
- b. The inventories, fixed assets, land or other natural resources owned by the enterprise and used in production are financed out of own funds (or equity capital) or out of borrowed funds (or loan capital).
- 7.13 Although operating surplus or mixed income is invariant to the extent to which land is owned or assets in general are financed, it needs to be sufficient to cover both any explicit, or implicit, rent on land and the explicit, or implicit, interest charges on the value of all the assets owned by the enterprise in order to justify their continued use in production. The implicit interest costs of using the enterprise's own funds to purchase inventories, fixed assets or other assets are the opportunity costs of using the funds in this way rather than to acquire financial assets on which interest could be earned. These costs are captured in estimates of capital services. The amounts of rent and interest actually payable on rented land and borrowed funds are recorded in the allocation of primary income account and the entrepreneurial income account.
- 7.14 The operating surplus or mixed income of an individual producer unit is not invariant, however, to the extent to which the fixed assets used in production are owned or rented. When buildings, other structures, machinery or equipment are rented by an enterprise, the payments of rentals under an operating lease are recorded as purchases of services. These services form part of intermediate consumption. Thus, as explained in chapter 17, the payment of the rental on a fixed asset tends to reduce gross value added below what it would be if the producer owned the asset. The impact on net value added is mitigated by the fact that a tenant, or lessee, incurs no consumption of fixed capital. However, even net value added will tend to be lower when a fixed asset is rented as the rental has to cover the lessor's operating and interest costs. At the level of the total economy, the lower surpluses accruing to tenants or lessees will tend to be counterbalanced by the operating surpluses earned by the lessors.

2. The allocation of primary income account

- 7.15 Whereas the generation of income account focuses on resident institutional units or sectors in their capacity as producers whose activities generate primary incomes, the allocation of primary income account (shown in table 7.2) focuses on resident institutional units or sectors in their capacity as recipients of primary incomes. The allocation of primary income account shows where the items payable in the generation of income account are receivable and also includes the amounts of property incomes receivable and payable by institutional units or sectors. As already noted, the generation of income account, being related to production activities, can be compiled for establishments and industries as well as for institutional units and sectors. However, the allocation of primary income account has no such direct link with production and can only be compiled for institutional units and sectors.
- 7.16 Enterprises may invest surplus funds in financial assets or even land, especially in times of uncertainty and high interest rates. Considerable property income may be received from such investments. The property income paid out by a corporation will be influenced by the amount of property income received as well as by its operating surplus. Thus, it is not appropriate to record all the property income paid out by an enterprise as if it were chargeable against operating surplus. Some interest costs, especially implicit costs, may be attributable to assets other than those used in production. For this reason, the explicit and implicit interest costs payable by an enterprise ought not to be recorded in the generation of income account in which the resources consist only of value added accruing from production. They are recorded in the allocation of primary income account along with any property income receivable as well as the operating surplus.
- 7.17 There are two kinds of income listed under resources on the right-hand side of the allocation of primary income account. The first shows where primary incomes already recorded in the generation of income account are receivable, as follows:

Table 7.1 (cont): The generation of income account - concise form - resources

Transactions and balancing items	Resources								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Value added, gross / Gross domestic product	1 331	94	126	155	15	1 854			1 854
Value added, net / Net domestic product	1 174	82	99	132	12	1 632			1 632
Compensation of employees									
Taxes on production and imports									
Subsidies									

- a. Compensation of employees receivable by households or non-resident households;
- b. Taxes (less subsidies) on production or imports receivable (or payable) by government units or a foreign government;
- c. Operating surplus, or mixed income, of enterprises carried forward from the generation of income account.
- d. The second kind of income consists of property incomes receivable from the ownership of financial assets or natural resources:
- e. Investment income receivable by the owners of financial assets from either resident or non-resident units;
- f. Rent receivable by owners of natural resources leased to other units.

The balancing items and national income

7.18 The uses, listed on the left-hand side of the allocation of primary income account, consist only of the property incomes payable by institutional units or sectors to creditors, shareholders, landowners, etc. Except for rent on natural resources, these may be payable to non-residents as well as residents. The remaining item recorded under uses is the balancing item, *the balance of primary incomes, defined as the total value of the primary incomes receivable by an institutional unit or sector less the total of the primary incomes payable*. At the level of the total economy it is described as national income.

7.19 The composition of the balance of primary incomes varies considerably from one sector to another as certain types of primary incomes are receivable by certain sectors only or by non-residents. In particular, taxes are received only by the general government sector and non-residents while compensation of employees is received only by the household sector and non-residents. These balances are described below.

- a. The balance of primary incomes of the non-financial and financial corporate sectors consists only of operating surplus plus property income receivable less property income payable.
- b. The balance of primary incomes of the general government sector consists of taxes on production and on imports receivable less subsidies on production payable, plus property income receivable less property income payable. It may also include a small amount of operating surplus from units within general government undertaking market production.
- c. The balance of primary incomes of the household sector consists of compensation of employees and mixed incomes accruing to households, plus property income receivable less property income payable. It also includes the operating surplus from housing services produced for own consumption by owner-occupiers.
- d. The balance of primary incomes of the non-profit institutions serving households (NPISHs) sector consists almost entirely of property income receivable less property income payable.

Net national income and gross national income

7.20 *Net national income (NNI) is the aggregate value of the net balances of primary incomes summed over all sectors. Similarly, gross national income (GNI) is the aggregate value of the gross balances of primary incomes for all sectors.*

7.21 Gross value added is strictly a production measure defined only in terms of output and intermediate consumption. It follows that GDP is also a production measure as it is obtained by summing the gross value added of all resident institutional units, in their capacities as producers, and adding the values of any taxes, less subsidies, on production or imports not already included in the values of the outputs, and value added, of resident producers. GNI is obtained by summing the balance of primary incomes of the same resident institutional units. It follows that the difference

Table 7.2: The allocation of primary income account - concise form - uses

Uses	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items									
Compensation of employees							6		6
Taxes on production and imports									0
Subsidies									0
Property income	134	168	42	41	6	391	44		435
Balance of primary incomes, gross / National income, gross	254	27	198	1 381	4	1 864			1 864
Balance of primary income, net / National income, net	97	15	171	1 358	1	1 642			1 642

between the numerical values of GNI and GDP is equal to the difference between the total primary incomes receivable by residents from non-residents and the total primary incomes payable by residents to non-residents (that is, net income from abroad). However, as both GDP and GNI are obtained by summing over the same set of resident institutional units, there is no justification for labelling one as “domestic” and the other as “national”. Both aggregates refer to the total economy defined as the complete set of resident institutional units or sectors. The difference between them is not one of coverage but the fact that one measures production while the other measures income.

Both have an equal claim to be described as domestic or as national. However, as the terms “gross domestic product” and “gross national income” are deeply embedded in economic usage, it is not proposed to change them. Emphasis should be given, however, to the third rather than second letter of the acronym to emphasize the fact that GDP refers to production (output) and GNI to income.

Paragraphs 7.22 to 7.27 discuss the entrepreneurial account and the allocation of other primary income account. These are shown in table 7.3 (not included here).

B. Compensation of employees

1. Identifying employees

7.28 It is not always self-evident whether a person is an employee or self-employed, for example, some workers paid by results may be employees while others may be self-employed. The boundary also affects the subsectoring of the household sector. The definitions in the SNA are consistent with resolutions of the International Conference of Labour Statisticians (ICLS) concerning the definitions of the economically active population. For the SNA, though, the main objective is to clarify the nature of the employment relationship in order to fix the boundary between compensation of employees and other kinds of receipts. Some persons who in labour statistics may be included with the self-employed, in particular some owners of quasi-corporations and owner-managers of corporations, are treated in the SNA as employees. Further discussion on the measurement of the labour force and definitions of the related terms appear in chapter 19.

The employment relationship

7.29 In order to be classified as employed, that is, either as an employee or self-employed, the person must be engaged in an activity that falls within the production boundary of the SNA. The relationship of employer to employee exists

when there is a written or oral agreement, which may be formal or informal, between an enterprise and a person, normally entered into voluntarily by both parties, whereby the person works for the enterprise in return for remuneration in cash or in kind. The remuneration is normally based on either the time spent at work or some other objective indicator of the amount of work done.

7.30 The self-employed are persons who work for themselves, when the enterprises they own are distinguished neither as separate legal entities nor as separate institutional units in the SNA. They may be persons who are the sole owners, or joint owners, of the unincorporated enterprises in which they work; members of a producers’ cooperative or contributing family workers (that is, family members who work in an unincorporated enterprise without pay).

a. Workers engaged in production undertaken entirely for their own final consumption or own capital formation, either individually or collectively, are self-employed. Although a value may be imputed for the output of own-account production based on costs, including estimated labour costs, no imputation is made for the wages of workers engaged in such production, even in the case of collective, or communal, projects undertaken by groups of persons working together. The sur-

Table 7.2 (cont): The allocation of primary income account - concise form - resources

Transactions and balancing items	Resources								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Operating surplus, gross	292	46	27	84	3	452			452
Mixed income, gross				61		61			61
<i>Operating surplus, net</i>	135	34	0	69	0	238			238
<i>Mixed income, net</i>				53		53			53
Compensation of employees				1 154		1 154	2		1 156
Taxes on production and imports			235			235			235
Subsidies			- 44			- 44			- 44
Property income	96	149	22	123	7	397	38		435

plus of the imputed value of the output over any monetary costs or taxes on production explicitly incurred is treated as gross mixed income.

- b. Contributing family workers, including those working without pay in unincorporated enterprises engaged wholly or partly in market production, are also treated as self-employed.
- c. The whole of the equity of a corporation may be owned by a single shareholder or small group of shareholders. When those shareholders also work for the corporation and receive paid remuneration other than dividends, the shareholders are treated as employees. The owners of quasi-corporations who work in those quasi-corporations and receive paid remuneration other than withdrawal of earnings from the quasi-corporation are also treated as employees.
- d. Outworkers may be either employees or self-employed depending on their exact status and circumstances. The treatment of outworkers is specified in more detail below.

7.31 The remuneration of the self-employed is treated as mixed income.

7.32 Students in their capacity as consumers of educational or training services are not employees. However, if students also have a formal commitment whereby they contribute some of their own labour as an input into an enterprise's process of production, for example, as apprentices or similar kinds of worker trainees, articulated clerks, student nurses, research or teaching assistants, hospital interns, etc., they are treated as employees, whether or not they receive any remuneration in cash for the work that they do in addition to training received as in-kind payment.

Employers and own-account workers

7.33 Self-employed persons may be divided into two groups: those who do and those who do not engage paid employees on a continuous basis. Those who do engage employees on a continuous basis are described as employers and those without paid employees are described as own-account workers. The distinction is used for purposes of subsectoring the household sector. Own-account workers may be further subdivided into outworkers who are under some kind of formal or informal contract to supply goods or services to a particular enterprise, and ordinary own-account workers who may be engaged in either market production or production for own final consumption or own capital formation.

Outworkers

7.34 An outworker is a person who agrees to work for a particular enterprise or to supply a certain quantity of goods or services to a particular enterprise, by prior arrangement or contract with that enterprise, but whose place of work is not within any of the establishments that make up that enterprise. The enterprise does not control the time spent at work

by an outworker and does not assume responsibility for the conditions in which that work is carried out, although it may carry out checks on the quality of work. Most outworkers work at home but may use other premises of their own choice. Some outworkers are provided with the equipment or materials, or both, on which they work, by an enterprise but other outworkers may purchase their own equipment or materials, or both. In any case, outworkers have to meet some production costs themselves: for example, the actual or imputed rentals on the buildings in which they work; heating, lighting and power; storage or transportation; etc.

7.35 Outworkers have some of the characteristics of employees and some of the characteristics of self-employed workers. The way in which they are to be classified is determined primarily by the basis on which they are remunerated. A distinction can be drawn between two cases that, in principle, are quite different from one another:

- a. The person is remunerated directly, or indirectly, on the basis of the amount of work done, that is, by the amount of labour that is contributed as an input into some process of production, irrespective of the value of the output produced or the profitability of the production process. This kind of remuneration implies that the worker is an employee.
- b. The income received by the person is a function of the value of the outputs from some process of production for which that person is responsible, however much or little work was put in. This kind of remuneration implies that the worker is self-employed.

7.36 In practice it may not always be easy to distinguish between employees and self-employed on the basis of these criteria. Outworkers who employ and pay others to work for them must be treated as the self-employed owners of unincorporated enterprises, that is as employers. The issue, therefore, is to distinguish own-account workers from employees.

7.37 An outworker is considered an employee when an employment relationship exists between the enterprise and the outworker. This implies the existence of an implicit or explicit employment contract or agreement whereby it is agreed that the outworker is remunerated on the basis of the work done. Conversely, an outworker is considered to be an own-account worker when there is no such implicit or explicit employment contract or agreement and the income earned by the outworker depends on the value of the goods or services supplied to the enterprise. This suggests that decisions on markets, scale of operations and finance are likely to be in the hands of self-employed outworkers who are also likely to own, or rent, the machinery or equipment on which they work.

7.38 The status of an outworker has important implications for the accounts. When the outworker is an own-account worker, the payment from the enterprise to the outworker constitutes a purchase of intermediate goods or services. For the outworker, the payment from the enterprise represents the value of output and the excess over direct costs to the outworker (treated as intermediate consumption) is gross mixed income. When the outworker is an employee,

the payment constitutes compensation of employees and so is paid out of the value added of the enterprise. Thus, the outworker's status affects the distribution of value added between enterprises as well as the distribution of incomes between compensation of employees of the employing enterprise and net mixed income of the household of the outworker.

2. The components of compensation of employees

7.39 Compensation of employees is recorded under uses in the generation of income account and under resources in the allocation of primary income account. The uses side of the generation of income account showing the detailed entries for compensation of employees is given in table 7.4 and the corresponding resources part of the allocation of primary income account in table 7.5. The only item, apart from the balancing items, relevant to these accounts that is not shown is the entry for compensation of employees payable by the rest of the world, which appears in the uses part of the allocation of primary income account.

7.40 As noted above, compensation of employees is defined as the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period.

7.41 Compensation of employees is recorded on an accrual basis; that is, it is measured by the value of the remuneration in cash or in kind that an employee becomes entitled to receive from an employer in respect of work done during the relevant period, whether paid in advance, simultaneously or in arrears of the work itself. No compensation of employees is payable in respect of unpaid work undertaken voluntarily, including the work done by members of a household within an unincorporated enterprise owned by the same household. Compensation of employees does not include any taxes payable by the employer on the wage and salary bill, for example, a payroll tax; such taxes are treated as taxes on production in the same way as taxes on buildings, land or other assets used in production.

7.42 Compensation of employees has two main components:

- a. Wages and salaries payable in cash or in kind;
- b. Social insurance contributions payable by employers, which include contributions to social security schemes; actual social contributions to other employment-related social insurance schemes and imputed social contributions to other employment-related social insurance schemes.

Social insurance schemes and the nature of benefits they provide are discussed in section D of chapter 8.

Wages and salaries

7.43 Wages and salaries include the values of any social contributions, income taxes, etc., payable by the employee even if they are actually withheld by the employer for administrative convenience or other reasons and paid

directly to social insurance schemes, tax authorities, etc., on behalf of the employee. Wages and salaries may be paid in various ways, including goods or services provided to employees as remuneration in kind instead of, or in addition to, remuneration in cash.

Wages and salaries in cash

7.44 Wages and salaries in cash include the following kinds of remuneration:

- a. Wages or salaries payable at regular weekly, monthly or other intervals, including payments by results and piecework payments; enhanced payments or special allowances for working overtime, at nights, at week-ends or other unsocial hours; allowances for working away from home or in disagreeable or hazardous circumstances; expatriation allowances for working abroad; etc.;
- b. Supplementary allowances payable regularly, such as housing allowances or allowances to cover the costs of travel to and from work, but excluding social benefits (see below);
- c. Wages or salaries payable to employees away from work for short periods, for example, on holiday or as a result of a temporary halt to production, except during absences due to sickness, injury, etc. (see below);
- d. Ad hoc bonuses or other exceptional payments linked to the overall performance of the enterprise made under incentive schemes;
- e. Commissions, gratuities and tips received by employees: these should be treated as payments for services rendered by the enterprise employing the worker, and so should also be included in the output and gross value added of the employing enterprise when they are paid directly to the employee by a third party.

7.45 Wages and salaries in cash do not include the reimbursement by employers of expenditures made by employees in order to enable them to take up their jobs or to carry out their work. For example:

- a. The reimbursement of travel, removal or related expenses made by employees when they take up new jobs or are required by their employers to move their homes to different parts of the country or to another country;
- b. The reimbursement of expenditures by employees on tools, equipment, special clothing or other items that are needed exclusively, or primarily, to enable them to carry out their work.

The amounts reimbursed are treated as intermediate consumption by employers. To the extent that employees who are required by their contract of employment to purchase tools, equipment, special clothing, etc., are not fully reim-

bursed, the remaining expenses they incur should be deducted from the amounts they receive in wages and salaries and the employers' intermediate consumption increased accordingly. Expenditures on items needed exclusively, or primarily, for work do not form part of household final consumption expenditures, whether reimbursed or not.

Wages and salaries in kind

7.51 Almost any kind of consumption good or service may be provided as remuneration in kind. The following includes some of the most common types of goods and services provided without charge, or at reduced prices, by employers to their employees:

- a. meals and drinks provided on a regular basis including any subsidy element of an office canteen (for practical reasons, it is unnecessary to make estimates for meals and drinks consumed as part of official entertainment or during business travel);
- b. housing services or accommodation of a type that can be used by all members of the household to which the employee belongs;
- c. the services of vehicles or other durables provided for the personal use of employees;
- d. goods and services produced as outputs from the employer's own processes of production, such as free travel for the employees of railways or airlines, or free coal for miners;
- e. sports, recreation or holiday facilities for employees and their families;
- f. transportation to and from work, free or subsidized car parking, when it would otherwise have to be paid for;
- g. childcare for the children of employees.

Employers' social contributions

7.56 *Employers' social contributions are social contributions payable by employers to social security funds or other employment-related social insurance schemes to secure social benefits for their employees.* Social security schemes are operated by general government; other

employer-related social insurance schemes may be operated by the employers themselves, by an insurance corporation or may be an autonomous pension scheme.

7.57 As employers' social contributions are made for the benefit of their employees, their value is recorded as one of the components of compensation of employees together with wages and salaries in cash and in kind. The social contributions are then recorded as being paid by the employees as current transfers to the social security schemes or other employment-related social insurance schemes. Although it is administratively more efficient for employers to pay the contributions on behalf of their employees, this must not be allowed to obscure the underlying economic reality. The payment made by the employer to the social security scheme or other employment-related social insurance schemes is not, in fact, a current transfer to the fund on the part of the employer. The transfer takes place between the employee and the social security scheme or other employment-related social insurance schemes out of remuneration provided by the employer. The situation is parallel to one in which income taxes payable by employees are deducted by employers from the wages or salaries and paid directly to the tax authorities. In this case, it is evident that the taxes are not current transfers payable by the employers. It is customary to describe the employers' social contributions as being re-routed in the accounts via the employees' primary and secondary distribution of income accounts. However, the accounts depict the various payables and receivables correctly. The direct payment of social contributions, or income taxes, by employers to social security schemes, other employment-related social insurance schemes or tax authorities is merely a short cut taken on grounds of administrative convenience and efficiency.

7.58 An amount equal in value to employers' social contributions is first recorded in the generation of income account as one of the components of compensation of employees and then recorded either in the secondary distribution of income account as being transferred by households to social security funds or other employment-related social insurance schemes as the case may be, or is recorded in the use of income account as the payment by households for the financial services associated with running the schemes. The transactions are recorded simultaneously in all three accounts at the times when the work that gives rise to the requirement to pay the contributions is carried out. The contributions paid to social security schemes may be fixed amounts per employee or may vary with the levels of wages or salaries paid. The amounts paid under other employment-related social insurance schemes depend on the arrangements agreed between employers and employees.

C. Taxes on production and on imports

1. Recording of taxes on production and on imports

7.71 *Taxes are compulsory, unrequited payments, in cash or in kind, made by institutional units to government units.*

They are described as unrequited because the government provides nothing in return to the individual unit making the payment, although governments may use the funds raised in taxes to provide goods or services to other units, either individually or collectively, or to the community as a whole.

- 7.72 The full classification of taxes on production and on imports consists of:

- Taxes on products,
 - Value added type taxes (VAT),
 - Taxes and duties on imports excluding VAT,
 - Import duties,
 - Taxes on imports excluding VAT and duties,
 - Export taxes,
 - Taxes on products, excluding VAT, import and export taxes,
- Other taxes on production.

- 7.73 At the highest level of the classification, taxes on production and on imports consist of taxes on products and other taxes on production. Taxes on products consist of taxes on goods and services that become payable as a result of the production, sale, transfer, leasing or delivery of those goods or services, or as a result of their use for own consumption or own capital formation. The way in which taxes on products are recorded in the SNA depends on the valuation used for the recording of output as described below. Other taxes on production consist mainly of taxes on the ownership or use of land, buildings or other assets used in production or on the labour employed, or compensation of employees paid. Whatever the valuation of output used, other taxes on production are always recorded as a charge on value added in the generation of income account.

- 7.74 A full explanation of the content of each of the categories of taxes on production and on imports is given below after a discussion of the rules of recording taxes. This explanation provides links to the main publications of data on tax yields, the *GFSM2001* and *Revenue Statistics* (Organisation for Economic Co-operation and Development (OECD), annual publication).

- 7.75 In business accounting, taxes on production, except invoiced VAT, are usually regarded as costs of production that may be charged against sales or other receipts when calculating profits for tax or other purposes. They correspond to “indirect taxes” as traditionally understood, indirect taxes being taxes that supposedly can be passed on, in whole or in part, to other institutional units by increasing the prices of the goods or services sold. However, it is extremely difficult, if not impossible, to determine the real incidence of different kinds of taxes, and the use of the terms “direct” and “indirect” taxes has fallen out of favour in economics and is not used in the SNA.

The recording of taxes on production and on imports in the accounts

- 7.76 Taxes on production and imports are recorded under uses in the generation of income account and under resources in the allocation of primary income account.
- 7.77 In the generation of income account, taxes on imports are recorded only at the level of the total economy as they are not payable out of the value added of domestic producers.

Moreover, at the level of an individual institutional unit or sector, only those taxes on products that have not been deducted from the value of the output of that unit or sector need to be recorded under uses in its generation of income account. These vary depending upon the way in which output is valued. When output is valued at basic prices, all taxes (subsidies) on products payable (receivable) on the goods or services produced as outputs are deducted from (added to) the value of that output at producers’ prices. Therefore they do not have to be recorded under uses in the generation of income account of the units or sectors concerned, being recorded only at the level of the total economy, in the same way as taxes on imports. When output is valued at producers’ prices, all taxes or subsidies on products payable or receivable on outputs have to be recorded under uses in the generation of income accounts of the units or sectors concerned, except invoiced VAT or similar deductible taxes as invoiced VAT is never included in the value of output. Non-deductible VAT and similar taxes are recorded under uses only at the level of the total economy, like taxes on imports.

- 7.78 Other taxes or subsidies on production, that is, taxes payable on the land, assets, labour, etc., employed in production are not taxes payable per unit of output and cannot be deducted from the producer’s price. They are recorded as being payable out of the value added of the individual producers or sectors concerned.

- 7.79 In the allocation of primary income account, taxes on production and imports appear under resources only for the general government sector and the total economy, apart from any such taxes payable to foreign governments.

Taxes versus fees

- 7.80 One of the regulatory functions of governments is to forbid the ownership or use of certain goods or the pursuit of certain activities, unless specific permission is granted by issuing a licence or other certificate for which a fee is demanded. If the issue of such licences involves little or no work on the part of government, the licences being granted automatically on payment of the amounts due, it is likely that they are simply a device to raise revenue, even though the government may provide some kind of certificate, or authorization, in return. However, if the government uses the issue of licences to exercise some proper regulatory function, for example, checking the competence, or qualifications, of the person concerned, checking the efficient and safe functioning of the equipment in question, or carrying out some other form of control that it would otherwise not be obliged to do, the payments made should be treated as purchases of services from government rather than payments of taxes, unless the payments are clearly out of all proportion to the costs of providing the services. The borderline between taxes and payments of fees for services rendered is not always clear-cut in practice (see paragraph 8.64(c) below for a further explanation of this matter in the case of households). The general case of government issued permits is discussed in part 5 of chapter 17.

Paragraphs 7.81 to 7.86 discuss links with the IMF and OECD tax classifications and the accrual basis of recording of taxes.

Taxes and subsidies within the primary distribution of income accounts

7.87 Table 7.6 shows the details of taxes and subsidies as uses in the generation of income account; table 7.7 shows them as resources in the allocation of primary income account. Because of the way that taxes on products and subsidies on products are recorded in the SNA, no details of payables by sector appear in table 7.6, only the totals. This is consistent with the presentation in table 6.1. Taxes and subsidies on products payable by the rest of the world appear in the resources part of the allocation of primary income account, not shown here.

2. Taxes on products

7.88 ***A tax on a product is a tax that is payable per unit of some good or service.*** The tax may be a specific amount of money per unit of quantity of a good or service (the quantity units being measured either in terms of discrete units or continuous physical variables such as volume, weight, strength, distance, time, etc.), or it may be calculated ad valorem as a specified percentage of the price per unit or value of the goods or services transacted. A tax on a product usually becomes payable when it is produced, sold or imported, but it may also become payable in other circumstances, such as when a good is exported, leased, transferred, delivered, or used for own consumption or own capital formation. An enterprise may or may not itemize the amount of a tax on a product separately on the invoice or bill that it charges its customers.

Value added type taxes

7.89 ***A value added type tax (VAT) is a tax on goods or services collected in stages by enterprises but that is ultimately charged in full to the final purchasers.*** Such taxes have already been described in paragraphs 6.55 to 6.62. They are described as a “deductible” tax because producers are not usually required to pay to the government the full amount of the tax they invoice to their customers, being permitted to deduct the amount of tax they have been invoiced on their own purchases of goods or services intended for intermediate consumption or fixed capital formation. VAT is usually calculated on the price of the good or service including any other tax on the product. VAT is also payable on imports of goods or services in addition to any import duties or other taxes on the imports.

Taxes and duties on imports, excluding VAT

7.90 ***Taxes and duties on imports consist of taxes on goods and services that become payable at the moment when those goods cross the national or customs frontiers of the economic territory or when those services are delivered by non-resident producers to resident institutional units.***

7.91 Imported goods on which all the required taxes on imports have been paid when they enter the economic territory may subsequently become subject to a further tax, or taxes, as they circulate within the economy. For example, excise duties or sales taxes may become due on goods as they pass through the chain of wholesale or retail distribution, such taxes being levied on all goods at the same point, whether those goods have been produced by resident enterprises or imported. Taxes payable subsequently on goods that have been already imported are not recorded as taxes on imports but as taxes on products, excluding VAT, import and export taxes.

7.92 Exceptionally, some taxes and duties may be payable on goods that physically enter the country but where there is no change of ownership so they are not treated as imports. Nevertheless, any such taxes and duties are still included in the heading of taxes and duties on imports.

Import duties

7.93 ***Import duties consist of customs duties, or other import charges, that are payable on goods of a particular type when they enter the economic territory.*** The duties are specified under customs tariff schedules. They may be intended as a means of raising revenue or discouraging imports in order to protect resident goods producers.

Taxes on imports, excluding VAT and duties

7.94 ***Taxes on imports, excluding VAT and duties consist of all taxes (except VAT and import duties) as defined in the GFSM/OECD classifications that become payable when goods enter the economic territory or services are delivered by non-residents to residents.***

Export taxes

7.95 ***Export taxes consist of taxes on goods or services that become payable by government when the goods leave the economic territory or when the services are delivered to non-residents.***

Taxes on products, excluding VAT, import and export taxes

7.96 ***Taxes on products, excluding VAT, import and export taxes, consist of taxes on goods and services that become payable as a result of the production, sale, transfer, leasing or delivery of those goods or services, or as a result of their use for own consumption or own capital formation.***

3. Other taxes on production

7.97 ***Other taxes on production consist of all taxes except taxes on products that enterprises incur as a result of engaging in production.*** Such taxes do not include any taxes on the profits or other income received by the enterprise and are payable regardless of the profitability of the production. They may be payable on the land, fixed assets or labour employed in the production process or on certain activities or transactions.

D. Subsidies

7.98 ***Subsidies are current unrequited payments that government units, including non-resident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services that they produce, sell or import.*** They are receivable by resident producers or importers. In the case of resident producers they may be designed to influence their levels of production, the prices at which their outputs are sold or the remuneration of the institutional units engaged in production. Subsidies have the same impact as negative taxes on production in so far as their impact on the operating surplus is in the opposite direction to that of taxes on production.

7.99 Subsidies are not payable to final consumers; current transfers that governments make directly to households as consumers are treated as social benefits. Subsidies also do not include grants that governments may make to enterprises in order to finance their capital formation, or compensate them for damage to their capital assets, such grants being treated as capital transfers.

1. Subsidies on products

7.100 ***A subsidy on a product is a subsidy payable per unit of a good or service.*** The subsidy may be a specific amount of money per unit of quantity of a good or service, or it may be calculated ad valorem as a specified percentage of the price per unit. A subsidy may also be calculated as the difference between a specified target price and the market price actually paid by a buyer. A subsidy on a product usually becomes payable when the good or service is produced, sold or imported, but it may also be payable in other circumstances such as when a good is transferred, leased, delivered or used for own consumption or own capital formation.

Import subsidies

7.101 ***Import subsidies consist of subsidies on goods and services that become payable when the goods cross the frontier of the economic territory or when the services are delivered to resident institutional units.*** They include implicit subsidies resulting from the operation of a system of official multiple exchange rates. They may also include losses incurred as a matter of deliberate government policy by government trading organizations whose function is to purchase products from non-residents and then sell them at

lower prices to residents (see also export subsidies). Export subsidies consist of all subsidies on goods and services that become payable by government when the goods leave the economic territory or when the services are delivered to non-resident units.).

7.102 As in the case of taxes on products, subsidies on imported goods do not include any subsidies that may become payable on such goods after they have crossed the frontier and entered into free circulation within the economic territory of the country.

Export subsidies

7.103 ***Export subsidies consist of all subsidies on goods and services that become payable by government when the goods leave the economic territory or when the services are delivered to non-resident units.***

Exclusions from export subsidies

7.104 Export subsidies do not include the repayment at the customs frontier of taxes on products previously paid on goods or services while they were inside the economic territory. They also exclude the waiving of the taxes that would be due if the goods were to be sold or used inside the economic territory instead of being exported. General taxes on products such as sales or purchase taxes, VAT, excise taxes or other taxes on products are usually not payable on exports.

Other subsidies on products

7.105 ***Other subsidies on products consist of subsidies on goods or services produced as the outputs of resident enterprises, or on imports, that become payable as a result of the production, sale, transfer, leasing or delivery of those goods or services, or as a result of their use for own consumption or own capital formation.***

2. Other subsidies on production

7.106 ***Other subsidies on production consist of subsidies except subsidies on products that resident enterprises may receive as a consequence of engaging in production.***

E. Property incomes

1. Defining property income

7.107 Property income accrues when the owners of financial assets and natural resources put them at the disposal of other institutional units. The income payable for the use of financial assets is called investment income while that pay-

able for the use of a natural resource is called rent. ***Property income is the sum of investment income and rent.***

7.108 ***Investment income is the income receivable by the owner of a financial asset in return for providing funds to another institutional unit.*** The terms governing the payment of investment income are usually specified in the

financial instrument created when the funds are transferred from the creditor to the debtor. Such arrangements are typically made only for a limited period of time, after which the funds must be returned. The period of time may be several months or several years, though the arrangements may be renewed.

7.109 **Rent is the income receivable by the owner of a natural resource (the lessor or landlord) for putting the natural resource at the disposal of another institutional unit (a lessee or tenant) for use of the natural resource in production.** The terms under which rent on a natural resource is payable are expressed in a resource lease. **A resource lease is an agreement whereby the legal owner of a natural resource that the SNA treats as having an infinite life makes it available to a lessee in return for a regular payment recorded as property income and described as rent.** A resource lease may apply to any natural resource recognized as an asset in the SNA. For resources such as land it is assumed that, at the end of the resource lease, the land is returned to the legal owner in the same state as when the lease started. For resources such as subsoil assets, though the resources potentially have an infinite life, they are not all returned to the legal owner at the end of the lease since the purpose of the lease is to permit extraction and disposal of the resource. Although the resource may suffer depletion in excess of any new discoveries or re-evaluations (or natural replenishments for renewable resources) the fact that rent is shown without deduction for any consumption of natural resources means that, in the SNA, the resource is effectively treated as having an infinite life as far as income generation is concerned.

7.110 The regular payments made by the lessees of natural resources such as subsoil assets are often described as royalties, but they are treated as rent in the SNA. The term “rent” is reserved in this manual for rent on natural resources, payments under operating leases being described as “rentals”.

7.111 Property incomes are classified in the following way in the SNA:

Investment income

- Interest
- Distributed income of corporations
 - Dividends
 - Withdrawals from income of quasi-corporations
 - Reinvested earnings on foreign direct investment
- Other investment income
 - Investment income attributable to insurance policyholders
 - Investment income payable on pension entitlements
 - Investment income attributable to collective investment fund shareholders

Rent

Each of these items is described in more detail below.

2. Interest

7.113 **Interest is a form of income that is receivable by the owners of certain kinds of financial assets, namely: deposits, debt securities, loans and (possibly) other accounts receivable**

for putting the financial asset at the disposal of another institutional unit. Income on SDR holdings and allocations is also treated as interest. The financial assets giving rise to interest are all claims of creditors over debtors. Creditors lend funds to debtors that lead to the creation of one or other of the financial instruments listed above. The amount the debtor owes the creditor is known as the principal. Over time, the amount due to the creditor declines as the debt is repaid and increases as interest accrues. The balance at any time is referred to as the principal outstanding.

7.114 Interest may be a predetermined sum of money or a fixed or variable percentage of the principal outstanding. If some or all of the interest accruing to the creditor is not paid during the period in question, it may be added to the amount of the principal outstanding or it may constitute an additional, separate liability incurred by the debtor. However, the interest may not necessarily be due for payment until a later date and sometimes not until the loan, or other financial instrument matures.

The accrual basis of recording

7.115 Interest is recorded on an accrual basis, that is, interest is recorded as accruing continuously over time to the creditor on the amount of principal outstanding. The interest accruing is the amount receivable by the creditor and payable by the debtor. It may differ not only from the amount of interest actually paid during a given period but also the amount due to be paid within the period. Some financial instruments are drawn up in such a way that the debtor is obliged to make regular interest payments, period by period, as the interest accrues but in other cases there may be no such requirement. As explained in part 4 of chapter 17, there are many different kinds of financial instruments and new instruments are continually being developed. Interest may therefore be paid in various different ways, not always explicitly described as interest. However, streams of net settlement payments under a swap or forward rate agreement contract (possibly described as “interest” in the contract) are not considered as property income but are to be recorded as transactions in financial derivatives in the financial account (see paragraphs 11.111 to 11.115).

Interest payable and receivable on loans and deposits

7.116 As explained in chapter 6, the amounts of interest on loans and deposits payable to and receivable from financial corporations include a margin that represents an implicit payment for the services provided by the financial corporations in providing loans and accepting deposits. The actual payments or receipts to or from financial corporations, described as bank interest, need to be partitioned so that SNA interest and the service charges may be recorded separately. The amounts of SNA interest paid by borrowers to financial corporations are less than bank interest by the estimated values of the charges payable, while the amounts of SNA interest receivable by depositors is higher than bank interest by the amount of the service charge payable. The values of the charges are recorded as sales of services in the production accounts of financial corporations and as uses in the accounts of their customers.

- 7.117 If bank interest is unpaid, it must be the case that both SNA interest and the service charge are unpaid. In other words, the amount of principal outstanding increases by both the amount of SNA interest unpaid plus the unpaid service charge.

Paragraphs 7.118 to 7.126 give further details of the recording of interest in special circumstances

3. Distributed income of corporations

Dividends

- 7.127 Corporations obtain funds by issuing shares in their equity that entitle the holders to a proportion of both distributed profits and the residual value of the assets of the corporation in the event of its liquidation. Shareholders are the collective owners of a corporation.

- 7.128 ***Dividends are a form of investment income to which shareholders become entitled as a result of placing funds at the disposal of corporations.*** Raising equity capital through the issue of shares is an alternative to borrowing as a way of raising funds. In contrast to loan capital, however, equity capital does not give rise to a liability that is fixed in monetary terms and it does not entitle the holders of shares of a corporation to a fixed or predetermined income.

- 7.129 Just as corporations are understood in the SNA to cover a set of institutional units engaged in production that may be described by different names such as private or public corporations, private or public companies, cooperatives and limited liability partnerships, so dividends must also be understood to cover all distributions of profits by corporations to their shareholders or owners, by whatever name they are called. Dividends may occasionally take the form of an issue of shares, but this excludes issues of bonus shares that simply represent a reclassification between own funds, reserves and undistributed profits.

Time of recording

- 7.130 Although dividends represent a part of income that has been generated over a substantial period, often six or twelve months, dividends are not recorded in the SNA on a strict accrual basis. For a short period after a dividend is declared but before it is actually payable, shares may be sold “ex dividend” meaning that the dividend is still payable to the owner at the date the dividend was declared and not to the owner on the date payable. A share sold “ex dividend” is therefore worth less than one sold without this constraint. The time of recording of dividends in the SNA is the point at which the share price starts to be quoted on an ex dividend basis rather than at a price that includes the dividend.

Super-dividends

- 7.131 Although dividends are notionally paid out of the current period’s operating surplus, corporations often smooth the payments of dividends, often paying out rather less than operating surplus but sometimes paying out a little more, especially when the operating surplus itself is very low. For practical reasons, no attempt is made in the SNA to align

dividend payments with earnings except in one circumstance. The exception occurs when the dividends are disproportionately large relative to the recent level of dividends and earnings. In order to determine whether the dividends are disproportionately large, it is helpful to introduce the concept of distributable income. ***Distributable income of a corporation is equal to entrepreneurial income, plus all current transfers receivable, less all current transfers payable and less the adjustment for the change in pension entitlements relating to the pension scheme of that corporation.*** From this it is possible to look at the ratio of dividends to distributable income over the recent past and assess the plausibility that the current level of dividends declared is in line with past practice, accepting some degree of smoothing from year to year. If the level of dividends declared is greatly in excess of this, the excess should be treated as a financial transaction, specifically the withdrawal of owners’ equity from the corporation.

- 7.132 This treatment applies to all corporations, whether incorporated or quasi-corporate and whether subject to public, foreign or domestic private control. There is more discussion on the case of publicly controlled corporations in chapter 22.

Withdrawals of income from quasi-corporations

- 7.133 ***Withdrawal of income from a quasi-corporation consists of that part of distributable income that the owner withdraws from the quasi-corporation.*** The income that the owners of quasi-corporations withdraw from them is analogous to the income withdrawn from corporations by paying out dividends to their shareholders. It is therefore treated as property income accruing to the owners of quasi-corporations. The withdrawal of income by the owners of quasi-corporations needs to be identified in order to be able to establish a full set of accounts for the entity and to treat it as an institutional unit separate from that of its owner.

- 7.134 Withdrawals of income from a quasi-corporation do not include withdrawals of funds realized by the sale or disposal of the quasi-corporation’s assets: for example, the sale of inventories, fixed assets, land or other non-produced assets. Such sales would be recorded as disposals in the capital account of the quasi-corporation and the transfer of the resulting funds would be recorded as a withdrawal from the equity of quasi-corporations in the financial account of the quasi-corporation and as a receivable by its owner(s). Similarly, funds withdrawn by liquidating large amounts of accumulated retained savings or other reserves of the quasi-corporation, including those built up out of provisions for consumption of fixed capital, are treated as withdrawals from equity. This situation corresponds to the treatment of superdividends payable by listed enterprises described immediately above.

- 7.135 Conversely, any funds provided by the owner(s) of a quasi-corporation for the purpose of acquiring assets or reducing its liabilities should be treated as additions to its equity. Just as there cannot be a negative distribution from the distributable income of corporations in the form of negative dividends, it is not possible to have a negative distribution from the distributable income of quasi-corporations in the form of negative withdrawals. However, if the quasi-corporation is owned by government, and if it runs a persistent operat-

ing deficit as a matter of deliberate government economic and social policy, any regular transfers of funds into the enterprise made by government to cover its losses should be treated as subsidies. Other subsidies on products consist of subsidies on goods or services produced as the outputs of resident enterprises, or on imports, that become payable as a result of the production, sale, transfer, leasing or delivery of those goods or services, or as a result of their use for own consumption or own capital formation. (c) above.

Reinvested earnings on foreign direct investment

7.136 As explained in chapter 26, a foreign direct investment enterprise is a corporate or unincorporated enterprise in which a foreign investor has made a foreign direct investment. A foreign direct investment enterprise may be either:

- a. The (unincorporated) branch of a non-resident corporate or unincorporated enterprise: this is treated as a quasi-corporation; or
- b. A corporation in which at least one foreign investor (which may, or may not, be another corporation) owns sufficient shares to have an effective voice in its management.

7.137 Actual distributions may be made out of the distributable income of foreign direct investment enterprises in the form of dividends or withdrawals of income from quasi-corporations. The payments made in these ways to foreign direct investors are recorded in the accounts of the SNA and in the balance of payments as international flows of investment income. However, both systems also require the retained earnings of a foreign direct investment enterprise to be treated as if they were distributed and remitted to foreign direct investors in proportion to their ownership of the equity of the enterprise and then reinvested by them by means of additions to equity in the financial account. The imputed remittance of these retained earnings is classified in the SNA as a form of distributed income that is separate from, and additional to, any actual payments of dividends or withdrawals of income from quasi-corporations.

7.138 The rationale behind this treatment is that since a foreign direct investment enterprise is, by definition, subject to control, or influence, by a foreign direct investor or investors, the decision to retain some of its earnings within the enterprise must represent a deliberate investment decision on the part of the foreign direct investor(s). In practice, the great majority of direct investment enterprises are subsidiaries of foreign corporations or the unincorporated branches of foreign enterprises, which are completely controlled by their parent corporations or owners.

7.139 ***Retained earnings of a corporation or quasi-corporation are equal to the distributable income less the dividends payable or withdrawal of income from the corporation or quasi-corporation respectively.*** If the foreign direct investment enterprise is wholly owned by a single foreign direct investor (for example, a branch of a foreign enterprise), the whole of the retained earnings is deemed to be remitted to that investor and then reinvested, in which case the saving of the enterprise must be zero. When a foreign direct investor

owns only part of the equity of the direct investment enterprise, the amount that is deemed to be remitted to, and reinvested by, the foreign investor is proportional to the share of the equity owned.

Retained earnings of domestic enterprises

7.140 A suggestion has been made to extend the treatment of distributing retained earnings to the owners of other corporations, in particular of public corporations. Investigation of this suggestion is part of the research agenda.

Paragraphs 7.141 to 7.152 discuss investment income disbursements to insurance policy holders, on pension entitlements and to investment fund shareholders.

5. Rent

Rent distinguished from rentals

7.153 The distinction between rent and the rentals receivable and payable under operating leases is basic to the SNA as rent is a form of property income and rentals are treated as sales or purchases of services. Rentals are payments made under an operating lease to use a fixed asset belonging to another unit where that owner has a productive activity in which the fixed assets are maintained, replaced as necessary and made available on demand to lessees. Rent is a payment made under a resource lease for the use of a natural resource. Not only is the type of asset leased different as between rent and rentals, so is the nature of the lease. The distinction between different types of leases is explained in part 5 of chapter 17.

Rent on natural resources

7.154 ***Rent is the income receivable by the owner of a natural resource (the lessor or landlord) for putting the natural resource at the disposal of another institutional unit (a lessee or tenant) for use of the natural resource in production.*** Two particular cases of resource rent are considered, rent on land and rent on subsoil resources. Resource rent on other natural resources follows the pattern laid out by these two instances.

Rent on land

7.155 Rent on land is recorded as accruing continuously to the landowner throughout the period of the contract agreed between the landowner and the tenant. The rent recorded for a particular accounting period is equal to the value of the accumulated rent payable over that period of time, as distinct from the amount of rent due to be paid during that period or the rent actually paid.

7.156 Rent may be paid in cash or in kind. Under share-cropping or similar schemes, the value of the rent payable is not fixed in advance in monetary terms and is measured by the value at basic prices of the crops that the tenants are obliged to provide to the landowner under the contract between them. Rent on land also includes the rent payable to the owners of inland waters and rivers for the right to exploit such waters for recreational or other purposes, including fishing.

- 7.157 A landowner may be liable to pay land taxes or incur certain maintenance expenses solely as a consequence of owning the land. By convention, such taxes or expenses are treated as payable by the tenant who is deemed to deduct them from the rent that he would otherwise be obliged to pay to the landowner. Rent reduced in this way by taxes or other expenses for which the landowner is liable is described as “after-tax rent”. By adopting the convention that the tenant pays only the after-tax rent, the taxes or expenses are recorded in the production or generation of income accounts of the tenant. This treatment does not change the income of the tenant. The convention avoids the necessity to create a notional enterprise for the landowner as the lessor.
- 7.158 Rentals payable on buildings or other structures are treated as purchases of services. In practice, however, a single payment may cover both rent and rentals when an institutional unit rents land that consists of land improvements and land in its natural state and may include any buildings situated on it in a single contract, or lease, in which the two kinds of payments are not differentiated from each other. For example, a farmer may rent a farmhouse, farm buildings, cultivated and grazing farmland in a contract in which only a single payment is required to cover all four. If there is no objective basis on which to split the payment between rent on land and rental on the buildings, it is recommended to treat the whole amount as rent when the value of the grazing land is believed to exceed the value of the buildings and cultivated land, and as a rental otherwise.

Rent on subsoil assets

- 7.159 The ownership of subsoil assets in the form of deposits of minerals or fossil fuels (coal, oil or natural gas) depends upon the way in which property rights are defined by law and also on international agreements in the case of deposits below international waters. In some cases the assets may belong to the owner of the ground below which the deposits are located but in other cases they may belong to a local or central government unit.
- 7.160 The owners of the assets, whether private or government units, may grant leases to other institutional units permitting them to extract such deposits over a specified period of time in return for the payment of rent. These payments are often described as royalties, but they are essentially rent that accrues to owners of the assets in return for putting them at the disposal of other institutional units for specified periods of time and are treated as such in the SNA. The rent may take the form of periodic payments of fixed amounts, irrespective of the rate of extraction or, more commonly, they may be a function of the quantity or volume of the asset extracted. Enterprises engaged in exploration may make payments to the owners of surface land in exchange for the right to make test drillings or investigate by other means the existence and location of subsoil resources. Such payments are also to be treated as rent even though no extraction is taking place.

Chapter 8: The redistribution of income accounts

A. Introduction

8.1 This chapter describes two accounts that show how income is redistributed between institutional units by means of the payments and receipts of current transfers. This redistribution represents the second stage in the process of income distribution as shown in the accounts of the SNA. The two accounts are the secondary distribution of income account and the redistribution of income in kind account.

8.2 The secondary distribution of income account shows how the balance of primary incomes of an institutional unit or sector is transformed into its disposable income by the receipt and payment of current transfers excluding social transfers in kind.

8.3 The redistribution of income in kind account takes the process of income redistribution one stage further. It shows how the disposable incomes of households, non-profit institutions serving households (NPISHs) and government units are transformed into their adjusted disposable incomes by the receipt and payment of social transfers in kind. Non-financial and financial corporations are not involved in this process.

8.4 Much of this chapter is concerned with the detailed definition, description and classification of the various types of current transfers recorded in the secondary distribution of income and redistribution of income in kind accounts. As part of this description, there is discussion of the composition of social insurance schemes and their role as the recipients of social contributions and dispensers of social benefits.

8.5 Understanding the difference between four related concepts is crucial to an appreciation of the two accounts described in this chapter. These terms are social insurance, social security, social assistance and social transfers in kind.

These concepts are explained very briefly below but in this document, the treatment of social insurance is not explained in detail. The reason for this is that in many developing countries, for whom this document is mainly intended, almost all employees outside government, and even many employed by government, are not entitled to benefits such as pensions so this complication has only a small impact on the accounts. It is also the case that some countries where social benefits including pensions are important, for instance the United States and Australia, the national accountants in those countries have decided not to treat social benefits in the way the SNA recommends. Fur-

ther, discussion of the redistribution of income in kind account is also omitted from this document.

8.6 Social insurance schemes are schemes in which social contributions are paid by employees or others, or by employers on behalf of their employees, in order to secure entitlement to social insurance benefits, in the current or subsequent periods, for the employees or other contributors, their dependants or survivors. The social benefits payable by social insurance schemes are of two kinds, pensions and other benefits such as medical, education, housing or unemployment benefits. Pensions are always paid in cash; non-pension benefits may be payable in cash or in kind.

8.7 Two main types of social insurance schemes may be distinguished:

a. The first consists of social security schemes covering the entire community, or large sections of the community, that are imposed, controlled and financed by government units. Pensions payable under these schemes may or may not be related to levels of salary of the beneficiary or history of employment. Non-pension benefits are less frequently linked to salary levels.

b. The second type consists of other employment-related schemes. These schemes derive from an employer-employee relationship in the provision of pension entitlement that is part of the conditions of employment and where responsibility for the provision of benefits does not devolve to general government under social security provisions.

8.8 Social assistance benefits in cash are current transfers payable to households by government units or NPISHs to meet the same needs as social insurance benefits but which are not made under a social insurance scheme requiring participation usually by means of social contributions.

8.9 Social transfers in kind consist of social security benefits payable in kind and social assistance benefits payable in kind.

1. The secondary distribution of income account

8.10 Apart from the balance of primary incomes, the balancing item carried forward from the primary distribution of

income accounts, and disposable income, the balancing item on the secondary distribution of income account, all the entries in the secondary distribution of income account consist of current transfers. *A transfer is a transaction in which one institutional unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as a direct counterpart.* Transfers are separated into current transfers and capital transfers. *Capital transfers are unrequited transfers where either the party making the transfer realizes the funds involved by disposing of an asset (other than cash or inventories), relinquishing a financial claim (other than accounts receivable) or the party receiving the transfer is obliged to acquire an asset (other than cash) or both conditions are met.* Capital transfers are often large and irregular but neither of these are necessary conditions for a transfer to be considered a capital rather than a current transfer. Other transfers are described as current. *A current transfer is a transaction in which one institutional unit provides a good or service to another unit without receiving from the latter any good or service directly in return as counterpart and does not oblige one or both parties to acquire, or dispose of, an asset.* The concept of a transfer is explained in more detail in section B below.

- 8.11 Table 8.1 shows the concise form of the secondary distribution of income account identifying the main kinds of transfers. Current transfers may take place between resident and non-resident units as well as between resident institutional units.
- 8.12 The transfers payable by an institutional unit or sector are recorded on the left-hand side of the account under uses. For example, in table 8.1, taxes on income, wealth etc. payable by the household sector are recorded at the intersection of the row for this item and the uses column for the household sector. The transfers receivable by an institutional unit or sector are recorded on the right-hand side of the account under resources. For example, social benefits other than social transfers in kind receivable by the household sector are recorded at the intersection of the row for this item and the resources column for the household sector.
- 8.13 In accordance with the general accounting rules of the SNA, the entries in the account, apart from the balancing items, refer to amounts payable and receivable. These may not necessarily coincide with the amounts actually paid or

received in the same accounting period. Any amounts payable and not paid or receivable and not received are recorded in the financial account, under accounts receivable or payable.

- 8.14 Three main kinds of current transfers are distinguished in the secondary distribution of income account:
- Current taxes on income, wealth, etc.;
 - Social contributions and benefits;
 - Other current transfers.

Their general nature and the purposes they serve are summarized in the following paragraphs.

Current taxes on income, wealth, etc.

- 8.15 *Current taxes on income, wealth, etc. consist mainly of taxes on the incomes of households or profits of corporations and of taxes on wealth that are payable regularly every tax period (as distinct from capital taxes levied infrequently).* In table 8.1, current taxes on income, wealth, etc. receivable appear under resources for the general government sector and possibly the rest of the world, while taxes payable appear under uses for the household and non-financial and financial corporation sectors, and possibly for the non-profit institutions serving households (NPISHs) sector and the rest of the world.

Social contributions and benefits

- 8.16 *Social contributions are actual or imputed payments to social insurance schemes to make provision for social insurance benefits to be paid.* Social contributions may be made by employers on behalf of their employees. As such they form part of compensation of employees and are included in the balance of primary income of households. In the secondary distribution of income account, these contributions together with payments made by households themselves in their capacity as employed, self-employed or unemployed persons, are recorded as payable by households and receivable by the units responsible for the social insurance schemes. Social contributions may be receivable

Table 8.1: The secondary distribution of income account - concise form - uses

Uses									
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Current transfers	98	277	248	582	7	1 212	17		1 229
Current taxes on income, wealth, etc.	24	10	0	178	0	212	1		213
Net social contributions				333		333	0		333
Social benefits other than social transfers in kind	62	205	112	0	5	384	0		384
Other current transfers	12	62	136	71	2	283	16		299
Disposable income, gross	228	25	317	1 219	37	1 826			1 826
Disposable income, net	71	13	290	1 196	34	1 604			1 604

by a unit in any sector in their capacity as providing a social insurance scheme to their employees (even exceptionally households if in their capacity as unincorporated enterprises) or by a third-party unit designated as the institution responsible for administering the scheme. Most contributions, however, are likely to be recorded under resources for the general government sector, including social security funds, and insurance corporations and pension funds in the financial corporations sector. Social contributions are recorded under uses only for households, either resident or non-resident.

- 8.17 ***Social benefits are current transfers received by households intended to provide for the needs that arise from certain events or circumstances, for example, sickness, unemployment, retirement, housing, education or family circumstances.*** Social benefits may be provided under social insurance schemes or by social assistance.
- 8.18 Social insurance benefits in kind provided by employers are treated as if they were paid in cash and included in the secondary distribution of income account. If this were not so, the purchase of the goods and services concerned would have to be shown as incurred by employers but these products are not intermediate consumption and enterprises cannot have final consumption. However, social insurance benefits in kind provided under general social security schemes and all social assistance benefits in kind constitute social transfers in kind and are therefore included only in the redistribution of income in kind account. In table 8.1 social benefits, except social transfers in kind, are recorded under resources for the household sector and may, in principle, be recorded under uses for any sector operating a social insurance scheme in its capacity as an employer.

Other current transfers

- 8.19 ***Other current transfers consist of all current transfers between resident institutional units, or between resident and non-resident units, other than current taxes on income, wealth, etc., social contributions and benefits, and social benefits in kind.*** The group includes net premiums and claims under non-life insurance policies, current transfers between different kinds of government units, usu-

ally at different levels of government, and also between general government and foreign governments, as well as current transfers to and from NPISHs and between resident and non-resident households.

2. Disposable income

8.20 ***Disposable income is the balancing item in the secondary distribution of income account. It is derived from the balance of primary incomes of an institutional unit or sector by:***

- a. ***Adding all current transfers, except social transfers in kind, receivable by that unit or sector; and***
- b. ***Subtracting all current transfers, except social transfers in kind, payable by that unit or sector.***

8.21 Disposable income, like the balance of primary incomes, may be recorded gross or net of consumption of fixed capital. As elsewhere, the net measure is conceptually preferable but it may be necessary to record the balancing items gross because of the difficulty of measuring consumption of fixed capital even though consumption of fixed capital is a cost of production and not a component of income. The following discussion refers to the net concept of disposable income.

8.22 Disposable income is not all available in cash. The inclusion in the accounts of non-monetary transactions associated with production for own consumption or barter, or with remuneration in kind, means that households have no choice but to consume certain kinds of goods and services for which the values of the corresponding expenditures out of disposable income are imputed.

National disposable income

8.26 Most current transfers, whether in cash or in kind, can take place between resident and non-resident institutional units as well as between resident units. ***Gross or net national disposable income may be derived from gross or net national income by:***

Table 8.1(cont.): The secondary distribution of income account - concise form - resources

	Resources									
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total	
Transactions and balancing items										
Balance of primary incomes, gross / National income, gross	254	27	198	1 381	4	1 864				1 864
Balance of primary income, net / National income, net	97	15	171	1 358	1	1 642				1 642
Current transfers	72	275	367	420	40	1 174	55			1 229
Current taxes on income, wealth, etc.			213			213	0			213
Net social contributions	66	213	50	0	4	333	0			333
Social benefits other than social transfers in kind				384		384	0			384
Other current transfers	6	62	104	36	36	244	55			299

a. *Adding all current transfers in cash or in kind receivable by resident institutional units from non-resident units; and*

b. *Subtracting all current transfers in cash or in kind payable by resident institutional units to non-resident units.*

8.27 Among the more important current transfers taking place between residents and non-residents are the following:

- a. Social contributions or benefits;
- b. Current taxes on income or wealth;

c. Non-life insurance premiums and claims;

d. Current international cooperation; that is, current transfers between different governments, such as transfers under aid programmes intended to sustain the consumption levels of populations affected by war or natural disasters such as droughts, floods or earthquakes;

e. Remittances between resident and non-resident households.

8.28 The net disposable income of a country is a better measure than its net national income (NNI) for purposes of analysing its consumption possibilities.

A. Current transfers

8.34 As defined above, *a transfer is a transaction in which one institutional unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as a direct counterpart*. A unit making a transfer receives no specific quantifiable benefit in return that can be recorded as part of the same transaction. Nevertheless, the payment of a social insurance contribution or non-life insurance premium may entitle the unit making the payment to some contingent future benefits. For example, a household may be entitled to receive some social benefits should certain events occur or certain conditions prevail. In addition, all resident households benefit from services provided by government units. However, the fact that a transfer has been made does not automatically mean a benefit will be received by the unit making the transfer nor, if it does, that the amount of the benefit is commensurate with the amount of the transfer. It is for this reason that the SNA holds there is no direct counterpart to the transfer.

differently to them, it becomes impossible to measure income, both in theory and in practice.

8.39 Current transfers consist of all transfers that are not transfers of capital. They directly affect the level of disposable income and should influence the consumption of goods or services. In practice, capital transfers tend to be large, infrequent and irregular, whereas current transfers tend to be comparatively small and are often made frequently and regularly. However, while size, frequency and regularity help to distinguish current from capital transfers they do not provide satisfactory criteria for defining the two types of transfer. For example, social security benefits in the form of maternity or death benefits are essentially current grants designed to cover the increased consumption expenditures occasioned by births or deaths, even though the events themselves are obviously infrequent.

8.40 It is possible that some cash transfers may be regarded as capital by one party to the transaction and as current by the other. For example, the payment of an inheritance tax may be regarded as a capital transfer by the household but as a current transfer by government. Similarly, a large country that regularly makes investment grants to a number of smaller countries may regard the outlays as current, even though they may be specifically intended to finance the acquisition of assets. In an integrated system of accounts such as the SNA, however, it is not feasible to have the same transaction classified differently by the two parties. Accordingly, a transfer should be classified as capital for both parties if it clearly involves a transfer of an asset for one of the parties.

1. The distinction between current and capital transfers

8.38 Transfers may be either current or capital. In order to distinguish one from the other, it is preferable to focus on the special characteristics of capital transfers. As noted above, a capital transfer is one that is linked to the acquisition or disposal of an asset, either financial or non-financial. Institutional units must be capable of distinguishing capital from current transfers and must be presumed to treat capital transferred during the course of the accounting period in the same way as capital held throughout the period. For example, a prudent household will not treat a capital transfer that happens to be received during a particular period as being wholly available for final consumption within the same accounting period. Conversely, a household making a capital transfer (for example, the payment of an inheritance tax) will not plan to reduce its final consumption by the whole amount of the transfer. Unless institutional units are capable of distinguishing capital from current transfers and react

2. The recording of transfers

8.41 Although no good, service or asset is received in return as a direct counterpart to a transfer, the recording of a transfer nevertheless must give rise to four entries in the accounts. The ways in which transfers (whether in cash or in kind) and social transfers in kind are recorded are shown below in the following examples.

Transfers in cash

8.42 The first example is of a current transfer in cash, such as the payment of a social security benefit in cash. The transfer is recorded as payable by the social security fund and receivable by the household in the secondary distribution of income account. (If the transfer were a capital transfer, it would be recorded in the capital account instead of the secondary distribution of income account.) The consequence of the transfer is a reduction in the financial assets (or increase in the financial liabilities) of the social security scheme and an increase in the financial assets of the household. The eventual use of the cash by the household is recorded subsequently as a separate transaction.

	Household		Social security fund	
	Uses/ Changes in assets	Resources/ Changes in liabilities and net worth	Uses/ Changes in assets	Resources/ Changes in liabilities and net worth
Secondary Distribution of income account		Transfer receivable	Transfer Payable	
Financial account		Increase in financial asset	Decrease in financial asset	

Provisions of goods and services by enterprises

8.43 The next example is of an enterprise producing medicines that donates some of its output free of charge to a charity (NPISH). As mentioned above, two transactions should be recorded, each with four entries. In this example, the first is the provision of a transfer by the enterprise to the NPISH, the second is the purchase of the medicine by the NPISH using the funds made available by the transfer. Both transactions imply two entries in the financial account and, if both transactions are completed in the same accounting period, these changes in financial assets will cancel each other for both units involved, leaving only four entries apparent in the accounts. However, if there is a difference in the timing between when the transfer is recorded and when the delivery of the medicine takes place, it will be necessary to include the entries in the financial accounts, specifically under other accounts receivable or payable.

B. Current taxes on income, wealth, etc.

1. Taxes in general

8.52 *Taxes are compulsory, unrequited payments, in cash or in kind, made by institutional units to government units.* They are transfers because the government provides nothing directly in return to the individual unit paying the tax, although governments do provide goods and services to the community as a whole or to individual units, or groups of units, depending on their general economic and social policy. Current taxes on income, wealth, etc. consist mainly of taxes levied on the incomes of households and corporations. They constitute charges against income and are

	NPISH		Enterprise	
	Uses/ Changes in assets	Resources/ Changes in liabilities and net worth	Uses/ Changes in assets	Resources/ Changes in liabilities and net worth
Secondary Distribution of income account		Transfer receivable	Transfer Payable	
Financial account		Increase in financial asset	Decrease in financial asset	
Production account				Output/sale of medicine
Use of income account	Expenditure on medicine			
Financial account	Decrease in financial asset			Increase in financial asset

8.44 A more complex variant occurs if enterprise A purchases the medicine from enterprise B and then gives it to an NPISH. Although A actually purchases the goods from B, they do not form part of A's intermediate consumption or capital formation. Nor can they be recorded as final consumption by A, since it is an enterprise. As before, a cash transfer is imputed from enterprise A to the NPISH and an imputed purchase by the NPISH. If both transactions occur in the same accounting period, the two entries of the financial account for the NPISH will cancel, leaving only six of the eight entries apparent in the accounts.

	NPISH		Enterprise A		Enterprise B	
	Uses/ Changes in assets	Resources/ Changes in liabilities and net worth	Uses/ Changes in assets	Resources/ Changes in liabilities and net worth	Uses/ Changes in assets	Resources/ Changes in liabilities and net worth
Secondary Distribution of income account		Transfer receivable	Transfer Payable			
Financial account		Increase in financial asset	Decrease in financial asset			
Production account						Output/sale of medicine
Use of income account	Expenditure on medicine					
Financial account	Decrease in financial asset					Increase in financial asset

recorded under uses for the households and corporations sectors in the secondary distribution of income account. The taxes may also be payable by non-residents or possibly by government units or NPISHs. Current taxes on income, wealth, etc. were described as "direct taxes" in the past, but the terms "direct" and "indirect" are no longer used in the SNA, as explained in chapter 7. The taxes cannot be described simply as "current taxes on income and wealth" because they include some periodic taxes on households that are assessed neither on the income nor the wealth of the household or its members, for example, poll taxes.

Taxes versus fees

8.54 One of the regulatory functions of governments is to forbid the ownership or use of certain goods or the pursuit of certain activities, unless specific permission is granted by issuing a licence or other certificate for which a fee is demanded. If the issue of such licences involves little or no work on the part of government, the licences being granted automatically on payment of the amounts due, it is likely that they are simply a device to raise revenue, even though the government may provide some kind of certificate, or authorization, in return. However, if the government uses the issue of licences to exercise some proper regulatory function, for example, checking the competence, or qualifications, of the person concerned, checking the efficient and safe functioning of the equipment in question, or carrying out some other form of control that it would otherwise not be obliged to do, the payments made should be treated as purchases of services from government rather than payments of taxes, unless the payments are clearly out of all proportion to the costs of providing the services.

2. Taxes on income

8.61 *Taxes on income consist of taxes on incomes, profits and capital gains.* They are assessed on the actual or presumed incomes of individuals, households, NPISHs or corporations. They include taxes assessed on holdings of property, land or real estate when these holdings are used as a basis for estimating the income of their owners. In some cases the liability to pay income taxes can only be determined in a later accounting period than that in which the income

accrues. Some flexibility is therefore needed in the time at which such taxes are recorded. Income taxes deducted at source, such as pay-as-you-earn taxes and regular prepayments of income taxes, may be recorded in the periods in which they are paid and any final tax liability on income can be recorded in the period in which the liability is determined.

3. Other current taxes

Current taxes on capital

8.63 *Current taxes on capital consist of taxes that are payable periodically, usually annually, on the property or net wealth of institutional units, excluding taxes on land or other assets owned or rented by enterprises and used by them for production, such taxes being treated as other taxes on production.* They also exclude taxes on property or wealth levied infrequently and at irregular intervals, or in exceptional circumstances (for example, death duties), such taxes being treated as capital taxes. They also exclude income taxes assessed on the basis of the value of the property owned by institutional units when their incomes cannot be estimated satisfactorily, such taxes being recorded under the previous heading, taxes on income.

Miscellaneous current taxes

8.64 Miscellaneous current taxes consist of various different kinds of taxes payable periodically, usually annually.

Table 8.5: The secondary distribution of income account - with details of current transfers - uses

Uses	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items									
Current transfers	98	277	248	582	7	1 212	17		1 229
Current taxes on income, wealth, etc.	24	10	0	178	0	212	1		213
Net social contributions				333		333	0		333
Social benefits other than social transfers in kind	62	205	112	0	5	384	0		384
Other current transfers	12	62	136	71	2	283	16		299
Net non-life insurance premiums	8	13	4	31	0	56	2		58
Net non-life direct insurance premiums	8	0	4	31	0	43	1		44
Net non-life reinsurance premiums		13				13	1		14
Non-life insurance claims		48				48	12		60
Non-life direct insurance claims		45				45	0		45
Non-life reinsurance claims		3				3	12		15
Current transfers within general government			96			96	0		96
Current international cooperation			31			31	1		32
Miscellaneous current transfers	4	1	5	40	2	52	1		53
Current transfers to NPISHs	1	1	5	29	0	36	0		36
Current transfers between resident and non-resident households				7		7	1		8
Other miscellaneous current transfers	3	0	0	4	2	9	0		9
Disposable income, gross	228	25	317	1 219	37	1 826			1 826
<i>Disposable income, net</i>	71	13	290	1 196	34	1 604			1 604

Sections D, E and F covering social insurance schemes, net social contributions and social benefits, paragraphs 863 to 8112 are omitted.

G. Other current transfers

8.113 Other current transfers consist of all current transfers between resident institutional units, or between residents and non-residents, except for current taxes on income, wealth, etc. and social contributions and benefits. Other current transfers include a number of different kinds of transfers serving quite different purposes. The four categories are insurance-related transactions, transfers within government, current international cooperation and miscellaneous current transfers. Each of these is described in turn below.

8.114 Table 8.5 shows table 8.1 with this disaggregation of current transfers.

1. Insurance-related transactions

8.115 There are three types of transactions included under the heading of insurance. These are net premiums and claims related to direct insurance, net premiums and claims related to reinsurance and payments related to standardized guarantees. Each of these is described below. A more detailed description of transactions to be recorded for insurance appears in part 1 of chapter 17 and for standardized guarantees in part 3 of chapter 17.

8.116 It should be noted that in this context “net” as applied to premiums implies that the service charge for the insurance services has been deducted from actual premiums paid plus premium supplements. There is no netting between direct insurance and reinsurance; each is recorded in full and separately from the other.

Net non-life insurance premiums

8.117 Non-life insurance policies provide cover against various events or accidents resulting in damage to goods or property or harm to persons as a result of natural or human causes (for example, fires, floods, crashes, collisions, sinkings, theft, violence, accidents, sickness, etc.) or against financial losses resulting from events such as sickness, unemployment, accidents, etc. Such policies are taken out by enterprises, government units, NPISHs or individual households. The policies taken out by individual households are those taken out on their own initiative and for their own benefit, independently of their employers or government and outside any social insurance scheme. *Net non-life insurance premiums comprise both the actual premiums payable by policyholders to obtain insurance cover during the accounting period (premiums earned) and the premium supplements payable out of the investment*

Table 8.5 (cont): The secondary distribution of income account - with details of current transfers - resources

Transactions and balancing items	Resources								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Balance of primary incomes, gross / National income, gross	254	27	198	1 381	4	1 864			1 864
Balance of primary income, net / National income, net	97	15	171	1 358	1	1 642			1 642
Current transfers	72	275	367	420	40	1 174	55		1 229
Current taxes on income, wealth, etc.			213			213	0		213
Net social contributions	66	213	50	0	4	333	0		333
Social benefits other than social transfers in kind				384		384	0		384
Other current transfers	6	62	104	36	36	244	55		299
Net non-life insurance premiums		47				47	11		58
Net non-life direct insurance premiums		44				44			44
Net non-life reinsurance premiums		3				3	11		14
Non-life insurance claims	6	15	1	35	0	57	3		60
Non-life direct insurance claims	6		1	35		42	3		45
Non-life reinsurance claims		15				15	0		15
Current transfers within general government			96			96	0		96
Current international cooperation			1			1	31		32
Miscellaneous current transfers	0	0	6	1	36	43	10		53
Current transfers to NPISHs					36	36			36
Current transfers between resident and non-resident households				1		1	7		8
Other miscellaneous current transfers			6			6	3		9

income attributed to insurance policyholders less the service charges payable to the insurance corporation. The way in which the service charges are calculated is explained in paragraphs 6.184 to 6.191. After deducting the service charges from the sum of non-life insurance premiums and premium supplements, the remainder is described as net non-life insurance premiums. Only the net non-life insurance premiums constitute current transfers and are recorded in the secondary distribution of income account. The service charges constitute purchases of services by the policyholders and are recorded as intermediate or final consumption, as appropriate.

Non-life insurance claims

- 8.118 *Non-life insurance claims are the amounts payable in settlement of damages that result from an event covered by a non-life insurance policy during the current accounting period.* Claims normally become due at the moment when the eventuality occurs that gives rise to a valid claim under the terms of the policy. An exception is made in cases where the possibility of making a claim is recognized only long after the event has happened. For example, an important series of claims were recognized only when exposure to asbestos was established as a cause of serious illness. In such cases the claim is recorded at the time that the insurance company accepts the liability. This may not be the same time as when the size of the claim is agreed on or when the claim is paid.
- 8.119 The settlement of a non-life insurance claim is treated as a transfer to the claimant. The claimant is usually but not invariably the policyholder. Claims are usually treated as current transfers, even when large sums may be involved as a result of the accidental destruction of a fixed asset or serious personal injury to an individual. The amounts received by claimants are usually not committed for any particular purpose and goods or assets that have been damaged or destroyed need not necessarily be repaired or replaced.
- 8.120 Some claims arise because of damages or injuries that the policyholders cause to the property or persons of third parties, for example, the damages or injuries that insured drivers of vehicles may cause to other vehicles or persons. In these cases, valid claims are recorded as being payable directly by the insurance enterprise to the injured parties and not indirectly via the policyholder.
- 8.121 In exceptional circumstances, some proportion of claims may be recorded not as current transfers but as capital transfers. The description of the functioning of the insurance activity in part 1 of chapter 17 explains when this is deemed to be appropriate.

Net reinsurance premiums and claims

- 8.122 Direct insurers provide a means of redistribution amongst regular policyholders. Instead of a large loss on an irregular basis, policyholders face regular smaller costs in the knowledge that, when and if a large loss happens, it will be settled by the insurance company and thus avoid the policyholder from bearing a large loss in that year. Reinsurance policies work in the same way to allow direct insurers (and other reinsurers) to protect themselves against particularly heavy

claims by taking out a policy with another insurance corporation that specializes in reinsurance.

- 8.123 Net reinsurance premiums and claims are calculated in exactly the same manner as non-life insurance premiums and claims. However, because the reinsurance business is concentrated in a few countries, globally most reinsurance policies are with non-resident units.

Fees and calls under standardized guarantees

- 8.124 Some units, especially government units, may provide a guarantee against a creditor defaulting in conditions that have many of the same characteristics as non-life insurance. This happens when many guarantees of the same sort are issued and it is possible to make a realistic estimate of the probable level of defaults overall. In this case, the fees payable (and the property income earned on them) are treated in the same way as non-life insurance premiums and the calls under the guarantees are treated in the same way as non-life insurance claims. Part 3 of chapter 17 discusses the topic of standardized guarantees in detail.
- 8.125 Standardized guarantees provide cover only for financial instruments and do not extend to product warranties

2. Current transfers within general government

- 8.126 *Current transfers within general government consist of current transfers between different government units.* They include current transfers between different levels of government, such as frequently occur between central and state or local government units, and between general government and social security funds. They do not include transfers of funds committed to finance gross fixed capital formation, such transfers being treated as capital transfers.
- 8.127 One government unit may act as an agent on behalf of a second government unit by, for example, collecting taxes that are due to the second unit, at the same time as it collects its own taxes. Taxes collected on behalf of the second unit in this way are to be recorded as accruing directly to the second unit and are not to be treated as a current transfer from the first to the second unit. Delays in remitting the taxes from the first to the second government unit give rise to entries under "other accounts receivable or payable" in the financial account.

3. Current international cooperation

- 8.128 *Current international cooperation consists of current transfers in cash or in kind between the governments of different countries or between governments and international organizations.* These include:
- Transfers between governments that are used by the recipients to finance current expenditures, including emergency aid after natural disasters; they include transfers in kind in the form of food, clothing, blankets, medicines, etc.;
 - Annual or other regular contributions paid by member governments to international organizations (excluding taxes payable to supranational organizations);

- c. Payments by governments or international organizations to other governments to cover the salaries of those technical assistance staff who are resident in the country in which they are working and are employed by the host government.

Current international cooperation does not cover transfers intended for purposes of capital formation, such transfers being recorded as capital transfers.

4. Miscellaneous current transfers

- 8.129 *Miscellaneous current transfers consist of current transfers other than insurance-related premiums and claims, current transfers within general government and current international cooperation.* Some of the more important examples are described below.

Current transfers between the central bank and general government

- 8.130 As described in paragraph 6.155, a current transfer representing the value of non-market output of the central bank is recorded as payable by the central bank to general government. The non-market output consists of monetary policy services, which are regarded as collective consumption.
- 8.131 This item may also include transfers between the central bank and government that are recorded when the central bank charges interest at a rate that is out of line with market rates for policy purposes.

Current transfers to NPISHs

- 8.132 *Current transfers to NPISHs consist of transfers received by NPISHs from other resident or non-resident institutional units in the form of membership dues, subscriptions, voluntary donations, etc. whether made on a regular or occasional basis.* Transfers to NPISHs are intended to cover the costs of the non-market production of NPISHs or to provide the funds out of which current transfers may be made to resident or non-resident households in the form of social benefits. Transfers in the form of gifts of food, clothing, blankets, medicines, etc. to charities for distribution to resident or non-resident households are included to the extent that they are newly acquired and are treated as transfers in cash used to purchase these commodities. Gifts of unwanted or used articles from households typically do not have a market value and so do not feature in the accounts as transfers. Gifts of valuables are treated as transfers of the value of the valuable in the balance sheet. Payments of membership dues or subscriptions to market NPIs serving businesses, such as chambers of commerce or trade associations, are treated as payments for services rendered and are therefore not transfers. They are recorded in the production account as intermediate consumption and not in the secondary distribution of income account.

Current transfers between households

- 8.133 *Current transfers between households consist of all current transfers made, or received, by resident households to*

or from other resident or non-resident households. The transfers include all cash transfers and the value of transfers in kind. In the context of remittances, current transfers between households are often referred to as personal transfers. They include regular remittances between members of the same family resident in different parts of the same country or in different countries, usually from a member of a family working in a foreign country for a period of a year or longer. Earnings remitted by seasonal workers to their families are not international transfers as the workers remain resident in their country of origin (that is, they are still members of their original households) when they work abroad for periods of less than a year. Their earnings are recorded as compensation of employees from abroad if they have the status of an employee in the non-resident country while they are working there or as the provision of services otherwise.

- 8.134 Transfers from non-resident households to resident households (and vice versa) are an item of considerable policy interest. In addition, memorandum items in the balance of payments are suggested for personal remittances and total remittances. Personal remittances from abroad are equal to personal transfers from abroad plus compensation of employees from abroad less expenditure abroad by the employees. Personal remittances thus show the total flows into a resident household from households abroad or from a member of the household working abroad for part of the year. Total remittances from abroad are equal to personal remittances plus social benefits (including pensions due from abroad in relation to earlier work abroad by a member of the household). Payments to abroad are defined correspondingly. For more details, reference should be made to chapter 26 and to *BPM6*.

Fines and penalties

- 8.135 *Fines and penalties are compulsory payments imposed on institutional units by courts of law or quasi-judicial bodies.* However, fines or other penalties imposed by tax authorities for the evasion or late payment of taxes cannot usually be distinguished from the taxes themselves and are, therefore, grouped with the latter in practice and not recorded under this heading; nor are payments of fees to obtain licences, such payments being either taxes or payments for services rendered by government unit.

Lotteries and gambling

- 8.136 The amounts paid for lottery tickets or placed in bets consist of two elements: the payment of a service charge to the unit organizing the lottery or gambling and a residual current transfer that is paid out to the winners. The service charge may be quite substantial and may have to cover taxes on the production of gambling services. The transfers are regarded in the SNA as taking place directly between those participating in the lottery or gambling, that is, between households.

- 8.137 Some lotteries may be organized with three components, the two as just described and a third element that is donated to charity. This element shows as a transfer to the charity, usually an NPISH.

- 8.138 When non-resident households take part there may be significant net transfers between the household sector and the rest of the world.
- 8.139 In some cases the winner of a lottery does not receive a lump sum immediately but a stream of income over future periods. In the SNA this should be recorded as the receipt of the lump sum and the immediate purchase of an annuity. The recording of annuities is described in part 1 of chapter 17.

Payments of compensation

- 8.140 *Payments of compensation consist of current transfers paid by institutional units to other institutional units in compensation for injury to persons or damage to property caused by the former that are not settled as payments of non-life insurance claims.* Payments of compensation could be either compulsory payments awarded by courts of law, or ex gratia payments agreed out of court. This heading covers compensation for injuries or damages caused by other institutional units and ex gratia payments made by government units or NPISHs in compensation for injuries or damages caused by natural disasters.

Chapter 9: The use of income accounts

A. Introduction

- 9.1 The purpose of the use of income accounts is to show how households, government units and non-profit institutions serving households (NPISHs) allocate their disposable income between final consumption and saving. Throughout this chapter, unless otherwise stated, the expression consumption should be taken to mean final consumption.

In the SNA, there are two use of income accounts. These correspond to the two redistribution of income accounts. The use of disposable income account corresponds to the secondary distribution of income account and is described here. The detailed discussion of the use of the adjusted disposable income account, that corresponds to the redistribution of income in kind account is omitted in this document. Nevertheless, the distinction between individual and collective consumption is briefly discussed below.

- 9.2 ***A consumption good or service is defined as a good or service that is used (without further transformation in production as defined in the SNA) by households, NPISHs or government units for the direct satisfaction of individual needs (or wants) or for the collective needs of members of the community.***
- 9.3 ***An individual consumption good or service is one that is acquired by a household and used to satisfy the needs or wants of members of that household.*** Individual goods and services can always be bought and sold on the market, although they may also be provided free, or at prices that are not economically significant, as social transfers in kind. In practice, all goods and most services are individual.
- 9.4 ***A collective consumption service is a service provided simultaneously to all members of the community or to all members of a particular section of the community, such as all households living in a particular region.*** Collective services are automatically acquired and consumed by all members of the community, or section of the community, without any action on their part. Typical examples are public administration and the provision of security, either at a national or local level. Collective services are the “public goods” of economic theory. By their nature, collective services cannot be sold to individuals on a market, and they are financed by government units out of taxation or other revenues.
- 9.5 Some of the services provided by NPISHs to the members of the associations that own them have some of the characteristics of collective services; for example, some research carried out by NPISHs may benefit all members of the

community. However, most of the services provided by NPISHs are individual in nature and, if it is not practicable to identify the outputs of NPISHs that may be considered to be collective in nature, all the services provided by NPISHs may be treated as individual.

- 9.6 As explained in later sections of this chapter, expenditure is attributed to the institutional units that bear the costs even if they are not the units to whom the goods or services are delivered. Thus, expenditures that government units or NPISHs make on individual goods and services that they provide to households as social transfers in kind are recorded as final consumption expenditure incurred by government units or NPISHs. Although they do not physically consume the goods and services provided as social transfers in kind, government units or NPISHs are the units that pay for them and take the decisions about the amounts to be provided. Information about their expenditure on such goods and services must, therefore, be recorded in the accounts of the SNA in conjunction with their disposable income. However, merely to record the expenditure is not sufficient when the goods and services are consumed by units different from those that control and finance the expenditure. In order to identify the units that benefit from their consumption it is necessary to recognize that the goods and services are in fact transferred to, and used by, households. From this stems the distinction between final consumption expenditure and actual final consumption.
- 9.7 In the use of disposable income account, the main resource is disposable income, which is the balancing item carried forward from the secondary distribution of income account. The main use is final consumption expenditure. ***Final consumption expenditure is the amount of expenditure on consumption goods and services.*** In the use of adjusted disposable income account, the main resource is adjusted disposable income which is the balancing item carried forward from the redistribution of income in kind account. The main use is actual final consumption. ***Actual final consumption measures the amount of consumption goods and services acquired.***
- 9.10 Saving, like disposable income and adjusted disposable income, may have to be recorded gross of consumption of fixed capital because of the difficulty of measuring the latter. As elsewhere, however, the net figures are conceptually preferable.
- 9.11 Corporations do not have final consumption expenditure. They may purchase the same kinds of goods or services as households use for final consumption (for example electric-

ity or food) but such goods or services are either used for intermediate consumption or provided to employees as remuneration in kind. It is assumed in the SNA that corporations do not make transfers of consumption goods or services to households. In other contexts, the saving of corporations is often described as the “retained earnings” or “undistributed incomes” of corporations.

1. The use of disposable income account

9.12 As shown in Table 9.1, the use of disposable income account contains only three main entries apart from the balancing item, saving. Disposable income, the balancing item carried forward from the secondary distribution of income account, is recorded on the right-hand side of the account under resources, while final consumption expenditure is recorded on the left-hand side under uses. As just noted, the account is relevant mainly for the three sectors that incur final consumption expenditure, namely the general government, NPISHs and household sectors.

9.13 The balancing item for the account is saving. Before the balance is struck, however, an adjustment item showing the adjustment for the change in pension entitlements is entered in order to reallocate a certain amount of saving between sectors. This item is needed because of the way in which pension contributions and benefits are recorded in the secondary distribution of income accounts. The adjustment is shown on the right-hand side under resources for households and on the left-hand side under uses for financial corporations or other units responsible for pension liabilities.

The adjustment item for change in pension entitlements is necessary only when the full recommendation on the treatment of social insurance is being followed.

9.14 Final consumption expenditure is shown in table 9.1, disaggregated between individual consumption expenditure and collective consumption expenditure to bring out the accounting interrelationships described below. However, it is usually desirable to break down final consumption expenditure using a classification of expenditure by purpose or by type of good or service. Most users will expect at least some degree of disaggregation, for example, between expenditures on goods or services or between expenditures on durable and non-durable goods. Disaggregation by type

of goods and services is needed for the supply and use tables, as explained in chapter 14.

Sections 2 to 4 (paragraphs 9.15 to 9.25) discuss the use of the adjusted disposable account and the adjustment for the change in pension entitlements.

5. Saving

9.26 Saving is the balancing item in the two use of income accounts. Its value is the same whether it is derived as disposable income less final consumption expenditure or as adjusted disposable income less actual final consumption (in both cases, after making the adjustment for the change in pension entitlements just described).

9.27 As already noted, non-financial and financial corporations have no final consumption expenditure or actual final consumption. Their net saving is equal to their net disposable, or adjusted disposable, income (apart from the adjustment item for pension entitlements).

9.28 ***Saving represents that part of disposable income (adjusted for the change in pension entitlements) that is not spent on final consumption goods and services.*** It may be positive or negative depending on whether disposable income exceeds final consumption expenditure, or vice versa. Assuming that saving is positive (and in the absence of capital transfers), the unspent income must be used to acquire assets (possibly only an increase in cash) or reduce liabilities. If saving is negative, some financial or non-financial assets must have been liquidated, (including a run down of cash) or some liabilities increased. Thus, saving provides the link between the current accounts of the SNA and the subsequent accumulation accounts.

9.29 If saving is zero, final consumption expenditure equals disposable income plus the change in pension entitlements. In that case, the institutional unit is not obliged to dispose of any assets or increase any of its liabilities unless capital transfers are receivable or payable. As already indicated in chapter 8, disposable income can, therefore, be interpreted as the maximum amount that an institutional unit can afford to spend on final consumption goods and services in the

Table 9.1: The use of disposable income account - uses

Uses									
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Final consumption expenditure			352	1 015	32	1 399			1 399
Individual consumption expenditure			184	1 015	31	1 230			1 230
Collective consumption expenditure			168		1	169			169
Adjustment for the change in pension entitlements	0	11	0		0	11	0		11
Saving, gross	228	14	- 35	215	5	427			427
Saving, net	71	2	- 62	192	2	205			205
Current external balance							- 13		- 13

accounting period without having to reduce its cash, liquidate other assets or increase its liabilities.

6. Calculating savings ratios

- 9.30 The savings ratio, especially for households, is a key economic variable. It is usually calculated by dividing saving by disposable income for the sector. However, the entry of the change in pension entitlements in both the use of disposable income account and the use of adjusted disposable

income account complicates this calculation. It is necessary to use not the balancing item from the secondary distribution of income account (disposable income) or from the redistribution of income in kind account (adjusted disposable income) but to add the adjustment for the change in pension entitlements to each of these figures to derive a figure for total disposable income or total adjusted disposable income. It is this total figure that should be the denominator in the savings ratio calculation.

B. Expenditures, acquisitions and consumption of goods and services

- 9.31 The distinction between final consumption expenditure and actual final consumption depends on the general distinction between expenditures on, and acquisitions of, goods and services. The purpose of this section is to explain not only how expenditure differs from acquisition but also how both of them differ from the actual or physical use of goods and services.

- The ownership of the good is transferred from the seller to the new owner; or
- The delivery of a service by the producer is completed to the satisfaction of the consumer.

1. Expenditures

- 9.32 *Expenditures on goods and services are defined as the values of the amounts that buyers pay, or agree to pay, to sellers in exchange for goods or services that sellers provide to them or to other institutional units designated by the buyers.* The buyer incurring the liability to pay need not be the same unit that takes possession of the good or service. As already noted, it is common for government units or NPISHs to pay for goods or services that the sellers provide to households. Moreover, as explained below, the liability incurred by the buyer does not necessarily have to be settled by a payment of cash.

- 9.34 The times at which sellers are actually paid for the goods or services they deliver are not necessarily the times at which the expenditures occur. As explained in chapter 3, payments may either precede, or lag behind, the actual deliveries of the goods or services sold. For this reason, the values of expenditures are measured by the values of the amounts receivable and payable at the times the expenditures are incurred. When payments take place before or after the expenditures are incurred, there must be consequential changes in the financial assets or liabilities (other than cash) of the two units concerned at the time the change of ownership takes place or the service is delivered.

The timing of expenditures on goods and services

- 9.33 Expenditures on goods or services occur at the times when buyers incur liabilities to sellers. These are usually the times when:

- 9.35 The precise moment at which the ownership of a good is transferred, or delivery of a service is completed to the satisfaction of the consumer, may not be easy to determine in practice in some cases. It may be perceived differently, or even disputed, by the two parties concerned.

Table 9.1 (cont): The use of disposable income account - resources

	Resources									
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total	
Transactions and balancing items										
Disposable income, gross	228	25	317	1 219	37	1 826				1 826
<i>Disposable income, net</i>	71	13	290	1 196	34	1 604				1 604
Final consumption expenditure								1 399		1 399
Individual consumption expenditure								1 230		1 230
Collective consumption expenditure								169		169
Adjustment for the change in pension entitlements					11		11	0		11

2. Acquisitions

9.36 *Acquisitions of goods and services by institutional units occur when they become the new owners of the goods or when the delivery of services to them is completed.* Acquisitions are valued at the transaction prices paid by the units that incur the expenditures. In most cases, the transaction price is the market price. The value of the goods or services acquired by an institutional unit or sector consists of the value the goods or services acquired through its expenditure plus the value of goods or services received through social transfers in kind less the value of goods or services paid to other units as social transfers in kind.

9.37 The difference between final consumption expenditure and actual final consumption is exactly the difference between expenditure on consumption goods and services and acquisition of consumption goods and services. Since all consumption goods and services must be both the subject of expenditure and also be acquired, this difference between final consumption expenditure and actual final consumption, sector by sector, explains the redistribution of goods and services by means of social transfers in kind.

9.38 The distinction between consumption expenditure and actual consumption and thus between expenditure and acquisitions is made only in respect of final consumption. The difference is explained exactly by social transfers in kind.

3. Consumption of goods and services

9.39 *Consumption of goods and services is the act of completely using up the goods and services in a process of production or for the direct satisfaction of human needs or wants. The activity of consumption consists of the use of goods and services for the satisfaction of individual or collective human needs or wants.* The satisfaction of needs or wants is immediate and direct in the case of final consumption; it is indirect and delayed in the case of intermediate consumption where goods and services are used to produce other goods and services that ultimately lead to the satisfaction of human needs or wants.

9.40 In the case of goods, the distinction between acquisition and consumption is clear. Producers acquire goods that they may hold for varying periods of time before physically using them up in processes of production. Households may hold consumption goods before using them for the satisfaction of their needs or wants. Few goods are so perishable that they have to be used immediately. For example, most foodstuffs need not be eaten until some time after they have been acquired.

9.41 In the case of services, however, the distinction between acquisition and use may not be relevant in a practical sense. The situations of units to whom services are delivered are automatically affected by those services and no further action may be needed in order to benefit from them.

Durable versus non-durable goods

9.42 In the case of goods, the distinction between acquisition and use is analytically important. It underlies the distinction between durable and non-durable goods that is used extensively in economic analysis. In fact, the distinction between durable and non-durable goods is not based on physical durability as such. Instead, the distinction is based on whether the goods can be used once only for purposes of production or consumption or whether they can be used repeatedly, or continuously. For example, coal is a highly durable good in a physical sense, but it can be burnt only once. *A durable good is one that may be used repeatedly or continuously over a period of more than a year, assuming a normal or average rate of physical usage. A consumer durable is a good that may be used for purposes of consumption repeatedly or continuously over a period of a year or more.*

Consumption as the using up of goods and services

9.43 A consumption function that expresses utility as a function of the quantities of goods and services consumed describes the using up of those goods and services rather than expenditures or acquisitions. In order to measure consumption as an activity, it would be necessary to adopt accounting procedures similar to those used in a production account, where a clear distinction is drawn between purchases of goods to be used in production and their subsequent use as inputs.

9.44 In practice, the SNA measures household consumption by expenditures and acquisitions only. The repeated use of durables by households could be recognized only by extending the production boundary by postulating that the durables are gradually used up in hypothetical production processes whose outputs consist of services. These services could then be recorded as being acquired by households over a succession of time periods. However, durables are not treated in this way in the SNA. A possible supplementary extension to the SNA to allow for such an extension of the production boundary could usefully take place in a satellite account.

C. Measuring the value of non-monetary transactions indirectly

9.45 By mutual agreement between the buyer and the seller, the liability incurred by the buyer may be discharged by providing a good, service or asset other than cash in exchange. For example, goods or services may be exchanged for each

other in barter transactions, or employees may provide labour in exchange for goods or services received as remuneration in kind.

9.46 When the buyers do not pay cash, or expect to pay cash, values have to be imputed for the expenditures using the appropriate prices of similar goods or services sold for cash on the market.

9.47 The value of goods produced and consumed within the same household as well as for those household services falling within the production boundary must also be measured indirectly.

9.48 In the interests of brevity, a transaction for which a value has to be imputed may be described as an “imputed expenditure” and this terminology is used below. Strictly speaking, however, the imputation refers to the value of goods or services involved and not to the expenditure itself. In other words it is the valuation that is imputed, not the fact that the transaction takes place. It is therefore preferable to refer to measuring the flows indirectly rather than by imputation.

1. Barter transactions

9.49 *A barter transaction is one where one basket of goods and services is exchanged for another basket of different goods and services without any accompanying monetary payment.* The values of the goods or services acquired in barter transactions constitute imputed expenditures. Values have to be estimated indirectly for goods or services exchanged in barter transactions equal to their market values. Thus, when the goods or services obtained through barter are used for household consumption their estimated values must be recorded as household final consumption expenditure. When a good offered for barter is an existing good and not newly produced output, negative imputed expenditure must be recorded for the unit offering the good, in the same way that sales of existing goods are recorded as negative expenditures.

9.50 In barter, both parties to a transaction must be recorded as making expenditures. The value of these expenditures should be based on the purchasers’ prices of these bartered products. In practice, neither taxes on products or transportation costs may apply, in which case the purchasers’ prices will not differ from the basic prices of the products. As the values of the goods or services bartered may not be the same, the values imputed for the barter transaction may on pragmatic grounds be taken as a simple average of the estimated values of the goods or services exchanged, so that equal expenditures are recorded for both parties. Goods that have been the subject of a barter transaction may be subsequently bartered with another party at a higher price, earning a margin for the unit conducting both barter transactions. However, each barter transaction involves two parties only and no wholesale or retail margin.

2. Expenditures on goods and services received as income in kind

9.51 *Income in kind received by employees is measured by the value of the goods and services provided by employers to their employees in remuneration for work done.* Workers receiving remuneration in kind are treated as making expenditures equal to the market value of the goods or services received (at producers’ prices if produced by the employer or at purchasers’ prices if bought by the

employer), the costs of the expenditures being met out of the income they receive as remuneration in kind. Thus, the values of the goods and services must be recorded as final consumption expenditure incurred by households as well as income in kind.

9.52 A distinction has to be made between goods or services provided to employees as remuneration in kind and goods or services provided because they are needed at work, the latter constituting intermediate consumption by the enterprise. In principle, the distinction is clear. Goods or services that employers are obliged to provide to their employees to enable them to carry out their work, such as tools, equipment, special clothing, etc., constitute intermediate consumption. On the other hand, goods or services that employees are able to use in their own time for the direct satisfaction of their needs or wants, or those of their families, constitute remuneration in kind. In practice, there are inevitably borderline cases, such as uniforms that must be worn at work but are also worn extensively by employees away from work. A detailed listing of the kinds of goods and services that are included in remuneration in kind is given in the section on compensation of employees in chapter 7.

3. Expenditure on goods and services produced on own account

9.53 When institutional units retain goods or services produced by themselves for their own final consumption or gross fixed capital formation, they clearly bear the costs themselves. They are, therefore, recorded as incurring expenditures whose values have to be estimated using the basic prices of similar goods or services sold on the market or their costs of production in the absence of suitable basic prices.

9.54 Household final consumption expenditure includes estimates for the values of goods or services produced as outputs of unincorporated enterprises owned by households that are retained for consumption by members of the household. The production of services for own consumption within the same household falls outside the production boundary of the SNA, except for housing services produced by owner-occupiers and services produced by employing paid domestic staff. As the costs of producing goods or services for own consumption are borne by the households themselves, it is clear that the expenditures on them are also incurred by households, even though their values must be estimated indirectly. The main types of goods and services produced and consumed within the same household are as follows:

- a. Food or other agricultural goods produced for own final consumption by farmers, including subsistence farmers, or others for whom agricultural production is only a secondary, or even a leisure, activity;
- b. Other kinds of goods produced by unincorporated enterprises owned by households that are consumed by members of the same households;
- c. Housing services produced for own final consumption by owner-occupiers (discussed further below); and

- d. Domestic or other services produced for own final consumption by households that employ paid staff for this purpose (domestic staff, cooks, gardeners, chauffeurs, etc.).

- 9.55 Values are estimated for these goods or services on the basis of the current basic prices of similar goods or services sold on the market, or by costs of production when suitable prices are not available, except for the services of paid staff; by convention, services of paid staff are valued simply by the compensation of employees paid, in cash and in kind.

D. Household final consumption expenditure

1. Introduction

- 9.56 Household final consumption expenditure consists of expenditure incurred by resident households on consumption goods or services. As well as purchases of consumer goods and services, final consumption expenditure includes the estimated value of barter transactions, goods and services received in kind, and goods and services produced and consumed by the same household, valued as explained in section C.

- 9.57 Final consumption expenditure excludes expenditure on fixed assets in the form of dwellings or on valuables. Dwellings are goods used by their owners to produce housing services. Expenditure on dwellings by households, therefore, constitutes gross fixed capital formation. When dwellings are rented by their owners, rentals are recorded as output of housing services by owners and final consumption expenditure by tenants. When dwellings are occupied by their owners, the imputed value of the housing services enters into both the output and final consumption expenditure of the owners. Valuables are expensive durable goods that do not deteriorate over time, are not used up in consumption or production, and are acquired primarily as stores of value. They consist mainly of works of art, precious stones and metals and jewellery fashioned out of such stones and metals. Valuables are held in the expectation that their prices, relative to those of other goods and services, will tend to increase over time, or at least not decline. Although the owners of valuables may derive satisfaction from possessing them, they are not used up in the way that consumption goods, including consumer durables, are used up over time.

- 9.58 The treatment of expenditure in some specific situations or on certain specific types of goods and services is outlined in the following sections.

2. Expenditures by households owning unincorporated enterprises

- 9.59 When a household includes one or more persons who own an unincorporated enterprise, all expenditure incurred for business purposes is excluded from household consumption expenditure. It is necessary to ensure that only expenditure for the direct satisfaction of human needs and wants is included in household final consumption expenditure. This may not be easy in practice when the same good or service (for example, electricity or other fuels) may be used equally well for business purposes or for final consumption. Business expenditures cannot therefore be identified purely on

the basis of the type of good or service purchased. Particular care needs to be exercised in the case of farms, including subsistence farms, where goods that have been purchased, or produced on own account, may be used either for household final consumption or for intermediate consumption; for example, corn or potatoes may be consumed by members of the households, fed to animals or used as seeds for future crops.

- 9.60 Care is also needed with purchases of consumer durables such as vehicles, furniture, or electrical equipment, which are to be classified as gross fixed capital formation by the household enterprise when purchased for business purposes but as final consumption expenditure when purchased for the personal use of household members. While the nature of the distinction may be clear in principle, it is often blurred in practice, especially when the owner of the business uses a durable good, such as a vehicle, partly for business purposes and partly for personal benefit. In such cases, the expenditure on the purchase of the durable should be split between gross fixed capital formation by the enterprise and household final consumption expenditure in proportion to its usage for business and personal purposes. When durables are purchased wholly or partly for business purposes, the decline in their value attributable to their use within the business should be recorded under the consumption of fixed capital of the unincorporated enterprise.

3. Expenditures on particular types of goods and services

Expenditures on financial services

- 9.61 When appropriate, values must be estimated for the expenditures that households incur on services provided by financial institutions for which no explicit charges are made. Expenditures on services for which financial institutions do make charges are recorded in the usual way.

Financial services, except insurance and pension fund services

- 9.62 Financial institutions, except insurance corporations and pension funds, and money lenders charge interest rates higher than a reference rate and pay interest at a rate lower than the reference interest rate. As explained in chapters 6 and 7, SNA interest is recorded in the allocation of primary income account at a reference rate and the difference between SNA interest and bank interest is recorded as final consumption expenditure of households. (If it is possible to identify interest payments and receipts relating exclusively

to unincorporated household enterprises, the charges would appear as intermediate consumption of those enterprises, but this is often not possible.)

- 9.63 When households acquire or dispose of foreign exchange and some other financial assets, the dealer in the financial asset will typically quote a buying price and a selling price for the asset. The difference between the price actually receivable or payable and the average of the buying and selling price at the time of the transaction is also treated as expenditure on the services of financial institutions.

Insurance and pension fund services

- 9.64 The way in which the value of the services produced by insurance enterprises and pension schemes is calculated in the SNA is explained in chapter 6. The values of the insurance services consumed by different sectors, subsectors or institutional units are estimated by allocating the value of the services produced by an insurance enterprise in proportion to the actual premiums. When the value of output is estimated by line of business, which is desirable if practicable, the service charge should be allocated across premiums by line of business also. The amounts paid by households are recorded as final consumption expenditure (except for the insurance services purchased by unincorporated enterprises owned by households, which are treated as intermediate consumption). The whole of the service charge on pension schemes is borne by households (some of which may be non-resident).

Services of dwellings, repairs and improvements

Services of owner-occupied dwellings

- 9.65 Persons who own the dwellings in which they live are treated as owning unincorporated enterprises that produce housing services that are consumed by the household to which the owner belongs. The housing services produced are deemed to be equal in value to the rentals that would be paid on the market for accommodation of the same size, quality and type. Care must be taken in respect of any taxes paid on housing. Taxes such as value added tax are rarely paid on housing services, but if they are payable, they should be excluded from the value of owner-occupied housing if the owner-occupier is exempt from payment. The imputed values of the housing services are recorded as final consumption expenditures of the owners.

Decoration, minor repairs and maintenance

- 9.66 “Do-it-yourself” activities of decoration and undertaking minor repairs, often of a routine nature, of a kind that would normally be seen as the responsibility of a tenant are treated as falling outside the production boundary. Purchases of materials used for such decoration or repairs should therefore be treated as final consumption expenditure, as should fees and service charges paid to builders, carpenters, plumbers, etc. Maintenance that is the responsibility of tenants is also treated as final consumption expenditure.
- 9.67 Expenditures that owners, including owner-occupiers, incur on the decoration, minor repairs and maintenance of the

dwelling that would normally be seen as the responsibility of a landlord should not be treated as household final consumption expenditure but as intermediate expenditure incurred in the production of housing services. These expenditures may consist either of payments for services provided by professional builders or decorators or purchases of materials for “do-it-yourself” repairs and decoration. In the latter case, no cost of the labour involved in the activity is included. The only value added for the imputed rent of owner-occupied housing is operating surplus.

Major improvements

- 9.68 Expenditures on major improvements (that is, reconstructions, renovations or enlargements) to dwellings are not classed in the same way as decoration, minor repairs and maintenance. They are excluded from household consumption expenditure and are treated as gross fixed capital formation on the part of the owners of those dwellings, including owner-occupiers.

The repair and maintenance of durables

- 9.69 Expenditures on all repair and maintenance of consumer durables, including vehicles, are treated in the same way as minor repairs to dwellings of the type carried out by tenants. Repairs and maintenance constitute final consumption expenditure whether they are carried out by specialist producers or by members of the household as “do-it-yourself” activities. In the latter case, only the values of the materials purchased should be included in household consumption expenditure.

Licences and fees

- 9.70 Households make payments to government units to obtain various kinds of licences, permits, certificates, passports, etc., and in some cases it is not clear whether the government units actually provide services in return, such as testing or inspection, or whether the payments are de facto taxes. As explained in paragraph 8.64 (c), the treatment of certain borderline cases has been decided by the following convention, based on the practices followed in the majority of countries: payments by households for licences to own or use vehicles, boats or aircraft and also licences for recreational hunting, shooting or fishing are treated as taxes. Payments for licences to undertake a specific activity, for example a taxi licence, are treated as a tax on production. Payments for all other kinds of licences, permits, certificates, passports, etc., are treated as purchases of services and included in household consumption expenditure.

4. Classification of household final consumption expenditure

- 9.71 Household final consumption expenditure is typically a large aggregate covering a wide range of goods and services. It is thus usually desirable to break down the figure. The *CPC* may be used for a breakdown by type of good or service. The Classification of Individual Consumption by Purpose (COICOP) may be used for a breakdown by purpose or function, such as food, health and education services.

5. Timing and valuation of household final consumption expenditure

Timing

9.72 In accordance with the general principles adopted in the SNA, expenditures should be recorded when the payables are created, that is, when the purchaser incurs a liability to the seller. This implies that expenditure on a good is to be recorded at the time its ownership changes while expenditure on a service is recorded when the delivery of the service is completed. Non-monetary transactions are recorded when the goods involved are made available to the household.

9.73 When a good is acquired under a hire purchase agreement, financial lease or similar method of financing, the purchaser accepts the risks and rewards of ownership on the good from the time the good is delivered. A change of ownership is therefore imputed at the time of delivery. Even though there is no legal change of ownership at this point, it is assumed that there is a change of economic ownership. The purchaser must also be shown in the financial accounts as incurring a liability to the hire purchase or finance corporation.

Valuation

9.74 Household expenditure is recorded at the purchasers' prices paid by households including any taxes on products that may be payable at the time of purchase. As defined in paragraphs 6.64 to 6.68, the purchaser's price of a good is the amount payable to take delivery of a unit of the good at the time and place required by the purchaser. It includes any transport charges incurred by the purchaser not already included in the seller's invoice price.

9.75 The value of barter and goods received as income in kind is recorded at the prices paid by the units incurring the expenditure initially. Goods produced on own account are valued at basic prices, consistently with their valuation as production.

9.76 Different households may pay different prices for identical products because of market imperfections. Price differences may persist because households may not be aware of them, or they may have imperfect information because the costs of searching for the retail outlets selling at the lowest prices may be too great. Even when households are aware of the price differences, it may be too inconvenient or costly to visit the outlets selling at the lowest prices. Another reason for the persistence of price differences is that many service producers deliberately practise price discrimination by charging different households different prices for identical services (for example, by charging lower prices or fees to pensioners or people with low incomes). As services cannot

be retraded, price discrimination is extremely common, or even prevalent, among service producers. Household expenditures are nevertheless recorded at the prices actually paid, as this is the appropriate value of the transaction.

9.77 Apparent price differences between the same goods or services are often not genuine price differences as they may be due to differences in quality, including differences in the terms or conditions of sale. For example, lower prices are often charged for bulk purchases of goods or off-peak purchases of services. Such expenditures are recorded at the prices actually paid; that is, after deducting from the standard or list prices or charges any discounts for bulk or off-peak purchases.

Valuation of purchases on credit

9.78 The purchaser's price does not include any interest or service charges that may be added when the seller arranges for credit to be provided to the purchaser. Similarly, the purchaser's price does not include any extra charges that may be incurred as a result of failing to pay within the period stated at the time the purchases were made, such charges being effectively interest payments on the credit extended by the seller. If the credit is arranged by a financial institution, the total charge may need to be allocated between a financial service charge and interest, as explained in paragraph 9.62. If the credit is provided by a non-financial institution, no financial service charge is provided. Note, however, that many large retailers have subsidiaries handling credit facilities, which are classed as financial institutions in their own right.

6. Expenditures by resident and non-resident households

9.79 Resident households make expenditures while travelling abroad, and non-resident households may make expenditures inside the economic territory of a country. Household final consumption expenditure in the SNA refers to the expenditure incurred by resident households, whether that expenditure is incurred within the economic territory or abroad.

9.80 In order to calculate total household final consumption expenditure it may be convenient to calculate the total expenditure made by all households, whether resident or not, within the economic territory and to adjust this figure by adding expenditures by residents abroad and subtracting expenditures by non-residents within the economy territory. Expenditures by residents abroad constitute imports, while expenditures by non-residents are exports. However, while the total expenditures by all households within the economic territory may be used for calculation in this way, it is not an aggregate recognized within the SNA.

F. Consumption expenditures incurred by general government

9.84 Expenditures on a wide range of consumption goods and services are incurred by general government, either on collective services or on selected individual goods or services.

9.85 The final consumption expenditures of general government can be classified in several ways. In particular, they may be classified:

- a. According to whether the goods or services have been produced by market or non-market producers;
- b. According to whether the expenditures are on collective services or individual goods or services;
- c. By function or purpose according to the classification of the functions of government (COFOG); or
- d. By type of good or service according to the *CPC*.

1. Expenditures on the outputs of market and non-market producers

9.86 Expenditures on the outputs of non-market producers that are provided free, or at prices that are not economically significant, to individual households or the community account for most of the final consumption expenditure by general government. It is therefore appropriate to take them first.

Expenditures on the outputs of non-market producers

9.87 Government may produce output for own final use and some market output but most production by units of general government is non-market in nature. As explained in chapter 6 the value of the non-market output is estimated by the sum of the costs involved in production. Although government delivers goods and services to the population individually and collectively, the costs of so doing are shown as final consumption expenditure by government.

9.88 The value of government final consumption expenditure on non-market goods and services is not necessarily exactly equal to the value of government output of these goods and services. The values of these expenditures are equal to the estimated values of all types of output less the value of production for own capital formation and less the values of any receipts from sales. These receipts may be derived from sales of some goods or services at prices that are not economically significant or from sales of a few goods or services at prices that are economically significant (sales of secondary market output).

Expenditures on consumption goods and services produced by market producers

9.89 Government units also purchase consumption goods and services produced by market producers that are supplied directly to households. The role of the government unit is confined to paying for the goods or services and ensuring

that they are distributed to households as social transfers in kind. The government unit does not engage in any further processing of such goods or services and the expenditures are treated as final consumption expenditure and not intermediate consumption of the government unit. The values of the goods or services distributed in this way form part of social transfers in kind. In this way, expenditure by government on market goods and services on behalf of households is recorded as both final consumption expenditure of government and actual final consumption of households.

Government output and final consumption expenditure

9.90 Final consumption expenditure of government can be derived as follows:

The value of all types of output of general government,

less the value of output for own account capital formation,

less the value of sales of goods and services at both economically insignificant prices and at economically significant prices,

plus the value of goods and services purchased from market producers for delivery to households free or at economically insignificant prices.

2. Expenditures on individual and collective goods and services

9.91 The consumption expenditures incurred by government units have to be divided into those incurred for the benefit of individual households and those incurred for the benefit of the community as a whole, or large sections of the community.

Individual goods and services

9.92 Individual goods and services are essentially “private”, as distinct from “public”, goods and services. They have the following characteristics:

- a. It must be possible to observe and record the acquisition of the good or service by an individual household or member thereof and also the time at which it took place;
- b. The household must have agreed to accept the provision of the good or service and to take whatever action is necessary to make it possible, for example, by attending a school or clinic; and
- c. The good or service must be such that its acquisition by one household or person, or possibly by a small, restricted group of persons, precludes its acquisition by other households or persons.

Collective services

9.96 Most goods can be privately owned and are individual in the sense used here. On the other hand, certain kinds of services can be provided collectively to the community as a whole. The characteristics of these collective services may be summarized as follows:

- a. Collective services are delivered simultaneously to every member of the community or to particular sections of the community, such as those in a particular region of a locality;
- b. The use of such services is usually passive and does not require the explicit agreement or active participation of all the individuals concerned; and
- c. The provision of a collective service to one individual does not reduce the amount available to others in the same community or section of the community. There is no rivalry in acquisition.

The classification of individual and collective government expenditures

9.99 The classification of the functions of government (COFOG) is a classification of transactions designed to apply to general government and its subsectors. There are ten classes in the classification as follows:

- 01General public services;
- 02Defence;
- 03Public order and safety;
- 04Economic affairs;

05Environmental protection;

06Housing and community amenities;

07Health;

08Recreation, culture and religion;

09Education;

10Social protection.

9.100 All of classes 01 to 06 are collective services, as are section 07.5 and 07.6 of health, sections 08.3 to 08.6 of recreation, culture and religion, sections 09.7 and 09.8 of education, and sections 10.8 and 10.9 of social protection. These sections cover expenditures on general administration, regulation, research that is not recorded as capital formation and so on. The remaining sections of health, recreation, culture and religion, education and social protection (which dominate each of the classes) are individual services.

Non-market services to enterprises

9.101 Many government expenditures benefit enterprises as much as households; expenditures on the cleaning, maintenance and repair of public roads, bridges, tunnels, etc. including the provision of street lighting, are examples. These are services whose consumption can be monitored and for this reason they are frequently provided on a market basis by charging tolls on road usage. When they are provided free, however, it would be difficult to separate the services provided free to enterprises from those provided free to households and, by convention, all these expenditures are treated as collective final expenditure.

9.102 Collective services such as the provision of security by the police, fire services, etc. that are provided free to the community at large also benefit individual enterprises as well as households.

H. Consumption expenditures incurred by NPISHs

9.105 The treatment of consumption expenditures incurred by NPISHs is very similar to that for general government. This section itemizes only those aspects that differ. Whereas government expenditures are financed in large part out of taxation, those of NPISHs are financed principally out of subscriptions, contributions or donations or property income.

9.106 The services provided by NPISHs are often confined to the members of the associations that own them, although they may also provide individual goods or services to third parties. Many NPISHs are only concerned with protecting the interests or welfare of their members or providing recreational, sporting or cultural facilities that households or persons cannot otherwise easily obtain for themselves acting individually. Although NPISHs may provide services to their members in groups, the services are essentially indi-

vidual rather than collective. In general, persons other than their members are excluded and derive no benefit from the services provided.

9.107 It is possible for NPISHs to produce collective services. For example a privately funded non-profit institution may undertake medical research and make its results freely available. However, unless such activities are evident and quantifiable, the assumption can be made that the expenditure of NPISHs is on individual goods and services only.

9.108 The final consumption expenditures of NPISHs can be classified in several ways. In particular, they may be classified:

- a. According to whether the goods or services have been produced by market or non-market producers;

- b. According to whether the expenditures are on collective services or individual goods and services;
 - c. By function or purpose according to the classification of the purposes of non-profit institutions serving households (COPNI); and
 - d. By type of good or service according to the *CPC*.
- 9.109 For NPISHs as for government, it is possible that they purchase goods from market producers for distribution to households. It is also possible that they may have some receipts from sales either of non-market output at prices that are not economically significant or from sales of secondary market production at economically significant

prices. However for many NPISHs, the value of their consumption expenditure will exactly match the value of their non-market output.

Individual consumption by type of producer

- 9.110 The whole of individual consumption of NPISHs is treated as social transfers in kind in the redistribution of income in kind account and in the use of adjusted disposable income account. It is analytically interesting to split individual consumption into those goods and services produced by NPISHs as non-market producers and those that are purchased by NPISHs from market producers for onward transmission to households either free or at prices that are not economically significant.

Chapter 10: The capital account

A. Introduction

- 10.1 The capital account is the first of four accounts dealing with changes in the values of assets held by institutional units. It records transactions in non-financial assets. The financial account records transactions in financial assets and liabilities. The other changes in the volume of assets account records changes in the value of both non-financial and financial assets that result from neither transactions nor price changes. The effects of price changes are recorded in the revaluation account. These four accounts enable the change in the net worth of an institutional unit or sector between the beginning and end of the accounting period to be decomposed into its constituent elements by recording all changes in the prices and volumes of assets, whether resulting from transactions or not. The impact of all four accounts is brought together in the balance sheets. The immediately following chapters describe the other accounts just mentioned.
- 10.2 The purpose of the capital account, shown in table 10.1, is to record the values of the non-financial assets that are acquired, or disposed of, by resident institutional units by engaging in transactions and to show the change in net worth due to saving and capital transfers. The transactions may be either with other institutional units, both resident and non-resident, or internal transactions in which units retain products that they have produced themselves for use as capital formation.
- 10.3 When compiling balance sheets, it is customary to record assets on the left-hand side and liabilities and net worth on the right-hand side. The same convention is followed in the accumulation accounts, where changes in assets are recorded on the left-hand side and other items on the right-hand side. As in the current accounts, the balancing item of the capital account, net lending or net borrowing, is recorded on the left-hand side. Consumption of fixed capital is also recorded on the left-hand side of the capital account.
- 10.4 The right-hand side of the capital account records the resources available for the accumulation of assets. These consist of net saving, the balancing item carried forward from the use of income account, and capital transfers. Capital transfers payable are recorded with a negative sign.

1. The definitions of ownership and assets

- 10.5 Ownership and assets are defined in chapter 3 but it is helpful to recall some of the key features of the definitions here. It is important to distinguish between legal ownership and economic ownership. *The legal owner of entities such*

as goods and services, natural resources, financial assets and liabilities is the institutional unit entitled in law and sustainable under the law to claim the benefits associated with the entities. By contrast, *the economic owner of entities such as goods and services, natural resources, financial assets and liabilities is the institutional unit entitled to claim the benefits associated with the use of the entity in question in the course of an economic activity by virtue of accepting the associated risks.*

- 10.6 Every entity has both a legal owner and an economic owner, though in many cases the economic owner and the legal owner of an entity are the same. Where they are not, the legal owner has handed responsibility for the risk involved in using the entity in an economic activity to the economic owner along with associated benefits. In return the legal owner accepts another package of risks and benefits from the economic owner.
- 10.7 When government claims legal ownership of an entity on behalf of the community at large, the benefits also accrue to the government on behalf of the community at large. Thus government is regarded as both the legal and economic owner of these entities.
- 10.8 *An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another.* All assets in the SNA are economic assets.

2. Non-financial assets

- 10.9 Two different categories of non-financial assets are distinguished from each other: produced assets and non-produced assets.
- Produced assets are non-financial assets that have come into existence as outputs from production processes that fall within the production boundary of the SNA.
 - Non-produced assets are non-financial assets that have come into existence in ways other than through processes of production.

Produced assets

- 10.10 There are three main types of produced assets: fixed assets, inventories and valuables. Both fixed assets and inventories

are assets that are held only by producers for purposes of production. Valuables may be held by any institutional unit and are primarily held as stores of value.

10.11 **Fixed assets are produced assets that are used repeatedly or continuously in production processes for more than one year.** The distinguishing feature of a fixed asset is not that it is durable in some physical sense, but that it may be used repeatedly or continuously in production over a long period of time, which is taken to be more than one year. Some goods, such as coal, may be highly durable physically but cannot be fixed assets because they can be used once only. Fixed assets include not only structures, machinery and equipment but also cultivated assets such as trees or animals that are used repeatedly or continuously to produce other products such as fruit or dairy products. They also include intellectual property products such as software or artistic originals used in production.

10.12 **Inventories are produced assets that consist of goods and services, which came into existence in the current period or in an earlier period, and that are held for sale, use in production or other use at a later date.** Inventories consist of stocks of outputs that are still held by the units that produced them prior to their being further processed, sold, delivered to other units or used in other ways and stocks of products acquired from other units that are intended to be used for intermediate consumption or for resale without further processing. Inventories of services consist of work-in-progress or finished products, for example architectural drawings, which are in the process of completion or are completed and waiting for the building to which they relate to be started. Inventories held by government include, but are not limited to, inventories of strategic materials, and grain and other commodities of special importance to the nation.

10.13 **Valuables are produced goods of considerable value that are not used primarily for purposes of production or consumption but are held as stores of value over time.** Valuables are expected to appreciate or at least not to

decline in real value, nor to deteriorate over time under normal conditions. They consist of precious metals and stones, jewellery, works of art, etc. Valuables may be held by all sectors of the economy.

Non-produced assets

10.14 **Non-produced assets consist of three categories: natural resources; contracts, leases and licences; and purchased goodwill and marketing assets.**

10.15 **Natural resources consist of naturally occurring resources such as land, water resources, uncultivated forests and deposits of minerals that have an economic value.**

10.16 **Contracts, leases and licences are treated as assets only when two conditions are both satisfied.**

a. **The terms of the contract, lease or licence specify a price for the use of an asset or provision of a service that differs from the price that would prevail in the absence of the contract, lease or licence.**

b. **One party to the contract must be able legally and practically to realize this price difference.**

The second condition presupposes that a market for the contract exists. It is recommended that in practice contracts, leases and licences should only be recorded in the accounts when the holder does actually exercise his right to realize the price difference.

10.17 **Purchased goodwill and marketing assets represent the whole or part of the net worth of an institutional unit.** They are recorded only when a unit is purchased in its entirety or an identifiable marketing asset is sold to another unit.

Table 10.1: The capital account - concise form - changes in assets

Changes in assets									
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Gross capital formation	308	8	38	55	5	414			414
Net capital formation	151	-4	11	32	2	192			192
Gross fixed capital formation	280	8	35	48	5	376			376
Consumption of fixed capital	-157	-12	-27	-23	-3	-222			-222
<i>Gross fixed capital formation by type of asset</i>									
Changes in inventories	26	0	0	2	0	28			28
Acquisitions less disposals of valuables	2	0	3	5	0	10			10
Acquisitions less disposals of non-produced assets	-7	0	2	4	1	0			0
Capital transfers, receivable									
Capital transfers, payable									
<i>Net lending (+) / net borrowing (-)</i>	-56	-1	-103	174	-4	10	-10		0

3. The structure of the capital account

Saving

- 10.18 The right-hand side of the capital account represents changes in liabilities and net worth. The first item recorded on the right-hand side is the balancing item carried down from the use of disposable income account, net saving. When positive, net saving represents that part of disposable income that is not spent on consumption goods and services and must, therefore, be used to acquire non-financial or financial assets of one kind or another, including cash, or to repay liabilities. When negative, net saving measures the amount by which final consumption expenditure exceeds disposable income: the excess must be financed by disposing of assets or incurring new liabilities.

Capital transfers

- 10.19 *Capital transfers are unrequited transfers where either the party making the transfer realizes the funds involved by disposing of an asset (other than cash or inventories), relinquishing a financial claim (other than accounts receivable) or the party receiving the transfer is obliged to acquire an asset (other than cash) or both conditions are met.* Capital transfers are often large and irregular but neither of these are necessary conditions for a transfer to be considered a capital rather than a current transfer. If there is doubt about whether a transfer should be treated as current or capital, it should be treated as current.
- 10.20 Capital transfers receivable represent an increase in net worth and so are shown on the right-hand side of the account for the recipient. By convention, the matching amounts payable are also shown on the right-hand side of the account but as a negative entry (that is, a decrease in net worth) for the payer.

Changes in net worth due to saving and capital transfers

- 10.21 The total of the entries on the right-hand side of the account is explicitly shown and described as changes in net worth due to saving and capital transfers. It is not a balancing item. *Changes in net worth due to saving and capital transfers represent the positive or negative amount available to the unit or sector for the acquisition of non-financial and financial assets.*

Acquisitions less disposals of non-financial assets

- 10.22 The left-hand side of the capital account records how much of the change in net worth due to saving and capital transfers is used to acquire non-financial assets and how much is left to be explained by the acquisition of financial assets or liabilities in the financial account. Resources coming from the disposal of existing assets appear as negative entries on the left-hand side of the account also. As well as purchases and sales of assets, non-financial assets acquired (or disposed of) via barter or by means of production for own use are included.
- 10.23 Three headings for the net change in the value of non-financial assets are shown in the capital account:
- Gross capital formation;
 - Consumption of fixed capital;
 - Acquisitions less disposals of non-produced non-financial assets.

The treatment given to each of these categories of changes in assets is described in later sections of this chapter.

- 10.24 *Gross capital formation shows the acquisition less disposal of produced assets for purposes of fixed capital*

Table 10.1 (cont): The capital account - concise form - changes in liabilities and net worth

Transactions and balancing items	Changes in liabilities and net worth								
	Non-financial corporations	Financial corporations	General government	Households	NPIs	Total economy	Rest of the world	Goods and services	Total
<i>Saving, net</i>	71	2	-62	192	2	205			205
<i>Current external balance</i>							-13		-13
Gross capital formation								414	414
Net capital formation								192	192
Gross fixed capital formation								376	376
Consumption of fixed capital								-222	-222
<i>Gross fixed capital formation by type of asset</i>									
Changes in inventories								28	28
Acquisitions less disposals of valuables								10	10
Acquisitions less disposals of non-produced assets								0	0
Capital transfers, receivable	33	0	6	23	0	62	4		66
Capital transfers, payable	-16	-7	-34	-5	-3	-65	-1		-66
<i>Changes in net worth due to saving and capital transfers</i>	88	-5	-90	210	-1	202	-10		192

formation, inventories or valuables. It is possible (if uncommon) for the gross capital formation of an individual institutional unit or sector to be negative if it sells off enough of its existing assets to other units or sectors.

- 10.25 **Consumption of fixed capital is the decline, during the course of the accounting period, in the current value of the stock of fixed assets owned and used by a producer as a result of physical deterioration, normal obsolescence or normal accidental damage.** When, as recommended in the SNA, the balancing item carried down from the use of income account is net saving, it already reflects the fact that net worth has been reduced by the amount of consumption of fixed capital, the amount by which fixed assets are reduced in the period. Since the capital account is designed to show the way in which net worth is augmented by the acquisition of non-financial assets, this amount has to be offset from the value of new acquisitions of fixed assets so the addition to the capital stock of fixed assets is a net amount. For this reason, consumption of fixed capital is recorded as a negative change in assets on the left-hand side of the capital account.
- 10.26 If it is not feasible to measure consumption of fixed capital because of lack of data, the saving figure carried forward from the use of income account has to be gross. In this case, there is no entry for consumption of fixed capital in the capital account. If consumption of fixed capital has to be omitted from both sides of the account, the balancing item of the account is not affected; net lending or borrowing can be derived residually whether or not consumption of fixed capital can be estimated. However, if consumption of fixed capital is not estimated, the accumulation accounts do not record all changes between two successive balance sheets.
- 10.27 The remaining item on the left-hand side of the capital account refers to non-produced non-financial assets. The total value of the acquisitions less disposals of non-produced non-financial assets may also be positive or

negative. Since natural resources are owned by units that are either actually or notionally resident, this part will generally be zero for the economy as a whole. (An exception exists for land purchased by a foreign government for an embassy or military base.) However, there may be transactions in contracts, leases and licences or marketing assets with non-resident units.

Net lending

- 10.28 The balancing item of the capital account, **net lending, is defined as the difference between changes in net worth due to saving and capital transfers and net acquisitions of non-financial assets (acquisitions less disposals of non-financial assets, less consumption of fixed capital). If the amount is negative it represents net borrowing.** It shows the amount of the resources remaining for purposes of lending or that need to be borrowed. Even if funds are not actively lent but are retained in cash, or in a bank deposit, the holder of the counterpart obligations represented by these financial assets has in effect borrowed from the unit holding the cash or bank deposit.
- 10.29 The identity between the balancing items of the capital account and the financial account is an important feature of the set of the accounts as a whole. What is borrowed by one unit must be lent by another and vice versa. The conceptual identity between the balancing items provides a check on the numerical consistency of the set of accounts as a whole, although the two balancing items are likely to diverge in practice because of errors of measurement.
- 10.30 In general in the SNA, and especially in balancing items, the prefix net means excluding the consumption of fixed capital. For net lending this is not the case; it represents the difference between those assets giving rise to making funds available to other units and those drawing funds from other units.

B. Gross capital formation

- 10.31 Gross capital formation is measured by the total value of the gross fixed capital formation, changes in inventories and acquisitions less disposals of valuables. Before discussing in detail the entries to be recorded under each of these items, it is necessary to clarify the coverage of the item and the application of accounting rules such as valuation, time of recording and the identification of ownership.

constitute a fixed asset and what activities are treated as adding to the value of non-produced assets.

The asset boundary

1. Gross fixed capital formation

- 10.32 **Gross fixed capital formation is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain specified expenditure on services that adds to the value of non-produced assets.** In order to ensure that the coverage of gross fixed capital formation is precisely defined, it is necessary first to define what does and what does not

- 10.33 All goods and services supplied to the economy by means of production, imports or the disposal of produced assets must be used for exports, consumption (intermediate or final) or as part of capital formation. The boundary line between those products that are retained in the economy and are used for consumption and those products that are used for capital formation is known as the asset boundary. **The asset boundary for fixed assets consists of goods and services that are used in production for more than one year.**

- 10.34 Two exclusions from the asset boundary should be noted at the outset. The first is that consumer durables are not treated as fixed assets. The services these durables produce

- are household services outside the production boundary of the SNA. If, for example, a washing machine were to be treated as a fixed asset, the production boundary would have to be extended to include all laundry services, whether undertaken by machine or by hand. As it stands, the production boundary restricts laundry services to those services provided to other units but includes services provided by both machine and by hand. However, owner-occupied dwellings are not treated as consumer durables but are included within the asset boundary. The owner-occupiers are treated as owners of unincorporated enterprises producing housing services for their own consumption.
- 10.35 The second exclusion is pragmatic rather than conceptual and concerns small tools. Some goods may be used repeatedly, or continuously, in production over many years but may nevertheless be small, inexpensive and used to perform relatively simple operations. Hand tools such as saws, spades, knives, axes, hammers, screwdrivers and spanners or wrenches are examples. If expenditures on such tools take place at a fairly steady rate and if their value is small compared with expenditures on more complex machinery and equipment, it may be appropriate to treat the tools as materials or supplies used for intermediate consumption. Some flexibility is needed, however, depending on the relative importance of such tools. In countries in which they account for a significant part of the value of the total stock of an industry's durable producers' goods, they may be treated as fixed assets and their acquisition and disposal by producers recorded under gross fixed capital formation.
- 10.36 Not all goods included within the asset boundary must be newly produced. Since assets have a long life, they may change hands but continue to function as fixed assets for their new owners. Thus it is important to define what existing fixed assets are and how they are treated in measuring gross fixed capital formation.
- 10.37 Nor are all services included within the asset boundary immediately recognizable. Important classes of services are included in the asset boundary because of the impact they have on the value of new or existing assets. These are improvements to existing assets and the cost of ownership transfer of assets. These are described below after defining existing fixed assets.
- Existing fixed assets*
- 10.38 Because assets have service lives that may range up to 50 years or more for dwellings or other structures, their ownership may change several times before they are eventually scrapped, demolished or abandoned. ***An existing fixed asset is one whose value was included in the stock of fixed capital of at least one producer unit in the domestic economy at some earlier point in time either in the current period or in the immediately previous accounting period.*** In many countries, well-organized markets exist to facilitate the buying and selling of many kinds of existing fixed assets, notably automobiles, ships, aircraft, dwellings and other structures. Indeed, the number of existing dwellings bought and sold within a given time period may considerably exceed the number of new dwellings. In practice, most existing fixed assets will have been used in production by their current owners, but an existing capital good might be sold by its owner before it has actually been used.
- 10.39 In general, sales or other disposals of existing goods, whether fixed assets or not, are recorded as negative expenditures or negative acquisitions. Thus, when the ownership of an existing fixed asset is transferred from one resident producer to another, the value of the asset sold, bartered or transferred is recorded as negative gross fixed capital formation by the former and as positive gross fixed capital formation by the latter. The value of the positive gross fixed capital formation recorded for the purchaser exceeds the value of the negative gross fixed capital formation recorded for the seller by the value of the costs of ownership transfer incurred by the purchaser. The treatment of these costs is explained in more detail in a later section.
- 10.40 When the sale takes place between two resident producers, the positive and negative values recorded for gross fixed capital formation cancel out for the economy as a whole except for the costs of ownership transfer. Similarly, if an existing immovable fixed asset, such as a building, is sold to a non-resident, by convention the latter is treated as purchasing a financial asset that is the equity of a notional resident unit while the notional resident unit is deemed to purchase the asset, so that the sale and purchase of the asset takes place between resident units. However, if an existing movable fixed asset, such as a ship or aircraft, is exported, no positive gross fixed capital formation is recorded elsewhere in the economy to offset the seller's negative gross fixed capital formation.
- 10.41 Some durable goods, such as vehicles, may be classified as fixed assets or as consumer durables depending upon the owner and the purpose for which they are used. If, therefore, the ownership of such a good were transferred from an enterprise to a household to be used for final consumption, negative gross fixed capital formation is recorded for the enterprise and positive consumption expenditure by the household. If a vehicle owned by a household were to be acquired by an enterprise, it would be recorded as an acquisition of a "new" fixed asset by the enterprise, even though it is an existing good, and as negative consumption expenditure by the household. A similar treatment is applied to imports of used products acquired by resident producers as assets.
- 10.42 Thus, it is perfectly possible for gross fixed capital formation to be negative as a result of the sale or disposal of existing fixed assets, although aggregate gross fixed capital formation is unlikely to be negative for large groups of units such as subsectors, sectors or the economy as a whole.
- Improvements to existing assets*
- 10.43 Gross fixed capital formation may take the form of improvements to existing fixed assets, such as buildings or computer software, that increase their productive capacity, extend their service lives, or both. By definition, such gross fixed capital formation does not lead to the creation of new assets that can be separately identified and valued, but to an increase in the value of the asset that has been improved.

Accordingly, it is the improved asset that is henceforth relevant to the SNA and on which consumption of fixed capital must be calculated subsequently.

10.44 A different treatment is applied to improvements to land in its natural state. In this case the improvements are treated as the creation of a new fixed asset and are not regarded as giving rise to an increase in the value of the natural resource. If land, once improved, is further improved, then the normal treatment of improvements to existing fixed assets applies.

10.45 The distinction between ordinary maintenance and repairs that constitute intermediate consumption and those that are treated as capital formation is not clear cut. As explained in chapter 6, ordinary maintenance and repairs are distinguished by two features:

- a. They are activities that must be undertaken regularly in order to maintain a fixed asset in working order over its expected service life. The owner or user of the asset has no choice about whether or not to undertake ordinary maintenance and repairs if the asset in question is to continue to be used in production;
- b. Ordinary maintenance and repairs do not change the fixed asset's performance, productive capacity or expected service life. They simply maintain it in good working order, if necessary by replacing defective parts by new parts of the same kind.

10.46 On the other hand, improvements to existing fixed assets that constitute gross fixed formation must go well beyond the requirements of ordinary maintenance and repairs. They must bring about significant changes in some of the characteristics of existing fixed assets. They may be distinguished by the following features:

- a. The decision to renovate, reconstruct or enlarge a fixed asset is a deliberate investment decision that may be taken any time, even when the good in question is in good working order and not in need of repair. Major renovations of ships, buildings or other structures are frequently undertaken well before the end of their normal service lives;
- b. Major renovations, reconstructions or enlargements increase the performance or productive capacity of existing fixed assets or significantly extend their previously expected service lives, or both. Enlarging or extending an existing building or structure constitutes a major change in this sense, as does the refitting or restructuring of the interior of a building or ship or a major extension to or enhancement of an existing software system.

10.47 It is difficult to provide simple objective criteria that enable improvements to be distinguished from repairs because any repair may be said to improve the performance or extend the working life of the unrepaired asset. For example, machines may cease to function at all because of the failure of one small part. The replacement of such a part does not,

however, constitute gross fixed capital formation. Thus, improvements have to be identified either by the magnitude of the changes in the characteristics of the fixed assets such as size, shape, performance, capacity, or expected service lives, or by the fact that improvements are not the kinds of changes that are observed to take place routinely in other fixed assets of the same kind, as part of ordinary maintenance and repair programmes.

Costs incurred on acquisition and disposal of assets

10.48 Purchasing a fixed asset is often a complicated procedure that may involve using lawyers to establish legal title to the asset, engineers to certify that it is in satisfactory working order and so on. There may also be taxes to be paid occasioned by the change of ownership of the item. Further, in the case of highly complex machinery there may be significant costs associated with delivery and installation that were not included in the purchase price.

10.49 The benefits to be derived from the use of the asset in production have to cover these costs as well as the initial price of the asset. Costs incurred on acquisition of an asset are treated as an integral part of the value of that unit's gross fixed capital formation. The value at which the asset enters the balance sheet of its new owner therefore includes these costs. This applies to both new and existing assets.

10.50 Just as there may be costs incurred on the acquisition of an asset, there may also be costs incurred on the disposal of an asset. Some of these may be parallel to those costs incurred on acquisition, for example legal fees and disinstallation costs. However, in the case of some significantly large and important assets, such as oil rigs and nuclear power stations, there may also be major costs associated with the decommissioning of the asset at the end of its productive life. For some land sites, such as those used for landfill, there may be large costs associated with rehabilitation of the site. These are referred to collectively as terminal costs.

10.51 All these costs associated with acquiring and disposing of assets may be described as costs of ownership transfer. ***The costs of ownership transfer consist of the following kinds of items:***

- a. ***All professional charges or commissions incurred by both units acquiring or disposing of an asset such as fees paid to lawyers, architects, surveyors, engineers and valuers, and commissions paid to estate agents and auctioneers;***
- b. ***Any trade and transport costs separately invoiced to the purchaser;***
- c. ***All taxes payable by the unit acquiring the asset on the transfer of ownership of the asset;***
- d. ***Any tax payable on the disposal of an asset;***
- e. ***Any delivery and installation or disinstallation costs not included in the price of the asset being acquired or disposed of; and***

f. Any terminal costs incurred at the end of an asset's life such as those required to render the structure safe or to restore the environment in which it is situated.

10.52 All these costs of ownership transfer are treated as gross fixed capital formation. They are attributed to the purchaser or seller of the asset according to which unit bears the responsibility of meeting the costs. The time of recording of these costs is discussed below. The costs are written off via consumption of fixed capital over the period the new owner expects to hold the asset, as discussed in the section on consumption of fixed capital except for the terminal costs that should be written off over the whole life of the asset.

Time of recording

10.53 The general principle for the time of recording of acquisitions less disposals of fixed assets is when the ownership of the fixed assets is transferred to the institutional unit that intends to use them in production. Except in two special cases, this time is not generally the same as the time at which the fixed assets are produced. Nor is it necessarily the time at which they are put to use in the production of other goods or services.

10.54 The two exceptions cover assets that take some time to produce such as construction projects and some cultivated biological resources. In general, incomplete construction projects and immature animals and plantations are treated as work-in-progress. They are reclassified from inventories to fixed capital when complete and delivered to the unit intending to use them as fixed assets. However, when the assets are being produced on own account, the partially complete products are recorded as fixed capital formation as work takes place.

10.55 When assets are developed under a contract of sale, the producer records work-in-progress as normal but when stage payments are made, these are regarded as purchase of [part of] a fixed asset or as a trade advance if the value of the stage payment exceeds the value of the work put in place. In the latter case, work is recorded as fixed capital delivered to the final owner as work proceeds until the trade credit is exhausted. When there is no contract of sale agreed in advance, the output produced by the enterprise must be recorded as work-in-progress or as additions to the producers' inventories of finished goods, depending on whether the product is completed. For example, finished dwellings built speculatively remain as additions to the producers' inventories of finished goods until they are sold or otherwise acquired by users.

Ownership of assets

10.56 In most cases, the ownership of fixed assets is straightforward; it is the unit that acquires the asset for use in production. There are however, three exceptions to be noted. One concerns assets subject to a financial lease; the second concerns assets produced by communal effort; the third concerns immovable assets owned by non-residents.

10.57 A financial lease is a contract between a lessor and a lessee whereby the lessor legally owns the good but the terms of

the lease are such that the lessee takes over both the economic risks and rewards of using the asset in production. In effect, therefore, the lessee becomes the economic owner of the asset even if the lessor remains the legal owner. In these cases, the asset is recorded as being acquired by the lessee in return for a loan extended by the lessor to the lessee. The asset is then recorded on the balance sheet of the lessee and not the lessor. The payments due under the lease arrangement are treated as forming a repayment of the principal of the loan and a payment of interest and possibly a service charge. More details of these arrangements are given in chapter 17.

10.58 Certain structures may be produced for own communal use by groups of households: for example, buildings, roads, bridges, etc. After they are finished, the ownership of such structures may then be transferred to some government unit that assumes responsibility for their maintenance. When the transfer occurs, the gross fixed capital formation on own account originally attributed to the group of households is cancelled by their negative gross fixed capital formation resulting from the capital transfer in kind made to the government unit. The final gross fixed capital formation remaining is that of the government unit resulting from its acquisition of the asset through the capital transfer in kind. If no such transfer exists and the structure remains the communal property of the group of households responsible for its construction, an NPISH providing collective services should be created.

10.59 A further consideration to be taken into account in determining ownership concerns assets built under a private finance initiative (PFI), sometimes also described as a public-private partnership (PPP) or a build, own, operate, transfer (BOOT) scheme or some other similar shorthand. Such schemes are under accounting scrutiny at the time of writing. Provisional guidance on how to ascribe the ownership of such schemes is given in chapter 22.

10.60 All buildings and other structures within the economic territory are deemed, by convention, to be owned by resident units. If the economic owner (or lessee under a financial lease) would not otherwise qualify as a resident unit, a notional resident unit is created for this purpose. The notional resident unit is assumed to purchase (or lease) the building or structure. The legal owner (or lessor) is deemed to hold equivalent equity in the notional resident unit. If a building or structure is owned in part by a resident unit and in part by one or several non-residents, there is one notional resident unit established with each of the owners having a proportionate share of the equity of the notional resident unit.

Valuation

10.61 The various components of acquisitions and disposals of fixed assets are listed below:

- a. Value of fixed assets purchased;
- b. Value of fixed assets acquired through barter;
- c. Value of fixed assets received as capital transfers in kind;

- d. Value of fixed assets retained by their producers for their own use, including the value of any fixed assets being produced on own account that are not yet completed or fully mature;

less

- e. Value of existing fixed assets sold;
- f. Value of existing fixed assets surrendered in barter;
- g. Value of existing fixed assets surrendered as capital transfers in kind.

Items (a) to (d) include new assets, existing assets, the value of improvements to assets and the cost of ownership transfers in respect of these assets. Items (e), (f) and (g) include disposals of assets that may cease to be used as fixed assets by their new owners: for example, vehicles sold by enterprises to households for their personal use, assets that are scrapped or demolished by their new owners and assets that are exported.

- 10.62 Fixed assets acquired through barter are valued at their estimated purchasers' prices plus any costs of ownership transfer. In practice, neither taxes on products nor transportation costs may apply, in which case the purchasers' prices will not differ from the basic prices of the product. Fixed assets produced for own gross fixed capital or assets transferred in kind are valued at their estimated basic prices, or by their costs of production when satisfactory estimates of their basic prices cannot be made.
- 10.63 Special considerations apply to fixed assets produced by communal construction by households. If the value of the asset must be estimated on the basis of costs, and some or all of the labour is provided free, as may happen, an estimate of what the cost of paid labour would be must be included in the estimated total production costs using wage rates for similar kinds of labour in the vicinity or region. Otherwise, the value of the finished structure will be seriously underestimated. However, this estimate is not treated as compensation of employees but as gross mixed income. This income accrues to the households concerned who are then assumed to use it to "purchase" the final construction. If the construction is then handed over to government, there is negative gross fixed capital formation recorded by the community offsetting their previously recorded acquisition of the asset and positive gross fixed capital formation recorded by government, along with a capital transfer of the value of the construction from the community to government.

Transactions in fixed assets

- 10.64 **Gross fixed capital formation in a particular category of fixed asset consists of the value of producers' acquisitions of new and existing products of this type less the value of their disposals of fixed assets of the same type.** Gross fixed capital formation is not recorded until the ownership of the fixed assets is transferred to the unit that intends to use them in production unless it is being constructed to order

under a contract agreed in advance. Thus, new assets that have not yet been sold form part of additions to inventories of finished goods held by the producers of the assets. Similarly, an imported product is not recorded as gross fixed capital formation until it is acquired by the unit that intends to use it.

- 10.65 Table 10.2 shows the changes in assets side of table 10.1 expanded to show the entries for transactions in fixed assets. It will be noted that the SNA recommends showing acquisitions of certain categories of assets separately from disposals of those assets when this provides analytically useful data.
- 10.66 In presentations of the capital account, gross fixed capital formation is usually shown by type of asset, where the accounting principles of the last paragraph are applied to each category of fixed asset in turn. Table 10.2 also incorporates the classification of fixed assets used in the SNA. Each of the main categories of fixed assets is defined and described in turn below.
- 10.67 The SNA does not formally include a division between tangible and intangible assets in the classification. However, the categories of dwellings, other buildings and structures, machinery and equipment, weapons systems and cultivated biological resources can be taken to correspond to tangible assets and the other categories to intangible assets.

Dwellings

- 10.68 **Dwellings are buildings, or designated parts of buildings, that are used entirely or primarily as residences, including any associated structures, such as garages, and all permanent fixtures customarily installed in residences.** Houseboats, barges, mobile homes and caravans used as principal residences of households are also included, as are public monuments identified primarily as dwellings.
- 10.69 Examples include products included in *CPC 2* class 5311, residential buildings and part of *CPC 2*.group 387. The former class includes single and multiple dwelling buildings as well as residential buildings for communities, retirement homes, hostels, orphans etc. The latter class includes prefabricated buildings, including those intended for housing or for buildings associated with housing such as garages.
- 10.70 The costs of clearing and preparing the site for construction are part of the costs of new dwellings (and other buildings and structures) and are therefore included in the value of the buildings.
- 10.71 Incomplete dwellings are included to the extent that the ultimate user is deemed to have taken ownership, either because the construction is on own-account or as evidenced by the existence of a contract of sale or purchase.
- 10.72 Dwellings acquired for military personnel are included because they are used for the production of housing services, in the same way as dwellings acquired by civilian units.

- Other buildings and structures*
- 10.73 ***Other buildings and structures comprise non-residential buildings, other structures and land improvements.*** These are described in turn below.

Buildings other than dwellings

- 10.74 ***Buildings other than dwellings include whole buildings or parts of buildings not designated as dwellings. Fixtures, facilities and equipment that are integral parts of the structures are included.*** For new buildings, costs of site clearance and preparation are included. Public monuments identified primarily as non-residential buildings are also included.
- 10.75 Examples include products included in *CPC 2.0* class 5312, non-residential buildings, such as warehouses and industrial buildings, commercial buildings, buildings for

public entertainment, hotels, restaurants, schools, hospitals, prisons etc. Prisons, schools and hospitals are regarded as buildings other than dwellings despite the fact that they may shelter institutional households.

Other structures

- 10.76 ***Other structures include structures other than buildings, including the cost of the streets, sewer, etc.*** The costs of site clearance and preparation are also included. Public monuments for which identification as dwellings or non-residential buildings is not possible are included as are shafts, tunnels and other structures associated with mining mineral and energy resources, and the construction of sea walls, dykes, flood barriers etc. intended to improve the quality and quantity of land adjacent to them. The infrastructure necessary for aquaculture such as fish farms and shellfish beds is also included.

Table 10.2: The capital account - the classification of fixed assets

Changes in assets	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items									
Gross capital formation	308	8	38	55	5	414			414
Net capital formation	151	-4	11	32	2	192			192
Gross fixed capital formation	280	8	35	48	5	376			376
Acquisitions less disposals of fixed assets	263	8	35	48	5	359			359
Acquisitions of new fixed assets	262	8	38	45	5	358			358
Acquisitions of existing fixed assets	5	0	0	3	1	9			9
Disposals of existing fixed assets	-4		-3	0	-1	-8			-8
Costs of ownership transfer on non-produced assets	17					17			17
Consumption of fixed capital	-157	-12	-27	-23	-3	-222			-222
<i>Gross fixed capital formation by type of asset</i>									
<i>Dwellings</i>									
<i>Other buildings and structures</i>									
<i>Buildings other than dwellings</i>									
<i>Other structures</i>									
<i>Land improvements</i>									
<i>Machinery and equipment</i>									
<i>Transport equipment</i>									
<i>ICT equipment</i>									
<i>Other machinery and equipment</i>									
<i>Weapons systems</i>									
<i>Cultivated biological resources</i>									
<i>Animal resources yielding repeat products</i>									
<i>Tree, crop and plant resources yielding repeat products</i>									
<i>Costs of ownership transfer on non-produced assets</i>									
<i>Intellectual property products</i>									
<i>Research and development</i>									
<i>Mineral exploration and evaluation</i>									
<i>Computer software and databases</i>									
<i>Computer software</i>									
<i>Databases</i>									
<i>Entertainment, literary or artistic originals</i>									
<i>Other intellectual property products</i>									
Changes in inventories	26	0	0	2	0	28			28
Acquisitions less disposals of valuables	2	0	3	5	0	10			10
Acquisitions less disposals of non-produced assets	-7	0	2	4	1	0			0
Capital transfers, receivable									
Capital transfers, payable									
Net lending (+) / net borrowing (-)	-56	-1	-103	174	-4	10	-10		0

10.77 Examples include products included in *CPC 2.0* group 532, civil engineering works, such as highways, streets, roads, railways and airfield runways; bridges, elevated highways, tunnels and subways; waterways, harbours, dams and other waterworks; long-distance pipelines, communication and power lines; local pipelines and cables, ancillary works; constructions for mining and manufacture; and constructions for sport and recreation.

10.78 The construction of new public monuments constitutes gross fixed capital formation and similarly, major improvements to existing public monuments are also included in gross fixed capital formation. **Public monuments are identifiable because of particular historical, national, regional, local, religious or symbolic significance.** They are accessible to the general public, and visitors are often charged for admission to the monuments or their vicinity. Their owners, who may be government units, non-profit institutions (NPIs), corporations or households, typically use public monuments to produce cultural or entertainment-type services. In principle, the gross fixed capital formation in public monuments should be included in dwellings, non-residential buildings, and other structures as appropriate; in practice, it may be desirable to classify them with other structures. Consumption of fixed capital on new monuments, or on major improvements to existing monuments, should be calculated on the assumption of appropriately long service lives.

Land improvements

10.79 **Land improvements are the result of actions that lead to major improvements in the quantity, quality or productivity of land, or prevent its deterioration.** Activities such as land clearance, land contouring, creation of wells and watering holes that are integral to the land in question are to be treated as resulting in land improvements. Activities such as the creation of seawalls, dykes, dams and major irrigation systems which are in the vicinity of the land but not integral to it, which often affect land belonging to several owners and which are often carried out by government, result in assets that are to be classified as structures.

10.80 Land improvements represent a category of fixed assets distinct from the non-produced land asset as it existed before improvement. Land before improvements are effected remains a non-produced asset and as such is subject to holding gains and losses separately from price changes affecting the improvements. In cases where it is not possible to separate the value of the land before improvement and the value of those improvements, the land should be allocated to the category that represents the greater part of the value.

10.81 The costs of ownership transfer on all land are to be included with land improvements.

Machinery and equipment

10.82 **Machinery and equipment cover transport equipment, machinery for information, communication and telecommunications (ICT) equipment, and other machinery and equipment.** As explained above, machinery

and equipment under a financial lease are treated as acquired by the user (lessee) rather than as acquired by the lessor. Tools that are relatively inexpensive and purchased at a relatively steady rate, such as hand tools, may be excluded. Also excluded are machinery and equipment integral to buildings that are included in dwellings and non-residential buildings. Machinery and equipment other than weapons systems acquired for military purposes are included; weapons systems form another category.

10.83 Machinery and equipment such as vehicles, furniture, kitchen equipment, computers, communications equipment, etc. that are acquired by households for purposes of final consumption are not fixed assets and their acquisition is not treated as gross fixed capital formation. However, houseboats, barges, mobile homes and caravans that are used as the principal residences of households are treated as dwellings, so that their acquisition by households is included in gross fixed capital formation.

Transport equipment

10.84 **Transport equipment consists of equipment for moving people and objects.** Examples include products other than parts included in *CPC 2.0* division 49, transport equipment, such as motor vehicles, trailers and semi-trailers; ships; railway and tramway locomotives and rolling stock; aircraft and spacecraft; and motorcycles, bicycles, etc.

ICT equipment

10.85 **Information, computer and telecommunications (ICT) equipment consists of devices using electronic controls and also the electronic components forming part of these devices.** Examples are products within *CPC 2.0* categories 452 and 472. In practice, this narrows the coverage of ICT equipment mostly to computer hardware and telecommunications equipment.

Other machinery and equipment

10.86 **Other machinery and equipment consists of machinery and equipment not elsewhere classified.** Examples include products other than parts and items identified in other categories of fixed capital formation included in *CPC 2.0* divisions 43, general purpose machinery; 44, special purpose machinery; 45, office, accounting and computing equipment; 46, electrical machinery and apparatus; 47, radio, television and communication equipment and apparatus; and 48, medical appliances, precision and optical instruments, watches and clocks. Other examples are products other than parts included in *CPC 2.0* groups 337, fuel elements (cartridges) for nuclear reactors; 381, furniture; 383, musical instruments; 384, sports goods; and 423, steam generators except central heating boilers.

Weapons systems

10.87 **Weapons systems include vehicles and other equipment such as warships, submarines, military aircraft, tanks, missile carriers and launchers, etc.** Most single-use weapons they deliver, such as ammunition, missiles, rockets, bombs, etc., are treated as military inventories. However, some single-use items, such as certain types of

ballistic missile with a highly destructive capability, may provide an ongoing service of deterrence against aggressors and therefore meet the general criteria for classification as fixed assets.

Cultivated biological resources

10.88 ***Cultivated biological resources cover animal resources yielding repeat products and tree, crop and plant resources yielding repeat products whose natural growth and regeneration are under the direct control, responsibility and management of institutional units.***

10.89 In general, when the production of fixed assets takes a long time to complete, those assets whose production is not yet completed at the end of the accounting period are recorded as work-in-progress. However, when the assets are produced on own account they are treated as being acquired by their users at the same time as they are produced and not as work-in-progress. These general principles also apply to the production of cultivated assets such as animals or trees that may take a long time to reach maturity. Two cases need to be distinguished from each other: the production of cultivated products by specialized producers, such as breeders or tree nurseries, and the own-account production of cultivated assets by their users.

10.90 In the case of the specialist producers, animals or trees whose production is not yet complete and are not ready for sale or delivery are recorded as work-in-progress. Examples are one-year-old horses bred for sale as two-year-old race horses, or young fruit trees that need further growth before being marketable. Such work-in-progress is recorded and valued in exactly the same way as that originating in any other kind of production.

10.91 However, when animals or trees intended to be used as fixed assets are produced on own account by farmers or others, incomplete assets in the form of immature animals, trees, etc. that are not ready to be used in production are treated not as work-in-progress but as gross fixed capital formation by the producing unit in its capacity as eventual user.

Animal resources yielding repeat products

10.92 ***Animal resources yielding repeat products cover animals whose natural growth and regeneration are under the direct control, responsibility and management of institutional units.*** They include breeding stocks, dairy cattle, draft animals, sheep or other animals used for wool production and animals used for transportation, racing or entertainment. Animals raised for slaughter, including poultry, are not fixed assets but inventories. Immature cultivated assets are excluded unless produced for own use.

10.93 This heading includes aquatic resources yielding repeat products, consisting of aquatic resources maintained for controlled reproduction. In all but exceptional cases, though, these will be small and may be ignored unless of significant importance.

10.94 Gross fixed capital formation in livestock that are cultivated for the products they yield year after year (dairy

cattle, draught animals, etc.) is measured by the value of acquisitions less disposals, taking account of the treatment just described of immature livestock reared on own account. It is therefore equal to the total value of all mature animals and immature animals produced on own account acquired by users of the livestock less the value of their disposals. Disposals consist of animals sold or otherwise disposed of, including those sold for slaughter, plus those animals slaughtered by their owners. Exceptional losses of animals due to major outbreaks of disease, contamination, drought, famine, or other natural disasters are recorded in the other changes in the volume of assets account and not as disposals. Incidental losses of animals due to occasional deaths from natural causes form part of consumption of fixed capital. Consumption of fixed capital of an individual animal is measured by the decline in its value as it gets older.

Tree, crop and plant resources yielding repeat products

10.95 ***Tree, crop and plant resources yielding repeat products cover plants whose natural growth and regeneration are under the direct control, responsibility and management of institutional units.*** They include trees (including vines and shrubs) cultivated for fruits and nuts, for sap and resin and for bark and leaf products. Trees grown for timber that yield a finished product once only when they are ultimately felled are not fixed assets, just as cereals or vegetables that produce only a single crop when they are harvested cannot be fixed assets.

10.96 Gross fixed capital formation in plantations, orchards, etc., consists of the value of the acquisitions less disposals of mature trees, shrubs, etc., including acquisitions of immature trees, shrubs, etc., produced on own account. As explained above, the value of the latter may be approximated, if necessary, by the value of costs incurred in their production during the period: for example, the costs of preparing the ground, planting, staking, protection from weather or disease, pruning, training, etc., until the tree reaches maturity and starts to yield a product. Disposals consist of trees, shrubs, etc., sold or otherwise transferred to other units plus those cut down before the end of their service lives. All agricultural output is at the mercy of the weather. Expected output must take account of normal variations in climatic conditions and exceptional losses should be confined to those outside recent past experience. Disposals do not include exceptional losses of trees due to drought or other natural disasters such as gales or hurricanes, these being recorded in the other changes in the volume of assets account.

Costs of ownership transfer on non-produced assets

10.97 The costs of ownership transfer on non-produced assets represent produced assets but their value cannot be integrated with the value of another produced asset. They must therefore be shown as a separate category of gross fixed capital formation. An exception is made in the case of land where costs of ownership transfer are treated by convention as land improvements. Costs of ownership transfer are defined in chapter 10.

Intellectual property products

- 10.98 Examples of intellectual property products are the results of research and development, mineral exploration and evaluation, computer software and databases, and entertainment, literary or artistic originals. They are characterized by the fact that most of their value is attributable to intellectual endeavour. They can be described in general terms in the following way. **Intellectual property products are the result of research, development, investigation or innovation leading to knowledge that the developers can market or use to their own benefit in production because use of the knowledge is restricted by means of legal or other protection.** The knowledge may be embodied in a free-standing product or may be embodied in another. When the latter is the case, the product embodying the knowledge has an increased price relative to a similar product without this embodied knowledge. The knowledge remains an asset as long as its use can create some form of monopoly profits for its owner. When it is no longer protected or becomes outdated by later developments, it ceases to be an asset.
- 10.99 Some intellectual property products are used solely by the unit responsible for their development or by a single unit to whom the product is transferred. Mineral exploration and evaluation is an example. Other products, such as computer software and artistic originals, are used in two forms. The first is the original or “master copy”. This is frequently controlled by a single unit but exceptions exist as explained below. The original is used to make copies that are in turn supplied to other units. The copies may be sold outright or made available under a licence.
- 10.100 A copy sold outright may be treated as a fixed asset if it satisfies the necessary conditions, that is, it will be used in production for a period in excess of one year. A copy made available under a licence to use may also be treated as a fixed asset if it meets the necessary conditions, that is, it is expected to be used in production for more than one year and the licensee assumes all the risks and rewards of ownership. A good, but not necessary, indication is if the licence to use is purchased with a single payment for use over a multiyear period. If the acquisition of a copy with a licence to use is purchased with regular payments over a multiyear contract and the licensee is judged to have acquired economic ownership of the copy, then it should be regarded as the acquisition of an asset. If regular payments are made for a licence to use without a long-term contract, then the payments are treated as payments for a service. If there is a large initial payment followed by a series of smaller payments in succeeding years, the initial payment is recorded as gross fixed capital formation and the succeeding payments are treated as payments for a service. If the licence allows the licensee to reproduce the original and subsequently assume responsibility for the distribution, support and maintenance of these copies, then this is described as a licence to reproduce and should be regarded as the sale of part or whole of the original to the unit holding the licence to reproduce.
- 10.101 When copies are distributed by the owner free of charge, then no flows between the owner and recipients are recorded in the SNA. If, despite making copies freely available, the owner still expects to obtain benefits, then the

present value of those benefits should be recorded in its balance sheet. It may be that when the information was distributed freely it was incomplete and the owner intends to make more detailed information available at a price later. Software distributed freely at the beta test stage is one example. Alternatively, the owner justifies the expenditure on the basis of the benefits to its own production and may make copies available for marketing purposes, generating goodwill or in cases it considers deserving.

- 10.102 It is often the case for some intellectual property products that some of the benefits accrue to units other than the owner to the extent they stimulate the production of other intellectual property products by other units. Examples of such spillovers include a breakthrough in the development of a new class of drug leading other enterprises to develop competing drugs of the same type, and the success or failure of mineral exploration in a particular zone informing other units with exploration rights in a neighbouring zone. These are treated in the same way as other externalities in the SNA. Unless there is a quantifiable monetary impact for one or both parties, nothing is recorded in the SNA. A *Handbook on Deriving Capital Measures of Intellectual Property Products* (Organisation for Economic Co-operation and Development, forthcoming) is under preparation.

Research and development

- 10.103 Intellectual property products include the results of research and development (R&D). **Research and [experimental] development consists of the value of expenditures on creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and use of this stock of knowledge to devise new applications. This does not extend to including human capital as assets within the SNA.** The value of research and development (R&D) should be determined in terms of the economic benefits it is expected to provide in the future. This includes the provision of public services in the case of R&D acquired by government. In principle, R&D that does not provide an economic benefit to its owner does not constitute a fixed asset and should be treated as intermediate consumption. Unless the market value of the R&D is observed directly, it may, by convention, be valued at the sum of costs, including the cost of unsuccessful R&D, as described in chapter 6.
- 10.104 R&D should be recognized as part of capital formation. In order to achieve this, several issues have to be addressed. These include deriving measures of research and development, price indices and service lives. Specific guidelines, together with handbooks on methodology and practice, will provide a useful way of working towards solutions that give the appropriate level of confidence in the resulting measures.
- 10.105 With the inclusion of R&D expenditure as capital formation, patented entities no longer feature as assets in the SNA. The patent agreement is to be seen instead as the legal agreement concerning the terms on which access to the R&D is granted. The patent agreement is a form of licence to use which is treated as giving rise to payments for services or the acquisition of an asset.

Mineral exploration and evaluation

- 10.106 ***Mineral exploration and evaluation consists of the value of expenditures on exploration for petroleum and natural gas and for non-petroleum deposits and subsequent evaluation of the discoveries made.*** These expenditures include prelicence costs, licence and acquisition costs, appraisal costs and the costs of actual test drilling and boring, as well as the costs of aerial and other surveys, transportation costs, etc., incurred to make it possible to carry out the tests. Re-evaluations may take place after commercial exploitation of the reserve has started and the cost of these re-evaluations is also included in gross fixed capital formation.
- 10.107 Mineral exploration is undertaken in order to discover new deposits of minerals or fuels that may be exploited commercially. Such exploration may be undertaken on own account by enterprises engaged in mining or the extraction of fuels. Alternatively, specialized enterprises may carry out exploration either for their own purposes or for fees. The information obtained from exploration influences the production activities of those who obtain it over a number of years. The expenditures incurred on exploration within a given accounting period, whether undertaken on own account or not, are therefore treated as expenditures on the acquisition of an intellectual property product and included in the enterprise's gross fixed capital formation.
- 10.108 The expenditures included in gross fixed capital formation include not only the costs of actual test drillings and borings, but also the costs incurred to make it possible to carry out tests, for example, the costs of aerial or other surveys, transportation costs, etc. The value of the resulting asset is not measured by the value of new deposits discovered by the exploration but by the value of the resources allocated to exploration during the accounting period. When the activities are carried out by contractors, the prices charged by these contractors, including their operating surplus, become part of the value of the expenditures incurred. Consumption of fixed capital may be calculated for such assets by using average service lives similar to those used by mining or oil corporations in their own accounts.

Computer software and databases

- 10.109 Computer software and databases are grouped together because a computerized database cannot be developed independently of a database management system (DBMS), which is itself computer software.

Computer software

- 10.110 ***Computer software consists of computer programs, program descriptions and supporting materials for both systems and applications software.*** Gross fixed capital formation in computer software includes both the initial development and subsequent extensions of software as well as acquisition of copies that are classified as assets.
- 10.111 The development of computer software represents the development of an intellectual property product. It is treated as an asset if it is to be used in production by its

owner for more than one year. The software may be intended only for own use or may be intended for sale by means of copies. If copies of the software are sold on the market, their treatment follows the principles described in chapter 10. Software purchased on the market is valued at purchasers' prices, while software developed in-house is valued at its estimated basic price, or at its costs of production if it is not possible to estimate the basic price.

Databases

- 10.112 ***Databases consist of files of data organized in such a way as to permit resource-effective access and use of the data.*** Databases may be developed exclusively for own use or for sale as an entity or for sale by means of a licence to access the information contained. The standard conditions apply for when an own-use database, a purchased database or the licence to access a database constitutes an asset.
- 10.113 The creation of a database will generally have to be estimated by a sum-of-costs approach. The cost of the database management system (DBMS) used should not be included in the costs but be treated as a computer software asset unless it is used under an operating lease. The cost of preparing data in the appropriate format is included in the cost of the database but not the cost of acquiring or producing the data. Other costs will include staff time estimated on the basis of the amount of time spent in developing the database, an estimate of the capital services of the assets used in developing the database and costs of items used as intermediate consumption.
- 10.114 Databases for sale should be valued at their market price, which includes the value of the information content. If the value of a software component is available separately, it should be recorded as the sale of software.

Entertainment, literary and artistic originals

- 10.115 ***Entertainment, literary and artistic originals consist of the original films, sound recordings, manuscripts, tapes, models, etc., on which drama performances, radio and television programming, musical performances, sporting events, literary and artistic output, etc., are recorded or embodied.*** Such works are frequently developed on own account. Subsequently they may be sold outright or by means of licences. The standard conditions on when the originals and copies are recognized as fixed assets apply. If an original is acquired as a valuable, its production does not count as own account production of a fixed asset but it may have been classified as work-in-progress.
- 10.116 An original purchased on the market is valued at the purchaser's price. One developed in-house is valued at its estimated basic price or at its costs of production if it is not possible to estimate the basic price.

Other intellectual property products

- 10.117 ***Other intellectual property products include any such products that constitute fixed assets but are not captured in one of the specific items above.***

2. Changes in inventories

10.118 *Changes in inventories are measured by the value of the entries into inventories less the value of withdrawals and less the value of any recurrent losses of goods held in inventories during the accounting period.* Some of these acquisitions and disposals are attributable to actual purchases or sales, but others reflect transactions that are internal to the enterprise.

10.119 It is useful to distinguish between two functions performed by an enterprise: its function as a producer of goods and services and its function as an owner of assets. When a good is entered into inventories it is acquired as an asset by the enterprise in its capacity as owner either by purchase (or barter) or by an internal transaction with itself as the producer. Conversely, a good leaving inventories represents the disposal of an asset by the owner either by sale or other use, by an internal transfer to the producer or possibly as a result of recurrent losses (recurrent wastage, accidental damage or pilfering).

Storage and stocks of inventories

10.120 Most goods going into inventories simply remain there until they are withdrawn in the same state as when they entered. Not infrequently, the price of the goods will have increased while they are in inventories, but these increases are not due to production but are simply holding gains. There are some goods, though, where the passage of time in store changes the character of the goods. In such cases, the increase in value due to storage is to be treated as production and not as holding gains, though holding gains (or losses) may occur as well.

10.121 The indication that storage is being undertaken as a production activity is that the price of the good stored, relative to the general level of prices, is expected to increase by a certain amount over a predetermined time. For example, winter wheat may be expected, on the basis of past experience, to fetch a given multiple of its price at harvest. Similarly, wine that is several years old is more valuable than the current year's vintage by a predictable factor.

10.122 The activity of storage may be undertaken by any institutional unit, not just the original producer of the product or may be undertaken by several units in succession if the ownership of the goods changes during storage.

10.123 The goods in storage are classified as work-in-progress and not finished goods. The increase in value during the accounting period up to the expected level at that time is treated as production of storage; any difference from this level is treated as a holding gain or loss. The method of valuing storage is described in the annex to chapter 6. The expected level of price increase for items being stored for more than one year, though, needs to be calculated in accordance with the principles of valuing work-in-progress described below.

Valuation

10.124 The enterprise in its capacity as a producer may obtain goods or services for intermediate consumption either by purchasing them on the market for immediate use or by internal transfers out of inventories. In order to ensure that all the goods and services used for intermediate consumption are consistently valued at current prices, the goods transferred out of inventories are valued at

Table 10.3: The capital account - changes in inventories and valuables

Changes in assets									
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Gross capital formation	308	8	38	55	5	414			414
Net capital formation	151	-4	11	32	2	192			192
Gross fixed capital formation	280	8	35	48	5	376			376
Consumption of fixed capital	-157	-12	-27	-23	-3	-222			-222
<i>Gross fixed capital formation by type of asset</i>									
Changes in inventories	26	0	0	2	0	28			28
<i>Materials and supplies</i>									
<i>Work-in-progress</i>									
<i>Work-in-progress on cultivated biological assets</i>									
<i>Other work-in-progress</i>									
<i>Finished goods</i>									
<i>Military inventories</i>									
<i>Goods for resale</i>									
Acquisitions less disposals of valuables	2	0	3	5	0	10			10
Acquisitions less disposals of non-produced assets	-7	0	2	4	1	0			0
Capital transfers, receivable									
Capital transfers, payable									
<i>Net lending (+) / net borrowing (-)</i>	-56	-1	-103	174	-4	10	-10		0

purchasers' prices current at the time of the withdrawal from inventories.

- 10.125 Similarly, the output produced by the producer may either be sold or otherwise disposed of or be transferred to inventories as finished products or work-in-progress. In order to ensure that output is consistently valued, finished goods transferred into inventories are valued as if they were sold at that time, while additions to work-in-progress are given the value they have at the time they are added to inventories.

Valuation of work-in-progress

- 10.126 Much work-in-progress is of short duration and occurs only because production is a continuous process and some goods will be incomplete at the end of one accounting period but will be completed long before the end of the next. For output with a production period of a year or less, and assuming that prices and costs remain stable during the period of production, the value of the additions to work-in-progress for non-agricultural products within a given accounting period can be approximated by calculating the proportion of the total production costs incurred in that period and applying that ratio to the basic price realized by the finished product. Thus, the value of the output of the finished product is distributed over the accounting periods in which it was produced in proportion to the costs incurred in each period. If the average levels of prices and costs change from period to period, the output should be allocated initially using the prices and costs at the time the production is finished, and then the values of the work-in-progress thus calculated for earlier periods should be recalculated in proportion to the change in average cost levels from period to period.

- 10.127 For agricultural products, this method of allocating output over multiple periods may not be satisfactory. A disproportionate share of the costs may be incurred in sowing a crop with little if any costs being incurred until harvest. Prorating the output to the physical growth of the crop may be considered a possibility but in cases where there is serious risk of climatic damage just before the crop is harvested, this may give over-optimistic indications of probable output. Pragmatic distributions over quarters based on past experience may have to be used, or where multicropping is the norm, to allow the whole output of each crop to be counted in the period when it is harvested.

- 10.128 There are important activities, such as construction of buildings, structures and complex machinery, where the production process may take several years. In these cases, the valuation of the partially complete product requires careful consideration especially since such large projects are by their nature very costly.

- 10.129 Even if one fifth of the work involved is put in place annually over a period of five years, it does not follow that one fifth of the value (assuming zero inflation for simplicity) should be recorded in each year. The work put in place in the first year cannot be used for four more years and so the value of it must be discounted to allow for this delay. In the second year, the value of the work put in place in the first year will increase by one discount factor and this

should be added to the value of the work put in place in the second year and so on. This case is discussed in more detail in chapter 20.

Transactions in inventories

- 10.130 The transactions in the capital account relating to inventories show the change in the level of inventories of each type. The changes comprise the additions less withdrawals and less regular losses from inventories. Table 10.3 shows the expansion of table 10.1 to incorporate changes in inventories. Each of the categories is described and defined below.

Materials and supplies

- 10.131 ***Materials and supplies consist of all products that an enterprise holds in inventory with the intention of using them as intermediate inputs into production.*** Not all necessarily get used in this way, however, as some may be lost as a result of physical deterioration, or recurrent accidental damage or pilfering. Such losses of materials and supplies are recorded and valued in the same way as materials and supplies actually withdrawn to be used up in production.

- 10.132 Enterprises may hold a variety of quite different kinds of goods under the heading of materials and supplies, the most common types being fuels, industrial raw materials, agricultural materials, semi-processed goods, components for assembly, packaging materials, foodstuffs, office supplies, etc. Every enterprise, including non-market producers owned by government units, may be expected to hold some inventories of materials and supplies, if only inventories of office supplies.

- 10.133 Materials and supplies do not include works of art or stocks of precious metals or stones acquired by enterprises as valuables. However, there are some producers that do use gold, diamonds, etc. as intermediate inputs into the production of other goods or services, for example, manufacturers of jewellery or dentists. Stocks of gold, diamonds, etc., intended for use in production are recorded under materials and supplies.

Work-in-progress

- 10.134 ***Work-in-progress consists of output produced by an enterprise that is not yet sufficiently processed to be in a state in which it is normally supplied to other institutional units.*** Work-in-progress occurs in all industries, but is especially important in those in which some time is needed to produce a unit of finished output, for example, in agriculture, or in industries producing complex fixed assets such as ships, dwellings, software or films. Work-in-progress can therefore take a wide variety of different forms ranging from growing crops to partially completed film productions or computer programs. Although work-in-progress is output that has not reached the state in which it is normally supplied to others, its ownership is nevertheless transferable, if necessary. For example, it may be sold under exceptional circumstances such as the liquidation of the enterprise.

- 10.135 Work-in-progress must be recorded for any output that is not complete at the end of the accounting period. This is a particular problem for output taking a long time to complete, such as construction. The shorter the accounting period, the more important work-in-progress is likely to be relatively to finished output. In particular, it is likely to be more significant for quarterly accounts than annual accounts, if only because the production of many agricultural crops is completed within a year but not necessarily within a quarter. The only exceptions to recording incomplete work as work-in-progress are for partially completed projects for which the ultimate owner is deemed to have taken ownership, either because the production is for own use or as evidenced by the existence of a contract of sale or purchase.
- 10.136 Reductions in work-in-progress take place when the production process is completed. At that point, all work-in-progress is reclassified as a finished product. This reclassification appears in the other changes in the volume of assets account.
- 10.137 If prices and costs have risen, work-in-progress carried forward from previous periods must be revalued using the prices and costs of the period in which the production is finished.
- 10.138 Current losses from work-in-progress resulting from physical deterioration or recurrent accidental damage or pilfering should be deducted from the additions to work-in-progress accruing as a result of the production carried out in the same period.
- 10.139 Work-in-progress is subdivided between work-in-progress on cultivated assets and other work-in-progress, as defined below.

Work-in-progress on cultivated biological resources

- 10.140 ***Work-in-progress on cultivated biological resources consists of output that is not yet sufficiently mature to be in a state in which it is normally supplied to other institutional units.*** In the present context it is necessary to distinguish single-use plants, trees and livestock that produce an output once only (when the plants or trees are cut down or uprooted or the livestock slaughtered) from trees (including vines and shrubs) and livestock that are used repeatedly or continuously for more than one year to produce outputs such as fruit, nuts, rubber, milk, wool, power, transportation and entertainment. Work-in-progress should be recorded for single use resources. For repeat yield resources, being cultivated on own account, or under an agreed contract with another unit, the growth is counted as fixed capital formation and so excluded from inventories. Any remaining cultivation of resources with repeat yields should be included in work-in-progress. This may be the case for nurseries and breeders of race horses or other special animals, for example.

Other work-in-progress

- 10.141 ***Other work-in-progress consists of output (other than on cultivated biological resources) that is not yet sufficiently***

processed to be in a state in which it is normally supplied to other institutional units.

Finished goods

- 10.142 ***Finished goods consist of goods produced as outputs that their producer does not intend to process further before supplying them to other institutional units.*** A good is finished when its producer has completed his intended production process, even though it may subsequently be used as an intermediate input into other processes of production. Thus, inventories of coal produced by a mining enterprise are classified as finished products, although inventories of coal held by a power station are classified under materials and supplies. Inventories of batteries produced by a manufacturer of batteries are finished goods, although inventories of the same batteries held by manufacturers of vehicles and aircraft are classified under materials and supplies.
- 10.143 Inventories of finished goods may be held only by the enterprises that produce them. Finished goods entering inventories are valued at the basic prices of those goods at the times the entries take place; finished goods withdrawn from inventories are valued at the basic prices at the time when their withdrawals take place. Current losses of finished goods resulting from physical deterioration or recurrent accidental damage or pilfering should be valued at the prices at the time when the losses occur.

Military inventories

- 10.144 ***Military inventories consist of single-use items, such as ammunition, missiles, rockets, bombs, etc., delivered by weapons or weapons systems.*** As noted above in the discussion of weapons systems as fixed capital, most single-use items are treated as inventories but some types of missiles with highly destructive capability may be treated as fixed capital because of their ability to provide an ongoing deterrence service against aggressors.

Goods for resale

- 10.145 ***Goods for resale are goods acquired by enterprises, such as wholesalers or retailers, for the purpose of reselling them to their customers.*** Goods for resale are not processed further by the enterprises that purchase them, except for presenting them for resale in ways that are attractive to their customers. Thus, goods for resale may be transported, stored, graded, sorted, washed, packaged, etc. by their owners but are not otherwise transformed.
- 10.146 Goods for resale entering the inventories of the enterprises are valued at their actual or estimated purchasers' prices. These prices include any additional transportation charges paid to enterprises other than the suppliers of the goods, but not the costs of any transport services produced on own account by the enterprise taking delivery. In principle, goods acquired by barter are valued at their estimated purchasers' prices at the time of acquisition. However, because there are no taxes or margins on bartered goods, the purchaser's price is the same as the basic price.

10.147 Goods for resale withdrawn from inventories are valued at the purchasers' prices at which they can be replaced at the time they are withdrawn as distinct from the purchasers' prices that may have been paid for them when they were acquired. Reductions in inventories are valued in this way whether the goods withdrawn are sold at a profit or at a loss, or even not sold at all as a result of physical deterioration or recurrent accidental damage or pilfering.

10.148 By convention, goods acquired by government for distribution as social transfers in kind but that have not yet been so delivered are also included in goods for resale.

3. Acquisitions less disposals of valuables

The asset boundary

10.149 Valuables include precious metals and stones, antiques and other art objects and other valuables. However, not all items that may be described by one of these titles should necessarily be included as a valuable in the balance sheet of the owner. The intent of the heading is to capture those items that are often regarded as alternative forms of investment. At various times, investors may choose to buy gold rather than a financial asset and pension funds have been known to buy "old master" paintings when the prices of financial assets were behaving in a volatile manner. Individuals (households in SNA terminology) may also choose to acquire some of these items knowing that they may be sold if there is a need to raise funds.

Valuation

10.150 Costs of ownership transfer, such as valuers' and auctioneers' margins, are often incurred when valuables are exchanged. As with other non-financial assets, these costs

are treated as gross capital formation and included in the value of the items when recorded in the balance sheet.

Transactions in valuables

10.151 A possible categorization of valuables is: precious metals and stones; antiques and other art objects; and other valuables. This list should be regarded as indicative and supplementary rather than a standard breakdown. The context of each category is described to assist in identifying and valuing valuables.

Precious metals and stones

10.152 Precious metals and stones are treated as valuables when they are not held by enterprises for sale or use as inputs into processes of production nor are held as monetary gold and are not held as a financial asset in the form of unallocated metal accounts.

Antiques and other art objects

10.153 Paintings, sculptures, etc., recognized as works of art and antiques are treated as valuables when they are not held by enterprises for sale. In principle, museum exhibits are included under valuables.

Other valuables

10.154 Other valuables not elsewhere classified include such items as collections of stamps, coins, china, books etc. that have a recognized market value and fine jewellery, fashioned out of precious stones, and metals of significant and realizable value.

C. Consumption of fixed capital

10.155 The concept of consumption of fixed capital is first described and defined in chapter 6 in connection with the difference between gross and net value added and then carries through all subsequent balancing items that may also be shown gross or net of consumption of fixed capital. The capital account is where the counterpart entry to the entry in the production account appears though unusually it appears on the same side as in the production account but with a negative sign rather than on the opposite side of the account.

10.156 Consumption of fixed capital constitutes a negative change in the value of the fixed assets used in production. Consumption of fixed capital must be measured with reference to a given set of prices, that is, the average prices of the type of asset of constant quality over the period. It may then be defined as the decline, between the beginning and the end of the accounting period, in the value of the fixed assets owned by an enterprise, as a result of their physical deterioration and normal rates of obsolescence and accidental damage. Consumption of fixed capital may be

deducted from gross fixed capital formation to obtain net fixed capital formation to match the balancing item of net saving carried down from the use of income account.

10.157 Consumption of fixed capital applies to all fixed assets and for every year the asset is in use in production. Because costs of ownership transfer are treated as fixed assets, including terminal costs, they are also subject to consumption of fixed capital. All buildings and other structures are assumed to have finite service lives, even when properly maintained, so that consumption of fixed capital is calculated for all such fixed assets, including railways, roads, bridges, tunnels, airports, harbours, pipelines, dams, etc. Service lives are not determined purely by physical durability, and many pieces of equipment as well as buildings and structures are eventually scrapped because they have become obsolete. However, the service lives for some structures such as certain roads, bridges, dams, etc., may be as long as a century or more.

4. Costs of ownership transfer

- 10.158 The costs of ownership transfer on the acquisition and disposal of a fixed asset are treated as gross fixed capital formation and included in the value of the asset on acquisition and disposal as recorded in the capital account and in the value of the asset in the balance sheet. However, although consumption of fixed capital is calculated on the value of the asset excluding the costs of ownership transfer over the whole of its life, the consumption of fixed capital in respect of the costs of ownership transfer is calculated only over the period that the owner expects to hold the asset. In this way there are no remaining costs of ownership transfer included in the value of the asset when it is sold to a new owner, so the amount the old owner receives is equal to the amount the new owner pays except for any costs of ownership transfer incurred by the new owner.
- 10.159 In the case of natural resources other than land, the costs of ownership transfer are shown as transactions in gross fixed capital formation in the capital account separately from the acquisition and disposal of natural resources, but the value of the natural resources in the balance sheet includes the value of the costs of ownership transfer. The costs of ownership transfer are still written off according to the expected length of time the owner will hold the asset and treated as consumption of fixed capital in the relevant production account.
- 10.160 In the case of land, costs of ownership transfer are treated as a part of land improvement, which is itself treated as a produced asset. The value of land improvements other than the costs of ownership transfer is written off over a suitably long period but the costs of ownership transfer are written off over the period the owner expects to own the land.

5. Terminal costs

- 10.161 In principle, the value of consumption of fixed capital cumulated over the life of an asset, once price changes are taken into account, should be equal to the difference between the acquisition and disposal values. In the case of assets with actual costs at the time of disposal, this means that consumption of fixed capital should cover anticipated terminal costs. Terminal costs should therefore be written off over the whole life of the asset, regardless of the number of owners during the life of the asset. Immediately before the disposal, the value of the asset will have a negative value which is reduced to zero when the terminal costs incurred are treated as gross fixed capital formation. The apparent oddity of an asset with negative value reflects the fact that the owner not only could not sell it but would have to pay another unit to take over responsibility for the asset.
- 10.162 In practice, it may be difficult to predict terminal costs accurately. In that case, cumulated consumption of fixed capital may not cover all the terminal costs. However, the full costs are still treated as gross fixed capital formation and any amount not already covered by consumption of fixed capital during the life of the asset is written off at the time the costs are incurred as consumption of fixed capital. This is a pragmatic recommendation and will lead to NDP being overstated over the time the asset is in use and understated in the year when the remaining costs are incurred.
- 10.163 There is further discussion on the treatment of costs of ownership transfer and terminal costs in chapter 20.

D. Acquisitions less disposals of non-produced non-financial assets

- 10.164 There are three distinct types of non-produced non-financial assets in the SNA: natural resources, contracts, leases and licences, and goodwill and marketing assets. These three types of assets have little in common except that they are all non-produced and non-financial. A separate section discusses each of the three.
- 10.165 Table 10.4 shows table 10.1 expanded to show the standard detail of non-produced non-financial assets. Each of the categories is discussed under the appropriate section.

1. Natural resources

The asset boundary

- 10.166 Not all environmental resources qualify as economic assets. It is useful, therefore, to delineate those naturally occurring resources that fall within the asset boundary of the SNA from those that do not.
- 10.167 In the first place, it must be noted that the accounts and balance sheets of the SNA are compiled for institutional

units or groups of units and can only refer to the values of assets that belong to the units in question. Only those naturally occurring resources over which ownership rights have been established and are effectively enforced can therefore qualify as economic assets and be recorded in balance sheets. They do not necessarily have to be owned by individual units, and may be owned collectively by groups of units or by governments on behalf of entire communities. Certain naturally occurring resources, however, may be such that it is not feasible to establish ownership over them: for example, air, or the oceans. In addition, there may be others that cannot be treated as economic assets because they do not actually belong to any particular units. These include not only those whose existence is unknown but also those, including uncultivated forests, that may be known to exist but remain so remote or inaccessible that, in practice, they are not under the effective control of any units.

- 10.168 Secondly, in order to comply with the general definition of an economic asset, natural assets must not only be owned but must also be capable of bringing economic benefits to their owners, given the technology, scientific knowledge,

economic infrastructure, available resources and set of relative prices prevailing on the dates to which the balance sheet relates or expected to do so in the near future. Thus, known deposits of minerals that are not commercially exploitable in the foreseeable future are not included in the balance sheets of the SNA, even though they may possibly become commercially exploitable at a later date as a result of major, unforeseen advances in technology or major changes in relative prices.

10.169 Naturally occurring assets in the form of biota (trees, vegetation, animals, birds, fish, etc.) are renewable. The growth and regeneration of trees, crops or other vegetation or the rearing of animals, birds, fish, etc., may take place under the direct control, responsibility and management of institutional units. In this situation, the assets are cultivated, and the activity is treated as falling within the production boundary of the SNA. The growth of animals, birds, fish, etc., living in the wild, or growth of uncultivated vegetation in forests, is not an economic process of production so that the resulting assets cannot be classed as produced assets. Nevertheless, when the forests or the animals, birds, fish, etc. are actually owned by institutional units and are a source of benefit to their owners, they constitute economic assets. When wild animals, birds, fish, etc. live in locations such that no institutional unit is able to exercise effective ownership rights over them they fall outside the asset boundary. Similarly, the forests or other vegetation growing in such regions are not counted as economic

assets. On the other hand, fish stocks in the high seas which are subject to international agreement on how much may be caught by individual countries may be counted as falling within the asset boundary.

Ownership

10.170 All owners and purchasers of land and immovable natural resources within the economic territory are deemed to have a centre of economic interest in the economy. If an owner or purchaser would not otherwise qualify as a resident unit, a notional resident unit is created for this purpose. The notional resident unit is deemed to purchase the land while the non-resident is deemed to purchase the equity of the notional unit and thus acquires a financial instead of a non-financial asset. Thus, all purchases and sales of land normally take place between resident units. The one exception is when the boundaries of the economic territory itself are changed, for example, when a foreign government, or international organization, purchases or sells land that is added to, or taken away from, the enclave in which its embassy or offices are located.

10.171 Moreover, as purchases and sales of land and natural resources are recorded excluding costs of ownership transfer for both buyers and sellers, the total value of the purchases and sales of land and natural resources must be

Table 10.4: The capital account - non-produced non-financial assets

Changes in assets									
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Gross capital formation	308	8	38	55	5	414			414
Net capital formation	151	-4	11	32	2	192			192
Gross fixed capital formation	280	8	35	48	5	376			376
Consumption of fixed capital	-157	-12	-27	-23	-3	-222			-222
<i>Gross fixed capital formation by type of asset</i>									
Changes in inventories	26	0	0	2	0	28			28
Acquisitions less disposals of valuables	2	0	3	5	0	10			10
Acquisitions less disposals of non-produced assets	-7	0	2	4	1	0			0
Acquisitions less disposals of natural resources	-6	0	2	3	1	0			0
<i>Natural resources</i>									
<i>Land</i>									
<i>Mineral and energy reserves</i>									
<i>Non-cultivated biological resources</i>									
<i>Water resources</i>									
<i>Other natural resources</i>									
<i>Radio spectra</i>									
<i>Other</i>									
Acquisitions less disposals of contracts, leases and licences	-1	0	0	1	0	0	0	0	0
<i>Contracts, leases and licences</i>									
<i>Marketable operating leases</i>									
<i>Permits to use natural resources</i>									
<i>Permits to undertake specific activities</i>									
<i>Entitlement to future goods and services on an exclusive basis</i>									
Purchases less sales of goodwill and marketing assets	0	0				0	0		0
Capital transfers, receivable									
Capital transfers, payable									
<i>Net lending (+) / net borrowing (-)</i>	-56	-1	-103	174	-4	10	-10		0

equal to each other at the level of the total economy, although not at the level of individual sectors or subsectors.

- 10.172 Similarly, it is assumed that extraction of subsoil resources can only be undertaken by resident institutional units. As soon as an enterprise starts to prepare to establish for extraction, for example by obtaining the requisite licences, it is assumed to become resident at that point.

Valuation

- 10.173 Since natural resources are non-produced, the costs of ownership transfer, which are part of fixed capital formation, must be shown separately in the capital account and not as part of the value of the transaction in the non-produced asset. For land, the costs of ownership transfer are treated, by convention, as being included with land improvements.

Transactions in natural resources

- 10.174 Transactions in natural resources are shown as acquisitions less disposals of the asset in question, according to the classification given in table 10.4.

Land

- 10.175 ***Land consists of the ground, including the soil covering and any associated surface waters, over which ownership rights are enforced and from which economic benefits can be derived by their owners by holding or using them.***

The value of land excludes any buildings or other structures situated on it or running through it; cultivated crops, trees and animals; mineral and energy resources; non-cultivated biological resources and water resources below the ground. The associated surface water includes any inland waters (reservoirs, lakes, rivers, etc.) over which ownership rights can be exercised and that can, therefore, be the subject of transactions between institutional units. However, water bodies from which water is regularly extracted, against payment, for use in production (including for irrigation) are included not in water associated with land but in water resources.

- 10.176 As explained above, land improvements and the costs of ownership transfer on land are treated as fixed assets and shown separately. In consequence, acquisitions and disposals of natural land are recorded at the same value for both the purchaser and the seller. Since both parties to the transaction must be residents, it follows that, for the economy as a whole, the aggregate value of total purchases of land must equal the aggregate value of total sales, although this is not generally true at lower levels of aggregation, such as individual sectors or subsectors. The value of acquisitions less disposals of land is thus zero for the economy as a whole (excluding transactions that change the boundary of the economic territory itself, as noted in chapter 10).

- 10.177 Buildings, or other structures, and plantations are often purchased or sold together with the land on which they are situated, without separate valuations being placed on the structures and the land. Even if it is not feasible to obtain separate valuations, as may be the case for existing

structures, it may be possible to determine which out of the land or the structure accounts for most of their combined value and to classify the transaction as the purchase of land or of a structure depending upon which has the greater value. If it is not possible to determine whether the land or the structure is the more valuable, by convention, the transaction should be classified as the purchase of a structure, that is, as gross fixed capital formation. A similar convention holds for plantations.

- 10.178 The SNA does not specify a disaggregation of land but it is recommended that if a disaggregation is required, it should be according to that used in the SEEA.

Mineral and energy resources

- 10.179 ***Mineral and energy resources consist of mineral and energy reserves located on or below the earth's surface that are economically exploitable, given current technology and relative prices.*** Ownership rights to the mineral and energy resources are usually separable from those to the land itself. Mineral and energy resources consist of known reserves of coal, oil, gas or other fuels and metallic ores, and non-metallic minerals, etc., that are located below or on the earth's surface, including reserves under the sea. The transactions recorded in the capital account refer only to those mineral and energy resources over which ownership rights have been established. In most cases, mineral and energy resources may be owned separately from land below which they are located, but in other cases the law may stipulate that the ownership of the mineral and energy resources is inseparably linked to that of the land.

- 10.180 The transactions in mineral and energy resources recorded in the capital account refer to acquisitions or disposals of deposits of mineral and energy resources in which the ownership of such assets passes from one institutional unit to another. Reductions in the value of known reserves of mineral and energy resources resulting from their depletion as a result of extracting the assets for purposes of production are not recorded in the capital account but in the other changes in the volume of assets account.

- 10.181 Again if a disaggregation is required, it is recommended to follow that in the SEEA.

Non-cultivated biological resources

- 10.182 ***Non-cultivated biological resources consist of animals, birds, fish and plants that yield both once-only and repeat products over which ownership rights are enforced but for which natural growth or regeneration is not under the direct control, responsibility and management of institutional units.*** Examples are virgin forests and fisheries within the territory of the country. Only those resources that are currently, or are likely soon to be, exploitable for economic purposes should be included.

- 10.183 In the SEEA, this category is further split into aquatic resources, animal resources other than aquatic resources, tree, crop and plant resources. Aquatic resources are further split into aquatic resources in national waters including the exclusive economic zone (EEZ) and those in the high seas.

Water resources

- 10.184 *Water resources consist of surface and groundwater resources used for extraction to the extent that their scarcity leads to the enforcement of ownership or use rights, market valuation and some measure of economic control.* If it is not possible to separate the value of surface water from the associated land, the whole should be allocated to the category representing the greater part of the total value.

Other natural resources

- 10.185 The category other natural resources currently includes radio spectra. Given the increasing move to carry out environmental policy by means of market instruments, it may be that other natural resources will come to be recognized as economic assets. If so, this is the category to which they should be allocated.

2. Contracts, leases and licences

The asset boundary

- 10.186 *Contracts, leases and licences are treated as assets only when both the following conditions are satisfied.*

- a. *The terms of the contract, lease or licence specify a price for the use of an asset or provision of a service that differs from the price that would prevail in the absence of the contract, lease or licence.*
- b. *One party to the contract must be able legally and practically to realize this price difference.*

The second condition presupposes that a market for the contract exists. It is recommended that in practice contracts, leases and licences should only be recorded in the accounts when the holder does actually exercise his right to realize the price difference.

- 10.187 Part 5 of chapter 17 discusses the whole question of the treatment of leases within the SNA and should be consulted if there is doubt about whether a contract, lease or licence should be treated as an asset.

- 10.188 As with natural resources, the costs of ownership transfer on the acquisition and disposal of contracts, leases and licences should be shown separately as gross capital formation.

Types of assets included in contracts, leases and licences

- 10.189 There are four classes of contracts, leases and licences considered to be assets in the SNA: marketable operating leases, permits to use natural resources, permits to

undertake specific activities and entitlement to future goods and services on an exclusive basis.

Marketable operating leases

- 10.190 *Marketable operating leases are third-party property rights relating to fixed assets.* An example is where a tenant of a building has a fixed rental but the building could fetch a higher rental in the absence of the lease. If, in these circumstances, the tenant is able both legally and practically to sublet the building, then he has an asset of the type of a marketable operating lease.

Permits to use natural resources

- 10.191 *Permits to use natural resources are third-party property rights relating to natural resources.* An example is where a person holds a fishing quota and he is able, again both legally and practically, to sell this to another person.

Permits to undertake specific activities

- 10.192 *A permit to undertake a specific activity is one where:*

- a. *the permits are limited in number and so allow the holders to earn monopoly profits,*
- b. *the monopoly profits do not come from the use of an asset belonging to the permit-issuer,*
- c. *a permit holder is able both legally and practically to sell the permit to a third party.*

Such permits are issued mainly by government but may also be issued by other units.

- 10.193 When governments restrict the number of cars entitled to operate as taxis or limit the number of casinos permitted by issuing licences, they are in effect creating monopoly profits for the approved operators and recovering some of the profits as the fee. The incentive to acquire such a licence is that the licensee believes that he will thereby acquire the right to make monopoly profits at least equal to the amount he paid for the licence. This stream of future income is treated as an asset if the licensee can realize this by on-selling the asset. The type of asset is described as a permit to undertake a specific activity. The value of the asset is determined by the future stream of monopoly profits.

- 10.194 It is less common for units other than government to be able to limit the participation in a given activity. One instance may be where the owner of property limits the numbers of units allowed to operate on his property, for example a hotel with a policy of only allowing one taxi firm to pick up guests. In this sort of case, the permits are treated as giving rise to payments for services. There is no reason in principle why such permits could not be treated as assets if they were marketable though this may not be a common situation.

Entitlement to future goods and services on an exclusive basis

10.195 **Entitlement to future goods and services on an exclusive basis relates to the case where one party which has contracted to purchase goods or services at a fixed price at a time in the future is able to transfer the obligation of the second party to the contract to a third party.** Examples are footballers' contracts, a publisher's exclusive right to publish new works by a named author or issue recordings by named musicians.

3. Goodwill and marketing assets

10.196 Potential purchasers of an enterprise are often prepared to pay a premium above the net value of its individually identified and valued assets and liabilities. This excess is described as "goodwill" and reflects the value of corporate structures and the value to the business of an assembled workforce and management, corporate culture, distribution networks and customer base. It may not have value in isolation from other assets, but it enhances the value of those other assets. Looked at another way, it is the addition to the value of individual assets because they are used in combination with each other.

10.197 Goodwill cannot be separately identified and sold to another party. The value has to be derived by deducting

from the sale value of the corporation the value of assets and liabilities classified elsewhere within the asset boundary of the SNA. (In practice, since it is estimated as a residual, an estimate of goodwill will also reflect errors and omissions in the valuation of other assets and liabilities.)

10.198 As well as residual errors, the value of goodwill may include the value to the corporation of items known as marketing assets. **Marketing assets consist of items such as brand names, mastheads, trademarks, logos and domain names.** A brand can be interpreted as far more than just a corporate name or logo. It is the overall impression a customer or potential customer gains from their experience with the company and its products. Interpreted in that wider sense it can also be seen to encompass some of the characteristics of goodwill such as customer loyalty.

10.199 **The value of goodwill and marketing assets is defined as the difference between the value paid for an enterprise as a going concern and the sum of its assets less the sum of its liabilities, each item of which has been separately identified and valued.** Although goodwill is likely to be present in most corporations, for reasons of reliability of measurement it is only recorded in the SNA when its value is evidenced by a market transaction, usually the sale of the whole corporation. Exceptionally, identified marketing assets may be sold individually and separately from the whole corporation in which case their sale should also be recorded under this item.

Table 10.5: The capital account - capital transfers - changes in liabilities and net worth

Transactions and balancing items	Changes in liabilities and net worth								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
<i>Saving, net</i>	71	2	-62	192	2	205			205
<i>Current external balance</i>							-13		-13
Gross capital formation								414	414
Net capital formation								192	192
Gross fixed capital formation								376	376
Consumption of fixed capital								-222	-222
<i>Gross fixed capital formation by type of asset</i>									
Changes in inventories								28	28
Acquisitions less disposals of valuables								10	10
Acquisitions less disposals of non-produced assets								0	0
Capital transfers, receivable	33	0	6	23	0	62	4		66
Capital taxes, receivable			2			2			2
Investment grants, receivable	23	0	0	0	0	23	4		27
Other capital transfers, receivable	10	0	4	23	0	37			37
Capital transfers, payable	-16	-7	-34	-5	-3	-65	-1		-66
Capital taxes, payable	0	0	0	-2	0	-2	0		-2
Investment grants, payable			-27			-27			-27
Other capital transfers, payable	-16	-7	-7	-3	-3	-36	-1		-37
<i>Changes in net worth due to saving and capital transfers</i>	88	-5	-90	210	-1	202	-10		192

E. Capital transfers

1. Capital versus current transfers

10.200 Capital transfers are unrequited transfers where either the party making the transfer realizes the funds involved by disposing of an asset (other than cash or inventories), by relinquishing a financial claim (other than accounts receivable) or the party receiving the transfer is obliged to acquire an asset (other than cash or inventories) or both conditions are met. Capital transfers are often large and irregular but neither of these are necessary conditions for a transfer to be considered a capital rather than a current transfer.

10.201 A current transfer reduces the income and consumption possibilities of the first party and increases the income and consumption possibilities of the second party. Current transfers are therefore not linked to, or conditional on, the acquisition or disposal of assets by one or both parties to the transaction.

10.202 Some cash transfers may be regarded as capital by one party to the transfer but as current by the other. For example, the payment of an inheritance tax may be regarded as the transfer of capital by the taxpayer but be regarded as a current receipt by government because it receives many such transfers. Similarly, a large country that makes investment grants to a number of smaller countries may regard the grants as current transfers even though they are specifically intended to finance the acquisition of capital assets. In an integrated system of accounts, such as the SNA, it is not feasible, however, to classify the same transaction differently in different places. Accordingly, a transfer should be classified as capital for both parties even if it involves the acquisition or disposal of an asset, or assets, by only one of the parties. By convention, social transfers are always treated as current transfers.

10.203 There may be cases in which it is difficult to decide on the evidence available whether to classify a cash transfer as current or capital. When there is serious doubt, the transfer should be classified as current rather than capital. It should be noted, however, that the decision as to which way to classify a transfer has important consequences for the allocation of saving between sectors and subsectors, and possibly between the economy as a whole and the rest of the world. Other things being equal, a current transfer increases the saving of the recipient and reduces that of the donor, whereas a capital transfer does not affect the saving of either party. If, therefore, cash transfers are incorrectly classified between current and capital, the saving behaviour recorded for the units or subsectors involved may be misleading for purposes of economic analysis and policymaking.

2. Transfers in cash and in kind

10.204 As explained in chapter 9, transfers may take place in cash or in kind. A capital transfer in kind necessarily concerns the change of ownership of a product previously recorded as a non-financial asset in the accounts of the donor. In this

case, the four entries relating to the transaction are all recorded in the capital account. Two relate to the transfer of wealth implied by a capital transfer; the other two are shown as disposal of the asset being transferred by the donor and its acquisition by the recipient. The treatment of fixed assets produced by communal construction and then transferred to government to maintain is discussed in chapter 10.

10.205 All other capital transfers have two entries in the capital account and two in the financial account. In the case of debt forgiveness, the two entries in the financial account show the reduction in the debt liability of the recipient towards the donor and the claim of the donor on the recipient. Other capital transfers are recorded as a transfer in cash and show a decrease in cash or deposits of the donor and an increase by the recipient.

Valuation

10.206 The value of a non-financial asset being transferred is the estimated price at which the asset, whether new or used, could be sold on the market plus any transport, installation or other costs of ownership transfer incurred by the donor but excluding any such charges incurred by the recipient. Transfers of financial assets, including the cancellation of debts, are valued in the same way as other acquisitions or disposals of financial assets or liabilities.

3. Capital taxes

10.207 *Capital taxes consist of taxes levied at irregular and infrequent intervals on the values of the assets or net worth owned by institutional units or on the values of assets transferred between institutional units as a result of legacies, gifts inter vivos or other transfers.* They include capital levies and taxes on capital transfers:

- a. Capital levies consist of taxes on the values of the assets or net worth owned by institutional units levied at irregular, and very infrequent, intervals of time. Capital levies are treated as exceptional both by units concerned and by the government. They may be payable by households or enterprises. They include betterment levies: that is, taxes on the increase in the value of agricultural land due to planning permission being given by government units to develop the land for commercial or residential purposes (*GFSM2001* tax code 1133; OECD 4500));
- b. Taxes on capital transfers consist of taxes on the values of assets transferred between institutional units. They consist mainly of inheritance taxes, or death duties, and gift taxes, including gifts inter vivos made between members of the same family to avoid, or minimize, the payment of inheritance taxes. They do not include taxes on sales of assets as these are not transfers (*GFSM2001* tax code 1134; OECD 4300).

4. Investment grants

10.208 *Investment grants consist of capital transfers made by governments to other resident or non-resident institutional units to finance all or part of the costs of their acquiring fixed assets.* The recipients are obliged to use investment grants for purposes of gross fixed capital formation, and the grants are often tied to specific investment projects, such as large construction projects. If the investment project continues over a long period of time, an investment grant in cash may be paid in instalments. Payments of instalments continue to be classified as capital transfers even though they may be recorded in a succession of different accounting periods.

10.209 Investment grants in kind consist of transfers of transport equipment, machinery and other equipment by governments to other resident or non-resident units and also the direct provision of buildings or other structures for resident or non-resident units. These may be constructed by enterprises owned by the donor government or by other enterprises that are paid directly by the donor government. In such cases, a capital transfer in cash is usually recorded followed by purchase of the items actually transferred in kind. Exceptionally, if the transfer is of an existing asset, and the recipient is resident, the transfer of ownership of the asset may be recorded as negative capital formation by government and positive capital formation by the recipient, but a capital transfer is still also recorded so that the balance sheet of both parties correctly reflects the change in net worth that has taken place.

5. Other capital transfers

10.210 *Other capital transfers consist of all capital transfers except capital taxes and investment grants.* One notable category included here is the cancellation of debt by mutual agreement between the creditor and the debtor. Such a cancellation is treated as a capital transfer from the creditor to the debtor equal to the value of the outstanding debt at the time of cancellation. It includes, but is not confined to, the cancellation of debt owed by non-residents to residents, and vice versa.

10.211 However, the unilateral writing off of debt is not a transaction between institutional units and therefore does not appear either in the capital account or the financial account of the SNA. If the creditor accepts such a write off or default, it should be recorded in the other changes in the volume of assets account of the creditor and the debtor. Provisions for bad debt are treated as bookkeeping entries

that are internal to the enterprise and do not appear in the SNA except in the case of expected losses on non-performing loans, which appear as memorandum items in the balance sheets. The unilateral repudiation of debt by a debtor is also not a transaction and is not recognized in the SNA.

10.212 Capital transfers may take various other forms, of which some examples are given below:

- a. Major payments in compensation for extensive damages or serious injuries not covered by insurance policies. The payments may be awarded by courts of law or settled out of court. They may be made to resident or non-resident units. They include payments of compensation for damages caused by major explosions, oil spillages, the side effects of drugs, etc.;
- b. Exceptionally large insurance settlements in the wake of a disaster. For more details on when this is the appropriate form of recording see chapter 17;
- c. Transfers from government units to publicly or privately owned enterprises to cover large operating deficits accumulated over two or more years;
- d. Transfers from central government to units at lower levels of government to cover some, or all, of the costs of gross fixed capital formation or large expenditure deficits accumulated over two or more years;
- e. Legacies or large gifts inter vivos, including legacies to NPIS;
- f. Exceptionally large donations by households or enterprises to NPIS to finance gross fixed capital formation: for example, gifts to universities to cover the costs of building new residential colleges, libraries, laboratories, etc.;
- g. Transfers of responsibility for pension entitlements, for example when general government assumes responsibility for pensions provision from an employer;
- h. Community built assets where responsibility for maintenance is then assumed by government or by an NPISH.

Chapter 11: The financial account

A. Introduction

- 11.1 The financial account is the final account in the full sequence of accounts that records transactions between institutional units. Net saving is the balancing item of the use of income accounts, and net saving plus net capital transfers receivable or payable can be used to accumulate non-financial assets. If they are not exhausted in this way, the resulting surplus is called net lending. Alternatively, if net saving and capital transfers are not sufficient to cover the net accumulation of non-financial assets, the resulting deficit is called net borrowing. This surplus or deficit, net lending or net borrowing, is the balancing item that is carried forward from the capital account into the financial account. The financial account does not have a balancing item that is carried forward to another account, as has been the case with all the accounts discussed in previous chapters. It simply explains how net lending or net borrowing is effected by means of changes in holdings of financial assets and liabilities. The sum of these changes is conceptually equal in magnitude, but on the opposite side of the account, to the balancing item of the capital account.
- 11.2 The financial account records transactions that involve financial assets and liabilities and that take place between resident institutional units and between resident institutional units and the rest of the world. The left-hand side of the account (table 11.1) records acquisitions of financial assets less disposals, while the right-hand side records incurrence of liabilities less their repayment.
- 1. Financial assets and liabilities**
- 11.3 As described in chapter 3, an asset is defined as follows. *An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another.*
- 11.4 Benefits are exchanged by means of payments. From this a financial claim, and hence a liability, can be defined. There are no non-financial liabilities recognized in the SNA, thus the term liability necessarily refers to a liability that is financial in nature.
- 11.5 *A liability is established when one unit (the debtor) is obliged, under specific circumstances, to provide a payment or series of payments to another unit (the creditor).* The most common circumstance in which a liability is established is a legally binding contract that specifies the terms and conditions of the payment(s) to be made and payment according to the contract is unconditional.
- 11.6 In addition, a liability may be established not by contract but by long and well-recognized custom that is not easily refuted. Some payments by government to individuals fall under this category. In these cases, the creditor has a valid expectation of payment, despite the lack of a legally binding contract. Such liabilities are called constructive liabilities.
- 11.7 Whenever either of these types of liability exists, there is a corresponding financial claim that the creditor has against the debtor. *A financial claim is the payment or series of payments due to the creditor by the debtor under the terms of a liability.* Like the liabilities, the claims are unconditional. In addition, a financial claim may exist that entitles the creditor to demand payment from the debtor but whereas the payment by the debtor is unconditional if demanded, the demand itself is discretionary on the part of the creditor.
- 11.8 *Financial assets consist of all financial claims, shares or other equity in corporations plus gold bullion held by monetary authorities as a reserve asset.* Gold bullion held by monetary authorities as a reserve asset is treated as a financial asset even though the holders do not have a claim on other designated units. Shares are treated as financial assets even though the financial claim their holders have on the corporation is not a fixed or predetermined monetary amount.
- 2. Quadruple-entry accounting**
- 11.9 The accounting rules of the SNA, explained in chapter 3, describe how the quadruple principle of accounting is implemented. When a good, service, asset or liability is sold by one institutional unit to another, two pairs of entries are recorded. The first pair records the supply of the item by one unit and the acquisition by the other. The second pair of entries records the second party supplying the means of payment for the item, and the first party receiving this. Similar quadruple entries are required in respect of transactions involving property income and transfers. The second pair of entries usually appears in the financial account though in a few cases of transfers in kind, the second pair of entries may appear as negative and positive final consumption expenditure or disposal and acquisition of a non-financial asset. In all cases except the acquisition of a financial asset or settlement of a liability, the first pair

of entries appears in one or more of the non-financial accounts. In the case of the exchange of a financial instrument, all four entries appear in the financial account.

- 11.10 There are thus two reasons for entries in the financial account. The first reason is as counterpart to entries in other accounts; the second is to record transactions involving the exchange of financial assets and liabilities only, so both the original and the counterpart entries are recorded in the financial account.

3. Counterparts of non-financial transactions

- 11.11 Transactions involving the transfer of ownership of a good or non-financial asset, or the provision of a service or labour almost always entail a counterpart entry in the financial account for means of payment or claims on future means of payment. Even many transactions in kind, such as barter sales and remuneration in kind, conceptually lead to entries in the financial account. If unit A provides a product of value x to unit B, expecting another product of the same value in return, A has a financial claim of x on B. This financial claim is settled and thus no longer needs to be recorded when B fulfils delivery of the product promised. Entries in the financial account are needed when all elements of the in-kind transaction are not completed simultaneously.

- 11.12 The sale of a good, service, or asset may have as its counterpart a change in currency or transferable deposit. Alternatively, the counterpart may be reflected in the financial account in a trade credit or other category of accounts receivable or payable.

4. Exchanges of financial assets and liabilities

- 11.13 Whenever one financial asset is exchanged for another or when a liability is repaid with a financial asset, transactions are recorded only in the financial account. These transactions change the distribution of the portfolio of financial assets and liabilities and may change the totals of both financial assets and liabilities, but they do not change the difference between total financial assets and liabilities. For example, trade credits are extinguished by payments. The claim represented by the trade credit no longer exists when

the debtor provides means of payment to the creditor. The resulting four entries in the financial account are:

- the creditor reduces its holdings of trade credits and increases its means of payment (currency or transferable deposits); and
- the debtor reduces its liabilities (in the form of trade credits) and reduces its financial assets (in the form of means of payment).

- 11.14 When existing financial assets are exchanged for other financial assets, all entries take place in the financial account and only affect assets. For example, if a debt security such as an existing bond is sold by one institutional unit to another on the secondary market, the seller reduces his holdings of securities and increases his holdings of means of payment by an equal amount. The purchaser increases his holdings of securities and decreases his holdings of means of payment.

- 11.15 When a new financial asset is created through the incurrence of a liability by an institutional unit, all related entries are also made in the financial account. For example, a corporation may issue short-term securities in exchange for means of payment. The financial account of the corporate sector accordingly shows an increase in liabilities in the form of securities and an increase in financial assets in the form of means of payment; the financial account of the purchasing sector shows a reduction in assets in the form of means of payment and an increase in assets in the form of securities.

5. Net lending

- 11.16 Some sectors or subsectors are net lenders while others are net borrowers. When institutional units engage in financial transactions with each other, the surplus resources of one sector can be made available by the units concerned for use by other sectors. The financial account indicates how deficit, or net borrowing, sectors obtain the necessary financial resources by incurring liabilities or reducing assets and how the net lending sectors allocate their surpluses by acquiring financial assets or reducing liabilities. The account also

Table 11.1: The financial account - concise form - changes in assets

Changes in assets									
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Net acquisition of financial assets	83	172	-10	189	2	436	47		483
Monetary gold and SDRs		-1				-1	1		0
Currency and deposits	39	10	-26	64	2	89	11		100
Debt securities	7	66	4	10	-1	86	9		95
Loans	19	53	3	3	0	78	4		82
Equity and investment fund shares	10	28	3	66	0	107	12		119
Insurance, pension and standardized guarantee schemes	1	7	1	39	0	48	0		48
Financial derivatives and employee stock options	3	8	0	3	0	14	0		14
Other accounts receivable/payable	4	1	5	4	1	15	10		25

shows the relative contributions of various categories of financial assets to these transactions.

- 11.17 The evolution of net lending can be seen clearly in table 11.1. Non-financial corporations are shown to have a net borrowing requirement of 72. This requirement is financed by incurring liabilities of 135 and acquiring financial assets of 63; the difference between the two equals net borrowing. Similarly, the household sector, which has a net lending balance of 206, achieves this result by acquiring financial assets of 220 and incurring liabilities of 14.
- 11.18 Although much borrowing and lending is routed through financial intermediaries, some borrowers can transact directly with non-financial lenders. For example, governments can issue securities in the market; these securities can be purchased by households, non-financial corporations and the rest of the world as well as by financial institutions. In many other cases, financial intermediaries have as their special function the creation of a financial market that links lenders and borrowers indirectly. The financial institution incurs liabilities to net lenders through taking deposits or issuing securities and providing the financial resources thus mobilized to borrowers, for example in the form of loans, holding of debt securities and holdings of equity securities. Thus, their transactions in financial assets and liabilities will be comparatively large relative to other sectors and to the size of their own net lending or borrowing. In table 11.1, the financial corporations sector has a net borrowing of 15, which is financed by net incurrence of lia-

bilities of 182 and net acquisition of financial assets of 167.

- 11.21 In the hypothetical case of a closed economy in which resident institutional units do not engage in transactions with non-residents, the total net lending and total net borrowing of the various sectors would have to be equal since the net borrowing requirements of deficit sectors would be met by net lending of surplus sectors. For the economy as a whole, net lending or borrowing would have to be zero. This equality reflects the symmetric nature of financial assets and liabilities. When residents engage in transactions with non-residents, the sum of the net lending and net borrowing of each of the sectors making up the total economy must equal the economy's net lending to, or borrowing from, the rest of the world. In table 11.1 the total economy has acquired financial assets of 436 and incurred liabilities of 426. Net lending for the total economy to the rest of the world is therefore 10.

6. Contingencies

- 11.22 Many types of contractual financial arrangements between institutional units do not give rise to unconditional requirements either to make payments or to provide other objects of value; often the arrangements themselves do not have transferable economic value. These arrangements, which are often referred to as contingencies, are not actual current financial assets and are not recorded in the SNA.

B. Transactions in financial assets and liabilities

1. The classification of financial assets and liabilities

- 11.27 Because of the symmetry of financial claims and liabilities, the same classification can be used to portray both assets and liabilities. Further, the same classification is used in all accumulation accounts for financial transactions. Within the SNA, the term "instrument" may be used to relate to the

asset or liability aspect of an item on the financial balance sheet. In monetary statistics, some off-balance sheet items may also be described as instruments. The use of the same term in the SNA is for convenience only and does not imply an extension of the coverage of assets and liabilities to include these off-balance-sheet items.

- 11.28 Two classes of financial assets that cannot properly be equated with identified claims over other designated insti-

Table 11.1 (cont): The financial account - concise form - changes in liabilities and net worth

Transactions and balancing items	Changes in liabilities and net worth								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
<i>Net lending (+) / net borrowing (-)</i>	-56	-1	-103	174	-4	10	-10		0
Net acquisition of liabilities	139	173	93	15	6	426	57		483
Monetary gold and SDRs									
Currency and deposits		65	37			102	-2		100
Debt securities	6	30	38	0	0	74	21		95
Loans	21	0	9	11	6	47	35		82
Equity and investment fund shares	83	22				105	14		119
Insurance, pension and standardized guarantee schemes		48	0			48	0		48
Financial derivatives and employee stock options	3	8	0	0	0	11	3		14
Other accounts receivable/payable	26	0	9	4		39	-14		25

tutional units are included in the classification of financial instruments. The first class is gold bullion owned by monetary authorities and others subject to the monetary authorities' effective control and held as a financial asset and as a component of foreign reserves. There is no matching liability for gold bullion. The second class is shares, other corporate equity securities and financial participations. These do not have fixed redemption values, as is the case for many other financial assets, but represent claims by the share holders on the net worth of the corporation.

11.29 Table 11.2 shows an elaboration of table 11.1 incorporating the classification of financial instruments. The exact coverage and the definition of each of the items are described in section C along with an explanation of the types of transactions appearing in the financial account that apply to each instrument. The remainder of this section deals with general matters of classification and the application of the accounting rules of the SNA as they apply to transactions in financial instruments.

11.30 The detail in which the classification is employed depends on the institutional sector to be analysed. The types of financial assets in which households transact are more limited than those for other sectors, and sources of information are generally more limited than those for other sectors. Financial corporations, on the other hand, transact in the full range of instruments, and information on their operations is often the most detailed and timely of any institutional units. Consequently, a detailed breakdown may be developed for financial corporations. Blanks, rather than zeros in table 11.2 show where entries are conceptually impossible; zeros show that entries are possible but expected to be small.

11.31 The standard items in the classification of financial assets and liabilities provide a useful basis for international comparison of national data. Presentation of data for individual countries, however, must be tailored to meet their analytical needs and to reflect national practices. Thus the particular form of presentation chosen may reflect differing institutional arrangements, the extent and nature of national financial markets, the complexity of financial assets available, and the degree of regulation and other financial control exercised. For this reason, a number of supplementary items are suggested for use in addition to the standard components of the SNA. These are described together with the standard items in section C.

2. Negotiability

11.33 Financial claims can be distinguished as to whether they are negotiable or not. A claim is negotiable if its legal ownership is readily capable of being transferred from one unit to another unit by delivery or endorsement. While any financial instrument can potentially be traded, negotiable instruments are designed to be traded on organized and other markets. Negotiability is a matter of the legal form of the instrument. Those financial claims that are negotiable are referred to as securities. Some securities may be legally negotiable, but there is not, in fact, a liquid market where they can be readily bought or sold. Securities include shares and debt securities; listed financial derivatives, such as warrants, are sometimes considered to be securities.

3. Valuation of transactions

11.34 The payments required under a contract relating to financial assets and liabilities almost always represent more than one transaction in the sense used in the SNA. Payments of interest on loans and deposits, as specified by financial institutions, involve both interest as recorded in the SNA and a service fee, which is the service payment to the financial institution for making the loan available or safe-guarding the deposit. The buying and selling prices for foreign currency and shares are usually different; the difference between the buying price and mid-price represents a service provided to and charged to the buyer and the difference between the mid-price and selling price a service provided to and charged to the seller. The mid-price is the mid-point of the buying and selling price at the time a transaction takes place; if the purchase and sale of a share, for instance, do not take place simultaneously, the mid-point for the sale and purchase price at the time of sale and of purchase will not necessarily be equal. For some financial instruments, for example bonds, the increase in value over time is taken to represent interest, not simply a price increase in the value of the asset. In some cases more than one adjustment may be needed to the apparent transaction value to identify and re-route both the service charge and interest associated with the asset.

11.35 It is essential that the value of the transactions in financial instruments recorded in the financial account carefully excludes these service charges and interest payments. Part 4 of chapter 17 describes the adjustments necessary to make these exclusions on an instrument-by-instrument basis.

4. Time of recording

11.37 In principle, the two parties to a financial transaction should record the transaction at the same point in time. When the counterpart to an entry in the financial account is in another account, the time of recording of financial claims is to be aligned with the time of recording in the other accounts of the transactions that gave rise to the financial claim.

11.38 When all entries relating to a transaction pertain only to the financial account, they should be recorded when the ownership of the asset is transferred.

5. Netting and consolidation

Netting

11.40 As described in chapter 3, netting is a process whereby entries on alternate sides of the account for the same transaction item and same institutional unit are offset against one another. In general the preference of the SNA is to avoid netting where possible but this may not always be possible and for some particular analyses, not always desirable.

Consolidation

11.43 Consolidation in the financial account refers to the process of offsetting transactions in assets for a given group of

institutional units against the counterpart transactions in liabilities for the same group of institutional units. Consolidation can be performed at the level of the total economy, institutional sectors, and subsectors. Different levels of consolidation are appropriate for different types of analysis. For example, consolidation of the financial accounts for the total economy emphasizes the economy's financial position with the rest of the world since all domestic financial positions are netted on consolidation. Consolidation for sectors permits the tracing of overall financial movements between sectors with positive net lending and those with net borrow-

ing and the identification of financial intermediation. Consolidation only at the subsector level for financial corporations can provide much more detail on intermediation and allow, for example, the identification of the central bank's operations with other financial intermediaries. Another area where consolidation can be instructive is within the general government sector when transactions between the various levels of government are consolidated. Chapter 22 makes a specific recommendation in this regard. Within the main sequence of accounts, however, the SNA discourages consolidation.

C. Recording of individual financial instruments

1. Monetary gold and SDRs

- 11.44 Monetary gold and Special Drawing Rights (SDRs) issued by the International Monetary Fund (IMF) are assets that are normally held only by monetary authorities.

Monetary gold

- 11.45 *Monetary gold is gold to which the monetary authorities (or others who are subject to the effective control of the monetary authorities) have title and is held as a reserve asset.*

SDRs

- 11.47 *Special Drawing Rights (SDRs) are international reserve assets created by the International Monetary Fund (IMF) and allocated to its members to supplement existing reserve assets.* The Special Drawing Rights Department of the IMF manages reserve assets by allocating SDRs among member countries of the IMF and certain international agencies (collectively known as the participants).

2. Currency and deposits

- 11.50 Financial transactions in currency and deposits consist of additions to, or disposals of, currency and establishing or incrementing a deposit or making a withdrawal from it. In the case of a deposit, an apparent increase in the value may be due to the payment of interest on an existing stock level. Payments of bank interest are always separated into SNA interest and a charge for financial intermediation services indirectly measured (FISIM). SNA interest is first recorded in the distribution of primary income account and then may be recorded in the financial account as a new deposit. An increase in deposits may correspond to a rundown of currency or vice versa.

- 11.51 The aggregate of currency, transferable deposits (including inter-bank deposits) and other deposits should always be calculated. A distinction should always be made between currency and deposits in domestic currency and in foreign currency. If it is considered useful to have data for individual foreign currencies, a distinction should be made between currency and deposits in each currency.

Currency

- 11.52 *Currency consists of notes and coins that are of fixed nominal values and are issued or authorized by the central bank or government.* (Commemorative coins that are not actually in circulation should be excluded as should unissued or demonetized currency.) A distinction should be drawn between domestic currency (that is, currency that is the liability of resident units, such as the central bank, other banks and central government) and foreign currencies that are liabilities of non-resident units (such as foreign central banks, other banks and governments). All sectors may hold currency as assets, but normally only central banks and government may issue currency. In some countries, commercial banks are able to issue currency under the authorization of the central bank or government.

Transferable deposits

- 11.54 *Transferable deposits comprise all deposits that:*
- are exchangeable for bank notes and coins on demand at par and without penalty or restriction; and*
 - are directly usable for making payments by cheque, draft, giro order, direct debit/credit, or other direct payment facility.*

Some types of deposit accounts embody only limited features of transferability; these are excluded from the category of transferable deposits and treated as other deposits. For example, some deposits have restrictions such as on the number of third-party payments that can be made per period or on the minimum size of the individual third-party payments. A transferable deposit cannot have a negative value. A bank current or checking account, for example, is normally treated as a transferable deposit but if it is overdrawn, the withdrawal of funds to zero is treated as the withdrawal of a deposit and the amount of the overdraft is treated as the granting of a loan.

- 11.55 Transferable deposits should be cross-classified according to:

- a. whether they are denominated in domestic currency or in foreign currencies; and
- b. whether they are liabilities of resident institutions or the rest of the world.

Inter-bank positions

11.56 Though not strictly accurate, the term bank is frequently used as a synonym for the central bank and other deposit-taking corporations. Banks take deposits from and make loans to all other sectors. There may also be substantial borrowing and lending within the banking subsector, but this is of different economic significance from their intermediation activities involving other sectors. There is normally little if any FISIM payable between banks as banks usually borrow from and lend to each other at a risk-free rate. For both these reasons, inter-bank loans and deposits should be separated from other loans and deposits.

Other transferable deposits

11.58 **Other transferable deposits are those where one party or both parties to the transaction, or either the creditor or debtor or both of the positions, is not a bank.**

Other deposits

11.59 **Other deposits comprise all claims, other than transferable deposits, that are represented by evidence of deposit.** Typical forms of deposits that should be included under this classification are savings deposits (which are always non-transferable), fixed-term deposits and non-negotiable certificates of deposit. The category also covers shares or similar evidence of deposit issued by savings and loan associations, building societies, credit unions and the like. Deposits of limited transferability that are excluded from the category of transferable deposits are included here. Other repurchase agreements should be classified under loans.

11.60 It is possible to hold accounts for both “Transferable and other deposits may be held as assets by all sectors. Deposits are most often accepted as liabilities by financial corporations but institutional arrangements in some countries permit non-financial corporations, general government and households to accept deposits as liabilities.

- 11.63 Other deposits should be cross-classified according to:
- a. whether the deposits are denominated in domestic currency or in foreign currencies, and
 - b. whether they are liabilities of resident institutions or the rest of the world.

3. Debt securities

11.64 **Debt securities are negotiable instruments serving as evidence of a debt.** They include bills, bonds, negotiable certificates of deposit, commercial paper, debentures, asset-backed securities, and similar instruments normally traded in the financial markets. **Bills are defined as securities that**

give the holders the unconditional rights to receive stated fixed sums on a specified date. Bills are issued and usually traded in organized markets at discounts to face value that depend on the rate of interest and the time to maturity. Examples of short-term securities are Treasury bills, negotiable certificates of deposit, bankers’ acceptances and commercial paper. **Bonds and debentures are securities that give the holders the unconditional right to fixed payments or contractually determined variable payments, that is, the earning of interest is not dependent on earnings of the debtors.** Bonds and debentures also give holders the unconditional rights to fixed sums as payments to the creditor on a specified date or dates.

These fixed amounts are often referred to as coupon payments. Paragraphs 11.54 to 11.69 discuss other, more complex, forms of securities.

11.70 **Index-linked securities are instruments for which either the coupon payments (interest) or the principal or both are linked to an index such as a price index or the price of a commodity.** The objective is to conserve purchasing power or wealth during a period of inflation in addition to earning interest income. When the coupon payments are index-linked they are treated entirely as interest, as is the case with any variable interest rate financial asset. When the value of the principal is indexed to an indicator that moves in line with a broad-based measure of inflation, the issue price of the security is recorded as the principal and the index payment paid periodically and at maturity is treated as interest. The payment owing to indexation should be recorded as interest (property income) over the life of the security and the counterpart should be recorded under debt securities in the financial account. When a security is indexed to a commodity and thus may be subject to large price fluctuations, a variation on this procedure is recommended. It is explained in detail in part 4 of chapter 17.

Supplementary classifications of debt securities

- 11.71 A supplementary subclassification of debt securities by maturity into short-term and long-term should be based on the following criteria.
- a. Short-term debt securities include those securities that have an original maturity of one year or less. Securities with a maturity of one year or less should be classified as short-term even if they are issued under long-term facilities such as note issuing facilities.
 - b. Long-term debt securities include those securities that have an original maturity of more than one year. Claims with optional maturity dates, the latest of which is more than one year away, and claims with indefinite maturity dates should be classified as long-term.

In addition, it may sometimes be useful to distinguish listed debt securities from unlisted ones and to record them according to whether they are short- or long-term.

4. Loans

11.72 **Loans are financial assets that:**

- a. *are created when a creditor lends funds directly to a debtor, and*
- b. *are evidenced by documents that are not negotiable.*
- 11.73 The category of loans includes overdrafts, instalment loans, hire-purchase credit and loans to finance trade credit. Claims on or liabilities to the IMF that are in the form of loans are also included. An overdraft arising from the overdraft facility of a transferable deposit account is classified as a loan. However, undrawn lines of credit are not recognized as a liability as they are contingent. When goods are acquired under a financial lease, a change of economic ownership of the goods from the lessor to the lessee is deemed to take place. The change of economic ownership may be distinguished by the fact that all the risks and rewards of ownership are transferred from the legal owner of the good, the lessor, to the user of the good, the lessee. The lessee contracts to make payments that enable the lessor, over the period of the contract, to recover all, or virtually all, of his costs including interest. This de facto change in ownership is recorded by assuming a loan is made by the lessor to the lessee, the lessee uses this loan to acquire the asset and the payments by the lessee to the lessor represent not rentals on the asset but payments of interest, possibly a service charge and repayments of principal on the imputed loan. Interest is recorded as property income payable or receivable and debt repayment is recorded in the financial account as reducing the value of the asset (loan) of the lessor and the liability of the lessee. There is more extensive discussion of financial leases in part 5 of chapter 17.
- 11.82 Investment fund shares have a specialized role in financial intermediation as a kind of collective investment in other assets, so they are identified separately.

Equity

- 11.83 *Equity comprises all instruments and records acknowledging claims on the residual value of a corporation or quasi-corporation after the claims of all creditors have been met.* Equity is treated as a liability of the issuing institutional unit.
- 11.85 Equities are subdivided into:
- listed shares;
 - unlisted shares, and
 - other equity.
- Both listed and unlisted shares are negotiable and are therefore equity securities.
- 11.86 *Listed shares are equity securities listed on an exchange.* They are also referred to as quoted shares. The existence of quoted prices of shares listed on an exchange means that current market prices are usually readily available.
- 11.87 *Unlisted shares are equity securities not listed on an exchange.* Unlisted shares can also be called private equity; venture capital usually takes this form. Unlisted shares tend to be issued by subsidiaries and smaller scale enterprises and typically have different regulatory requirements but neither qualification is necessarily the case.
- 11.88 *Other equity is equity that is not in the form of securities.* It can include equity in quasi-corporations (such as branches, trusts, limited liability and other partnerships), unincorporated funds and notional units for ownership of real estate and other natural resources. The ownership of some international organizations is not in the form of shares and so is classified as other equity (although equity in the Bank for International Settlements (BIS) is in the form of unlisted shares).
- 11.89 Transactions in equity in the financial account cover three different types of transactions. The first is the recording of the value of shares bought and sold on an exchange. From time to time corporations restructure their shares and may offer shareholders a new number of shares for each share previously held. These bonus shares are not however treated as transactions but as a form of redenomination since the value of the new number of shares times the new price represents the same proportion of the value of the corporation as the old number of shares times the old price.
- 11.79 Loans may be divided, on a supplementary basis, between short- and long-term loans.
- Short-term loans comprise loans that have an original maturity of one year or less. Loans repayable on the demand of the creditor should be classified as short-term even when these loans are expected to be outstanding for more than one year.
 - Long-term loans comprise loans that have an original maturity of more than one year.
- 11.80 It may also be useful to distinguish loans that, though taken out for a period longer than a year, have less than one year to maturity in the accounting period considered, as well as loans secured by mortgages.

5. Equity and investment fund shares

- 11.81 Equity and investment fund shares have the distinguishing feature that the holders own a residual claim on the assets of the institutional unit that issued the instrument. Equity represents the owner's funds in the institutional unit. In contrast to debt, equity does not generally provide the owner with a right to a predetermined amount or an amount determined according to a fixed formula.
- 11.90 The second type of transaction concerning equity is capital injections by the owners or, on occasion, withdrawals of equity by the owners. Dividends are recorded in the distribution of primary income account as if they were always paid out of operating surplus earned in the current period. An enterprise, though, usually aims to have a smooth track record of dividend payments and will therefore sometimes

pay out more than the current operating surplus and sometimes rather less, the balance carrying through to the accumulation accounts by way of saving (which might be negative). However, if the dividends paid out are significantly in excess of recent average earnings, then the excess should no longer all be recorded in the allocation of primary income account but should be regarded as a withdrawal of equity by the owners and be reflected under this item. Such payments are sometimes referred to as “super-dividends”. Withdrawals may take the form of proceeds from sales of fixed or other assets, transfers of fixed and other assets from the quasi-corporation to the owner and funds taken from accumulated retained earnings and reserves for the consumption of fixed capital. (The particular case of payments between government and public enterprises is discussed in chapter 22.) Equally, liquidating dividends paid to shareholders when an enterprise becomes bankrupt should be recorded as withdrawal of equity.

- 11.91 Conversely, owners may inject extra finance into an enterprise. If the enterprise is publicly controlled and runs a regular deficit each year as a matter of government economic or social policy that is covered by a receipt from government to match this deficit, the payment is regarded as a subsidy. If the payment from government is irregular but clearly designed to cover accumulated losses, it is treated as a capital transfer. If government makes an investment grant to a public corporation this also is recorded as a capital transfer. However, there may be cases where the owners (public or private) agree to make new finance available to permit expansion, say, and represent not just a reduction of debt but a positive addition to the enterprise’s own funds. The finance consists of funds for use by the enterprise in purchasing fixed assets, accumulating inventories, acquiring financial assets or redeeming liabilities. Transfers by owners of fixed and other assets to the quasi-corporation are also included as addition to equity. Such payments are to be included in this item as an acquisition of equity, even if no new shares are issued in response to the financial contribution.
- 11.92 The third type of transaction concerning equity is the special case of equity addition and withdrawal that happens in respect of the reinvestment of earnings of foreign direct investment enterprises. In the distribution of primary income account, the share of operating surplus proportionate to the foreign direct investor’s share of equity is shown as being withdrawn and distributed to him as reinvested earnings. Because it is not actually withdrawn, it adds to the value of the equity of the enterprise by a recording as reinvestment of earnings in the financial account.
- 11.93 Notional resident units are treated in the same manner as quasi-corporations. For example, an extension to a holiday home of a non-resident is recorded as an increase in the value of an asset owned by a resident notional unit with a matching increase in the equity of the non-resident owner. However, the entire income from a holiday home is treated as a withdrawal by the owner of the notional resident unit so there are no earnings left to be reinvested. This ensures that the entire net worth of the notional resident unit is the value of the property in question.

Investment fund shares or units

- 11.94 *Investment funds are collective investment undertakings through which investors pool funds for investment in financial or non-financial assets.* Those units acquiring shares in the funds thus spread their risk across all the instruments in the fund.
- 11.97 Investment funds are divided into money market funds (MMF) and non-MMF investment funds. The fundamental difference between them is that MMFs typically invest in money market instruments with a residual maturity of less than one year, are often transferable and are often regarded as close substitutes for deposits. Non-MMF investment funds typically invest in longer-term financial assets and possibly real estate. They are not transferable and are typically not regarded as substitutes for deposits.

6. Insurance, pension and standardized guarantee schemes

- 11.103 Insurance, pension and standardized guarantee schemes all function as a form of redistribution of income or wealth mediated by financial institutions. The redistribution may be between individual institutional units in the same period or for the same institutional unit over different periods or a combination of the two. Units participating in the schemes contribute to them and may receive benefits (or have claims settled) in the same or later periods. While they hold the funds, insurance corporations invest them on behalf of the participants. The part of the investment income that is distributed to the participants as property income is returned as extra contributions. In all cases, net contributions or premiums are defined as actual contributions or premiums plus distributed property income less the service charge retained by the financial institution concerned. Entries in the financial account, therefore, reflect the difference between net contributions or net premiums paid to the schemes less benefits and claims paid out. Significant other additions to the reserves of the schemes come via other changes in the volume of assets and especially holding gains. There is more extensive discussion on the recording of all these schemes in parts 1, 2 and 3 of chapter 17.
- 11.104 There are five sorts of reserves applicable to insurance, pension and standardized guarantee schemes. These are non-life insurance technical reserves, life insurance and annuities entitlements, pension entitlements, claims of pension funds on the pension manager and provisions for calls under standardized guarantees.

More detail on these five sorts of reserves are given in paragraphs 11.105 to 11.110.

7. Financial derivatives and employee stock options

Financial derivatives

- 11.111 *Financial derivatives are financial instruments that are linked to a specific financial instrument or indicator or commodity, through which specific financial risks can be traded in financial markets in their own right.* The value

of a financial derivative derives from the price of the underlying item: the reference price. The reference price may relate to a commodity, a financial asset, an interest rate, an exchange rate, another derivative or a spread between two prices. The derivative contract may also refer to an index or a basket of prices.

- 11.112 An observable market price or an index for the underlying item is essential for calculating the value of any financial derivative. If a financial derivative cannot be valued because a prevailing market price or index for the underlying item is not available, it cannot be regarded as a financial asset. Unlike debt instruments, no principal amount is advanced to be repaid and no investment income accrues. Financial derivatives are used for a number of purposes including risk management, hedging, arbitrage between markets and speculation. Financial derivatives enable parties to trade specific financial risks (interest rate risk, currency, equity and commodity price risk and credit risk, etc.) to other entities who are more willing, or better suited, to take or manage these risks, typically, but not always, without trading in a primary asset or commodity. The risk embodied in a derivatives contract can be “traded” either by trading the contract itself, such as is possible with options, or by creating a new contract that embodies risk characteristics that match, in a countervailing manner, those of the existing contract owned. The latter is termed offsetability and is particularly common in forward markets or where there are no formal exchanges through which to trade derivatives.

Paragraphs 11.113 to 11.125 give more details on financial derivatives and employee stock options.

8. Other accounts receivable or payable

Trade credit and advances

- 11.126 This category comprises trade credit for goods and services extended to corporations, government, NPISHs, households and the rest of the world, and advances for work that is in progress (if classified as such under inventories) or is to be undertaken. Trade credits and advances do not include

loans to finance trade credit, which are classified as loans. It may be valuable to separate short-term trade credits and advances from long-term trade credit and advances by employing the same criteria used to distinguish between other short- and long-term financial assets.

Other

- 11.127 This category includes accounts receivable and payable, other than those described previously, that is the amounts are not related to the provision of goods and services. It covers amounts related to taxes, dividends, purchases and sales of securities, rent, wages and salaries, and social contributions. Interest that accrues but is not paid is included in this item only if the accrued interest is not added to the value of the asset on which the interest is payable (as is usually the case).

- 11.128 This category does not include statistical discrepancies.

9. Memorandum items

Foreign direct investment

- 11.129 Transactions in financial assets and liabilities arising from the provision of, or receipt of, foreign direct investment are to be recorded under the appropriate categories: debt securities, loans, equity, trade credit or other. However, the amounts of foreign direct investment included within each of those categories should also be recorded separately as memorandum items. Foreign direct investment is discussed further in chapters 17 and 24.

Non-performing loans

- 11.130 It is useful to identify transactions relating to non-performing loans as memorandum items. There is a discussion of the definition of and recording for non-performing loans in chapter 13. In addition, when they are important it may be useful to group all arrears of interest and repayment under a memorandum item.

Chapter 12: The other changes in assets accounts

A. Introduction

- 12.1 This chapter is concerned with the recording of changes in the values of assets and liabilities, and thus of the changes in net worth, between opening and closing balance sheets that result from flows that are not transactions, referred to as other flows. Transactions in assets and liabilities and the immediate consequences of transactions on net worth are recorded in the capital account and financial account. The change in the value of produced assets resulting from consumption of fixed capital and from recurrent losses from inventories are treated as transactions and so do not appear in the other changes in assets accounts.
- 12.2 Although the entries relate to flows that are not transactions, they are not “residual” entries. Rather they serve to demonstrate significant changes in the value and composition of items between the opening and closing balance sheets due to other events.
- 12.3 The entries in the other changes in assets accounts cover many different kinds of changes in assets, liabilities and net worth. Some of these are particular to the type of asset concerned, some may apply to all types of assets. All changes relating to holding gains and losses are included in the revaluation account. Holding gains and losses arise from changes over time in the level and structure of prices. All other changes in the value of assets are treated as being due to a change in volume due to quality change rather than due to changes in prices and are recorded in the other changes in the volume of assets account. This includes changes in value that result instantaneously, for example, from a reclassification of an asset or from other one-off events.
- 12.4 The chapter discusses the two accounts in turn, beginning with the other changes in the volume of assets account and proceeding to the revaluation account. Under each account, the entries for each type of asset are discussed separately.

B. The other changes in the volume of assets account

- 12.5 The other changes in the volume of assets account records the changes in assets, liabilities, and net worth between opening and closing balance sheets that are due neither to transactions between institutional units, as recorded in the capital and financial accounts, nor to holding gains and losses as recorded in the revaluation account. The format of the other changes in the volume of assets account, shown in table 12.1, is similar to that of the other accumulation accounts. The entries for changes in assets are on the left-hand side and the entries for changes in liabilities are on the right-hand side. Non-financial assets, both produced and non-produced, and financial assets are shown separately. The balancing item in the account, the change in net worth due to other changes in volume of assets, is the excess of the sum of the changes in assets over the sum of the changes in liabilities recorded in the account and is shown on the right-hand side of the account.
- 1. Functions of the other changes in the volume of assets account**
- 12.6 In the capital account, produced assets enter and leave the SNA through acquisition less disposal of fixed assets, consumption of fixed capital and additions to, withdrawals from and recurrent losses from inventories. In the financial account, most financial assets enter the SNA when the debtor acquires something of value and accepts the obligation to make payment, or payments, to the creditor. Financial assets are extinguished when the debtor has fulfilled the financial obligation under the terms of the agreement.
- 12.7 Both the capital and financial accounts also record transactions in existing assets among the institutional sectors. However, these acquisitions and disposals merely change the ownership of the assets without changing the total net worth for the economy as a whole except where the transactions are between residents and the rest of the world.
- 12.8 One important function of the other changes in the volume of assets account is to allow certain assets to enter and leave

the SNA other than by transactions. The acts of entering and exiting from the balance sheet are referred to as economic appearances and disappearances. Some entrances and exits happen when naturally occurring assets, such as subsoil assets, gain economic value or become worthless. Such entrances and exits come about as interactions between institutional units and nature, thus contrasting with entrances and exits that come about as a result of transactions, which typically are interactions by mutual agreement between institutional units. Yet other entrances and exits may also relate to assets created by human activity, such as valuables, purchased goodwill or gold.

- 12.9 A second function of the account is to record the effects of exceptional, unanticipated events that affect the economic benefits derivable from assets (and corresponding liabilities). These occurrences are referred to as the effect of external events. They include one institutional unit's effectively removing an asset from its owner without the owner's agreement, an action that is not considered a transaction because the element of mutual agreement is absent. These events also include those that destroy assets, such as natural disaster or war.
- 12.10 A third function of the account is to record changes in classifications of institutional units and assets and in the structure of institutional units.
- 12.11 The three sections that follow discuss first the recording of the economic appearance and disappearance of assets, then the effects of external events on the value of assets and finally changes in the classification and structure of assets.

2. Appearance and disappearance of assets other than by transactions

- 12.12 Entries relating to the appearance and disappearance of assets can be grouped according to the main type of asset under consideration as follows:

- a. entries relating to recognition of produced assets;
- b. entries relating to entry and exit from the asset boundary of natural resources;
- c. entries relating to contracts, leases and licences;
- d. changes in goodwill and marketing assets; and
- e. entries relating to financial assets.

Table 12.2 shows a disaggregation of table 12.1 including the various entries for economic appearance and disappearance of assets.

Economic recognition of produced assets

- 12.13 Two types of assets can appear under this item: public monuments and valuables. As was described in chapter 10, public monuments are objects, structures or sites of significant or special value. Valuables are items held as stores of value because their value is expected to appreciate, or at least not depreciate, over time. The capital account records the acquisition of valuables and public monuments when these are newly produced goods or imported and it records transactions in existing goods already classified as valuables and public monuments.
- 12.14 However, existing goods, valuables and public monuments may not already have been recorded in the balance sheets for any of several reasons; they may date from a time before the time period covered by the accounts, they were originally recorded as consumption goods or, if structures, they have already been written off.

Table 12.1: The other changes in the volume of assets account - concise form - transactions in assets

Changes in assets

Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Economic appearance of assets	26	0	7	0	0	33			33
Economic disappearance of non-produced non-financial assets	-9	0	-2	0	0	-11			-11
Catastrophic losses	-5	0	-6	0	0	-11			-11
Uncompensated seizures	-5	0	5	0	0	0			0
Other changes in volume n.e.c.	1	1	0	0	0	2			2
Changes in classification	6	-2	-4	0	0	0			0
Total other changes in volume	14	-1	0	0	0	13			13
Produced non-financial assets	-2	-2	-3	0	0	-7			-7
Non-produced non-financial assets	14	0	3	0	0	17			17
Financial assets	2	1	0	0	0	3			3

Entry of natural resources into the asset boundary

Discoveries and upwards reappraisals of subsoil resources

- 12.17 In the SNA, subsoil assets are defined as those proven subsoil resources of coal, oil and natural gas, of metallic minerals or of non-metallic minerals that are economically exploitable, given current technology and relative prices. The capital account records acquisitions and disposals among sectors of the resources that exist under those conditions. The other changes in the volume of assets account, in contrast, records increases and decreases that change the total volume for the economy as a whole.
- 12.18 One way in which the resources may increase is by the discovery of new exploitable deposits, whether as a result of systematic scientific explorations or surveys or by chance. Economic appearance may also occur because resources may be increased by the inclusion of deposits for which exploitation was previously uneconomic but becomes economic as a result of technological progress or relative price changes.

Natural growth of uncultivated biological resources

- 12.19 The natural growth of uncultivated biological resources, such as natural forests and fish stocks, may take various forms: a stand of natural timber may grow taller, or fish in the estuaries may become more numerous. Although these resources are economic assets, growth of this kind is not under the direct control, responsibility and management of an institutional unit and thus is not treated as production. The increment in the asset must then be regarded as an economic appearance, and it is recorded in the other changes in the volume of assets account.
- 12.20 In principle, natural growth should be recorded gross, and the depletion of these resources should be recorded as economic disappearance, as described below. This recording

would be consistent with the separate recording of acquisitions and disposals described in the capital account. In practice, however, many countries will record natural growth net because the physical measures that are likely to be the only basis available for the recording are, in effect, net measures. These measures may be used in conjunction with a market price for a unit of the asset to estimate the value of the volume change to be recorded.

Transfers of other natural resources to economic activity

- 12.21 Not all land included in the geographic surface area of a country is necessarily within the asset boundary of the SNA. Land may make its economic appearance when it is transferred from a wild or waste state to one in which ownership may be established and the land can be put to economic use. It may also acquire value because of activity in the vicinity, for example, land that becomes more desirable and thus more valuable because a new development is established nearby or the creation of an access road. The cost of land improvements, affecting the parcel of land being considered directly, is treated as gross fixed capital formation, recorded as land improvements and subsequently subject to consumption of fixed capital. Any excess in the increase in value of the land over the value of land improvements or any increase due to adjacent capital activity is recorded as economic appearance.
- 12.22 For other natural resources, the first substantial market appearance, generally involving commercial exploitation, is the reference point for recording in this account. For virgin forests, gathering firewood is not commercial exploitation, but large-scale harvesting of a virgin forest for timber is and brings the forest into the asset boundary. Similarly, drawing water from a natural spring does not bring an aquifer into the asset boundary of the SNA, but a significant diversion of groundwater does. A move to charge for regular extraction from a body of surface water may also bring a water resource into the balance sheet.

Table 12.1 (cont): The other changes in the volume of assets account - concise form - transactions in liabilities and net worth

	Changes in liabilities and net worth								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Other flows									
Economic appearance of assets									
Economic disappearance of non-produced non-financial assets									
Catastrophic losses									
Uncompensated seizures									
Other changes in volume n.e.c.	0	0	0	1	0	1			1
Changes in classification	0	0	2	0	0	2			2
Total other changes in volume	0	0	2	1	0	3			3
Produced non-financial assets									
Non-produced non-financial assets									
Financial assets	0	0	2	1	0	3			3
<i>Changes in net worth due to other changes in volume of assets</i>	14	-1	-2	-1	0	10			

Quality changes in natural resources due to changes in economic uses

- 12.23 The SNA, in general, treats differences in quality as differences in volume. As explained with respect to goods and services in chapter 15, different qualities reflect different use values (and in the case of goods and services, different resource costs). Different qualities are, therefore, economically different from each other. The same principle applies to assets. The quality changes recorded here occur as the simultaneous counterparts of the changes in economic use that are shown as changes in classification, as described below. For example, the reclassification of cultivated land to land underlying buildings may result in a change of value as well as a change in classification. In this case, the asset is already within the asset boundary, and it is the change in quality of the asset due to changes in its economic use that is regarded as the appearance of additional amounts of the asset. Another example is that of livestock treated as capital formation, for example, dairy cattle, if they are sent to slaughter earlier than expected.

Exit of natural resources from the asset boundary

- 12.24 Exits of natural resources from the balance sheets are shown as negative entries on the left-hand side of the account. Many of the possible entries are simply the negative alternative to the positive entries just discussed.

Extractions and downwards reappraisals of subsoil resources

- 12.25 The changes recorded here are the negative analogues of gross additions to the level of exploitable subsoil resources that result from reassessments of exploitability because of changes in technology or relative prices. In practice, only net additions may be available, and these will be recorded under discoveries and upwards reappraisals of subsoil resources.

- 12.26 The depletion of natural resources covers the reduction in the value of deposits of subsoil assets as a result of the physical removal and using up of the assets.

Harvesting of uncultivated biological resources

- 12.27 The depletion of natural forests, fish stocks in the open seas and other uncultivated biological resources included in the asset boundary as a result of harvesting, forest clearance, or other use beyond sustainable levels of extraction should be included here.

Transfers of other natural resources out of economic activity

- 12.28 It is possible that some natural resources cease to be deployed in economic activity because of changing technology, or reduced demand for the resulting product or for

legislative reasons, for example the suspension of fishing to ensure the survival of fish stocks.

Quality changes in natural resources due to changes in economic uses

- 12.29 The changes recorded here are the negative equivalent of the upward changes in volume associated with the changes in classification. For example, if a change in land use leads to reclassifying some land from cultivated land to communal grazing land, there will be a resulting change in the value of the land.

- 12.30 All degradation of land, water resources and other natural assets caused by economic activity is recorded in the other changes in the volume of assets account. The degradation may be an anticipated result from regular economic activity or less predictable erosion and other damage to land from deforestation or improper agricultural practices.

Contracts, leases and licences and purchased goodwill and marketing assets are discussed in paragraphs 12.31 to 12.35.

Appearance and disappearance of financial assets and liabilities

- 12.36 Financial assets that are claims on other institutional units are created when the debtor accepts the obligation to make a payment, or payments, to the creditor in the future; they are extinguished when the debtor has fulfilled the obligation under the terms of the agreement. Monetary gold held in the form of gold bullion, however, cannot be created and extinguished in this way; hence when it becomes a reserve asset it enters the financial part of the balance sheet as a reclassification in the other changes in the volume of assets account from valuables to monetary gold. (At the time it is acquired by a monetary authority it is first classified as a valuable.) The same recording is followed for allocated gold accounts that become part of monetary gold. When allocated gold accounts become reserve assets they are reclassified from currency and deposits to monetary gold, also in the other changes in the volume of assets accounts. Monetary gold may be sold to another monetary authority but otherwise any reduction in holdings follows a similar declassification path; the monetary gold is reclassified to be either a valuable (in the case of gold bullion) or currency and deposits (in the case of allocated gold accounts). Subsequent transactions, if and when they occur, are recorded in terms of valuables or currency and deposits and not in terms of monetary gold.

- 12.37 Also recorded here are the effects of events not anticipated when the terms of financial claims were set.

Debt operations

- 12.38 There are a number of circumstances that may lead to reduction or cancellation of debt by other than normal

repayment of liabilities. The most common instances are described below.

12.39 A debtor and creditor may become parties to a bilateral agreement (often referred to as “debt forgiveness”) that a financial claim no longer exists. Such an agreement gives rise in the SNA to the recording of a capital transfer payable or receivable (recorded in the capital account at the time the debt forgiveness occurs) and the simultaneous extinction of the claim (recorded in the financial account). Debt forgiveness usually concerns government debt. Some taxes and social security contributions that government recognizes as unlikely to be collected from the outset are excluded from tax and social security contribution receipts and so do not appear in the other changes in the volume of assets account.

12.40 Changes in claims resulting from debt assumption or rescheduling should be reflected in the financial account when the terms of the debt contract (maturity, interest rate, etc.) change, or when the institutional sector of the creditor or debtor changes, as these are considered new contractual arrangements. However, all other changes in claims resulting from write-offs and write-downs are excluded from the financial account because there is no mutual agreement between the parties. Specifically, a creditor may recognize that a financial claim can no longer be collected because of bankruptcy, liquidation or other factors and he may remove the claim from his balance sheet. This recognition (by the creditor) should be accounted for in the other changes in volume of assets account. (The corresponding liability must also be removed from the balance sheet of the debtor to maintain balance in the accounts of the total economy.)

12.41 Most commercial situations where the impossibility of debt collection is recognized are treated as unilateral cancellation of debt. Unilateral cancellation of a financial claim by a debtor (debt repudiation) is not recognized in the SNA. Write-downs that reflect the actual market values of financial assets should be accounted for in the revaluation account. However, changes in value that are imposed solely to meet regulatory, supervisory or accounting requirements do not reflect the actual market values of those financial assets and should not be recorded in the SNA.

3. The effect of external events on the value of assets

12.45 There are three principal causes of the reduction in value of an asset, or even its total disappearance, that are not related to the nature of the asset but to conditions prevailing in the economy that impact either the value or ownership of assets. These are catastrophic losses, uncompensated seizures and other volume changes of assets. Each is discussed below. Table 12.3 shows an expansion of table 12.1 to include entries for these events.

Catastrophic losses

12.46 The volume changes recorded as catastrophic losses in the other changes in the volume of assets account are the result of large scale, discrete and recognizable events that may destroy a significantly large number of assets within any of the asset categories. Such events will generally be easy to identify. They include major earthquakes, volcanic eruptions, tidal waves, exceptionally severe hurricanes, drought and other natural disasters; acts of war, riots and other political events; and technological accidents such as major toxic spills or release of radioactive particles into the air. Included here are such major losses as deterioration in the quality of land caused by abnormal flooding or wind damage; destruction of cultivated assets by drought or outbreaks of disease; destruction of buildings, equipment or valuables in forest fires or earthquakes.

12.47 Catastrophic losses of financial assets are less common but where evidence of ownership depends on written records and these records are destroyed, it may not be possible to re-establish ownership. Accidental destruction of currency or bearer securities may result from a natural catastrophe or political events.

Uncompensated seizures

12.48 Governments or other institutional units may take possession of the assets of other institutional units, including non-resident units, without full compensation for reasons other than the payment of taxes, fines, or similar levies. If the compensation falls substantially short of the values of the assets as shown in the balance sheet, the difference should be recorded as an increase in assets for the institutional unit doing the seizing and a decrease in assets for the institutional unit losing the asset under the entry for uncompensated seizures of assets.

12.49 It should be noted that foreclosures and repossessions of goods by creditors are not treated as uncompensated seizures. They are treated as transactions, specifically as disposals by debtors and acquisitions by creditors, because, explicitly or by general understanding, the agreement between debtor and creditor provided this avenue of recourse.

Other changes in volume n.e.c.

12.50 The value of a fixed asset is continually reduced by the consumption of fixed capital until the asset is disposed of or has no remaining value. It is possible, though, for the assumptions underlying the calculation of consumption of fixed capital to be mistaken and when this is so, corrections need to be made in the other changes in the volume of assets account. Similarly, if the assumption about the rate of shrinkage of inventories is mistaken, this should also be corrected in the other changes in the volume of assets account. The financial assets and liabilities that can be affected by volume change are some of the reserves for insurance, pension and standardized guarantee schemes.

There is further discussion of this in parts 1, 2 and 3 of chapter 17.

More details are given in paragraphs 12.51 to 12.62.

4. Changes in classifications

12.63 The other changes in the volume of assets account records changes in assets and liabilities that reflect nothing more

than changes in the classification of institutional units among sectors, changes in the structure of institutional units and changes in the classification of assets and liabilities. Table 12.4 shows an expansion of table 12.1 to include the entries for changes in classification.

More details are given in paragraphs 12.64 to 12.72.

C. The revaluation account

1. Different holding gains and losses concepts

12.73 The revaluation account, shown in table 12.6, records the holding gains or losses accruing during the accounting period to the owners of financial and non-financial assets and liabilities. The first entries relate to nominal holding gains and losses which are then decomposed into neutral holding gains and real holding gains. Holding gains or losses on assets are recorded on the left-hand side of the account and those on liabilities on the right-hand side.

12.74 *The nominal holding gain on a non-financial asset is the value of the benefit accruing to the owner of that asset as a result of a change in its price over a period of time. The nominal holding gain on a financial asset is the increase in value of the asset, other than transactions in the assets (including the accrual of interest over a period of time) and other changes in the volume of assets. The nominal holding gain on a liability is the decrease in value of the*

liability, other than by transactions or by other volume changes. A nominal holding gain that is negative is referred to as a holding loss. A positive holding gain, whether due to an increase in the value of a given asset or a reduction in the value of a given liability, increases the net worth of the unit in question. Conversely, a holding loss reduces the net worth of the unit in question, whether due to a reduction in the value of a given asset or an increase in the value of a given liability.

12.75 As well as the absolute change in value of an asset, it is interesting to know how the change in value compares with a general measure of inflation. When the value of an asset rises over a given period of time by more than the general price level, the asset can be exchanged for a greater volume of the goods, services and assets covered by the general price index at the end of the period than at the beginning. The increase that preserves exactly the same volume of goods and services is called a neutral holding gain. *A neutral holding gain (loss) over a period is the increase*

Table 12.6: The revaluation account - changes in assets

Changes in assets										
Other flows		Non-financial corporations	Financial corporations	General government	Households	NPIs	Total economy	Rest of the world	Goods and services	Total
Nominal holding gains and losses	Non-financial assets	144	4	44	80	8	280			280
	Produced non-financial assets	63	2	21	35	5	126			126
	Fixed assets	58	2	18	28	5	111			111
	Inventories	4		1	2		7			7
	Valuables	1		2	5		8			8
	Non-produced non-financial assets	81	2	23	45	3	154			154
	Natural resources	80	1	23	45	3	152			152
	Contracts, leases and licences	1	1				2			2
	Goodwill and marketing assets									
	Financial assets/liabilities	8	57	1	16	2	84	7		91
	Monetary gold and SDRs		11	1			12			12
	Currency and deposits						0			0
	Debt securities	3	30		6	1	40	4		44
	Loans						0			0
	Equity and investment fund shares/units	5	16		10	1	32	3		35
Insurance, pension and standardized guarantee schemes						0			0	
Financial derivatives and employee stock options						0			0	
Other accounts receivable/payable						0			0	

(decrease) in the value of an asset that would be required, in the absence of transactions and other changes in the volume of assets, to maintain command over the same amount of goods and services as at the beginning of the period.

12.76 The difference between the nominal holding gain or loss and the neutral holding gain or loss for the same asset over the same time period is called the real holding gain or loss. If the value of the asset increases faster than the neutral holding gain, then there is a real holding gain. If the value of the asset does not increase as fast as the overall increase in prices, or does not increase at all, the owner of the asset registers a real holding loss. *A real holding gain (loss) is the amount by which the value of an asset increases (decreases) over the neutral holding gain for the period, in the absence of transactions and other changes in the volume of assets.* Nominal, neutral and real holding gains, and the interrelationships between them are explained more fully in the following sections.

12.77 The balancing item in the revaluation account is described as *changes in net worth due to nominal holding gains or losses. It is defined as the algebraic sum of the positive or negative nominal holding gains on all the assets and liabilities of an institutional unit.* Just as nominal holding gains are decomposed into neutral and real holding gains, so changes in net worth due to nominal holding gains may be decomposed into changes in net worth due to neutral holding gains or losses and changes in net worth due to real holding gains or losses. The latter is an item of considerable analytic interest.

12.78 In order to simplify the terminology and exposition, holding losses will not usually be referred to explicitly unless the context requires it. The term “holding gains” is used to

cover both holding gains and losses on the clear understanding that holding gains may be negative as well as positive. Similarly, the term “assets” is used collectively to cover both assets and liabilities, unless the context requires liabilities to be referred to specifically.

12.80 When an asset whose value has increased because of a nominal holding gain is sold or otherwise disposed of, the holding gain is said to be realized. If the asset is retained by the existing owner, the holding gain is unrealized. In common usage, a realized gain is usually understood as the gain realized over the entire period over which the asset is owned or liability is outstanding whether this period coincides with the accounting period or not. Within the SNA, however, all holding gains and losses are measured only from the start of the accounting period. *A holding gain (loss) is realized when an asset that has increased (decreased) in value due to holding gains (losses) since the beginning of the accounting period is sold, redeemed, used or otherwise disposed of, or a liability incorporating a holding gain or loss is repaid. An unrealized holding gain is one accruing on an asset that is still owned or a liability that is still outstanding at the end of the accounting period.* It follows that the nominal holding gain or loss on an asset is the sum of the realized and unrealized holding gain or loss for the period in question.

Nominal holding gains

12.81 It is useful to distinguish four different situations giving rise to nominal gains and the methods of valuation to be employed in each case. For clarity of exposition, it is assumed for the moment that there are neither transactions nor other changes in volume intervening between the two dates mentioned.

Table 12.6 (cont): The revaluation account - changes in liabilities and net worth

		Changes in liabilities and net worth								
Other flows		Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Nominal holding gains and losses	Non-financial assets									
	Produced non-financial assets									
	Fixed assets									
	Inventories									
	Valuables									
	Non-produced non-financial assets									
	Natural resources									
	Contracts, leases and licences									
	Goodwill and marketing assets									
	Financial assets/liabilities	18	51	7	0	0	76	15		91
	Monetary gold and SDRs							12		12
	Currency and deposits								2	44
	Debt securities	1	34	7			42			
Loans										
Equity and investment fund shares/units	17	17				34	1		35	
Insurance, pension and standardized guarantee schemes										
Financial derivatives and employee stock options										
Other accounts receivable/payable										
<i>Changes in net worth due to nominal holding gains/losses</i>		134	10	38	96	10	288	- 8		280

- a. An asset held throughout the accounting period: the nominal holding gain accruing during the accounting period is equal to the closing balance sheet value minus the opening balance sheet value. These values are the estimated values of the assets if they were acquired at the times the balance sheets are drawn up. The nominal gain is unrealized.
- b. An asset held at the beginning of the period that is sold during the period: the nominal holding gain accruing is equal to the actual or estimated disposal value minus the opening balance sheet value. The nominal gain is realized.
- c. An asset acquired during the period and still held at the end of the period: the nominal holding gain accruing is equal to the closing balance sheet value minus the actual, or estimated, acquisition value of the asset. The nominal gain is unrealized.
- d. An asset acquired and disposed of during the accounting period: the nominal holding gain accruing is equal to the actual, or estimated, disposal value minus the actual, or estimated, acquisition value. The nominal gain is realized.

12.82 The basic identity linking balance sheets, transactions, other volume changes and nominal holding gains may be expressed as follows:

the value of the stock of the asset in the opening balance sheet valued at the date of the opening balance sheet,

plus the value of the asset acquired, or disposed of, in transactions valued at the dates the transactions took place,

plus the value of other changes in the volume of the asset valued at the dates the other volume changes are recorded as taking place,

plus the value of the nominal holding gains on the asset,

equals the value of the stock of the asset in the closing balance sheet, valued at the date of the closing balance sheet.

The values of the assets and liabilities in the closing balance sheet incorporate the unrealized holding gains or losses. The value of transactions includes the value of realized holding gains or losses. It therefore follows that the correct value of the revaluation item must cover both realized and unrealized holding gains, in other words to be the full value of the nominal holding gains or losses.

12.83 Because the total nominal holding gains accruing on a particular category of asset over a given period of time include those accruing on assets acquired or disposed of during the accounting period as well as on assets that figure in the opening or closing balance sheets, it is not possible to calculate total holding gains from balance sheet data on their own. This can be demonstrated by means of a simple example.

12.84 Suppose a corporation owns 100 units of a stock (inventories or shares, for instance) at the beginning of the period and these are worth 20 each or 2 000 in total. At some point in the period, when the price per unit has risen to 22, another 15 units are bought; a cost of 330. At the end of the period, when the price has risen to 25, some 15 units are sold for a value of 375. The value of the stock in the closing balance sheet represents 100 units valued at 25 each or 2 500. The increase in the balance sheet of 500 represents unrealized holding gain on the stock of 100. The value of the transactions represents a decrease in the balance sheet since the value of the stock added to the balance sheet (330) is less than the value of stock sold (375). The difference, -45, is a reduction in net worth brought about by realizing some holding gains. The total nominal holding gain is thus 545 which satisfies the identity that the opening stock (2 000) plus the transactions (-45) plus the nominal holding gains (545) plus the other changes in the volume of assets (0) equals the value in the closing balance sheet (2 500).

12.85 In order to calculate total holding gains directly, therefore, it is necessary to keep records of all the assets acquired and disposed during the accounting period and the prices at which they were acquired and disposed of, as well as the prices and quantities of assets held at the beginning and end of the period. This sort of recording is more common for financial assets and liabilities than for non-financial assets.

12.86 Each of the five elements that make up the identity explaining the changes in the balance sheet can be calculated directly and independently of the other four elements. Thus, each element has the same status, none of them being defined residually as a balancing item. Nevertheless, it follows that if any four out of the five elements are calculated directly, the fifth can be estimated residually. For this reason, the identity can be exploited to estimate nominal holding gains from the other four elements, but without this implying that nominal holding gains are a balancing item in the SNA.

The decomposition of nominal holding gains into neutral and real holding gains is discussed in paragraphs 12.87 to 12.93.

2. Holding gains and losses on specific assets

Fixed assets

12.96 Nominal holding gains may occur on existing fixed assets either because of general inflation or because the price of the asset itself changes over time. When assets of the same kind are still being produced and sold on the market, an existing asset should be valued in the opening or closing balance sheet at the current purchaser's price of a newly produced asset less the accumulated consumption of fixed capital up to that time also calculated on the basis of the prices prevailing at the time the balance sheet is drawn up. When new assets of the same type are no longer being produced, the valuation of existing assets may pose difficult conceptual and practical problems. If broadly similar kinds of assets are still being produced, even though their charac-

teristics may differ significantly from those of existing assets (for example, new models of vehicles or aircraft), it may be reasonable to assume that, if the existing assets were still being produced, their prices would have moved in the same way as those of new assets. However, such an assumption becomes questionable when the characteristics of new assets are much improved by technical progress. There is further discussion on this topic in *Measuring Capital*.

Inventories

- 12.99 Unless records are kept of the quantities of goods entering and leaving inventories and their prices at those times, it is not possible to measure the value of changes in inventories directly. As such records may not be available, it becomes necessary to try to deduce the value of changes in inventories from the value and quantities of the opening and closing inventories using methods that attempt to partition the difference between the values of the opening and closing stocks of assets into transactions and nominal holding gains. Such methods are only as good as the assumptions on which they are based. Estimating holding gains and losses based only on period end data involves two problematical assumptions. The first is that prices increase linearly throughout the period; the second is that the changes in volume of inventories increase or decrease linearly between opening and closing balance sheets. Both assumptions are improbable, especially in the case of seasonal products. It should also be noted that this is not only a problem for the accumulation accounts as the values of changes in inventories of inputs and outputs are needed in order to measure intermediate consumption, output and value added and hence all the balancing items of the SNA. In general, if these sorts of assumptions need to be made in order to derive holding gains and losses, they should be made over as short a period as possible. In particular, the aggregation of quarterly estimates of this type will be preferable to an annual estimate of the same type.

Valuables

- 12.100 The nature of valuables is that they are held as a store of value in the expectation that their value will increase over time. Any increase in value of an individual valuable is treated as a nominal holding gain. This may be partitioned into a neutral and a real holding gain in the standard way.

Financial assets and liabilities

- 12.101 Because it is not always appropriate to describe financial assets and liabilities as having a price, holding gains and losses appear to be treated differently for different categories though the same basic principles apply to all categories. Other changes in the volume of financial assets and liabilities are possible, as described in section B, but are generally ignored in what follows.
- 12.102 Except for monetary gold and SDRs, the discussion is first in terms of assets denomination in domestic currency and

then of the effects when they are denominated in foreign currency.

Monetary gold and SDRs

- 12.103 Because the price of gold is usually quoted in dollars, monetary gold is subject to nominal and real holding gains and losses because of changes in the exchange rate as well as in the price of gold itself.
- 12.104 Since the value of the SDR is based on a basket of four key currencies, the value of SDRs is always subject to nominal and real holding gains and losses. From time to time, new allocations of SDRs may be made; when this occurs the allocation is recorded as a transaction.

Currency

- 12.105 Domestic currency is not subject to any nominal holding gains or losses. It can be thought of as a fixed “quantity” of currency units (for example, one dollar) with a price that is always unity.

Deposits and loans

- 12.106 Deposits and loans denominated in domestic currency also do not register nominal holding gains and losses for the same reasons as currency. There may be increases in the values of a loan or a deposit during an accounting period but this must be due to transactions including the addition of interest to the previous level of principal.

Debt securities

- 12.107 Debt securities typically have market values and these market values change over time. However, not all of the changes in value are treated as holding gains and losses.

There is detailed discussion of the part of the increase in value to be treated as interest in part 4 of chapter 17. Some aspects are also covered in paragraphs 12.108 to 12.112.

Equity and investment fund shares

- 12.113 For corporations that are foreign direct investment enterprises and investment funds, any undistributed earnings are shown as reinvested earnings in the distribution of primary income account and as reinvestment of earnings in the financial account. Reinvestment of earnings increases the value of equity and investment fund shares. For listed shares and investment fund shares and units, market prices exist and changes in the value other than via reinvested earnings are treated as holding gains and losses exactly as for inventories with no storage component or valuables.
- 12.114 For other forms of equity, holding gains are calculated in a manner similar to the way in which the value of the equity is calculated. For example, for a quasi-corporation where the value of other equity is derived as the balance of assets

less liabilities, holding gains are calculated as the sum of holding gains on assets less the holding gains on liabilities.

Insurance, pension and standardized guarantee schemes

- 12.115 When the reserves for insurance and standardized guarantee schemes are denominated in domestic currency, there are generally no nominal holding gains and losses just as there are none for currency or deposits and loans. Exceptionally, if a figure for a claim outstanding has been agreed and it has been agreed to be indexed pending payment, then there may be a nominal holding gain or loss recorded for it.

Financial derivatives and employee stock options

- 12.118 Financial derivatives have quoted prices and thus register nominal holding gains and losses as for listed shares and investment fund shares and units. As explained in part 6 of chapter 17, employee stock options may also register nominal holding gains and losses.

Other accounts receivable or payable

- 12.119 Other accounts receivable or payable denominated in domestic currency do not register nominal holding gains and losses. All changes in value between the start and end of the accounting period are due to transactions, possibly including accrued interest.

Assets denominated in foreign currency

- 12.120 Residents may hold assets denominated in foreign currency just as non-residents may hold assets denominated in domestic currency. For balance sheet purposes, the value of an asset denominated in foreign currency is measured by its current value in foreign currency converted into the currency of the country in which its owner is resident at the mid-point of the bid and offer rate of the exchange rate on the balance sheet date. Nominal holding gains may therefore occur not only because the price of the asset in local currency changes but also because the exchange rate changes.

Chapter 13: The balance sheet

A. Introduction

13.1 This chapter is concerned with measuring the stocks of assets, both non-financial and financial, and liabilities. Assets and liabilities can be aggregated across all types so as to show the total value of assets less liabilities, or net worth, of an institutional unit. Alternatively, the total value of a given type of asset across all units in the economy can be derived. Tables depicting the first sort of aggregation are called balance sheets; those depicting the second sort are called asset accounts. For both balance sheets and asset accounts, it is also important to show how the transactions and other flows recorded during the course of an accounting period explain the changes in value of the stock in question between the start and end of the period. The value of the stock at the start of the period is referred to as the opening stock and the value at the end of the period is referred to as the closing stock. Sometimes a stock level is referred to as a position, especially in the balance of payments context.

1. Balance sheets

13.2 *A balance sheet is a statement, drawn up in respect of a particular point in time, of the values of assets owned and of the liabilities owed by an institutional unit or group of units.* A balance sheet may be drawn up for institutional units, institutional sectors and the total economy. A similar account is drawn up showing the stock levels of assets and liabilities originating in the total economy held by non-residents and of foreign assets and liabilities held by residents. In *BPM6* this account is called the international investment position (IIP) but is drawn up from the point of view of residents whereas in the SNA it is drawn up from the point of view of the rest of the world with the rest of the world being treated in the same way as domestic sectors.

13.3 Assets appear in the balance sheet of the unit that is the economic owner of the asset. In many cases this unit will also be the legal owner but in the case of a financial lease, the leased asset appears on the balance sheet of the lessee, while the lessor has a financial asset of similar amount and a corresponding claim against the lessee. On the other hand, when a natural resource is the subject of a resource lease, the asset continues to appear in the balance sheet of the lessor even though most of the economic risks and rewards of using the asset in production are assumed by the lessee. A fuller description of the treatment of leases is given in part 5 of chapter 17 and of the distinction between legal and economic owner is given in chapter 3.

13.4 The financial and non-financial resources at the disposal of an institutional unit or sector shown in the balance sheet provide an indicator of economic status. These resources

are summarized in the balancing item, net worth. *Net worth is defined as the value of all the assets owned by an institutional unit or sector less the value of all its outstanding liabilities.* For the economy as a whole, the balance sheet shows the sum of non-financial assets and net claims on the rest of the world. This sum is often referred to as national wealth.

13.5 The balance sheet completes the sequence of accounts, showing the ultimate result of the entries in the production, distribution and use of income, and accumulation accounts.

13.6 The existence of a set of balance sheets integrated with the flow accounts encourages analysts to look more broadly when monitoring and assessing economic and financial conditions and behaviour. Balance sheets provide information necessary for analysing a number of topics. For example, in studies of the factors determining household behaviour, consumption and saving functions often include wealth variables to capture the effects of such factors as price fluctuations in corporate securities or the deterioration and obsolescence of stocks of durable consumer goods on households' purchasing patterns. Further, balance sheets for groups of households are needed in order to assess the distribution of wealth and liquidity.

13.7 Balance sheets allow economists to assess the financial status of a sector and permit risk analyses by a central bank, for example. For corporations, balance sheets permit the computation of widely used ratios that involve data on the level of the different items on the balance sheet. Banks and other financial institutions, for example, are required to maintain specific reserve ratios that can be monitored via a balance sheet. Non-financial corporations check certain ratios such as current assets in relation to current liabilities and the market value of corporate shares in relation to the adjusted book value. Data on the stocks of fixed assets owned by corporations, as well as by other institutional units, are useful in studies of their investment behaviour and needs for financing. Balance sheet information on financial assets held by, and liabilities owed to, non-residents are of considerable interest as indicators of the economic resources of a nation and for assessing the external debtor or creditor position of a country.

2. Asset accounts

13.8 As well as drawing up a balance sheet showing the values of all assets held by an institutional unit, it is possible to draw up a similar account for the value of a single type of

asset (or liability) held by all institutional units in the economy. This is called an asset account. A basic accounting identity links the opening balance sheet and the closing balance sheet for a given asset:

The value of the stock of a specific type of asset in the opening balance sheet;

plus the total value of the same type of asset acquired, less the total value of the same type of asset disposed of, in transactions that take place within the accounting period: transactions in non-financial assets are recorded in the capital account (including consumption of fixed capital) and transactions in financial assets are recorded in the financial account;

plus the value of other positive or negative changes in the volume of these assets held, for example, as a result of the discovery of a subsoil asset or the destruction of an asset (as a result of war or a natural disaster): these changes are recorded in the other changes in the volume of assets account;

plus the value of the positive or negative nominal holding gains accruing during the period resulting from a change in the price of the asset: these changes are shown in the revaluation account;

equals the value of the stock of the asset in the closing balance sheet.

13.9 Although balance sheets are more familiar to those used to working with commercial accounts, asset accounts are particularly useful for some types of analyses. One example is in connection with environmental accounting where the asset account provides a particularly revealing picture of whether an asset is being used sustainably or not. Another example is in connection with the development of capital stock series for fixed assets. Many financial statistics describe the evolution of an individual financial asset, for example showing how the level of lending has changed over the period.

3. Structure of the balance sheet

13.10 The balance sheet records assets on the left-hand side and liabilities and net worth on the right-hand side, as do the accumulation accounts for changes in these items. In table 13.1, only a limited number of classes of assets are shown, though in principle the table can include all the detailed non-financial assets described and defined in chapter 10 and the full set of financial assets and liabilities described and defined in chapter 11. A balance sheet relates to the values of assets and liabilities at a particular point in time. The SNA provides for balance sheets to be compiled at the beginning of the accounting period (with the same values as at the end of the preceding period) and at its end. The SNA then provides for a complete recording of the changes in the values of the various items in the balance sheet

between the beginning and end of the accounting period to which the flow accounts of the SNA relate. The balancing item in the balance sheet is net worth, which, as noted earlier, is defined as the value of all the assets owned by an institutional unit or sector less the value of all its outstanding liabilities. Changes in net worth can thus be explained fully only by examining the changes in all the other items that make up the balance sheet.

13.11 Table 13.1 consists of three sections. The first shows the opening balance sheet and net worth for each institutional sector and the total economy. For the rest of the world, the only relevant entries are for contracts, leases and licences, financial assets and liabilities, and net worth.

13.12 The second part of table 13.1 consists of a summary of the entries in the capital, financial, other changes in volume of assets and revaluation accounts grouped by type of asset. The entries for fixed assets, for example, show the totals of the entries for fixed assets in each of the capital account, the other changes in volume of assets account and the revaluation account. Under these entries there is a breakdown showing how much of the change in net worth is due to saving and capital transfers, other changes in the volume of assets and holding gains. There is no entry carried forward from the financial account because the changes in net worth due to saving and capital transfers are completely exhausted by changes in transactions in financial and non-financial assets.

13.13 The third section of table 13.1 shows the closing balance sheet which is numerically equal, cell by cell, to the sum of the corresponding cells in the first two parts of the table. In practice, though, these figures will be determined independently and a reconciliation exercise needed to ensure the identities inherent in the table are satisfied.

4. Structure of asset accounts

13.14 An example of a set of asset accounts is given in table 13.2. The same data for the stock levels in the opening and closing balance sheets are given for the same range of assets, but instead of the breakdown by sectors, the columns show the entries for each type of asset coming from the capital and financial account, the other changes in the volume of assets account and the revaluation account.

13.15 Unlike table 13.1, table 13.2 does not include any entries for assets held by or due to the rest of the world because it focuses on the holding by resident units of particular assets and liabilities. However, by comparing the figures for financial assets and liabilities of the same instrument, it is possible to derive the balance with the rest of the world. For example, in the opening balance sheet figures, the value of financial assets for currency and deposits is 1 482 and of liabilities is 1 471. This implies that the rest of the world has a net liability with the national economy of 11. Table 13.1 shows that the asset position of the rest of the world is 105 and the liability position 116.

B. General principles of valuation

- 13.16 For the balance sheets to be consistent with the accumulation accounts of the SNA, every item in the balance sheet should be valued as if it were being acquired on the date to which the balance sheet relates. This implies that when they are exchanged on a market, assets and liabilities are to be valued using a set of prices that are current on the date to which the balance sheet relates and that refer to specific assets. In the case of non-financial assets, other than land, the value includes any associated costs of ownership transfer. Financial claims that are not traded on organized financial markets are valued at the amount the debtor must pay to the creditor to extinguish the claim.
- 13.17 The prices at which assets may be bought or sold on markets are the basis of decisions by investors, producers, consumers and other economic agents. For example, investors in financial assets (such as securities) and natural resources (such as land) make decisions in respect of acquisitions and disposals of these assets in the light of their values in the market. Producers make decisions about how much of a particular commodity to produce and about where to sell their output by reference to prices on markets. For a given asset, there is a clear relationship between the price paid by the purchaser and the price received by the seller. For non-financial assets other than land, the price paid by the purchaser exceeds that received by the seller by the costs of ownership transfer. In the case of financial assets, the value is the same for creditor and debtor because the costs of transferring financial assets and liabilities are treated as consumption rather than accumulation.
- 13.18 Ideally, observable market prices should be used to value all assets and liabilities in a balance sheet. However, in estimating the current market price for balance sheet valuation, a price averaged over all transactions in a market can be used if the market is one on which the items in question are regularly, actively and freely traded. When there are no observable prices because the items in question have not been purchased or sold on the market in the recent past, an attempt has to be made to estimate what the prices would be were the assets to be acquired on the market on the date to which the balance sheet relates.
- 13.19 In addition to values observed in markets or estimated from observed prices, values may be approximated for balance sheet valuation in two other ways. In some cases, values may be approximated by accumulating and revaluing acquisitions less disposals of the type of asset in question over its lifetime and adjusted for changes such as consumption of fixed capital; this generally is the most practical and also the preferred method for fixed assets, but it can be applied to other assets as well. In other cases, values may be approximated by the present, or discounted, value of future economic benefits expected from a given asset; this is the case for a number of financial assets, natural resources and even for fixed assets. With good information and efficient markets, the values of the assets obtained by accumulating and revaluing transactions should equal, or at least approximate, both the present, or discounted, value of the remaining future benefits to be derived from them and their market values when active second-hand markets exist. These three price bases are discussed below in general terms.
- ### 1. Value observed in markets
- 13.20 The ideal source of price observations for valuing balance sheet items is a market, like the stock exchange, in which each asset traded is completely homogeneous, is often traded in considerable volume and has its market price listed at regular intervals. Such markets yield data on prices that can be multiplied by indicators of quantity in order to compute the total market value of different classes of assets held by sectors and of different classes of their liabilities. These prices are available for nearly all financial claims, existing transportation equipment, crops, and livestock as well as for newly produced fixed assets and inventories.
- 13.21 For securities quoted on a stock exchange, for example, it is feasible to gather the prices of individual assets and of broad classes of assets and, in addition, to determine the global valuation of all the existing securities of a given type. In some countries, another example of a market in which assets may be traded in sufficient numbers to provide useful price information is the market for existing dwellings.
- 13.22 In addition to providing direct observations on the prices of assets actually traded there, information from such markets may also be used to price similar assets that are not traded. For example, information from the stock exchange also may be used to price unlisted shares by analogy with similar, listed shares, making some allowance for the inferior marketability of the unlisted shares. Similarly, appraisals of assets for insurance or other purposes generally are based on observed prices for items that are close substitutes, although not identical, and this approach can be used for balance sheet valuation. For a discussion of the special valuation problems associated with direct investment enterprises, see chapters 21 and 26.
- ### 2. Values obtained by accumulating and revaluing transactions
- 13.23 Most non-financial assets change in value year by year reflecting changes in market prices. At the same time, initial acquisition costs are reduced by consumption of fixed capital (in the case of fixed assets) or other forms of depreciation over the asset's expected life. The value of such an asset at a given point in its life is given by the current acquisition price of an equivalent new asset less the accumulated depreciation. This valuation is sometimes referred to as the "written-down replacement cost". When reliable, directly observed prices for used assets are not available, this procedure gives a reasonable approximation of what the market price would be were the asset to be offered for sale.
- ### 3. Present value of future returns
- 13.24 In the case of assets for which the returns either are delayed (as with forests) or are spread over a lengthy period (as with subsoil assets), although market prices are used to value the ultimate output, a rate of discount must, in addition,

Table 13.1: Opening and closing balance sheets with changes in assets

		Non-financial corporations	Financial corporations	General government	Households	NPIs	Total economy	Rest of the world	Goods and services	Total	
Stocks and changes in assets											
Opening balance sheet	Non-financial assets	2 151	93	789	1 429	159	4 621			4 621	
	Produced non-financial assets	1 274	67	497	856	124	2 818			2 818	
	Fixed assets	1 226	52	467	713	121	2 579			2 579	
	Inventories	43		22	48	1	114			114	
	Valuables	5	15	8	95	2	125			125	
	Non-produced non-financial assets	877	26	292	573	35	1 803			1 803	
	Natural resources	864	23	286	573	35	1 781			1 781	
	Contracts, leases and licences	13	3	6			22			22	
	Goodwill and marketing assets										
	Financial assets/liabilities	982	3 421	396	3 260	172	8 231	805		9 036	
	Monetary gold and SDRs		690	80			770			770	
	Currency and deposits	382		150	840	110	1 482	105		1 587	
	Debt securities	90	950		198	25	1 263	125		1 388	
	Loans	50	1 187	115	24	8	1 384	70		1 454	
	Equity and investment fund shares/units	280	551	12	1 749	22	2 614	345		2 959	
	Insurance, pension and standardized guarantee schemes	25	30	20	391	4	470	26		496	
	Financial derivatives and employee stock options	5	13	0	3	0	21	0		21	
	Other accounts receivable/payable	150		19	55	3	227	134		361	
	Total changes in assets	Non-financial assets	300	- 2	57	116	11	482			482
		Produced non-financial assets	195	- 4	29	67	7	294			294
Fixed assets		165	- 2	23	53	7	246			246	
Inventories		27	0	1	4	0	32			32	
Valuables		3	- 2	5	10	0	16			16	
Non-produced non-financial assets		105	2	28	49	4	188			188	
Natural resources		101	1	26	48	4	180			180	
Contracts, leases and licences		4	1	2	1	0	8			8	
Goodwill and marketing assets		0	0	0	0	0	0			0	
Financial assets/liabilities		93	230	- 9	205	4	523	54		577	
Monetary gold and SDRs		0	10	1	0	0	11	1		12	
Currency and deposits		39	10	- 26	64	2	89	11		100	
Debt securities		10	96	4	16	0	126	13		139	
Loans		19	53	3	3	0	78	4		82	
Equity and investment fund shares/units		17	44	3	76	1	141	15		156	
Insurance, pension and standardized guarantee schemes		1	8	1	39	0	49	0		49	
Financial derivatives and employee stock options		3	8	0	3	0	14	0		14	
Other accounts receivable/payable		4	1	5	4	1	15	10		25	
Closing balance sheet		Non-financial assets	2 451	91	846	1 545	170	5 103			5 103
		Produced non-financial assets	1 469	63	526	923	131	3 112			3 112
	Fixed assets	1 391	50	490	766	128	2 825			2 825	
	Inventories	70	0	23	52	1	146			146	
	Valuables	8	13	13	105	2	141			141	
	Non-produced non-financial assets	982	28	320	622	39	1 991			1 991	
	Natural resources	965	24	312	621	39	1 961			1 961	
	Contracts, leases and licences	17	4	8	1	0	30			30	
	Goodwill and marketing assets	0	0	0	0	0	0			0	
	Financial assets/liabilities	1 075	3 651	387	3 465	176	8 754	859		9 613	
	Monetary gold and SDRs	0	700	81	0	0	781	1		782	
	Currency and deposits	421	10	124	904	112	1 571	116		1 687	
	Debt securities	100	1 046	4	214	25	1 389	138		1 527	
	Loans	69	1 240	118	27	8	1 462	74		1 536	
	Equity and investment fund shares/units	297	595	15	1 825	23	2 755	360		3 115	
	Insurance, pension and standardized guarantee schemes	26	38	21	430	4	519	26		545	
	Financial derivatives and employee stock options	8	21	0	6	0	35	0		35	
	Other accounts receivable/payable	154	1	24	59	4	242	144		386	

Table 13.1 (cont): Opening and closing balance sheets with changes in liabilities and net worth

		Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Stocks and changes in liabilities										
Opening balance sheet	Non-financial assets									
	Produced non-financial assets									
	Fixed assets									
	Inventories									
	Valuables									
	Non-produced non-financial assets									
	Natural resources									
	Contracts, leases and licences									
	Goodwill and marketing assets									
	Financial assets/liabilities	3 221	3 544	687	189	121	7 762	1 274		9 036
	Monetary gold and SDRs						0	770		770
	Currency and deposits	40	1 281	102	10	38	1 471	116		1 587
	Debt securities	44	1 053	212	2		1 311	77		1 388
	Loans	897		328	169	43	1 437	17		1 454
	Equity and investment fund shares/units	1 987	765	4			2 756	203		2 959
	Insurance, pension and standardized guarantee schemes	12	435	19		5	471	25		496
Financial derivatives and employee stock options	4	10				14	7		21	
Other accounts receivable/payable	237		22	8	35	302	59		361	
<i>Net worth</i>	-88	-30	498	4 500	210	5 090	-469		4 621	
Total changes in liabilities and net worth	Non-financial assets									
	Produced non-financial assets									
	Fixed assets									
	Inventories									
	Valuables									
	Non-produced non-financial assets									
	Natural resources									
	Contracts, leases and licences									
	Goodwill and marketing assets									
	Financial assets/liabilities	157	224	102	16	6	505	72		577
	Monetary gold and SDRs							12		12
	Currency and deposits	0	65	37	0	0	102	-2		100
	Debt securities	7	64	45	0	0	116	23		139
	Loans	21	0	9	11	6	47	35		82
	Equity and investment fund shares/units	100	39	2	0	0	141	15		156
	Insurance, pension and standardized guarantee schemes	0	48	0	1	0	49	0		49
Financial derivatives and employee stock options	3	8	0	0	0	11	3		14	
Other accounts receivable/payable	26	0	9	4	0	39	-14		25	
<i>Changes in net worth, total</i>	236	4	-54	305	9	500	-18		482	
<i>Saving and capital transfers</i>	88	-5	-90	210	-1	202	-10		192	
<i>Other changes in volume of assets</i>	14	-1	-2	-1	0	10			10	
<i>Nominal holding gains/losses</i>	134	10	38	96	10	288	-8		280	
<i>Neutral holding gains/losses</i>	82	6	27	87	6	208	-10		198	
<i>Real holding gains/losses</i>	52	4	11	9	4	80	2		82	
Closing balance sheet	Non-financial assets									
	Produced non-financial assets									
	Fixed assets									
	Inventories									
	Valuables									
	Non-produced non-financial assets									
	Natural resources									
	Contracts, leases and licences									
	Goodwill and marketing assets									
	Financial assets/liabilities	3 378	3 768	789	205	127	8 267	1 346		9 613
	Monetary gold and SDRs							782		782
	Currency and deposits	40	1 346	139	10	38	1 573	114		1 687
	Debt securities	51	1 117	257	2	0	1 427	100		1 527
	Loans	918	0	337	180	49	1 484	52		1 536
	Equity and investment fund shares/units	2 087	804	6	0	0	2 897	218		3 115
	Insurance, pension and standardized guarantee schemes	12	483	19	1	5	520	25		545
Financial derivatives and employee stock options	7	18	0	0	0	25	10		35	
Other accounts receivable/payable	263	0	31	12	35	341	45		386	
<i>Net worth</i>	148	-26	444	4 805	219	5 590	-487		5 103	

tion, be used to compute the present value of the expected future returns.

4. Assets denominated in foreign currencies

13.25 Assets and liabilities denominated in foreign currencies should be converted into the domestic currency at the mar-

ket exchange rate prevailing on the date to which the balance sheet relates. This rate should be the mid-point between the buying and selling spot rates for currency transactions.

The whole of section C, paragraphs 13.26 to 13.95) is moved to the compilation volume.

Table 13.2: Asset accounts for the total economy

	Opening balance sheet	Capital and financial account	Other changes in the volume of assets account	Revaluation account			Closing balance sheet
				Nominal holding gains and losses	Neutral holding gains and losses	Real holding gains and losses	
Non-financial assets	4 621	192	10	280	198	82	5 103
Produced assets	2 818	175	- 7	126	121	5	3 112
Fixed assets	2 579	137	- 2	111	111	0	2 825
Dwellings							
Other buildings and structures							
Machinery and equipment							
Weapons systems							
Cultivated biological resources							
Intellectual property products							
Inventories	114	28	- 3	7	4	3	146
Valuables	125	10	- 2	8	6	2	141
Non-produced assets	1 803	17	17	154	77	77	1 991
Natural resources	1 781	17	11	152	76	76	1 961
Land							
Mineral and energy reserves							
Non-cultivated biological resources							
Water resources							
Other natural resources							
Contracts, leases and licences	22	0	6	2	1	1	30
Goodwill and marketing assets	0	0	0	0	0	0	0
Financial assets	8 231	436	3	84	136	- 52	8 754
Monetary gold and SDRs	770	- 1	0	12	16	- 4	781
Currency and deposits	1 482	89	0	0	30	- 30	1 571
Debt securities	1 263	86	0	40	25	15	1 389
Loans	1 384	78	0	0	28	- 28	1 462
Equity and investment fund shares/units	2 614	107	2	32	26	6	2 755
Insurance, pension and standardised guarantee schemes	470	48	1	0	7	- 7	519
Financial derivatives and employee stock options	21	14	0	0	0	0	35
Other accounts receivable/payable	227	15	0	0	4	- 4	242
Financial liabilities	7 762	426	3	76	126	- 50	8 267
Monetary gold and SDRs	0	0	0	0	0	0	0
Currency and deposits	1 471	102	0	0	30	- 30	1 573
Debt securities	1 311	74	0	42	26	16	1 427
Loans	1 437	47	0	0	29	- 29	1 484
Equity and investment fund shares/units	2 756	105	2	34	28	6	2 897
Insurance, pension and standardised guarantee schemes	471	48	1	0	7	- 7	520
Financial derivatives and employee stock options	14	11	0	0	0	0	25
Other accounts receivable/payable	302	39	0	0	6	- 6	341
Net worth	5 090	202	10	288	208	80	5 590

Chapter 14: The supply and use tables and goods and services account

A. Introduction

- 14.1 The sequence of accounts described in chapters 6 to 13 portrays the working of the economy with particular emphasis on how income is generated, distributed, redistributed and used for consumption or the acquisition of assets and when assets are disposed of, or a liability is incurred, to acquire other assets or undertake more consumption than current income permits. An alternative view of the economy focuses less on income and more on the processes of production and consumption. Where do products come from and how are they used? The present chapter is concerned with this aspect of the accounts. It consists of a description of a product balance and the generalization of this to the goods and services account, as well as the practical and conceptual benefits of these accounts. It also shows how supply and use tables can be compiled for the economy and provides a link to input-output tables, which are described in chapter 28.
- 14.2 In this chapter, and elsewhere, the expressions “product balance” and “product flow” methods are used in preference to “commodity balance” and “commodity flow method” as reflecting more recent usage of the word product in place of commodity. The change in terminology does not indicate a change in methodology, however.
- 14.3 Supply and use tables are a powerful tool with which to compare and contrast data from various sources and improve the coherence of the economic information system. They permit an analysis of markets and industries and allow productivity to be studied at this level of disaggregation. When, as is usually the case, supply and use tables are built from establishment data, they provide a link to detailed economic statistics outside the scope of the SNA.
- #### 1. Product balances
- 14.4 The amount of a product available for use within the economy must have been supplied either by domestic production or by imports. The same amount of the product entering an economy in an accounting period must be used for intermediate consumption, final consumption, capital formation (including changes in inventories) or exports. These two statements can be combined to give a statement of a product balance:
- $$\text{Output} + \text{imports} = \text{intermediate consumption} + \text{final consumption} + \text{capital formation} + \text{exports}$$
- 14.5 The accounting rules from chapter 3 including the time of recording and the valuation rules from chapter 6 and elsewhere apply to each of the entries in this identity. Because the uses of products are usually valued at purchasers’ prices, but production at basic prices, it is necessary to add trade and transport margins, and taxes on products less subsidies on products to the left-hand (or supply) side of the identity so both sides are expressed in purchasers’ prices. Thus a fuller articulation of *the product balance for any product recognizes that the sum of output at basic prices plus imports plus trade and transport margins plus taxes on products less subsidies on products is equal to the sum of intermediate consumption, final consumption and capital formation, all expressed at purchasers’ prices, plus exports*. The treatment of margins and taxes is complex and is described at length in section B. The valuation applied to imports and exports requires special consideration and is described in sections B and C below.
- 14.6 A product balance is an especially powerful tool for a compiler as is best illustrated by example. Typically the production of tobacco products, mainly cigarettes, is well measured but consumption of cigarettes is not, because of the reluctance of respondents to report accurately how much is spent on them in a household budget survey. Assuming that output, imports and exports are well measured then the identity of the product balance can be used to generate data for consumption that will be consistent with other items in the identity. The compiler can then use judgement to reach a balance by adjusting the components as necessary.
- 14.7 It is not always final consumption that is the weakest component of the identity. In some cases, consumption data may be more reliable than output data. For example, in the case of taxi services where much may be supplied by unregulated and unmeasured activity, the estimate of how much households spend on taxis may help improve the estimates of output to include these aspects of the non-observed economy.
- 14.8 Even for items where informal activity is not an issue, a product balance may be useful. Aircraft manufacture is a long process. Work in progress may be measured either by the amount the manufacturer claims to have completed or by the amounts the potential purchaser has paid for by means of stage payments. These two sources of data need to

be reconciled with adjustments in the financial accounts for accounts receivable or payable as necessary.

2. The goods and services account

14.9 If a product balance is drawn up for all goods and services in the economy (either individually or in groups of products) and these are aggregated, the totals for output, imports, intermediate consumption, final consumption, capital formation and exports must be equal to the corresponding items identified in the sequence of accounts elaborated in previous chapters. The trade and transport services embodied in margins represent products that may also be seen as being used for intermediate or final consumption, capital formation or exports. The fact that the value of the margins may be included with the value of the goods they apply to does not invalidate the identity. Thus when product balances are aggregated across all goods and services, these margins are necessarily included and do not need to be specified additionally.

14.10 Since the figures for output and intermediate consumption correspond to the entries for output and intermediate consumption in the production account, the identity of the sum of all product balances may be rearranged to become *the goods and services account, which reads:*

Output - intermediate consumption + taxes on products – subsidies on products = final consumption + capital formation + exports – imports.

As explained in chapter 6, the left-hand side of this identity is equivalent to GDP at market prices. The right-hand side is therefore also equal to GDP at market prices and is the well-known statement of GDP often described as the “expenditure approach”. By contrast, the definition coming from the left-hand side of the identity is known as the “production approach” to GDP.

14.11 The goods and services account is one of the most basic, if not the most basic, identity in the SNA. It captures the idea that all output from within the production boundary, plus imports, must be accounted for in one of the other two basic activities of the SNA, consumption of goods and services or accumulation of goods and services. Without the goods and services account, a supply and use table would not be fully articulated and exhaust all products available within the economy. The whole sequence of accounts can be viewed as built around the goods and services account by adding transactions relating to the generation, distribution and redistribution of income and saving. When these transactions are aggregated across all sectors and the rest of the world, total resources are equal to total uses. If these were to be “consolidated” out of the sequence of accounts, only the goods and services account would be left.

14.12 Every row of the supply and use tables is a reminder of the basic identity of the goods and services account.

3. Supply and use tables

14.13 With a complete set of product balances, supply and use tables can be created. Supply and use tables exist in pairs with common valuation and level of detail as regards the products identified. The most common format of supply and use tables is at purchasers’ prices. *A use table at purchasers’ prices consists of a set of product balances covering all products available in an economy arranged in the form of a rectangular matrix with the products, valued at purchasers’ prices, appearing in the rows and the columns indicating the disposition of the products to various types of uses. A supply table at purchasers’ prices consists of a rectangular matrix with the rows corresponding to the same groups of products as the matching use tables and columns corresponding to the supply from domestic production valued at basic prices plus columns for imports and the valuation adjustments necessary to have total supply of each [group of] product[s] valued at purchasers’ prices.*

14.14 Sections B and C below describe the supply and use tables respectively.

14.15 Supply and use tables are a necessary first step in preparing input-output tables as described in chapter 28 but have important uses on their own, both analytically and as quality control tools. When supply and use tables are first prepared, they are unlikely to balance and until they are brought into balance, GDP measured from the production approach will differ from the expenditure measure of GDP. Only supply and use tables provide a sufficiently rigorous framework to eliminate discrepancies in the measured flows of goods and services throughout the economy to ensure the alternative measures of GDP converge to the same value.

14.16 Some countries with less advanced statistical systems still have difficulty in deriving a detailed breakdown of household consumption expenditure from direct sources on a regular basis. Such a breakdown is necessarily available from within a set of supply and use tables. One benefit of this is that the proportionate distribution of expenditure on different product groups can be compared with the weights used in a consumer price index (CPI) as a means of checking both the CPI weights and the supply and use tables for plausibility and consistency.

4. The industry dimension

14.17 It is conceptually possible to compile a set of supply and use tables with intermediate consumption treated in total only, with the use table showing how much of each product is used for intermediate consumption but with no further detail. Such a presentation has little value as either a compilation or analytical tool but from the earliest elaboration of supply and use tables and input-output tables onwards, further detail was introduced to relate the products used in the economy to the units producing them. The simplest case and the one most often elaborated in text books assumes that it is possible to establish a one-to-one correspondence

between products and producing units. This indeed is the motivation for defining an establishment as a unit producing only one type of product. However, there is no necessary reason for the match to be one-to-one and many countries now work with matrices where many more groups of products are distinguished than groups of producing units. The most important reason for this is that most units produce very many products, for example, a footwear manufacturer may make sandals, sports shoes, uniform boots and fashion shoes, and it would be neither practicable nor interesting to try to create an establishment for each type of footwear.

- 14.18 Once a set of producing units is determined, the supply matrix is expanded to show exactly which products each of the groups of producing units supplies and the use matrix is expanded to show intermediate demand for each of these groups of producing units. In addition, extra information relating to the producing units is appended below the demand for intermediate consumption so that the columns corresponding to the producing units contain the compo-

nents of value added as well as total output. In other words, the identity that

$$\text{intermediate consumption} + \text{value added} = \text{output}$$

is apparent for each group of producing units (industry) in addition to the aggregate product based equivalent. Further information relating to capital formation and number of employees, for instance, may also be added. These extensions are discussed in section D.

5. A numerical example

- 14.19 Tables illustrating supply and use tables are shown in section E with associated descriptive text. These tables contain all the features described in the chapter but at a high level of aggregation since they are intended for illustrative purposes only. In addition, some extracts from these tables are included in the text to illustrate the features being described.

B. The supply table

- 14.20 The main part of the supply matrix is a matrix of products (or commodities) by industry showing which industry supplies or “makes” which product. For this reason, it used sometimes to be described as a “make matrix”.

1. Products and producing units

- 14.21 While it is possible to compile a supply table using enterprises as the basic building block, it is more common and generally recommended to work with establishments. As noted in the introduction, the idea of an establishment as a unit where only one type of product is produced derives from the idea of an input-output table where there is a one-to-one correspondence between the groups of products distinguished and the groups of producing units distinguished. All the conventions described in chapter 5 about when an establishment is identified apply in the context of using establishment data for a supply matrix; indeed although establishment-level data may be used in the context of short-term economic indicators, they are used in the SNA only in the context of the supply and use tables.

- 14.22 The basis for grouping products is most commonly an aggregation of *CPC* and the resulting groups were often described as “commodities” though modern usage would be “products”. The basis for grouping producing units is most commonly *ISIC* and the resulting groups are often described as “industries”.

- 14.23 In the case where there are the same number of groups of producing units as there are products, there will be a large entry in one cell of the column representing the principal product of that group of producing unit, that is the product

that gives rise to the largest proportion of value added. If the group of producing units contains only pure establishments, there will be no other entries in the column but most often there will be some secondary production showing as smaller entries in other cells in the column.

- 14.24 When there are the same number of groups of producing units as groups of products, the rows and columns are arranged so that the entries for the principal products fall on the diagonal of the resulting matrix.

- 14.25 In practice, it is common for there to be more products than types of producing units. For example it is interesting to specify different sorts of agricultural crops but less interesting or practical to distinguish farms specializing in each of the possible sorts of crop. For this reason, the supply table (make matrix) may be rectangular with more rows than columns but arranged with similar products in adjacent rows so that an aggregation of the rows for similar products would again produce a square matrix.

- 14.26 The greater the amount of product detail that is used, the more there will be a scatter of entries around the entries for the principal products, for example when a farm produces more than one crop or a manufacturer of machinery produces different types of machines. At a level of detail such as “agricultural product” and “machinery” these off-diagonal elements will be merged in a larger diagonal element.

- 14.27 However, as well as similar products, many establishments produce some retail and wholesale services, some transport services and some construction, the last sometimes being produced for own use as capital formation.

2. Accounting rules

14.28 All the rules about time of recording, re-routing and partitioning of transactions described in chapter 3 apply to the entries in the supply and use tables.

14.29 Although the supply and use tables do not record property income flows, the financial services associated with the payment of interest and with the acquisition and disposal of financial assets and liabilities are recorded in the supply and use tables. Chapter 17 explains in detail what sorts of financial service flows are associated with transactions in financial assets and property income flows.

14.30 The re-routing of flows associated with margins is described below under valuation.

3. Production

14.31 The principles for recording output in the supply and use tables are exactly the same as those for recording output in the production account, as described in chapter 6. It should be emphasized that all the concepts and definitions of the SNA elaborated in previous chapters describing the sequence of accounts apply equally and exactly to supply and use tables and input-output tables. The only difference is in the manner of presentation of the accounts, not in the underlying fundamentals of the SNA.

14.32 As noted in the introductory section, the producing units to be identified in the supply and use tables are determined by reference to an industrial classification such as *ISIC*. However, it may also be useful to distinguish which producing units are market and which are non-market. This may be applied generally or to just those groups where significant production on both bases is common, for instance in health and education services. Similarly, production on own account may also be of special interest and can be distinguished within the *ISIC* categories, for instance for construction.

14.33 In general, in keeping with the guidance on their treatment given in chapters 4 and 5, ancillary activities are not treated as giving rise to products that are recorded as output in the accounts. One exception is when some products are used both for own ancillary use and are supplied to another unit. Another exception is where it is appropriate to treat the unit producing the ancillary products as a separate establishment, for example because of its geographical location where it may be a source of significant employment.

14.34 Bearing in mind the discussion about units, the production part of the supply matrix is a matrix with rows corresponding to product groups and columns corresponding to groups of producing units. The entries in this matrix show the value of output of each type of product by each group of producing unit. The goal of creating establishments is to partition horizontally and vertically integrated enterprises so that each row and column of the matrix is dominated by one entry with only a few non-zero entries, which are typi-

cally fairly small, elsewhere. There is more discussion on this sort of partitioning of enterprises in chapter 5.

Table 14.1: Abbreviated version of the production part of the supply table

	Market production	Production for own final use	Non-market production	Total
Agriculture, forestry and fishery products (0)	78	9	0	87
Ores and minerals; electricity, gas and water (1)	195	0	0	195
Manufacturing (2-4)	1 707	7	0	1 714
Construction (5)	213	31	0	244
Trade, accommodation, food & beverages; transport services (6)	233	0	0	233
Finance and Insurance (7 less 72-73)	146	0	0	146
Real estate services; and rental and leasing services (72-73)	100	95	0	195
Business and production services (8)	256	0	0	256
Community and social services (92-93)	63	0	212	275
Other services (94-99)	86	5	0	91
Public administration (91)		0	168	168
Total	3 077	147	380	3 604

14.35 Table 14.1 shows columns 16, 20, 23 and 24 of the supply matrix shown in table 14.12. In the full version it is clear that most entries in the sub-matrix for market production are zero. Even in the abbreviated table, this is obvious for production for own final use and for non-market production.

4. Imports

Classification

14.36 In order to add imports to domestic production to reach total supply, imports must be classified by products in a manner consistent with that used for domestic production. This is not always straightforward since imports (and exports) are classified not according to *CPC* but according to the HS or SITC. Finding a level of aggregation of the trade data that is sufficiently detailed but also consistent with domestic production may be a factor in determining the level of detail to be adopted in the supply and use tables.

Goods for processing

14.37 The traditional view of an input-output table or a supply and use table was that it portrayed the physical or technological process of production. The aim was to show which products were combined, and in what proportions, to make other products. One consequence of this, in combination with the idea of establishments, was that if one establishment of an enterprise was responsible for making steel and another for making steel products, the steel from the first establishment was shown as being delivered (or “sold”) to the second. This meant the final customer for the steel prod-

- ucts bought them entirely from the second establishment and the production account showed the value of the steel included in both intermediate inputs and output. A similar approach was taken for goods sent abroad for processing but then returned to the original economy.
- 14.38 In terms of the SNA, this approach amounts to imputing a change of ownership when goods are delivered from the first unit to the second. For imports and exports, this is particularly inappropriate in the case of goods sent abroad for processing since to ensure consistency in the SNA, financial transactions that do not take place have to be imputed to match the imputed change in ownership of the goods. In reality, though, the unit processing the goods assumes no risk associated with the eventual marketing of the products; the risk remains with the legal owner. The processor is not at risk from (and does not benefit from) any unexpected changes in prices of either the components or the final product. The only risk the processor accepts is limited to meeting the contractual commitment in the most cost-effective manner. The value of the output of the processor is the fee agreed for the processing. Any other change in the value of the goods and services processed, for example due to holding gains or losses or to the incorporation of R&D or the benefits of marketing assets accrue to the legal owner of the product. When the processing is carried out abroad, exports from the processing country consist only of the processing fee.
- 14.39 With the increasing importance of outsourcing under globalization of markets, there is great interest in knowing where the returns to labour arise and how far operating surplus accrues to the processor and how far to the unit that contracts the processing.
- 14.40 The pattern of inputs for an establishment processing goods on behalf of another unit is quite different from the pattern of inputs when the establishment is manufacturing similar goods on their own account. A simple illustration may be given by referring to crude petroleum. The unit refining on own account has intermediate consumption of crude oil and output of refined petroleum products; the unit processing on behalf of another unit has all the other similar inputs and uses the same sort of fixed capital but shows neither the crude petroleum nor the refined products in its production account. For similar amounts of crude oil processed, the value added and other inputs will be comparable and when the process is carried out for a non-resident, imports will exclude the crude oil and exports will exclude the refined products but include the processing fee. As a result, the current external balance will be unaffected by this treatment. The result of recording only the processing fee rather than the full value of the goods processed does, however, affect the ratios of imports and exports to GDP and gives a more realistic picture of the extent to which domestic financial resources are required to fund imports or benefit from exports.
- 14.41 Similar consequences hold for processing by resident producers. There is discussion in chapter 6 about whether or not to record deliveries from one establishment to another in the same enterprise.
- 14.42 Measuring goods for processing by the processing fee instead of by the full value of the processed goods changes the nature of input-output coefficients. They no longer represent the technological structures of an industrial process but an economic process. Changes in coefficients may result not from changes in technology but from changes in the proportion of oil (in this case) processed on own account and processed on behalf of another unit. More extensive discussion on the treatment of goods for processing (and the similar but distinct case of merchant goods) is given in chapter 26 but the consequences for supply and use tables and input-output tables are extremely significant and change many of the traditional perceptions about what information is conveyed in these tables.
- 14.43 Interpreting input-output coefficients as representing the technological structure of an industry does not recognize the role of other factors, such as whether fixed capital is rented or owned, the importance of ancillary activities or the consequences of a statistician balancing the tables. These factors still play an important part in determining input-output coefficients but where extensive processing of goods by third parties occurs, this may be the largest single factor contributing to change in the coefficients.

5. Valuation

- 14.44 As explained in the introduction, in order to balance total supply with total use, both must be valued in the same way. The most usual way to achieve this is to raise total supply to purchasers' prices and this is the approach described here. However, the alternative, of reducing total use to basic prices is also considered in section D under discussion about deflating the supply and use tables to prices of another year.
- 14.45 It is helpful to begin by recapitulating the distinction between the purchaser's, producer's and basic prices as explained in chapter 6 and, because of the complexity of VAT and similar deductible taxes, to itemize the difference between the three ways in which VAT is recorded.
- a. Invoiced VAT is the VAT payable on the sales of a producer; it is shown separately on the invoice that the producer presents to the purchaser;
 - b. Deductible VAT is the VAT payable on purchases of goods or services intended for intermediate consumption, gross fixed capital formation or for resale that a producer is permitted to deduct from his own VAT liability to the government in respect of VAT invoiced to his customers;
 - c. Non-deductible VAT is VAT payable by a purchaser that is not deductible from his own VAT liability, if any.

14.46 Bearing these ways of recording VAT in mind, the price bases in the SNA are expressed as follows:

- a. The purchaser's price is the amount paid by the purchaser, excluding any deductible VAT or similar deductible tax, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place;
- b. The producer's price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any VAT, or similar deductible tax, invoiced to the purchaser. It excludes any transport charges invoiced separately by the producer;
- c. The basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable, and plus any subsidy receivable, on that unit as a consequence of its production or sale. It excludes any transport charges invoiced separately by the producer.

14.47 When an item is not sold directly by the producer but passes through the hands of one or more wholesaler or retailer, it is necessary to consider the distribution margins these wholesalers and retailers add to the cost of the product. One possibility is to treat distribution margins as another element increasing the value of the purchaser's price over the producer's price. An alternative possibility is to treat the purchaser as undertaking two quite different transactions; one is the purchase of the item directly from the producer, the second is the purchase of the margins involved. A supply and use table at purchasers' prices assumes the former; a supply and use table at basic prices assumes the latter.

14.48 Whichever alternative for handling trade margins is chosen, the three price valuations can be linked schematically as follows:

Purchasers' prices

minus wholesale and retail distribution margins (trade margins),

minus transportation charges invoiced separately (transport margins),

minus non-deductible VAT,

equals producers' prices;

minus taxes on products resulting from production excluding invoiced VAT,

plus subsidies on products resulting from production,

equals basic prices.

14.49 Thus the three factors that need to be considered in converting the values of output and imports to purchasers' prices are:

- a. Trade margins,
- b. Transport margins,
- c. Taxes less subsidies on products.

Each of these is considered in turn below. Trade margins are typically more significant in size than transport margins but are conceptually more straightforward. Transport margins are complex because of the different ways in which the cost of transport can be recovered.

Trade margins

14.50 Trade margins may be significant and may apply to virtually all goods. When a supply and use table is compiled at purchasers' prices, the distribution margins need to be added to the rows for each group of products.

14.51 In order to account for the use of wholesalers and retailers margins, an adjustment column is added to the supply part of the supply and use tables. This column shows the addition to the value of each group of goods to which the margins apply with an offsetting negative entry for the rows corresponding to the margins. Typical entries for transport margins are treated in the same manner. Table 14.2 shows the adjustment column (2) from the full supply table 14.12.

14.52 Trade margins are usually produced within the economy but may apply to both domestic production and to imports. Transport margins, on the other hand, may be provided by both residents and non-residents and may be provided to both residents and non-residents. This aspect of transport margins is discussed in the following paragraphs.

Table 14.2: An example of the entries to adjust supply to include trade and transport margins

	Trade and transport margins
Agriculture, forestry and fishery products (0)	2
Ores and minerals; electricity, gas and water (1)	2
Manufacturing (2-4)	74
Construction (5)	0
Trade, accommodation, food & beverages; transport services (6)	-78
Finance and Insurance (7 less 72-73)	0
Real estate services; and rental and leasing services (72-73)	0
Business and production services (8)	0
Community and social services (92-93)	0
Other services (94-99)	0
Public administration (91)	0
Total	0

Transport margins

14.53 It is helpful to consider the case of domestic transport charges first and see how they are included in the supply and use tables before turning to transport margins on imports.

Domestic transport charges

14.54 As explained in paragraphs 6.65 to 6.66, if the producer agrees to deliver the product to the purchaser without explicit charge, the cost of delivery is included in the basic price. Only if the purchaser is explicitly invoiced for the delivery is there a specific transportation margin that is part of the purchaser's price.

14.55 Consider the situation where a unit, A, sells a product to unit B. For simplicity it is assumed they are both producers with factories some distance apart. If B collects the product from A, the price charged is 200. The cost of transport from A's factory to that of B is 10. Both A and B have delivery fleets that can transfer the product from A to B or either may use a third party, C, to make the transfer. Ten per cent tax (not VAT) is payable on both the cost of the product and the transport costs. Different values of the three possible prices result from the alternative means of moving the product from A to B as shown in table 14.3.

14.56 The entries in the use matrix will be quite different for each of these six cases, even though the total cost to B is similar throughout. Only when B collects the product itself is the purchaser's price for the product plus delivery less than 231. In this case it must be assumed that the internal costs of collection are 10, as before, so only the tax payable on this, 1, is a reduction in the total cost of taking delivery of A's product even though the purchaser's price is 220 compared with 231 for other modes of delivery.

14.57 When A or B undertake transport as an ancillary activity, the cost of petrol and other consumables will appear in

intermediate consumption, the driver's wages in compensation of employees and there will be consumption of fixed capital recorded in respect of the vehicle used.

14.58 These entries will appear for A when it is undertaking a secondary activity but the cost of the secondary activity will appear as intermediate consumption of A's primary activity.

14.59 When C acts as an agent for A, whether A charges B directly for C's services or not, the cost of C's services forms part of A's intermediate consumption. When C is hired directly by B, then the service cost is part of B's intermediate consumption.

14.60 The rationale behind these different recordings is that the point when change of ownership occurs is different under the different scenarios. If A agrees or is obliged to provide transport to B, even for a charge, then change of ownership takes place when the product is delivered to B's factory. If B agrees or is obliged to arrange delivery itself, then change of ownership takes place when the product leaves A's factory.

International transport charges

14.61 The information for allocating domestic transport charges is typically available to national accountants from survey information collected from domestic establishments. In the example above, information from A, B and C would, in principle, be available. For products delivered to establishments abroad, this is not the case. Either A or B is non-resident and possibly C also. The most common situation is where information coming from the administrative records compiled by customs authorities must be used. Increasingly, however, some products circulate without direct customs supervision and recording. This applies to services but services seldom if ever have transportation charges associated with their delivery.

Table 14.3: Example of the impact on prices of transport charges

Delivery method	Basic price	Tax	Pro-ducer's price	Transport margin plus tax on transport	Pur-chaser's price	Comment
A charges B an all-inclusive price and uses own delivery fleet	210	21	231		231	Transport is an ancillary activity of A
A charges B for delivery but uses own delivery fleet	200	20	220	11	231	Transport is a secondary activity of A
A charges B an all-inclusive price but uses C to deliver	210	21	231		231	C's production is intermediate consumption of A
A charges B for delivery but uses C to deliver	200	20	220	11	231	C's production is intermediate consumption of A
B collects the product from A using own delivery fleet	200	20	220		220	Transport is an ancillary activity of B
B uses C to collect product from A and deliver to B	200	20	220		220	B buys 2 products; one from A for 220 and one from C for 11
	10	1	11		11	

14.62 The following are examples of goods that may not be covered in customs statistics:

- a. Goods circulating within a single customs area that spans several economies;
- b. Goods delivered to offshore establishments such as oil platforms;
- c. Certain types of goods, such as diamonds and other precious goods of high value but small volume, that may be carried by persons;
- d. Ships and aircraft, which, while hardly concealable in a physical sense, may be difficult to distinguish from the vehicles that belong to another economy and simply transit through the domestic economy.

It is therefore appropriate to consider products subject to customs documentation separately from other internationally traded products. Separate consideration also must be given to transport related to merchanted goods and goods sent abroad for processing.

Products not included in customs documentation

14.63 In the absence of customs documentation, information must be obtained from surveys and other sources and will typically record the prices at which transactions are actually undertaken. The analysis above for goods transported within the domestic economy is likely to apply to international transport also. When the supplier (exporter) commits to deliver goods to the importer, the value of the goods will include the transport costs. When the purchaser (importer) is responsible for transport, the value of the goods excludes the transport costs and these feature as a separate purchase. Whichever of the units takes responsibility for the transport, the values of the goods for both the exporter and importer are identical. This is an important distinction from the valuation used in customs merchandise trade statistics as discussed in the immediately following section.

14.64 Following the example in the previous section, if A and B are resident in different economies, whenever A takes responsibility for delivery to B, the value of exports from A (and the corresponding value of imports to B) includes the transport element. If B takes responsibility for the transport from A, then neither the value of exports from A nor the value of imports into B includes the value of the transport.

14.65 If the third party, C, is used to undertake the transport, the residence of C is important in determining the value of total imports and exports. If C is co-resident with A and provides services to A, this is a domestic transaction within A's economy. However, the value of the exports of goods from A will reflect the fact that they must cover the cost of services bought from C. If C is co-resident with A but provides services to B to transport the goods from A to B, then C also provides exports to B but these are shown as exports of transport services, not of goods.

14.66 If C is co-resident with B and contracts with A to transport goods to B, there are imports of transport services from B's economy to A's which are then included in the value of exports from A to B. If C contracts with B to transport the goods, this is a domestic transaction for B's economy even though C is operating in foreign territory in collecting and moving the goods.

14.67 If C is resident in an economy other than that of A and B, then the services provided to A constitute exports of services from C's economy to A's and the value of the goods exported from A to B are sufficient to cover this cost of imports just as previously they covered the cost of a domestic transaction. If C contracts with B to move the goods, the cost shows as an export of services from C's economy to B's.

14.68 As in the domestic case, the question of whether the value of goods covers the cost of transportation or not depends on whether the exporter or importer is responsible for transport. Again this is equivalent to whether change of ownership takes place after or before transportation from A to B.

Products covered by customs documentation

14.69 In most countries, most information on imports and exports of goods will come from customs declarations. These declarations are compiled for administrative purposes, namely the levy of import and export duties, and are therefore not necessarily ideal for use in the national accounts or balance of payments context but are used because of their general availability and consistency of valuation.

14.70 Within customs declarations, imports are usually valued CIF (that is, they include cost, insurance and freight) at the point of entry into the importing economy. This valuation is standard, regardless of whether any of the CIF elements are provided by domestic enterprises because import duties are typically imposed on the CIF valuation. It also excludes the cost of transport from the border of the importing economy to the premises of the importer. This transport also may be provided by either a resident or non-resident carrier. Exports are valued FOB (free on board) at the point of exit from the exporter's economy. It includes the cost of transport from the exporter's premises to the border of the exporting economy. The CIF/FOB valuation principles arise from the common situation where goods are transported by ship from one country to another and it is not unreasonable to assume that transport to and from the ship would be undertaken by carriers resident in the relevant economy. This assumption may still hold in the main for goods transported by sea and air. It is much less satisfactory for goods transported overland where a single vehicle may transport goods from the exporter to importer without a break at national borders.

14.71 As noted already, if it is the exporter that contracts the delivery (whatever the nationality of the carrier), it is correct that the cost of transport is included in the value of the good imported, though describing this as CIF is not helpful in the context of the SNA since it is a legitimate part of the

cost of the imported good and should not be seen as a separate import of transport services. The delivery contractor provides services to the exporter and these are shown as an import of services to the exporting economy if the contractor is not co-resident with the exporter.

- 14.72 If it is the importer that contracts the delivery and if the carrier is not co-resident with the importer, an import of services takes place and, ideally, for the SNA it would be desirable to separate the CIF value into the value of the good only and the value of the transport service. If the importer undertakes delivery itself or contracts with a unit resident in the same economy, there is in fact no import of services even though it will appear there when imports of goods are recorded CIF. To counteract this, a fictional export of the same amount of services must be shown to leave the current balance of goods and services correct.

Transport on merchant goods

- 14.73 Merchanting is a process whereby a unit in economy X purchases goods from economy Y for sale in economy Z. The goods legally change ownership but do not physically enter the economy where the owner is resident. By convention, the acquisition of the goods intended for resale is shown as negative exports. When the goods are sold, they are shown as [positive] exports. When acquisition and sale take place in the same period, the difference shows as an addition to exports. If only the acquisition takes place in an accounting period, the negative export is offset by an increase in inventories of goods for resale, even though those goods are held abroad. In a subsequent period when the goods are sold, the exports recorded for their sale are offset by a withdrawal from inventories. As normal, the withdrawals should be valued at the cost of the goods at the date of the withdrawal, any increase in value due to a change in the price of the goods being shown as a holding gain or loss.

Table 14.4: An example of imports entries in the supply table with the global CIF-to-FOB adjustment

	CIF/FOB adjustment	Goods	Services
Agriculture, forestry and fishery products (0)		37	
Ores and minerals; electricity, gas and water (1)		61	
Manufacturing (2-4)		284	
Construction (5)			
Trade, accommodation, food & beverages; transport services (6)	-6		62
Finance and Insurance (7 less 72-73)	-4		17
Real estate services; and rental and leasing services (72-73)			
Business and production services (8)			5
Community and social services (92-93)			
Other services (94-99)			
Public administration (91)			
CIF/FOB adjustment	10	-10	
Purchases abroad by residents		20	23
Total	0	392	107

- 14.74 The services provided to transport the goods from Y to Z may be paid for by any of the units in X, Y or Z and should be recorded consistently with the principles outlined above. (See chapter 26 for more on merchanting.)

Transport on goods sent abroad for processing

- 14.75 Goods sent abroad from economy X to economy Y for processing without changing ownership, after which they are returned to economy X, are not shown as either exports of goods from X to Y or subsequently as exports of goods from Y to X. As explained above, only the agreed processing fee is shown as an export of service from Y to X. However, there are costs of transporting the goods on both the journey from X to Y and then on the return journey from Y to X. The costs of these journeys, excluding the value of the goods themselves, must be shown as transportation services. If X is responsible for transport on either the outward or inward journey, the cost is an import to X's economy unless it is carried out by X or another unit co-resident with X. If Y is responsible for the transport, the cost is an import to Y unless it is carried out by Y or another unit co-resident with Y. When Y is responsible for transport costs (on either or both journeys) the costs will be covered by the agreed processing fee and hence in the value of the exports of services from Y to X.

Recording transport margins in the supply and use tables

- 14.76 In the supply and use tables, either supply must be adjusted to be at purchasers' prices or use must be adjusted to be at basic prices since both sides of the balance must be expressed in the same prices. It is common to compile the use table, initially at least, in purchasers' prices. As shown in table 14.3, this value will often be the same however the good is transported from the seller to the buyer. The only exception is when the buyer fetches the goods using its own resources. The way the transport service shows in the use table, however, depends critically on how the service is provided (using own resources or a third party contractor) and to whom (the buyer or seller). The different forms of recording in different circumstances are indicated in table 14.3.

- 14.77 Imports of goods are to be recorded in the supply table at basic prices with taxes and margins added subsequently. There is no universally appropriate valuation for imports of goods at basic prices. The following recommendations should be noted.

- a. If the data come from other than customs documentation, it is to be assumed that actual transaction prices are used and it should be clear whether transport services are separately invoiced or not. If they are, the basic price excludes the value of transport; if not, the basic price value of goods includes transport costs. The purchaser's price will differ from the basic price only because of any taxes payable by the purchaser.

- b. If the data come from customs documentation and if it is the exporter of the goods who is responsible for meeting the transportation costs, the value of the goods at basic prices should include the transport costs. In this case a CIF valuation will approximate the basic price (approximate unless a domestic carrier assumes responsibility for transport from the border of the importing country). The purchaser's price will differ from the basic price only because of any taxes and subsidies payable by the purchaser.
- c. If the data come from customs documentation and if it is the importer of the goods who is responsible for meeting the transportation costs, the value of the goods at basic prices should exclude the transport costs. In this case an FOB valuation will approximate the basic price (approximate because the value of transport from the place of origin to the border of the exporting economy is included in the FOB valuation). The purchaser's price will differ from the basic price because of the transport costs incurred plus any taxes and subsidies payable by the purchaser.
- d. It may not be possible to determine from customs declarations which unit is responsible for the transport costs and, even when it is and conceptually the transport costs should be separated from the value of the goods themselves, there may be no information and no resources available to make the separation in practice. In such a case the CIF value of imports may be the only source with a disaggregation by type of good. If the disaggregated CIF figures are used for imports of goods, though, that part of the transport costs and insurance also included in imports of services would be double-counted. In order to avoid this, therefore, an adjustment column is inserted into the supply table. The adjustment column consists of a deduction from the services items for transport and insurance equal to the CIF-to-FOB adjustment for these items with an offsetting global adjustment made to imports of goods. Table 14.4 gives an example of such an adjustment.

Taxes and subsidies on products

- 14.78 The taxes and subsidies on products that add to the value of products available in the economy are exactly those described as taxes and subsidies on products in chapter 7. Other taxes on production are included in the basic price measurement of output and other subsidies on production are excluded so do not feature in the adjustment for taxes that intervenes between a valuation at basic prices and purchasers' prices.
- 14.79 Value added type taxes in the SNA include VAT proper and taxes that are deductible in a way similar to VAT. The SNA recommends that output, even at producers' prices, is valued excluding VAT invoiced by the producer; imports also are valued excluding invoiced VAT. For intermediate and final uses, the purchases of goods and services are recorded including non-deductible VAT only.
- 14.80 The general cases in which VAT is usually deductible, non-deductible or just not applicable are as follows:

Deductible VAT:

- Most of intermediate consumption
- Most of gross fixed capital formation
- Part of changes in inventories.

Non-deductible VAT:

- Most of final consumption expenditure
- Part of gross fixed capital formation
- Part of changes in inventories
- Part of intermediate consumption.

VAT not applicable:

- Exports
- Any goods or services subject to a zero rate of VAT regardless of their use
- Any producers exempted from VAT registration (small businesses or the like).

Table 14.5: An example of the entries to adjust supply to include taxes less subsidies on products

	Taxes on products	Subsidies on products
Agriculture, forestry and fishery products (0)	5	-3
Ores and minerals; electricity, gas and water (1)	5	
Manufacturing (2-4)	94	-5
Construction (5)	17	
Trade, accommodation, food & beverages; transport services (6)	5	
Finance and Insurance (7 less 72-73)	0	
Real estate services; and rental and leasing services (72-73)	0	
Business and production services (8)	11	
Community and social services (92-93)	0	
Other services (94-99)	4	
Public administration (91)	0	
Total	141	-8

- 14.81 When output is at basic prices, the taxes column contains total non-deductible VAT on products, taxes and duties on imports excluding VAT, export taxes and taxes on products excluding VAT, import and export taxes. When output is at producers' prices, the taxes column includes only taxes and duties on imports (excluding VAT), plus total non-deductible VAT on those products.
- 14.82 Subsidies are recorded as if they were negative taxes on products or negative taxes on production. Only subsidies on products (if any) are entered into the column for the tax adjustment to the valuation of supply; they appear with a negative sign to indicate they reduce the value of purchasers' prices rather than increase it.

- 14.83 Table 14.5 shows columns 3 and 4 from the full supply matrix in table 14.12 that show the adjustments for taxes and subsidies on products.

C. The use table

- 14.84 A use table can be viewed as a rectangular table with four quadrants, two in the upper part and two in the lower part. The upper left quadrant consists of a sub-matrix showing the use of different products by different groups of producing units. In other words, this quadrant contains intermediate consumption, disaggregated by product in the rows and by industries in the columns. The upper right quadrant consists of a sub-matrix showing the use of different products by final consumers, a sub-matrix for exports and a sub-matrix showing the use of different products for capital formation. Together these three sub-matrices show final demand. The lower left quadrant contains information on value added disaggregated to show the elements of the generation of income account, that is compensation of employees, gross operating surplus or gross mixed income and taxes less subsidies on production. Each of these five sub-matrices is described below. The lower right quadrant is empty.
- 14.85 The upper part of the use matrix (the intermediate and final demand quadrants) can be valued at purchasers' prices or at basic prices. In this section sub-matrices at purchasers' prices are discussed. The alternative valuation at basic prices is discussed in section D along with considerations about expressing the use table in volume terms.
- 14.86 Together the left-most quadrants (the intermediate consumption and value added quadrants) can be viewed as a set of columns, each relating to a group of producing units, containing information relating to the production and generation of income accounts plus other information that can be attributed to groups of producing units at a more disaggregated level than groups of enterprises. This other information most often includes capital formation and the number of employees for each group of producing units. These aspects are also discussed in section D.
- ### 1. The use of products by producing units
- 14.87 The sub-matrix showing the use of specific products by each type of producing unit (the upper left quadrant of the table) has long been considered one of the more interesting aspects of supply and use tables and input-output tables. It gives a picture of how products are converted to more complex products either for yet further processing or for sale to final users or as exports. Unlike the supply table or make matrix, which also shows products by producing units, the sub-matrix of the use table (sometimes called the "absorption matrix") is densely rather than sparsely populated. The patterns of inputs for market, own final use and non-market producers of the same products are likely to bear a strong resemblance to one another but the variations give insights into how the characteristics of the three sorts of production vary.
- 14.88 The definition of intermediate consumption and the borderlines with payments for the use of labour and capital are exactly as explained in chapter 6.
- 14.89 Compiling the sub-matrix usually starts from information provided by establishments about their intermediate consumption. These may be classified according to the purpose they serve rather than the type of good. The classification of outlays of producers by purpose (COPP) consists of six main headings that apply to intermediate consumption of establishments, only one of which relates to current production techniques. The other five cover more general categories such as outlays on marketing and human resource development that are common to most establishments. Use of this detail in the form of a satellite account is discussed in chapter 29.
- 14.90 When this is all the information available to the compiler, he must make a judgement of what type of products will be covered in each heading allowing for variations between producing units of different types.
- 14.91 It is important to bear in mind the interpretation of data in this sub-matrix. The total across the rows show how much of a given product is used as intermediate consumption by all producing units. The total down a column shows the total of all types of products used as intermediate consumption inputs by a single type of producing unit. There is absolutely no reason why the relative size of these two entities should be related in any systematic manner but mistaking one concept for the other is a common error made by users not very familiar with the nature of a supply and use table.
- 14.92 Table 14.6 shows columns 16, 20, 23 and 24 of the use matrix that include the intermediate consumption by each type of production. This contrasts with table 14.1 which shows the same columns for the supply part of table 14.12. Whereas table 14.1 shows that most manufactured products are produced by the market producers in the manufacturing industry, table 14.6 shows that all three types of producers use manufactured products and that only about half of manufactured products are used in manufacturing industries. While the proportion quoted depends on this example, the phenomenon is generally observed.

Table 14.6: Abbreviated version of the intermediate consumption part of the use table

	Market production	Production for own final use	Non-market production	Total
Agriculture, forestry and fishery products (0)	82	1	5	88
Ores and minerals; electricity, gas and water (1)	208	0	9	217
Manufacturing (2-4)	878	32	80	990
Construction (5)	22	0	18	40
Trade, accommodation, food & beverages; transport services (6)	110	0	9	119
Finance and Insurance (7 less 72-73)	76	5	23	104
Real estate services; and rental and leasing services (72-73)	39	0	18	57
Business and production services (8)	171	12	39	222
Community and social services (92-93)	2	0	32	34
Other services (94-99)	6	0	4	10
Public administration (91)	0	0	2	2
Total	1 594	50	239	1 883

2. The use of products for final consumption

14.93 As explained in chapter 9, there are three types of units that undertake final consumption; households, NPISHs and general government. The manner of compiling the sub-matrix of the use table showing the use of products for final consumption is similar for each of the three types of consumer but starts from a different classification for each of them.

14.94 Information on consumption by households usually starts from household surveys. In these, household expenditures are classified according to the classification of individual consumption by purpose (COICOP). COICOP classifies household expenditure into ten main categories, such as food, clothing and housing. This is useful for analysis of how much of household consumption goes on essentials, for instance, and is basic to the establishment of weights for the consumer price index but it is not in the necessary format for inclusion in the use table. For that a conversion table is necessary showing which of the designated products are purchased as food, which as clothing and so on. It should be noted that household surveys typically include expenditure by households abroad, for example on holidays, which must be separated from demand in the domestic economy in the supply and use tables.

14.95 A similar approach is used for consumption expenditure by NPISHs but starting from the classification of the purposes of non-profit institutions serving households (COPNI). COPNI spells out the different sorts of NPISHs there may be by their objectives, for example, whether they undertake research and scientific services, education services or are religious associations. Given this knowledge, it should be possible to determine whether the NPISH is one with costs mainly limited to those associated with running an office with few paid employees or whether there are significant costs associated with acquiring goods and services to pass on to households, for instance.

14.96 For general government consumption expenditure the starting classification is the classification of functions of government (COFOG). This classification is consistent with that proposed in the *GFSM2001* and shows a breakdown of government expenditure by standard functions associated with general public services, defence, law and order and so on. As with the classification for NPISHs, knowing the type of function gives a way to start to allocate the expenditure between intermediate consumption and other expenditure and to allocate intermediate consumption to specific product types.

Table 14.7: The final consumption part of a use table

	Households	NPISHs	General government	Total
Agriculture, forestry and fishery products (0)	28	0	2	30
Ores and minerals; electricity, gas and water (1)	40	0	0	40
Manufacturing (2-4)	570	0	3	573
Construction (5)	2	0	0	2
Trade, accommodation, food & beverages; transport services (6)	42	0	0	42
Finance and Insurance (7 less 72-73)	53	0	0	53
Real estate services; and rental and leasing services (72-73)	115	0	0	115
Business and production services (8)	40	0	0	40
Community and social services (92-93)	21	14	204	239
Other services (94-99)	85	0	0	85
Public administration (91)	5	2	159	166
Purchases abroad by residents	43	0	0	43
Domestic purchases by non-residents	-29	0	0	-29
Total	1 015	16	368	1 399

14.98 When these entries are compiled at purchasers' prices, as assumed in this section, there are no entries for consumption of wholesale and retail services as these are included with the expenditure on the products to which they apply. Equally, taxes payable on products are included in the purchaser's value and do not show separately. (These statements apply equally to products used for intermediate consumption and for capital formation but are much more significant for final consumption.)

14.99 Table 14.7 illustrates the part of the use table for final consumption (columns 30, 31, 32 and 29 of table 14.12). The entry for production for own final use by households includes the estimate for the rental of owner-occupied dwellings. The item for expenditure on non-market production by households represents the partial payments made by households for items supplied at nominal prices by government and NPISHs.

3. The use of products for capital formation

14.100 There are three types of capital formation to be examined, gross fixed capital formation, changes in inventories and acquisition less disposal of valuables.

Gross fixed capital formation

- 14.101 Allocating gross fixed capital formation to products is the easiest part of the use table since the categories of fixed capital fall quite naturally into product groups. Further, they will often be exempt from taxes on products and not subject to trade margins. However, some assets are subject to costs of ownership transfer on acquisition and disposal and these costs need to be allocated to the appropriate product. This product may be trade or transport but may also be legal services or real estate services, for example, depending on the asset concerned.
- 14.102 One aspect that does need to be mentioned, though, is the treatment of existing goods that are resold to another unit. (This applies to consumption expenditure also but is described here because it is most common for fixed capital.)

Resale of existing goods

- 14.103 Strictly speaking, it is not exactly true that all goods available for purchase in the domestic market come from domestic production or imports. Some goods may exist in the economy already and simply change owners. The most obvious example is fixed capital, where buildings and vehicles are regularly sold before their useful life is exhausted. In this case, the supply of goods is recorded not as a positive entry in the supply table but as a negative entry in the use table.
- 14.104 When a building is sold, for example, the seller records negative fixed capital formation and the purchaser records positive fixed capital formation. These items frequently do not offset one another exactly as there may be costs of ownership transfer associated with the exchange. As explained in chapter 10, costs of ownership transfer incurred by the seller should be written off during the period the seller has owned the asset, so that by the time the item is sold, all the costs of ownership transfer on acquisition should have been written off. For the purchaser, costs of ownership transfer on acquisition of the asset are recorded as part of gross fixed capital formation and, in turn, are written off over the period the purchaser expects to use the asset. In this way costs of ownership transfer of both disposal and acquisition are treated as new fixed capital formation.
- 14.105 Fixed assets may not always be sold to other producers in the same economy. For example, it is common for aircraft to be sold abroad. In this case, the supply of the aircraft is still recorded as negative capital formation but the use is recorded as an export.
- 14.106 Even when an asset is no longer cost effective, it may have a residual value, for example as scrap. (It should be noted, though, that the margins of scrap merchants are often very high compared to the prices paid by them to acquire the scrap.) In that case the supply is recorded as negative capital formation and the use as intermediate consumption of a producing unit processing the scrap. Chapter 10 also

explains why the total of consumption of fixed capital over the life of the asset is not necessarily the whole value of the asset on acquisition but the difference between the value of the asset on acquisition and its value on final disposal, in this case the scrap value. In cases where the scrap value does not coincide with the residual balance sheet value of the asset immediately before disposal, an adjustment is to be made to the value of the asset via the other changes in the volume of assets account.

- 14.107 Second-hand assets may also become household consumption expenditure, as for example when a hire car company sells its cars to households for recreational purposes.
- 14.108 If a unit disposes of more assets than it acquires in a period, it will have negative capital formation. It is possible, though not very common, for the figure of capital formation for a group of producing units also to be negative in such a case.
- 14.109 As explained in chapter 9, it is assumed that a household consumes products at the moment they are acquired. In the case of consumer durables this is not strictly so and consumer durables may be sold or donated to other units at a later time (for example in response to requests for disaster relief). In this case also, the supply of the goods in question is treated as negative expenditure by the previous owner and positive use by the new owner (including households in the rest of the world). The way in which the income element of donations to other units is handled is via transfers, as explained in chapter 8 but for a supply and use table this aspect is not relevant since it is only the physical disposition of the product that is recorded.

Changes in inventories

- 14.110 While allocating fixed capital formation to product type is relatively straightforward, allocating changes in inventories to product type is challenging. Chapter 10 explains how the types of inventories identified in the SNA are materials and supplies, work-in-progress, finished goods, and goods for resale. Work-in-progress and finished goods are straightforward to allocate since the products concerned must be those that the unit reporting the inventories produces. Materials and supplies are more complex. Some will be specific to the producing unit reporting them but virtually all producing units will hold some office supplies and cleaning materials, for example, though maybe not to a significant degree. For goods for resale, however, practically all types of goods may be included in inventories. Not only is the range of goods extensive, the pattern of goods held for resale is subject to a high degree of variation over time and even within an accounting period.
- 14.111 In the exercise of balancing a supply and use table, this uncertainty over the composition of inventories, added to the fact that even the valuation of changes in inventories may be less robust than desired, means that inventories are often estimated indirectly and with the need to balance the supply and use table as one of the operating constraints.

Valuables

14.112 The range of products held as valuables is quite extensive and it is an area where existing goods may feature. For example, antiques and old masters, by their very nature, are not output of the current period. The importance of the value of acquisition less disposals of valuables as an item of capital formation, though, tends to be limited and any major disposal, such as sales by a museum, are likely to be well known.

14.113 Table 14.8 illustrates the capital formation part of a use table.

Table 14.8: The capital formation part of a use table

	Gross fixed capital formation	Changes in inventories	Acquisition less disposals of valuables	Total
Agriculture, forestry and fishery products (0)	2	1	0	3
Ores and minerals; electricity, gas and water (1)	0	-1	0	-1
Manufacturing (2-4)	161	5	10	176
Construction (5)	190	23	0	213
Trade, accommodation, food & beverages; transport services (6)	0	0	0	0
Finance and Insurance (7 less 72-73)	0	0	0	0
Real estate services; and rental and leasing services (72-73)	22	0	0	22
Business and production services (8)	1	0	0	1
Community and social services (92-93)	0	0	0	0
Other services (94-99)	0	0	0	0
Public administration (91)	0	0	0	0
Total	376	28	10	414

4. Exports

14.114 The allocation of exports by product requires the same conversion between SITC or HS codes as the allocation of imports does. The valuation of exports is easier, though, since in trade statistics exports are uniformly valued FOB. This valuation may not be in perfect accord with the recording in the SNA since the point of valuation is at the border, not necessarily where change of ownership takes place. As with the valuation of imports, ideally exports should be valued when and where they change ownership from a resident unit to a non-resident unit but, again as with imports, the assumption that this change of ownership takes place at the national border may be the only practical assumption given existing data sources.

5. Introducing value added

14.115 The sum across the rows of the use table, encompassing intermediate consumption, final consumption, capital formation and exports, for each product type must be equal to the sum across the rows of the supply table (domestic production plus imports plus valuation adjustments to make the valuation in the supply table consistent with that in the use table) for the same product type. The sum down each

column of the supply table shows the value of output for the relevant type of producing unit. The sum down the column of the use table for the same type of producing unit shows the amount of intermediate consumption of that type of producing unit. It is an obvious extension, therefore, to add two further lines to the use table for the column corresponding to producing units. The second of these contains the values of output from the supply table, the first contains the difference between this total and the value of intermediate consumption just described and so represents value added for that type of producing unit.

14.116 Introducing the entries for value added and output is key to one of the main purposes of the supply and use tables, that of using the structure to ensure the accounts are internally consistent. Returning to some of the examples quoted in the introductory section illustrates this point.

14.117 Suppose the data from a household survey for cigarette consumption is assumed to be accurate and suppose for simplicity there are no exports of cigarettes. This figure then virtually determines the total use of tobacco products and subtracting imports of cigarettes gives a figure for the output of the domestic cigarette factories. This may be much lower than the amounts reported by the cigarette manufacturers and the compiler may be inclined to think the output of cigarette manufacturers is overstated. However, the main intermediate input to cigarette manufacture will be tobacco and there will be other figures for either production or imports of tobacco. Given there are few uses for tobacco other than input into tobacco products and exports, if the supply and use table compiler wishes to adhere to the household expenditure survey data, he is faced with assuming either that there are errors of overstatement of cigarette manufacture, tobacco production or imports or the household figures for tobacco consumption are understated.

14.118 Consider the case of taxi services in a country where communal taxis are the main form of personal transport. As well as the value of taxi services reported by the taxi drivers, there may well be information about the number of cars and amount of petrol or diesel claimed as tax deductions because they are used for taxi services. A judgement can be made about whether these inputs are more consistent with the figure from the household expenditure survey than with the reported output figures.

14.119 More generally it should be noted that once the supply and use tables are balanced, any increase in final use for a particular good must be met from increased total supply or decreased intermediate consumption for the same good. If the increased supply comes from domestic production, then value added increases in line with the increases in final use; if the increased supply comes from increased imports, then both value added and GDP are unaffected (or only marginally if there are import taxes on the good in question). Similarly, any increase in intermediate consumption without an increase in domestic output must lead to a decrease in final use and also a decrease in value added.

Table 14.9: The value added part of a use table

	Market production	Production for own final use	Non-market production	Total
Intermediate consumption	1 594	50	239	1 883
Total gross value added/GDP	1 483	97	141	1 721
Compensation of employees	1 041	0	109	1 150
Taxes less subsidies on production and imports	56	0	2	58
Mixed income, gross	46	15	0	61
Operating surplus, gross	340	82	30	452
Consumption of fixed capital - mixed income	5	3		8
Consumption of fixed capital - other	168	16	30	214
Total output	3 077	147	380	3 604

6. Expanding value added

14.120 Useful as it is to add value added to the bottom of the use table, it is possible and even more helpful to disaggregate

E. Numerical example

1. The full supply and use table

14.158 Table 14.12 shows a full supply and use table. The topmost part consists of the supply table. The first column shows total supply at purchasers' prices. This is followed by information first on trade and transport margins, as in table 14.2, and then on taxes and subsidies on products, as in table 14.5. Deducting the elements in all these columns from the corresponding elements in the column for total supply at purchasers' prices gives the next column, which is total supply at basic prices. This is followed by the largest part of the table, the supply of products by type of domestic producing units. This is an expanded form of table 14.1. At the extreme right of the supply table is the information on imports, corresponding to table 14.4.

14.159 The middle part of table 14.12 is the product part of the use table. The first column is total supply at purchasers' prices and corresponds exactly to the column above in the supply table. The next three columns are blank in the use table. Then the detailed information on use of products by type of producing unit is shown. This is the expanded version of table 14.6. The column for exports and columns for final consumption and capital formation follow. These correspond to tables 14.7 and 14.8.

14.160 Below the product part of the use table is the value added part. In the columns for taxes and subsidies, information on taxes and subsidies on production is shown. Details of the generation of income account for each of the types of producing unit are shown under their use of products as intermediate consumption. These entries correspond to the summary information in table 14.9. Information on capital

value added and show all the entries in the generation of income account (described in chapter 7). Table 14.9 shows the entries for each type of production in rows 14 and 17 to 25 of the use part of table 14.12.

7. Adding other variables

14.121 As well as the entries for the generation of income account, it is possible to add memorandum items relating to other variables that are useful in a study of production at the establishment level. These are gross fixed capital formation by establishment and the number of employees. As discussed in chapter 19, it is preferable to show employment on a full time equivalent basis if this is available.

Section D, containing paragraphs 14.122 to 14.157, discusses further elaboration of the use table, including partitioning each element to show the parts due to domestic production, imports, margins and taxes in order to produce a table valued at basic prices.

formation by type of producing unit and employment are also shown. There are no entries under the columns for exports, final consumption or capital formation.

2. Margins and taxes

14.161 Within table 14.12, row 3 shows that the value of manufactured products at basic prices is 1 998. To this value, subsidies of 5 are deducted, taxes of 94 and trade and transport margins of 74 are added to give a value at purchasers' prices of 2 161. Within the use part of table 14.12, the whole of the value of 2 161 is accounted for. This means that the margins of 74 are accounted for in this way and not as demand on the trade and transport industry directly. In row 5 of the supply part of the table, therefore, these margins are shown as offsetting supply of trade and transport services (along with margins of 2 apply to each of agricultural products and ores and minerals) so the total of trade and transport margins at purchasers' prices shown in column 1 is less than the total at basic prices shown in column 5.

14.162 The right-most part of the supply table shows the way the margins on imports are handled. It is assumed that imports of goods are only available on a CIF basis. Within the balance of payments figures for imports of services, however, the figures of 6 and 4 will be included in the imports of services of these products. Thus column 26 shows the necessary adjustments. The negative entries of 6 and 4 are offset within the column by an adjustment item of 10 in a special row for the CIF/FOB adjustment. This in turn is offset by a negative entry in the same row within the column for the import of goods (column 27).

Table 14.12: Supply and use tables at purchasers' prices

Supply of products	Total supply at purchasers' prices				Output by industries (by ISIC Categories)											Sub-total market
	Total supply (basic prices)	Trade and transport margins	Taxes on products	Subsidies on products (-)	Market											
					Agriculture, forestry and fishing	Manufacturing and other industry	Construction	Trade, transport, accommodation and food	Information and communication	Finance and insurance	Real estate activities	Business services	Education, human health and social work	R-T and U		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
<i>Products (by CPC sections)</i>																
1 Agriculture, forestry and fishery products (0)	128	2	5	-3	122	78	0	0	0	0	0	0	0	0	0	78
2 Ores and minerals; electricity, gas and water (1)	263	2	5	0	250	0	195	0	0	0	0	0	0	0	0	195
3 Manufacturing (2-4)	2 161	74	94	-5	1 996	0	1 650	6	24	18	0	0	9	0	0	1 707
4 Construction (5)	261	0	17	0	244	0	7	201	3	2	0	0	0	0	0	213
5 Trade, accommodation, food & beverages; transport services (6)	216	-78	5	0	289	0	6	1	226	0	0	0	0	0	0	233
6 Finance and Insurance (7 less 72-73)	159	0	0	0	159	0	0	0	0	0	146	0	0	0	0	146
7 Real estate services; and rental and leasing services (72-73)	195	0	0	0	195	0	2	0	4	0	0	94	0	0	0	100
8 Business and production services (8)	272	0	11	0	261	0	1	0	3	80	0	0	172	0	0	256
9 Community and social services (92-93)	275	0	0	0	275	0	0	0	0	0	0	0	0	63	0	63
10 Other services (94-99)	95	0	4	0	91	0	0	0	2	0	0	0	2	0	82	86
11 Public administration (91)	91				91											
12 CIF/FOB adjustment on imports	0				0											
13 Direct purchases abroad by residents	43				43											
14 Total	4 159	0	141	-8	4 026	78	1 861	208	262	100	146	94	183	63	82	3 077

Use of products	Total supply at purchasers' prices				Intermediate consumption of industries (by ISIC categories)											Sub-total market
	Total supply (basic prices)	Taxes on products	Subsidies on products		Market											
					Agriculture, forestry and fishing	Manufacturing and other industry	Construction	Trade, transport, accommodation and food	Information and communication	Finance and insurance	Real estate activities	Business services	Education, human health and social work	R-T and U		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
<i>Products (by CPC section)</i>																
Total uses																
1 Agriculture, forestry and fishery products (0)	128					2	71	0	3	1	2	1	2	0	0	82
2 Ores and minerals; electricity, gas and water (1)	263					3	190	1	6	3	2	1	2	0	0	208
3 Manufacturing (2-4)	2 161					27	675	63	44	16	16	9	19	4	5	878
4 Construction (5)	261					1	9	5	3	1	1	1	1	0	0	22
5 Trade, accommodation, food & beverages; transport services (6)	216					3	65	3	25	4	4	2	4	0	0	110
6 Finance and Insurance (7 less 72-73)	159					1	36	5	18	1	3	3	7	1	1	76
7 Real estate services; and rental and leasing services (72-73)	195					1	15	1	8	2	5	2	4	0	1	39
8 Business and production services (8)	272					2	70	12	15	10	18	9	19	7	9	171
9 Community and social services (92-93)	275					0	1	0	0	0	0	0	1	0	0	2
10 Other services (94-99)	95					1	1	0	1	1	1	0	1	0	0	6
11 Public administration (91)	168					0	0	0	0	0	0	0	0	0	0	0
12 Direct purchases abroad by residents	43															0
13 Domestic purchases by non-residents	0															0
14 Total	4 236					41	1 133	90	123	39	52	28	60	12	16	1 594
15 Total gross value added/GDP			141	-8		37	728	118	139	61	94	66	123	51	66	1 483
16 Compensation of employees						19	547	79	102	32	44	49	79	43	47	1 041
17 Taxes less subsidies on production and imports			141	-8		-2	43	5	-5	-1	4	6	4	1	1	56
18 Mixed income, gross						4	30	3	9	0	0	0	0	0	0	46
19 Operating surplus, gross						16	108	31	33	30	46	11	40	7	18	340
20 Consumption of fixed capital -mixed income						1	3	0	1	0	0	0	0	0	0	5
21 Consumption of fixed capital - other						8	80	11	30	7	12	5	12	1	2	168
22 Total output						78	1 861	208	262	100	146	94	183	63	82	3 077
23 Labour inputs (hours worked)						1 840	31 962	4 244	8 786	1 332	1 290	920	1 562	494	642	53 072
24 Gross fixed capital formation						10	122	8	49	14	7	5	7	1	2	225
25 Closing stocks of fixed assets						142	1 861	143	731	208	143	102	147	22	29	3 528

Table 14.12 (cont): Supply and use tables at purchasers' prices

	Own final use							Non-market			Total industry	Total economy	Imports		
	Agriculture, forestry and fishing	Construction	Real estate and private household services	Sub-total own final use	Education, human health and social services	Public Administration	Sub-total non-market	Total economy	CIFFOB adjustments on imports	Imports			Goods	Services	
															(A)
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)			
1	9	0	0	9	0	0	0	87			37				
2	0	0	0	0	0	0	0	195			61				
3	2	5	0	7	0	0	0	1 714			284				
4	0	31	0	31	0	0	0	244							
5	0	0	0	0	0	0	0	233		- 6		62			
6	0	0	0	0	0	0	0	146		- 4		17			
7	0	0	95	95	0	0	0	195							
8	0	0	0	0	0	0	0	256				5			
9	0	0	0	0	212	0	212	275				0			
10	0	0	5	5	0	0	0	91				0			
11						168	168	168							
12										10	- 10				
13											20	23			
14	11	36	100	147	212	168	380	3 604		0	392	107			

	Intermediate consumption of industries (by ISIC categories)							Final consumption expenditure						Gross capital formation							
	Own final use				Non-market			Total industry	Total economy	Exports		Sub-total final consumption expenditure	Households	NPISHs	General government			Sub-total gross capital formation	Gross fixed capital formation	Changes in inventories	Acquisition less disposals of valuables
	Agriculture, forestry and fishing	Construction	Real estate and private household services	Sub-total own final use	Education, human health and social services	Public Administration	Sub-total non-market			Goods	Services				Sub-total	Collective	Individual				
(A)	(F)	(L)	(20)	(P-Q)	(O)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
1	1	0	0	1	3	2	5	88		7	0	30	28	0	2	0	2	3	2	1	
2	0	0	0	0	5	4	9	217		7	0	40	40	0	0	0	0	- 1	0	- 1	
3	5	17	10	32	42	38	80	990		422	0	573	570	0	3	0	3	176	161	5	10
4	0	0	0	0	11	7	18	40		6	0	2	2	0	0	0	0	213	190	23	
5	0	0	0	0	4	5	9	119		0	55	42	42	0	0	0	0				
6	0	2	3	5	6	17	23	104		0	2	53	53	0	0	0	0				
7	0	0	0	0	8	10	18	57		0	1	115	115	0	0	0	0	22	22	0	
8	0	5	7	12	15	24	39	222		0	9	40	40	0	0	0	0	1	1	0	
9	0	0	0	0	24	8	32	34		0	2	239	21	14	204	0	204				
10	0	0	0	0	2	2	4	10		0	0	85	85	0	0	0	0				
11	0	0	0	0	1	1	2	2		0	0	166	5	2	159	156	3				
12												43	43								
13										20	9	- 29	- 29								
14	6	24	20	50	121	118	239	1 883		462	78	1 399	1 015	16	368	156	212	414	376	28	10
15	5	12	80	97	91	50	141	1 721	1 854												
16	0	0	0	0	70	39	109	1 150	1 150												
17	0	0	0	0	1	1	2	58	191												
18	3	12	0	15				61	61												
19	2	0	80	82	20	10	30	452	452												
20	3	0	0	3				8	8												
21	1	0	15	16	20	10	30	214	214												
22	11	36	100	147	212	168	380	3 604													
23	218	780	0	998	7 299	8 000	15 299	69 369													
24	1	1	124	126	13	12	25	376													
25	17	17	1 851	1 885	201	169	370	5 783													

Chapter 15: Price and volume measures

A. Introduction

15.1 Chapter 14 describes how the goods and services account may be compiled and elaborated within a supply and use table. The changes in the values of flows of goods and services can be directly factored into two components, one reflecting changes in the prices of the goods and services concerned and the other the changes in their volumes. One major advantage of compiling price and volume measures within an accounting framework, such as that provided by the supply and use tables, is that a check is provided on the numerical consistency and reliability of the set of measures as a whole. This is particularly important when every flow of goods and services in the economy has to be covered, including non-market goods and services whose valuation is even more difficult in volume terms than at current prices.

15.2 Another advantage of compiling price and volume measures within an accounting framework is that implicit price or volume measures can be derived for certain important balancing items. In particular, gross value added can be measured in real terms by subtracting intermediate consumption in volume terms from output in volume terms, the so-called “double deflation” method. Double deflation may be used at the level of an individual enterprise, industry or sector. However, the primary objective of the SNA is not simply to provide guidelines on measures of changes in prices and volumes for the main aggregates of the SNA but to assemble a set of interdependent measures that make it possible to carry out systematic and detailed analyses of inflation and economic growth.

1. Index number theory

15.3 Section B gives an overview of the theory of index numbers as applied in the SNA. There have been significant developments in this area over the last decade. New manuals have been published on the theory and practice of consumer price indices (CPIs) and on producer price indices (PPIs). These are *Consumer Price Index Manual: Theory and Practice*, (International Labour Organization, International Monetary Fund, Organisation for Economic and Co-operation and Development, Eurostat, United Nations Economic Commission for Europe and World Bank (2004)) and *Producer Price Index Manual: Theory and Practice*, (International Labour Organization, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, Economic Commission for Europe and the World Bank (2004).) A further manual on export

and import price indices (XMPPIs), *Export and Import Price Index Manual: Theory and Practice* (International Labour Organization, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations Economic Commission for Europe and World Bank (2009)). These manuals have been prepared with a common structure to help readers. In particular chapter 14 of the CPI and PPI manuals and chapter 15 of the XMPPI manual outline how such indices fit into the framework of the SNA.

15.4 The first topic in section B concerns the choice of an appropriate methodology for compiling inter-temporal price and volume measures for flows of goods and services in a national accounting context. Section B also deals with the consequences of price variation due to price discrimination; that is, how to treat goods or services that are sold to different purchasers on the same market in the same period at different prices. Such differences need to be clearly distinguished from price differences attributable to differences in qualities. This section also discusses the treatment of changes in quality over time, including the appearance of new products and the disappearance of old products.

2. Inter-temporal price and volume series

15.5 Section C shows how the considerations in section B can be applied to the SNA and time series of volumes and prices be derived. It discusses not only the elements of the goods and services account but also how stocks of non-financial assets can be decomposed into price and volume elements. Further, the section addresses the question of expressing key aggregates of the SNA that do not themselves have price and volume components in real terms, allowing an analysis of the impact of terms of trade on national income, for instance.

15.6 Like section B, section C does not aim to be exhaustive in its coverage but draws on, and refers to, other manuals developed over the last decade, specifically the *Handbook on Price and Volume Measures in National Accounts* (Eurostat, 2001) and chapter IX of *Quarterly National Accounts Manual: Concepts, Data Sources and Compilation* (International Monetary Fund (IMF), 2001b).

3. International price comparisons

- 15.7 Although most price and volume index numbers were developed to measure changes in prices and volumes over time, they can also be adapted to compare levels of prices and volumes between different regions or countries in the same period of time. Such comparisons are needed in order to be able to compare standards of living, levels of economic development or levels of productivity in different countries.
- 15.8 These topics are addressed in section D, first in theoretical terms and then in terms of the implications for national

accountants. The *Global Purchasing Power Parities and Real Expenditure - 2005 International Comparison Program Methodological Handbook* (World Bank, 2008) describes the methodology underlying the 2005 round of the International Comparison Program (ICP).

4. Further information

- 15.9 This chapter aims to do no more than introduce the most important concepts and considerations of the application of index number theory to the derivations of volume series within the SNA. Further information should be sought from the other manuals cited.

B. An overview of index number theory

1. Quantities, prices and values

- 15.10 For each individual type of good or service it is necessary to specify an appropriate quantity unit in which that good or service can be measured. Goods or services may be supplied in units that are either discrete or continuously variable. Automobiles, aircraft, microcomputers, haircuts and appendectomies are examples of goods or services provided in discrete or integral units. The quantities of such goods and services are obtained simply by counting the number of units. Oil, electricity, sugar and transportation are examples of goods or services provided in units that vary continuously in respect of characteristics such as weight, volume, power, duration and distance. The choice of physical unit, and its price in relation to the unit selected, is therefore a matter of convenience. For example, the price quoted per tonne is one thousand times greater than one quoted per kilo. As long as the price is expressed in a manner consistent with the unit of volume, the value (v) at the level of a single, homogeneous good or service is equal to the price per unit of quantity (p) multiplied by the number of quantity units (q), that is: $v = p \times q$.

Additivity of quantities, prices and values

- 15.11 Certain important properties in relation to the additivity of quantities, prices and values may be briefly noted:
- Quantities are additive only for a single homogeneous product. For example, it is not economically meaningful to add 10 tonnes of coal to 20 tonnes of sugar. Less obviously, the addition of 10 automobiles of one type to 20 automobiles of another type would not be economically meaningful either if they differ in quality.
 - The price of a good or service is defined as the value of one unit of that good or service.** It varies directly with the size of the unit of quantity selected and in many cases can be made to vary arbitrarily by changing the unit of quantity, for example, by choosing to measure in tonnes instead of in

kilograms. Prices, like quantities, are not additive across different goods or services. An average of the prices of different goods or services has no economic significance and cannot be used to measure price changes over time.

- Values are expressed in terms of a common unit of currency and are additive across different products. Values are invariant to the choice of quantity unit.
- 15.12 In a market system, the relative prices of different goods and services should reflect both their relative costs of production and their relative utilities to purchasers, whether the latter intend to use them for production or consumption. Relative costs and relative utilities influence the rates at which sellers and buyers are prepared to exchange goods and services on markets. An aggregation of the values of different goods and services necessarily reflects the choices of which goods and services have been produced and consumed at the currently prevailing prices.

Volume, quantity, price and unit value indices

- 15.13 **A volume index is an average of the proportionate changes in the quantities of a specified set of goods or services between two periods of time.** The quantities compared over time must be those for homogeneous items and the resulting quantity changes for different goods and services must be weighted by their economic importance, as measured by their relative values in one or other, or both, periods. For this reason volume is a more correct and appropriate term than quantity in order to emphasize that quantities must be adjusted to reflect changes in quality.
- 15.14 Unfortunately, it may sometimes happen, especially in the field of foreign trade statistics based on customs documentation, that the data from which price and volume indices have to be calculated are not sufficiently detailed or are otherwise inadequate for the purpose. For example, the basic information available may be limited to the total number of units of some group of products imported or exported, or their total weight, for example, the total number of pairs of

shoes, or total weight of equipment of a certain type. Indices built up from information of this kind are not volume indices when the numbers, or weights, cover different items selling at different prices. They are sometimes described as “quantity indices” for this reason. The “price” indices associated with such indices are usually described as average or “unit value” indices. Unit value indices measure the change in the average value of units that are not necessarily homogeneous and may be affected by changes in the mix of items as well as by changes in their prices. Unit value indices cannot therefore be expected to provide good measures of average price changes over time for groups of non-homogeneous items.

2. Inter-temporal index numbers of prices and volumes

- 15.15 The index numbers of interest within the SNA are designed to decompose changes in value aggregates into their overall change in price and volume components. A price index can be written and calculated as a weighted average of the proportionate changes in the prices of a specified set of goods and services between two periods of time, say a reference period 0 and current period t . Similarly, a volume index can be written and calculated as a weighted average of the proportionate changes in the volumes of a specified set of goods and services between two periods of time, say a reference period 0 and current period t . There are many index number formulae differing from each other mainly in the weights which they attach to the individual price or quantity relatives and the particular form of average used, whether it is arithmetic, geometric, harmonic, etc. These alternative formulae, their properties and relative merits, are outlined in detail in the CPI and PPI manuals.

Laspeyres and Paasche indices

- 15.16 The two most commonly used index formulae are the Laspeyres and Paasche indices. The Laspeyres price index (L_p) is defined as a weighted arithmetic average of the price relatives using the value shares of the reference period 0 as weights:

$$L_p = \sum_{i=1}^n \left(\frac{p_i^t}{p_i^0} \right) s_i^0 = \frac{\sum_{i=1}^n \left(\frac{p_i^t}{p_i^0} \right) p_i^0 q_i^0}{\sum_{i=1}^n p_i^0 q_i^0} \equiv \frac{\sum_{i=1}^n p_i^t q_i^0}{\sum_{i=1}^n p_i^0 q_i^0} \quad (1)$$

that is, where p_i^0 , q_i^0 and $v_i^0 = p_i^0 \times q_i^0$ are the prices, quantities and values in period 0 of $i=1, \dots, n$ products and $s_i^0 = v_i^0 / \sum_{i=1}^n v_i^0$, the value shares in period 0. Similar expressions with superscripts t refer to period t .

- 15.17 Note from (1) that the Laspeyres price index can be defined as the change in value of a basket of products whose composition is kept fixed as it was in the reference period 0. The Laspeyres volume index (L_Q) can be similarly defined

as the change in the value of a basket whose composition every period is updated but the prices of the reference period 0 are applied to the new quantities (or volumes), that is:

$$L_Q = \sum_{i=1}^n \left(\frac{q_i^t}{q_i^0} \right) s_i^0 \equiv \frac{\sum_{i=1}^n p_i^0 q_i^t}{\sum_{i=1}^n p_i^0 q_i^0} \quad (2)$$

- 15.18 Paasche indices also exist in both price and volume forms. The Paasche index differs from the Laspeyres index in two respects. It uses a harmonic mean instead of an arithmetic average and the fixed period volumes or prices are those of the current period t . The Paasche price index is given by:

$$P_p = \left[\sum_{i=1}^n \left(\frac{p_i^t}{p_i^0} \right)^{-1} s_i^t \right]^{-1} \equiv \frac{\sum_{i=1}^n p_i^t q_i^t}{\sum_{i=1}^n p_i^0 q_i^t} \quad (3)$$

and a Paasche volume index, with fixed current period weights or prices, by:

$$P_Q = \left[\sum_{i=1}^n \left(\frac{q_i^t}{q_i^0} \right)^{-1} s_i^t \right]^{-1} \equiv \frac{\sum_{i=1}^n p_i^t q_i^t}{\sum_{i=1}^n p_i^t q_i^0} \quad (4)$$

Deflation and volume series using Laspeyres and Paasche formulae

- 15.19 The index of the change in monetary values between two periods, $I_V = \sum_{i=1}^n v_i^t / \sum_{i=1}^n v_i^{t-1}$, reflects the combined effects of both price and quantity changes. When Laspeyres and Paasche indices are used, the value change will exactly decompose into a price index times a volume index only if the Laspeyres price index is matched with the Paasche volume index, that is: $L_p \times P_Q = I_V$ or the Laspeyres volume

index is matched with the Paasche price index $L_Q \times P_p = I_V$. For example, a price index, 1.05 representing a 5 per cent change multiplied by a volume index of 1.08, an 8 per cent change, yields a value change index of 1.134, a 13.4 per cent change.

- 15.20 This relationship can be exploited whenever the total current values for both periods are known and either of a price or volume index. Suppose, for example, compilers want to derive a volume index. Laspeyres and Paasche volume indices are derived by dividing (deflating) the value change by appropriate price indices: $L_Q = I_V / P_p$ and $P_Q = I_V / L_p$ respectively. Note that L_Q from the right-hand side of equation (2) generates a time series of Laspeyres volume indices, for periods $t = 1, \dots, T$ of:

$$\frac{\sum_{i=1}^n p_i^0 q_i^1, \sum_{i=1}^n p_i^0 q_i^2, \dots, \sum_{i=1}^n p_i^0 q_i^T}{\sum_{i=1}^n p_i^0 q_i^0, \sum_{i=1}^n p_i^0 q_i^0, \dots, \sum_{i=1}^n p_i^0 q_i^0} \quad (5)$$

Multiplying through the series by the common denominator $\sum_{i=1}^n p_i^0 q_i^0$ yields the volume series:

$$\sum_{i=1}^n p_i^0 q_i^1, \sum_{i=1}^n p_i^0 q_i^2, \dots, \sum_{i=1}^n p_i^0 q_i^T \quad (6)$$

The relative movements from period to period for this series are identical with those of the associated Laspeyres volume indices given by (5), the two series differing only by a scalar that is the value in period 0.

- 15.21 Series using the prices of a base year throughout, as illustrated by (6), are easy to understand but are not best practice in national accounts if the time period T is a lengthy one over which there are changes in the structure of the economy. For example, if volume changes are measured over a 10 year period, say 1995 to 2005, at constant 1995 prices, then the volume movements in later years are based on a price configuration that is likely to have changed. A better practice is to change the weights of (rebase) the Paasche deflator in 2000 and link the resulting index to the 1999 one. The resulting volume series over the 10 year period will no longer be at constant 1995 prices, but be a more representative volume index. Even better practice, resources permitting, is to form a series of annual bilateral links of constant price comparisons. It is preferable to use the term volume series to describe such series rather than “in” or “at constant prices”.

Paragraphs 15.22 to 15.35 contain more information on index number theory.

3. Chain indices

The rebasing and linking of indices

- 15.36 As noted in the previous section, over time the pattern of relative prices in the base period tends to become progressively less relevant to the economic situations of later periods to the point where it becomes unacceptable to continue using them to measure volume changes from one period to the next. It is then necessary to update the weights. With long time series, it is as inappropriate to use the most current weights for a date long in the past as it is to use the weights from a long time in the past for the current period. It is therefore necessary to link the old series to the new reweighted series by multiplication. This is a simple numerical operation requiring estimates for an overlapping period of the index or series calculated using both the old and new weights.
- 15.37 The linking calculation can be undertaken in a number of ways. The current index on the new weights can be multiplied by a linking coefficient of the old to new index to con-

vert the new index to the old index reference period. Alternatively, the index may have its reference period changed at the time of the introduction of new weights and the old index may be revised by dividing it by the linking coefficient. The process of linking an old series and a new one by means of a link for an overlap period is referred to as chaining.

- 15.38 Whether the chaining is done so as to preserve the earlier reference period in the new series or to change the reference period of the old series to the new one, the calculations have to be undertaken at each level of aggregation. Each component as well as each aggregate has to be linked individually because of non-additivity.

Paragraphs 15.39 to 15.55 develop the ideas of chained indexes.

Chaining and data coverage

- 15.56 One major practical problem in the construction of index numbers is the fact that products are continually disappearing from markets to be replaced by new products as a result of technological progress, new discoveries, changes in tastes and fashions, and catastrophes of one kind or another. Price and volume indices are compiled by comparing the prices or quantities of goods of the same characteristics or quality (that is, homogenous goods) over time. This is not easy in product areas such as personal computers where quality changes rapidly.
- 15.57 Chaining helps ameliorate the problems of such constant quality comparisons since the likelihood of an overlap of a product in two consecutive price periods is almost bound to be greatest and the chain indices can accommodate the changes in weight that accompany a new and a disappearing product.

Variables that change sign

- 15.62 Index number formulae are generally not applicable to time series that can take positive, negative and zero values. Nevertheless, there are ways of deriving pseudo chain volume series expressed in terms of monetary values in such cases. The most commonly used approach is to identify two associated time series that take only positive values and are such that when differenced yield the target series. An example is the stock of inventories at the start and end of the period as opposed to the change during the period. Chain volume series are not additive and so it is evident that this is an imperfect method since by construction an additive relationship is produced. It follows that the series to be differenced should be as closely aligned in terms of price and volume composition as possible with the target series. Hence, a chain volume series of changes in inventories is derived as a chain volume series of closing inventories less a chain volume series of opening inventories. Sometimes public gross fixed capital formation can take negative values as a result of the sale of assets to the private sector, in which case the chain volume series of acquisitions and sales could be differenced.

4. Causes of price variation

Price variation due to quality differences

- 15.64 In general, most types of goods or services, whether simple food products such as potatoes or high technology products such as computers, are available on the market in many different qualities whose physical characteristics differ from each other. For example, potatoes may be old or new, red or white, washed or unwashed, loose or pre-packed, graded or ungraded. Consumers recognize and appreciate the differences and are prepared to pay different prices. For some goods and services, such as personal computers and telecommunication services, there is a rapid turnover in the highly differentiated varieties and this, as considered below, creates severe problems for the measurement of price changes.
- 15.65 The same generic term, such as potato, computer or transportation is used to describe goods and services that differ from each other in their price-determining characteristics. The price or quantity of a good or service of one quality cannot be directly compared to that of a different quality. Different qualities have to be treated in exactly the same way as different kinds of goods or services.
- 15.66 Differences in quality may be attributable to differences in the physical characteristics of the goods or services concerned and be easily recognized, but not all differences in quality are of this kind. Goods or services delivered in different locations, or at different times, such as seasonal fruits and vegetables, must be treated as different qualities even if they are otherwise physically identical. The conditions of sale, or circumstances or environment in which the goods or services are supplied or delivered can make an important contribution to differences in quality. For example, a durable good sold with a guarantee, or free after-sales service is higher quality than the same good sold without guarantee or service. The same goods or services sold by different kinds of retailers, such as local shops, specialist shops, department stores or supermarkets may have to be treated as different qualities.
- 15.67 It is generally assumed in economic analysis that whenever a difference in price is found between two goods and services that appear to be physically identical there must be some other factor, such as location, timing or conditions of sale, that is introducing a difference in quality. Otherwise, it can be argued that the difference could not persist, as rational purchasers would always buy lower priced items and no sales would take place at higher prices.
- 15.68 When there is price variation for the same quality of good or service, the price relatives used for index number calculation should be defined as the ratio of the weighted average price of that good or service in the two periods, the weights being the relative quantities sold at each price. Suppose, for example, that a certain quantity of a particular good or service is sold at a lower price to a particular category of purchaser without any difference whatsoever in the nature of the good or service offered, location, timing or

conditions of sale, or other factors. A subsequent decrease in the proportion sold at the lower price raises the average price paid by purchasers for quantities of a good or service whose quality is the same and remains unchanged, by assumption. It also raises the average price received by the seller without any change in quality. This must be recorded as a price and not a volume increase.

Price variation without quality differences

- 15.69 Nevertheless, it must be questioned whether the existence of observed price differences always implies corresponding differences in quality. There are strong assumptions underlying the standard argument which are seldom made explicit and are often not satisfied in practice: for example, that purchasers are well informed and that they are free to choose between goods and services offered at different prices.
- 15.70 In the first place, purchasers may not be properly informed about existing price differences and may therefore inadvertently buy at higher prices. While they may be expected to search for the lowest prices, costs are incurred in the process. Given the uncertainty and lack of information, the potential costs incurred by searching for outlets in which there is only a possibility that the same goods and services may be sold at lower prices may be greater than the potential savings, so that a rational purchaser may be prepared to accept the risk that he or she may not be buying at the lowest price. Situations in which the individual buyers or sellers negotiate, or bargain over prices, provide further examples in which purchasers may inadvertently buy at a higher price than may be found elsewhere. On the other hand, the difference between the average price of a good purchased in a market or bazaar in which individual purchasers bargain over the price and the price of the same good sold in a different type of retail outlet, such as a department store, should normally be treated as reflecting differences in quality attributable to the differing conditions under which the goods are sold.

Price discrimination

- 15.71 Secondly, purchasers may not be free to choose the price at which they purchase because the seller may be in a position to charge different prices to different categories of purchasers for identical goods and services sold under exactly the same circumstances, in other words, to practise price discrimination. Economic theory shows that sellers have an incentive to practise price discrimination as it enables them to increase their revenues and profits. However, it is difficult to discriminate when purchasers can retrade amongst themselves, that is, when purchasers buying at the lowest prices can resell the goods to other purchasers. While most goods can be retraded, it is usually impossible to retrade services, and for this reason price discrimination is extensively practised in industries such as transportation, finance, business services, health, education, etc., in most countries. Lower prices are typically charged to purchasers with low incomes, or low average incomes, such as pensioners or students. When governments practise or encour-

age the practice of price discrimination it is usually justified on welfare grounds, but market producers also have reasons to discriminate in favour of households with low incomes as this may enable them to increase their profits. Thus, when different prices are charged to different consumers it is essential to establish whether or not there are in fact any quality differences associated with the lower prices. For example, if senior citizens, students or schoolchildren are charged lower fares for travelling on planes, trains or buses, at whatever time they choose to travel, this must be treated as pure price discrimination. However, if they are charged lower fares on condition that they travel only at certain times, typically off-peak times, they are being offered lower quality transportation.

The existence of parallel markets

- 15.72 Thirdly, buyers may be unable to buy as much as they would like at a lower price because there is insufficient supply available at that price. This situation typically occurs when there are two parallel markets. There may be a primary, or official, market in which the quantities sold, and the prices at which they are sold, are subject to government or official control, while there may be a secondary market, either a free market or unofficial market, whose existence may or may not be recognized officially. If the quantities available at the price set in the official market are limited there may be excess demand so that supplies have to be allocated by rationing or some form of queuing. As a result, the price on the secondary or unofficial market will tend to be higher. It is also possible, but less likely, that lower prices are charged on the secondary or unofficial market, perhaps because the payment of taxes on products can be evaded in such a market.
- 15.73 For the three reasons just given, lack of information, price discrimination or the existence of parallel markets, identical goods or services may sometimes be sold to different purchasers at different prices. Thus, the existence of different prices does not always reflect corresponding differences in the qualities of the goods or services sold.
- 15.74 When there is price variation for the same quality of good or service, the price relatives used for index number calculation should be defined as the ratio of the weighted average price of that good or service in the two periods, the weights being the relative quantities sold at each price. Suppose, for example, that a certain quantity of a particular good or service is sold at a lower price to a particular category of purchaser without any difference whatsoever in the nature of the good or service offered, location, timing or conditions of sale, or other factors. A subsequent decrease in the proportion sold at the lower price raises the average price paid by purchasers for quantities of a good or service whose quality is the same and remains unchanged, by assumption. It also raises the average price received by the seller without any change in quality. This must be recorded as a price and not a volume increase.
- 15.75 It may be difficult to distinguish genuine price discrimination from situations in which the different prices reflect dif-

ferences in quality. Nevertheless, there may be situations in which large producers (especially large service producers in fields such as transportation, education or health) are able to make the distinction and provide the necessary information. If there is doubt as to whether the price differences constitute price discrimination, it seems preferable to assume that they reflect quality differences, as they have always been assumed to do so in the past.

5. The measurement of changes in quality over time

- 15.76 Goods and services and the conditions under which they are marketed are continually changing over time, with some goods or services disappearing from the market and new qualities or new goods or services replacing them. National accountants use disaggregated price indices to deflate changes in consumption, production and investment values as the principle means of determining volume changes in such aggregates. Deficiencies in price indices carry over to estimates of volume changes. For example, estimates of price indices for computers that do not fully incorporate the increases in quality over time will overstate price changes and understate volume changes. National accountants need to be aware of the extent and nature of methods used by price compilers to take account of such quality changes, if they are to use them properly as deflators. This in turn requires that price compilers keep explanatory notes on such methods used, a policy advocated by chapter 8 in each of the CPI and PPI manuals.
- 15.77 There are, of course, costs associated with implementing quality adjustment procedures tailored to the specific product groups. What is important for national accountants and price index compilers to appreciate is that quality change is an increasing feature of product markets. The default procedures of dealing with quality change, specifically by treating all replacements as comparable, or dropping varieties from the sample if missing, implicitly incorporate valuations of quality differences. Such valuations are unlikely to be appropriate and improvements can and should be made.
- 15.78 An unfortunate common procedure to deal with missing values is to carry forward the price from the previous period into the current period. This may well bias the index and is strongly discouraged.
- 15.79 A brief overview of some of the more common techniques follows. More extensive discussion can be found in all the three price manuals, those for CPI, PPI and XMPI. The techniques can be divided into those that are direct or explicit methods and those that are indirect or implicit.
- ### Direct methods
- 15.80 In principle, the price relatives that enter into the calculation of inter-temporal price indices should measure pure price changes by comparing the prices of a representative sample of identical goods and services in different time periods. This is called the matched-models method. Price

index compilers maintain detailed product descriptions of the items being priced in successive periods to ensure proper matching. When a model is missing because it is obsolete, a problem of quality adjustment arises. A number of methods can be used to take account of the quality change in order to continue the series.

- 15.81 One possibility is to use the estimated relative costs of production as the basis for estimates of their relative prices and hence their relative qualities. It may often be feasible for producers to provide such estimates. If, however, the new quality feature was available as an option in the previous period, but now is a standard feature, the estimate of the valuation of the quality change may be based on the (relative) price of this option.
- 15.82 An extension of the costs of production approach is known as model pricing. It is often applied to products made to order. A particular case in point is measuring building costs. The characteristics of buildings and other structures are so variable that it may be almost impossible to find identical buildings and structures being produced in successive periods of time. In these circumstances, a small number of hypothetical and relatively simple standard buildings and structures may be specified and their prices estimated in each of the periods. The specifications of these standard buildings or structures are chosen on the advice of construction experts who are also asked to estimate what their prices would be in each of the periods. Model pricing for services is described in *Methodological Guide for Developing Producer Price Indices for Services*. (Eurostat and the Organisation for Economic Co-operation and Development, 2005)

Hedonics

- 15.83 A more general and powerful method of dealing with changes in quality is to make use of estimates from hedonic regression equations. Hedonic regression equations relate the observed market prices of different models to certain measurable price-determining characteristics. Provided sufficiently many differentiated models are on sale at the same time, the estimated regression equation can be used to determine by how much prices vary in relation to each of the characteristics or to predict the prices of models with different mixes of characteristics that are not actually on sale in the period in question.
- 15.84 Hedonic regression equations have been estimated for high technology goods such as computers and electronic goods and for services such as air transportation. The technique has also been used for housing by regressing house prices (or rents) on characteristics such as area of floor space, number of rooms or location. The method has been used not only for inter-temporal price measurements but also for international comparisons.

Indirect methods

- 15.85 When the two qualities are not produced and sold on the market at the same time it becomes necessary to resort to indirect methods of quantifying the change in quality between the old and new qualities. In such cases it is necessary to estimate what would be the relative prices of the old and new models, or qualities, if they were produced and sold on the market at the same time and to use the estimated relative prices to determine measures of the relative qualities.
- 15.86 When a model is missing a replacement of a comparable quality may be found and the price comparisons continued. If there is no comparable replacement, the price in the missing period may be imputed using the measured price changes of a product group expected to experience similar price changes. Dropping the product from the calculation is equivalent to an imputation that assumes the price change for the missing model would follow those of all goods and services in the index. The assumptions behind such imputations are less soundly based than those behind the more targeted imputation. In either case, items subject to quality change tend to be atypical and unrepresentative, so that assuming that their prices change at the same rate as for goods or services whose characteristics do not change is questionable.
- 15.87 If the replacement model is not directly comparable in quality, then the price change of the new model may be readily linked to the price series of the old one if the two models are for sale in the market at the same time, in an overlap period. The implicit assumption is that the difference in prices at the time of the overlap link is a good valuation of the difference in quality, an assumption that will not be valid if the overlap period is at an unusual point in time in the model's life cycle, for example when it is about to become obsolete and discontinued or has just been introduced at an unusually high price to obtain temporary monopoly profits in a segmented market.

Rapidly changing differentiated product markets

- 15.88 Problems of adjusting price changes for changes in quality in product markets with a rapid turnover of differentiated varieties require special consideration. The matched model method breaks down. Models of like quality can only be compared over relatively short periods and are not representative of the overall market. The summation in index number formulae such as the Laspeyres price index in equation (1) is misleading since in period t the n items produced or consumed may be quite different from those on the market in period 0.
- 15.89 Price index number compilers use a short-run formulation to ameliorate the difficulties of comparing the prices of like with like when there is a rapid turnover in differentiated goods and services. A Laspeyres price index, for example, comparing prices in period 0 and t , is given as:

$$L_p = \frac{\sum_{i=1}^n p_i^0 q_i^0 \left(\frac{p_i^{t-1}}{p_i^0} \right) \left(\frac{p_i^t}{p_i^{t-1}} \right)}{\sum_{i=1}^n p_i^0 q_i^0} \quad (17)$$

15.90 If a new type of good, for example a digital camera, is introduced in period $t-1$ to replace a non-digital one, then the compiler has only to wait for the good to be on the market for two successive periods before it can be included in the index. This provides a mechanism for changing the representative items to include the new, higher quality, item within a product category that has an assigned weight. Additional weighting information may be required to augment the weighting given to cameras within the wider group. However, a chain formulation in which weights are regularly updated would be a better mechanism to achieve this.

15.91 While a chain index with a short-run formulation such as in equation (17) will ameliorate the measurement problem in markets with a rapid turnover of differentiated varieties, it cannot take account of the effect on the overall price change from period $t-1$ to period t of the new variety introduced in period t and of the old model that was dropped in period $t-1$. Two successive price quotes are required to implement the formula in (17) and a chain index. Hedonic indices are a means of incorporating such affects. They can take a number of forms, but essentially the prices and values of price-determining quality characteristics, say the speed, RAM, etc. of different varieties of personal computers are collected in each period. A Paasche-type hedonic imputation (or characteristics) price index would be derived by first estimating a hedonic regression of price on quality variables based on period $t-1$ data and then using the estimated coefficients to impute for $t-1$ the prices of the varieties available in period t , including those not available in $t-1$. Prices for period t characteristics valued at period t prices can be directly compared with the estimated period $t-1$ valuation of period t characteristics to yield a Paasche-type price index. A Laspeyres-type hedonic index can be similarly defined using an estimated period t regression and constant period $t-1$ characteristics set, as can a Fisher-type hedonic index as a geometric mean of the two. An alternative formulation is to pool the two sets of observations in periods 0 and t and include a dummy variable in the hedonic regression equation to distinguish observations in one period from those in the other. The coefficient on the dummy variable would be an estimate of the price change between the two periods having controlled for the effect of quality changes.

Further elaboration

15.92 A detailed account of all the methods referred to above is available in chapters 7 and 8 of the CPI and PPI manuals. These chapters include the use of imputations, overlap prices, comparable replacements, non-comparable replacements using estimates from production costs, option costs and hedonic regressions, as well as methods for markets

with a rapid turnover of differentiated varieties including short-run relatives, chaining, product augmentation and hedonic indices.

15.93 Further discussion of this topic can also be found in *Handbook on Hedonic Indices and Quality Adjustments in Price Indexes: Special Application to Information Technology Products* (Organisation for Economic Co-operation and Development, 2004).

6. Practical advantages of compiling chain indices

15.94 It has been shown on theoretical grounds that long time series of volume and price indices are best derived by being chained. The question is how often in the time series should a link occur. It has been argued that annual chaining is generally best on theoretical grounds, but what of the practicalities? There are a number of matters to consider, including data requirements, computing requirements, human resource requirements, loss of additivity, revisions and informing users.

- a. If annual current values and corresponding volume or price data are available, then annual chaining is possible. No other data are required.
- b. The computing requirements of deriving annual chain indices are greater than those for fixed-weighted Laspeyres-type indices and should not be attempted without adequate, tailored software. The complexity of the software needed depends on the formula used and the method of linking. For instance, it is quite simple to develop software to derive annually chained Laspeyres-type quarterly volume measures using the annual overlap method.
- c. Experience has shown that if the benefits of chain volume measures, along with the loss of additivity, are carefully explained to users via documentation and seminars before their introduction, chain volume measures are generally accepted. Particular attention should be given to informing the key users, including economic journalists, well beforehand.
- d. When volume estimates are rebased, say every five or ten years, then it is typically the case that the growth rates are revised. If price and volume relativities have been changing rapidly, then the changes in the growth rates can be dramatic. Such is usually the case for any aggregate in which computers have a significant share. With annual chaining history is only "rewritten" a little each year, not in one large jump every five or ten years. Not surprisingly, the sort of big revisions associated with chaining only every five or ten years can have a detrimental effect on user confidence in the national accounts, not least because users learn they can expect similar revisions in the future. Annual chaining not only measures changes better, it is likely to increase confidence in the resulting national accounts volume indices.

Section C contains practical guidance on the deflation of the various elements of the goods and services account. It

has been moved to the companion volume, *The 2008 SNA – compilation in brief*.

D. Measures of real income for the total economy

1. The concept of real income

15.181 Many flows in the SNA, such as cash transfers, do not have price and quantity dimensions of their own and cannot, therefore, be decomposed in the same way as flows related to goods and services. While such flows cannot be measured in volume terms they can nevertheless be measured “in real terms” by deflating their values with price indices in order to measure their real purchasing power over some selected basket of goods and services that serves as the numeraire.

15.182 It is possible by use of a numeraire to deflate any income flow in the accounts and even a balancing item such as saving may be deflated by a price index in order to measure the purchasing power of the item in question over a designated numeraire set of goods and services. By comparing the deflated value of the income with the actual value of the income in the base year, it is possible to determine by how much the purchasing power of the income has increased or decreased. Income deflated in this way is generally described as “real income”.

15.183 Despite the terminology used, “real” incomes are artificial constructs that are dependent on two points of reference.

- a. Real incomes are measured with reference to the price level in some selected reference year; they vary depending upon the choice of reference year.
- b. Real incomes measure changes in purchasing power over some selected numeraire; they vary according to the choice of numeraire.

15.184 As there may often be no obvious or uncontroversial choice of numeraire there has always been some reluctance to show real incomes in national accounts on the grounds that the choice of numeraire should be left to the user of the statistics and not the compiler. However, when major changes in prices occur, it can be argued that compilers of statistics are under an obligation to present at least some measures of real income. Not all users of the accounts have the opportunity, inclination or expertise to calculate the real incomes which may be most suited to their needs. Moreover, there is a demand from many users for multipurpose measures of real income, at least at the level of the economy as a whole and the purpose of this section is to indicate how such measures may be compiled.

2. Trading gains and losses from changes in the terms of trade

15.185 In a closed economy without exports or imports, GDP is equal to the sum of final consumption plus capital formation. This sum is described as domestic final expenditures. GDP is also a measure of the income generated in the economy by production. Although income cannot be expressed as the product of prices and volumes, if GDP can be deflated, then in effect this must also be a measure of income in real terms. However, with the inclusion of imports and exports, GDP is no longer identical to domestic final expenditure and deflation of GDP must allow for the deflation of imports and exports as well as of domestic final expenditures. Even if imports and exports are equal in current values, they usually have different prices so there is an impact on real income measures of import and export prices. This is generally done by considering the terms of trade and calculating what is known as the trading gains and losses from changes in the terms of trade.

15.186 Further, the total real income that residents derive from domestic production depends also on the rate at which exports may be traded against imports from the rest of the world.

15.187 *The terms of trade are defined as the ratio of the price of exports to the price of imports.* If the prices of a country’s exports rise faster (or fall more slowly) than the prices of its imports (that is, if its terms of trade improve) fewer exports are needed to pay for a given volume of imports so that at a given level of domestic production goods and services can be reallocated from exports to consumption or capital formation. Thus, an improvement in the terms of trade makes it possible for an increased volume of goods and services to be purchased by residents out of the incomes generated by a given level of domestic production.

15.188 *Real gross domestic income (real GDI) measures the purchasing power of the total incomes generated by domestic production.* It is a concept that exists in real terms only. When the terms of trade change there may be a significant divergence between the movements of GDP in volume terms and real GDI. The difference between the change in GDP in volume terms and real GDI is generally described as the “trading gain” (or loss) or, to turn this round, *the trading gain or loss from changes in the terms of trade is the difference between real GDI and GDP in volume terms.* The differences between movements in GDP in volume terms and real GDI are not always small. If imports and exports are large relative to GDP and if the commodity composition of the goods and services that make up imports

and exports is very different, the scope for potential trading gains and losses may be large. This may happen, for example, when the exports of a country consist mainly of a small number of primary products, such as cocoa, sugar or oil, while its imports consist mainly of manufactured products. Trading gains or losses, T , are usually measured by the following expression:

$$T = \frac{X - M}{P} - \left\{ \frac{X}{P_x} - \frac{M}{P_m} \right\} \quad (19)$$

where

X = exports at current values

M = imports at current values

P_x = the price index for exports

P_m = the price index for imports

P = a price index based on some selected numeraire.

P_x , P_m and P all equal 1 in the base year. The term in brackets measures the trade balance calculated at the export and import prices of the reference year whereas the first term measures the actual current trade balance deflated by the numeraire price index. It is perfectly possible for one to have a different sign from the other.

15.189 There is one important choice to be made in the measurement of trading gains or losses, the selection of the price index P with which to deflate the current trade balance. There is a large but inconclusive literature on this topic, but one point on which there is general agreement is that the choice of P can sometimes make a substantial difference to the results. Thus, the measurement of real GDI can sometimes be sensitive to the choice of P and this has prevented a consensus being reached on this issue.

15.190 It is not necessary to try to summarize here all the various arguments in favour of one deflator rather than another, but it is useful to indicate the main alternatives that have been advocated for P . They can be grouped into three classes, as follows.

- a. One possibility is to deflate the current balance, $X - M$, either by the import price index (which has been strongly advocated) or by the export price index, with some authorities arguing that the choice between P_m and P_x should depend on whether the current trade balance is negative or positive.
- b. The second possibility is to deflate the current balance by an average of P_m and P_x various different kinds of averages have been suggested, simple arithmetic or harmonic averages, or more complex trade weighted averages.

- c. The third possibility is to deflate the current balance by some general price index not derived from foreign trade; for example, the price index for gross domestic final expenditure, or the consumer price index.

15.191 The failure to agree on a single deflator reflects the fact that no one deflator is optimal in all circumstances. The choice of deflator may depend on factors such as whether the current balance of trade is in surplus or deficit, the size of imports and exports in relation to GDP, etc. On the other hand, there is general agreement that it is highly desirable and, for some countries vitally important, to calculate the trading gains and losses resulting from changes in the terms of trade. In order to resolve this deadlock it is recommended to proceed as follows:

- a. Trading gains or losses, as defined above, should be treated as an integral part of the SNA;
- b. The choice of appropriate deflator for the current trade balances should be left to the statistical authorities in a country, taking account of the particular circumstances of that country;
- c. If the statistical authorities within a country are uncertain what is the most appropriate general deflator P to be used, some average of the import and export price indices should be used, the simplest and most transparent average being an unweighted arithmetic average of the import and export price indices. (This is referred to in the specialist literature on the subject as the Geary method.)

15.192 These proposals are intended to ensure that the failure to agree on a common deflator does not prevent aggregate real income measures from being calculated. Some measure of the trading gain should always be calculated even if the same type of deflator is not employed by all countries. When there is uncertainty about the choice of deflator, an average of the import and the export price indices is likely to be suitable.

3. The interrelationship between volume measures of GDP and real income aggregates

15.193 The usual way to calculate real income figures is to start from real GDI and then follow the normal sequence of income aggregates, but with every intervening adjustment deflated to real terms. This is illustrated as follows:

- a. Gross domestic product in volume terms;

plus the trading gain or loss resulting from changes in the terms of trade;

- b. *equals* real gross domestic income;

plus real primary incomes receivable from abroad;

minus real primary incomes payable abroad;

- c. *equals* real gross national income;
plus real current transfers receivable from abroad;
minus real current transfers payable abroad;
- d. *equals* real gross national disposable income;
minus consumption of fixed capital in volume terms;
- e. *equals* real net national disposable income.
- 15.194 The transition from (a) to (b) is the trading gain from changes in the terms of trade explained immediately above. The steps needed in order to move from (b) to (d) above involve the deflation of flows between resident and non-resident institutional units, namely, primary incomes and current transfers receivable from abroad and payable to abroad. There may be no automatic choice of price deflator, but it is recommended that the purchasing power of these flows should be expressed in terms of a broadly based numeraire, specifically the set of goods and services that make up gross domestic final expenditure. This price index should, of course, be defined consistently with the volume and price indices for GDP.
- 15.195 Each step in the process should first be calculated for adjacent years in additive volume terms and longer series derived as chain indices.
- 15.196 A possible alternative approach is to move from GDP in volume terms to net domestic final expenditure in volume terms and then make a single adjustment for the impact on purchasing power of the current external balance using the deflator for net final domestic expenditure to reduce the current external balance to real terms. The advantage of this alternative is a single numeraire, the set of goods and services making up net domestic final expenditures being used throughout. It may be easier, therefore, to grasp the significance of real net national disposable income as this deflator is explicit.
- 15.197 However, the alternative framework measures the trading gain or loss by using the deflator for net domestic final expenditures as the general deflator P, for the trading gain or loss from changes in the terms of trade whereas it can be argued that P ought always to be based on flows which enter into foreign trade. On balance, therefore, the original framework presented above is to be preferred.

E. International price and volume comparisons

1. Introduction

- 15.198 Users want to compare GDP and its components not only over time for a given country or countries in analyzing economic growth, for example, but also across countries for a given time period in analyzing relative economic size. A commonly used method of making such comparisons is to adjust national accounts values to a common currency using exchange rates, which has the advantage that the data are readily available and completely up to date. This is adequate if users need a ranking of a country's relative spending power on the world market. However, it is not adequate for comparisons of productivity and standards of living because it does not adjust for the differences in price levels between countries and thus does not give a measure of countries' relative sizes in the volume of goods and services they produce.
- 15.199 Purchasing power parities (PPPs) are used in producing a reliable set of estimates of the levels of activity between countries, expressed in a common currency. *A purchasing power parity (PPP) is defined as the number of units of B's currency that are needed in B to purchase the same quantity of individual good or service as one unit of A's currency will purchase in A.* Typically, a PPP for a country is expressed in terms of the currency of a base country, with the US dollar commonly being used. PPPs are thus weighted averages of the relative prices, quoted in national currency, of comparable items between countries. Used as deflators, they enable cross-country comparisons of GDP and its expenditure components.
- 15.200 This section first examines the index number issues in aggregate comparisons of prices and volumes across countries. The ICP produces internationally comparable economic aggregates in volume terms as well as PPPs and price level indices (PLIs). Established in 1968, the ICP has grown to cover all regions of the world and for the 2005 round involved 107 countries. The results were combined with the OECD/Eurostat PPP program for 43 countries, bringing the total to 150 countries.
- 15.201 Compiling PPP-based data is a costly and time-consuming exercise, so it is not possible to make such comparisons as a matter of course. Worldwide coordination is required to collect the data and compile the PPP-based estimates. However, national accountants in participating countries need to understand the basic principles of the comparison and the practical demands that are made on them for data to compile PPP indices and thus GDP volume comparisons. This material is the subject of the last part of this section.

2. Index number issues

- 15.202 The theory of index numbers developed in a time series context cannot be applied mechanically to international comparisons simply by replacing the term "period" by the

term “country.” International comparisons differ in a number of respects.

- a. Time series are ordered by the date of the observation, but countries have no such a priori ordering. In consequence there is no predetermined way to order countries when compiling chain indices.
 - b. For international price comparisons different price collectors will be reporting on the prices of the items in different countries. There thus is a need for flexible but detailed structured product descriptions (SPDs) for each item so that only the prices of like items are compared, either by comparing the prices of exactly the same item specification drawn from the SPD in both countries, or by adjusting the prices of different specifications drawn from the SPD for quality differences.
 - c. International comparisons are conducted on a less regular basis, in part because they present a large scale coordination challenge, involving the statistical offices of all participating countries as well as international organizations.
- 15.203 At the heart of the PPPs are price comparisons of identical or closely similar product specifications. The 2005 ICP round used SPDs to define these specifications and to ensure the quality of the detailed price comparisons. For each item there is a specification describing the technical characteristics of the item in detail so a price collector can precisely identify it in the local market. Besides the technical characteristics, the specification also includes other variables that need to be considered when pricing the item, such as the terms of sales, accessories and transportation and installation costs. The database formed from these structured descriptions and the prices collected for them permit more precise matching of items between countries.

Representativity versus comparability

- 15.204 Two critical criteria in selecting products to be priced for calculating PPPs are “representativity” and “comparability”. Representative products are those products that are frequently purchased by resident households and are likely to be widely available throughout a country. Representativity is an important criterion in the ICP because the price levels of non-representative products are generally higher than those of representative products. Therefore, if one country prices representative products while another prices non-representative products in the same expenditure category, then the price comparisons between the countries will be distorted. On the other hand, comparability relates to the physical characteristics of a product. Products are considered to be comparable if their physical characteristics, such as size and quality, and economic characteristics, such as whether candles are used as a primary source of light or are primarily decorative, are identical.
- 15.205 In practice, difficult trade-offs are involved in selecting products that are both representative and comparable to use in calculating PPPs. The product lists for calculating PPPs

are developed in a way that balances the competing aims of within-country representativity and cross-country comparability. In this respect, they are generally quite different from the products that would be priced by any individual country to compile its price indices (such as the consumer price index or any of a range of producer price indices) and which are used in producing the deflators used to calculate volume estimates in the time series national accounts. In the case of time series within a country, representativity is the key criterion in selecting the products to be priced while comparability with other countries is unimportant. Once a representative product is selected for pricing, the important issue is to price the same product in subsequent periods so that price changes in the product can be measured over time. For the ICP, representativity is required only at a point in time and not over time.

Aggregation

- 15.206 PPPs are calculated and aggregated in two stages: estimation of PPPs at the level of basic headings and aggregation across basic heading PPPs to form higher-level aggregates. The estimation of basic heading level PPPs is based on price ratios of individual products in different countries. Typically no information about quantities or expenditures is available within a basic heading and, thus, the individual price ratios cannot be explicitly weighted when deriving PPPs for the whole basic heading. Two aggregation methods dominate PPP calculations at this level, the EKS method and the Country Product Dummy (CPD) method. A description of these methods can be found in chapter 11 of the *2005 ICP Methodological Handbook*. Weights are of crucial importance at the second stage when the basic heading PPPs are aggregated up to GDP.

Paragraphs 15.207 to 15.223 elaborate these two aggregation methods.

3. Practical considerations for national accountants

PPP and the national accounts

- 15.224 One of most important uses of PPPs is to calculate comparable estimates of GDP and its major components, expressed in a common currency where the effects of differences in price levels between countries are removed. The national accounts are integral to PPP estimates in two ways. In the first place, the national accounts provide the weights that are used to aggregate prices from a detailed level to broader aggregates, up to GDP itself. Secondly, the national accounts provide the values that are “deflated” by the PPPs to provide the volumes (also referred to as “real expenditures”) expressed in a common currency that enable GDP and its expenditure components to be compared between countries.
- 15.225 The PPP exercise also produces comparative price level indices (PLI). A PLI is the ratio of the PPP for a country relative to the official exchange rate, both measured with

- respect to a reference currency. PLIs are generally expressed on a base of 100, with the base being either a single reference country or a regional average.
- 15.226 If a country has a PLI less than 100, then its price level is lower than the numeraire country (or region). Similarly, any pair of countries can be compared directly. If one has a PLI less than the other, then the country with the lower PLI would be considered “cheap” by the other country, regardless of whether its PLI is above or below 100.
- 15.227 In practice, PPPs do not change rapidly over time and so a large change in a country’s PLI is usually due to a large change in exchange rates.
- 15.228 It is important that the volumes in the ICP not be confused with the time series volumes described earlier in this chapter because they are different measures, although there are some similarities in that they are both designed to measure values that have had the direct effects of price differences removed from them. In a time series of volumes, the effects of price changes from one period to another are removed to produce the volume measures from which rates of economic growth are calculated. In the case of an intercountry comparison, which is the basis for PPP-based volume measures, the effects of differences due to exchange rates and those due to different price levels within each country are removed from the national accounts values to provide a comparison between the volumes in the countries concerned.
- 15.229 The lowest level for which PPPs can be compared across all countries involved in a comparison is referred to as the “basic heading” and it is also the lowest level for which national accounts values are required as weights. In effect, the national accounts values provide the weights to aggregate the basic heading level data to broader national accounting aggregates, including GDP itself. The basic heading is also the level at which product specifications are determined, with a number of products representative of the expenditure within each basic heading being specified for pricing.
- 15.230 Expenditure-based estimates of GDP have been used in most PPP-based comparisons during the past half-century or so because the prices for final expenditures are more readily observable than those for outputs and inputs, which would be required for a comparison of the production-based estimates of GDP. Consistency in the national accounts is critical in producing comparable estimates across countries so the SNA has played an important part in PPP-based comparisons by providing the framework for obtaining consistent estimates of GDP and its major aggregates.
- 15.231 The ICP is the broadest-based project to produce PPPs; about 150 countries participated worldwide in the 2005 round of the ICP. The volume estimates produced from the 2005 ICP present a snapshot of the relationships between countries from all over the world, expressed in a common currency. The ICP is a very expensive and resource-consuming project and so it provides benchmarks at infrequent intervals. As a result, PPP benchmarks, such as the one from the 2005 ICP, have to be extrapolated using time series from the national accounts of the countries involved. It is interesting to compare the outcomes of an extrapolation with the benchmarks from two sets of PPPs compiled several years apart. In practice, the extrapolated series do not tie in exactly with the benchmarks and there are several reasons for the differences that arise. An important one is the issue of the consistency between the prices used in the time series national accounts and those used in calculating PPPs as explained in the section on representativity and comparability earlier. Further, the price and volume structure may change significantly over time in a way not picked up in the extrapolation techniques.
- Why ICP growth rates differ from national growth rates**
- 15.232 The method commonly used to extrapolate PPPs from their benchmark year to another year is to use the ratio of the national accounts deflators from each country compared with a numeraire country (generally the United States of America) to move each country’s PPPs forward from the benchmark. The PPPs derived are then applied to the relevant national accounts component to obtain volumes expressed in a common currency for the year in question.
- 15.233 Theoretically, the best means of extrapolating PPPs from a benchmark year would be to use time series of prices at the individual product level from each country in the ICP to extrapolate the prices of the individual products included in the ICP benchmark. In practice, it is not possible to use this type of procedure in extrapolating PPP benchmarks because the detailed price data needed are not available in all the countries. Therefore, an approach based on extrapolating at a macro level (for GDP or for a handful of components of GDP) is generally adopted. Leaving aside the data problems involved in collecting consistent data from all the countries involved, a major conceptual question arises with this process because it can be demonstrated mathematically that it is impossible to maintain consistency across both time and space. In other words, extrapolating PPPs using time series of prices at a broad level such as GDP will not result in a match with the benchmark PPP-based estimates even if all the data are perfectly consistent.
- 15.234 One of the reasons for differences between GDP time series and PPP benchmark comparisons stems from the definition of a product. As explained in paragraphs 15.66 to 15.67, location is an essential product characteristic in the national accounts whereas the PPP comparisons use average prices of the whole country. Another problem is that the weighting patterns underlying the deflators in the time series national accounts will differ from those in the PPP benchmarks over time. In addition, as noted above, the products priced for the PPPs will differ from those underlying the time series because of the requirements in spatial price indices for representativity within each country and comparability between countries, while in time series the main requirement is for consistency over time. Generally, many more

products will be priced for a country's price indices than it is possible to price for calculating PPPs. Finally and often most critically, the prices underlying the deflators in the national accounts are adjusted to remove changes in quality over time and the methods of making such quality adjustments can differ significantly between countries. In particular, the extent of using hedonic methods for adjusting products whose characteristics change rapidly varies significantly from country to country. Electronic products (such as computers) feature prominently in hedonic quality adjustment, although some countries also use hedonics to quality adjust products such as clothing and housing. Comparing price changes in a country that uses hedonics in quality adjusting the price indices underlying its national accounts deflators with those in one that does not do so will lead to potentially large inconsistencies between the benchmarks and the extrapolated series.

- 15.235 Possibly the single biggest factor that affects the difference between extrapolated GDP series and PPP benchmark results is due to exports and imports. GDP volume measures in the national accounts are unaffected by changes in terms of trade whereas they influence real GDP in spatial comparisons directly. For example, an increase in energy prices results in an increase in nominal GDP. In a spatial comparison, the outcome will be an increase in GDP volumes for energy exporting countries relative to other countries because the net trade PPPs are based on exchange rates, which do not respond to a change in the terms of trade to a significant extent in the short term. The result is that the increase in the terms of trade is treated as a volume effect in the PPP-based benchmark. On the other hand, in the national accounts of energy exporting countries, GDP volumes remain unchanged if the same amount of energy is exported and so the increase in the terms of trade is treated as a price effect, which is observed in the GDP deflator used as the price extrapolator.

Non-market services

- 15.236 Another area that leads to consistency problems between countries' PPP-based volumes is the group of so-called "comparison-resistant services". They are predominantly (although not exclusively) non-market services, with government services being a major part of the non-market services that have to be priced for PPP projects. The main problems in pricing non-market services relate to the qual-

ity of the services being produced and the productivity of the labour used in producing them. One of the conventions used in producing the estimates for the government sector in most countries' national accounts is that the value of output is measured as the sum of the labour and material inputs used in producing the service(s), which involves an assumption that an increase in costs translates into an equivalent increase in output. In addition, an assumption that is commonly made in the national accounts is that the productivity of the labour involved in producing such services does not change over time either. A similar assumption, that productivity is identical in all the countries in a comparison, generally has to be made between countries in calculating PPPs. It is a reasonable assumption when countries at roughly the same level of economic development are involved in the PPP comparison. However, when countries at very different levels of economic development are being compared then the validity of the assumption breaks down.

- 15.237 The choices faced by the compilers of PPPs are either to assume that productivity levels are identical across countries, even when they are at very different stages of economic development, or to adjust the non-market services estimates in some way to account for productivity differences. Apart from the problems involved in determining an appropriate conceptual approach to adjust for productivity differences between disparate economies, obtaining the data required to make such adjustments also proves problematical particularly when the method involves adjustments based on relative levels of capital intensity in the countries involved. Despite the problems, it is sometimes necessary to make productivity adjustments for non-market services because the problems involved in doing so are rather less than the consequences of assuming equal productivity in all the countries in a comparison.

Conclusion

- 15.238 PPP-based comparisons of activity levels between countries are an important use of national accounts. Despite the conceptual and empirical difficulties, PPP-based volumes provide a much firmer basis for international comparisons than the commonly used alternative of converting national accounts aggregates to a common currency using exchange rates.

Chapter 16: Summarizing and integrating the accounts

A. Introduction

- 16.1 This chapter provides a synthesis of the sequence of accounts presented in chapters 6 to 13 and shows how they relate to the tables in chapter 2. It shows how the most common aggregates in the SNA, GDP, NDP and GNI are related to the balancing items in the various accounts. It shows the impact on national aggregates of transactions undertaken between a resident unit and one resident in the rest of the world. It describes the articulation of the accumulation accounts.
- 16.2 The chapter lays the groundwork for greater elaboration of the accounts, in both manners of presentation and further analysis that form the subject matter of later chapters.

B. Integrating the accounts

- 16.3 The tables presented in the previous chapters use a format very common in published tables; the items representing resources are shown in the right-hand side of the table and the items representing uses in the left-hand side of the table. This format is flexible because it allows a multiple number of columns to be shown for both parts of the table and even for the two parts to be shown on different pages if the columns are sufficiently numerous. However, there is another format for the tables that is particularly useful for explanatory purposes, the T account.
- 16.6 The immediately following rows show the main entries from the production account, output and taxes less subsidies on the resource side and intermediate consumption on the use side. The balancing item for the production account, value added, appears next, also on the use side as the closing item of the production account. Value added is the basic building block for determining GDP.

The production account

- 16.4 In a T account, only one set of descriptive headings (stubs) is shown in the middle of the table with values representing resources in columns to the right and values representing uses in columns to the left. An example of a T account is given in table 16.1. The rows in the table show the rows from tables 6.1, 7.1, 7.2, 8.1 and 9.1 at a high level of aggregation. Data for the individual sector accounts are not shown but the total for the economy as well as for the rest of the world and the total of both these are shown. In addition, the column for the goods and services account is retained.

The generation of income account

1. Summarizing the current accounts

- 16.5 The current accounts included in table 16.1 consist of the production account and accounts showing the primary distribution of income, the secondary distribution of income and the use of income. In addition to these accounts, table 16.1 begins with imports and exports of goods and services, the entries from the rest of the world account that show the value of goods and services that reach the national economy from the rest of the world and those that are produced in the national economy but are provided to the rest of the world.
- 16.7 The next few rows correspond to the generation of income account. This is the first part of the primary distribution of income account. Value added, the balancing item from the production account, appears as the only entry on the resources side of the account. The entries on the left-hand side of the account under uses show how much of value added is generated by labour in the form of compensation of employees and how much of the value of output is payable to government in the form of taxes on products less subsidies on products not already included in the value of output. The balancing items, operating surplus and mixed income, represent the contribution of capital to the generation of value added.

The allocation of primary income account

- 16.8 In the allocation of primary income account, these contributions to value added appear as resources of the relevant sectors; compensation of employees to households, taxes less subsidies to government and operating surplus and mixed income to the sectors containing the relevant production units. In addition, however, the allocation of primary income account shows

Table 16.1: Summary of the current accounts in the sequence of accounts

Uses				Resources			
Total economy	Rest of the world	Goods and services	Total	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items							
		499	499		499		499
		392	392		392		392
		107	107		107		107
	540		540			540	540
	462		462			462	462
	78		78			78	78
Production account							
		3 604	3 604	3 604			3 604
		3 077	3 077	3 077			3 077
		147	147	147			147
		380	380	380			380
1 883			1 883			1 883	1 883
		141	141	141			141
		- 8	- 8	- 8			- 8
1 854			1 854				1 854
222			222				222
1 632			1 632				1 632
	- 41		- 41				- 41
Generation of income account							
				1 854			1 854
				1 632			1 632
1 150			1 150				1 150
235			235				235
141			141				141
94			94				94
- 44			- 44				- 44
- 8			- 8				- 8
- 36			- 36				- 36
452			452				452
61			61				61
214			214				214
8			8				8
238			238				238
53			53				53
Allocation of primary income account							
				452			452
				61			61
				238			238
				53			53
	6		6	1 154	2		1 156
				235			235
				- 44			- 44
391	44		435	397	38		435
1 864			1 864				1 864
1 642			1 642				1 642
Secondary distribution of income account							
				1 864			1 864
				1 642			1 642
1 212	17		1 229	1 174	55		1 229
212	1		213	213	0		213
333	0		333	333	0		333
384	0		384	384	0		384
283	16		299	244	55		299
1 826			1 826				1 826
1 604			1 604				1 604
Use of disposable income account							
				1 826			1 826
				1 604			1 604
1 399			1 399			1 399	1 399
11	0		11	11	0		11
427			427				427
205			205				205
	- 13		- 13				- 13

Table 16.2 Summary of the accumulation accounts and balance sheets

Changes in assets				Changes in liabilities and net worth			
Total economy	Rest of the world	Goods and services	Total	Total economy	Rest of the world	Goods and services	Total
				Transactions and balancing items			
				Capital account			
				<i>Saving, net</i>			
				205			205
				<i>Current external balance</i>			
					- 13		- 13
414			414	<i>Gross capital formation</i>			
192			192	<i>Net capital formation</i>			
376			376			414	414
- 222			- 222	<i>Gross fixed capital formation</i>			
						376	376
				<i>Consumption of fixed capital</i>			
						- 222	- 222
				<i>Gross fixed capital formation by type of asset</i>			
				<i>Changes in inventories</i>			
28			28			28	28
10			10	<i>Acquisitions less disposals of valuables</i>			
0			0	<i>Acquisitions less disposals of non-produced assets</i>			
						0	0
				<i>Capital transfers, receivable</i>			
				62	4		66
				<i>Capital transfers, payable</i>			
				- 65	- 1		- 66
				<i>Changes in net worth due to saving and capital transfers</i>			
				202	- 10		192
10	- 10		0	<i>Net lending (+) / net borrowing (-)</i>			
				Financial account			
				<i>Net lending (+) / net borrowing (-)</i>			
				10	- 10		0
436	47		483	<i>Net acquisition of liabilities</i>			
- 1	1		0	<i>Monetary gold and SDRs</i>			
89	11		100	<i>Currency and deposits</i>			
86	9		95	<i>Debt securities</i>			
78	4		82	<i>Loans</i>			
107	12		119	<i>Equity and investment fund shares</i>			
48	0		48	<i>Insurance, pension and standardized guarantee schemes</i>			
14	0		14	<i>Financial derivatives and employee stock options</i>			
15	10		25	<i>Other accounts receivable/payable</i>			
				39	- 14		25
				Other changes in the volume of assets account			
				<i>Total other changes in volume</i>			
				3			3
- 7			- 7	<i>Produced non-financial assets</i>			
17			17	<i>Non-produced non-financial assets</i>			
3			3	<i>Financial assets</i>			
				3			3
				<i>Changes in net worth due to other changes in volume of assets</i>			
				10			
				Revaluation account			
				<i>Nominal holding gains and losses</i>			
				<i>Non-financial assets</i>			
280			280	<i>Financial assets/liabilities</i>			
84	7		91	76	15		91
				<i>Changes in net worth due to nominal holding gains/losses</i>			
				288	- 8		280
				<i>Neutral holding gains and losses</i>			
				<i>Non-financial assets</i>			
198			198	<i>Financial assets/liabilities</i>			
136	12		148	126	22		148
				<i>Changes in net worth due to neutral holding gains/losses</i>			
				208	- 10		214
				<i>Real holding gains and losses</i>			
				<i>Non-financial assets</i>			
82			82	<i>Financial assets/liabilities</i>			
- 52	- 5		- 57	- 50	- 7		- 57
				<i>Changes in net worth due to real holding gains/losses</i>			
				80	2		66
				Stocks and changes in assets			
				<i>Opening balance sheet</i>			
				<i>Non-financial assets</i>			
4 621			4 621	<i>Financial assets/liabilities</i>			
8 231	805		9 036	7 762	1 274		9 036
				<i>Net worth</i>			
				5 090	- 469		4 621
				<i>Total changes in assets and liabilities</i>			
				<i>Non-financial assets</i>			
482			482	<i>Financial assets/liabilities</i>			
523	54		577	505	72		577
				<i>Changes in net worth, total</i>			
				500	- 18		482
				<i>Saving and capital transfers</i>			
				202	- 10		192
				<i>Other changes in volume of assets</i>			
				10			10
				<i>Nominal holding gains/losses</i>			
				288	- 8		280
				<i>Neutral holding gains/losses</i>			
				208	- 10		198
				<i>Real holding gains/losses</i>			
				80	2		82
				<i>Closing balance sheet</i>			
				<i>Non-financial assets</i>			
5 103			5 103	<i>Financial assets/liabilities</i>			
8 754	859		9 613	8 267	1 346		9 613
				<i>Net worth</i>			
				5 590	- 487		5 103

how much of each of these three items is payable to non-resident units and where comparable items generated in non-resident units are payable to resident sectors.

- 16.9 In the course of production, producers may have made use of financial and non-produced assets belonging to other units. The payments for the use of these assets are shown as property income. Property income may be payable by residents or non-residents and may be receivable by residents or non-residents. Once the values for three of them are known, the value of the last is necessarily determined. For example, property income receivable by residents must be equal to property income payable by both residents and non-residents less property income receivable by non-residents. Thus property income receivable by both residents and non-residents (shown under resources) must be equal to property income payable by both residents and non-residents (shown under uses).
- 16.10 Value added as a resource plus the resource entries of compensation of employees, operating surplus, mixed income and property income, less the corresponding entries for these items as uses leads to the balance of primary incomes. This is the balancing item for the allocation of primary income account shown as a use, and the first item, a resource, of the secondary distribution of income account.
- 16.11 From the balance of primary incomes, another key aggregate of the SNA, national income, is derived. Value added is determined by the criterion of residence; all resident units and only resident units contribute to the total. For the balance of primary income, however, the focus changes not just from production to income but to the residence of the units receiving the income generated by production rather than the residence of the producing units themselves. Further discussion of national income appears below in connection with the discussion of the rest of the world account.

The secondary distribution of income account

- 16.12 The secondary distribution of income account shows how primary income is transformed to disposable income by the payment and receipt of current transfers. Various factors stimulate redistribution of income between sectors of the economy. One of these is the role of government in levying current taxes on income and wealth; one is the role played by social insurance schemes in redistributing contributions by current workers to retirees; another is the role of insurance in providing a mechanism whereby small regular payments by many units are channelled to a few units suffering predefined sorts of losses. Among other types of current transfers, the role of purely voluntary transfers is of increasing interest. Such transfers may provide the main source of finance for NPISHs, in the form of international cooperation between governments, or may be between resident and non-resident households in the form of workers' remittances.
- 16.13 Current transfers payable by resident and non-resident units must be equal to current transfers receivable by both resident and non-resident units, and thus total uses and resources are equal as is the case for property income.

- 16.14 Disposable income is an important balancing item in the accounts since it shows how much can be consumed without the need to run down assets or incur liabilities. It thus corresponds to the economic theoretical concept of income.

The use of income accounts

- 16.15 The use of disposable income account shows how much disposable income is in fact used for consumption and how much is saved. When looking at the sector accounts, the adjustment for the change in pension entitlements has to be made to ensure that these form part of the saving of households and not of pension funds. However, in the aggregate only flows relating to pension entitlements involving non-resident employees or resident employees of non-resident enterprises appear.
- 16.16 Table 16.1 does not include the redistribution of income in kind account and the use of adjusted disposable income account but these could be inserted either in place of, or as a complement to, the use of disposable income account.

2. Summarizing the accumulation accounts

- 16.17 Table 16.2 presents a summary of the accumulation accounts and balance sheets with the same degree of detail as used for the current accounts in table 16.1. In this case, the titles given to the right- and left-hand columns are changed; the columns to the right are described as changes in liabilities and net worth, and those to the left show changes in assets.

The capital account

- 16.18 The first items appearing on the right-hand side of the capital account are saving and the current external balance. Also appearing as resources are capital transfers receivable. By convention, capital transfers payable also appear under resources but with a negative sign. For the economy as a whole, including transactions with the rest of the world, capital transfers receivable and payable exactly offset one another in the same way that property income and current transfers do. However, this equality is not generally true for the total economy excluding the rest of the world nor for individual sectors within it.
- 16.19 Together, saving plus capital transfers (net) show how much is available within the economy to acquire non-financial capital, primarily capital formation but also non-produced non-financial assets. This total is shown as a special aggregate called changes in net worth due to saving and capital transfers. It is not a balancing item but has the same characteristic of being an analytical construct of particular interest.
- 16.20 The uses shown in the capital account are the acquisition of produced and non-produced non-financial assets. The balancing item of the capital account is net borrowing or lending. When there is net lending, it shows the extent to which the sum of saving and capital transfers is actually used to finance the acquisition of non-financial assets and how much is lent to the rest of the world. When there is net borrowing, saving plus capital transfers are insufficient to

finance all the acquisition of non-financial assets and borrowing from the rest of the world is necessary.

The financial account

- 16.21 The financial account shows exactly how net lending or borrowing takes place by showing all the transactions in financial instruments. Transactions in financial assets shown as changes in assets exactly balance the amounts shown as changes in liabilities and net worth because when all transactions of resident units with either other resident units or non-resident units are taken into account, there can be no net lending or borrowing left unexplained.
- 16.22 Because the financial account does not introduce any new balancing items and only explains how net lending or net borrowing is effected, and because it requires quite different data sources and understanding of the data sources, this account is not always compiled by national accountants. However, without the financial account, the compiler cannot be certain that the estimates for the other accounts are fully consistent and complete. Just as the national accountant must have an understanding of the balance of payments system and ensure that the transactions relating to the rest of the world are fully captured in the accounts, so there is a need to appreciate the implications of systems of monetary and financial statistics. Two later chapters, chapters 26 and 27, discuss the relationships with these other statistical systems in more detail.

3. The goods and services account

- 16.23 Throughout the sequence of accounts, each transaction line is balanced. For the distributive and redistributive transactions, this is automatically the case if the data are fully reconciled since whatever is shown as payable by one unit must be shown as receivable by another. However this is not obviously the case for the transactions relating to goods and services. In order to preserve the balancing nature of the accounts, a column headed “goods and services” is included on each side of the accounts. In every case where there is a transaction relating to goods and services, an entry in the goods and services column on the other side of the account is made.
- 16.24 Ultimately the entries on the left-hand side of the account show the value of all goods and services supplied to the economy, either as production or imports, plus the taxes on products less subsidies paid on them. On the right-hand side of the account, the use of the goods and services is shown, as intermediate or final consumption, capital formation or exports.
- 16.25 Clearly, ex post the total amount of goods and services supplied to the economy must be equal to the total use made of those goods and services. Setting the entries in the left-hand goods and services column equal to those in the right-hand side column gives the familiar goods and services account, described in chapter 14:

$$\begin{aligned} & \text{Output} + \text{imports} + \text{taxes less subsidies on products} \\ & = \text{intermediate consumption} + \text{final consumption} + \text{exports} \\ & + \text{capital formation} \end{aligned}$$

16.26 The equation reflects the notion that goods and services produced in the current period are used either to generate more goods and services in the current period (intermediate consumption) or to generate more goods and services in future periods (capital formation) or to satisfy human wants immediately (final consumption). However, because no economy is entirely closed, it is necessary to allow for those goods and services supplied from outside the economy (imports) and those goods and services used by other economies (exports).

16.27 This identity comprises the goods and services account. *The goods and services account shows the balance between the total goods and services supplied as resources to the economy as output and imports (including the value of taxes less subsidies on products not already included in the valuation of output) and the use of the same goods and services as intermediate consumption, final consumption, capital formation and exports.*

4. The accounts for the rest of the world

- 16.28 The entries in the integrated accounts for the rest of the world correspond to the entries in the balance of payments as laid out in *BPM6*. Table 16.3 shows the entries for the rest of the world in the structure of the balance of payments accounts.
- 16.29 There are three current accounts; one for goods and services, one for primary income and one for secondary income. Each of these has a balancing item but, unlike the accounts in the SNA, the balancing items do not carry down from one account to the next. However, other balancing items that do match those in the SNA are allowed for. Thus the external balance of goods, services and primary income is the sum of the [external] balance of goods and services and the [external] balance of primary incomes and corresponds to the balance of primary income for the total economy. When this item is added to the external balance of secondary income, the current external balance is derived which corresponds to saving for the total economy.
- 16.30 In the capital account of the rest of the world, the only entries are for capital transfers receivable from and payable to the rest of the world and acquisition less disposals of non-produced non-financial assets involving non-resident units. These give the capital external balance. When this is added to the current external balance, the result is net lending to or borrowing from the rest of the world.

5. Integration of stock and flow data

Linking the opening and closing balance sheets

- 16.31 The balance sheets are an integral part of the SNA. An understanding of the articulation of the balance sheets with the flows relating to assets in the capital, financial and other changes in assets accounts is fundamental to understanding the role capital accumulation plays in the SNA.
- 16.32 The basic accounting identity linking the opening and the closing balance sheet values for a single type of asset can be summarized as follows:

The value of the stock of a specific type of asset in the opening balance sheet valued at the prices prevailing at the date the balance sheet refers to;

plus the total value of the assets acquired, less the total value of those disposed of (including consumption of fixed capital where appropriate), in transactions that take place within the accounting period;

plus the value of other positive or negative changes in the volume of the assets held (for example, as a result of the discovery of a subsoil resource or the destruction of assets as a result of war or a natural disaster);

plus the value of the positive or negative nominal holding gains accruing during the period resulting from a change in the price of the asset;

equals the value of the stock of the asset in the closing balance sheet valued at the prices prevailing at the date the balance sheet refers to.

16.33 The value of the non-financial assets acquired, less the total value of those disposed of, in transactions that take place within the accounting period is recorded in the capital account and the value of transactions in financial assets and liabilities in the financial account. The value of other positive or negative changes in the volume of the assets held is recorded in the other changes in the volume of assets account. The value of the positive or negative nominal holding gains accruing during the period resulting

from a change in the price of the asset is recorded in the revaluation account. This means that the value of each entry in the closing balance sheet can, in principle, be constructed by taking the value in the opening balance sheet and adding to it the entries relating to the same asset in each of the four accumulation accounts.

16.34 A nominal holding gain may be decomposed into a neutral holding gain and a real holding gain. The nominal holding gain indicates by how much the value of an asset has increased over the period. The neutral holding gain indicates the increase that would have been necessary for the asset to exactly maintain its purchasing power over the period. If the nominal holding gain is larger than the neutral holding gain, the owner of the asset has a real holding gain (equal to the difference between the nominal and neutral holding gains). If the nominal holding gain is less than the neutral holding gain, then the owner suffers a real holding loss.

16.35 The identity linking the opening and closing balance sheets and the accumulation account is valid even in the case of assets that are held only temporarily within the accounting period and that do not appear in either the opening or the closing balance sheets. For example, an asset may be acquired in a period, increase in price due to a holding gain and then suffer some destruction before being sold again before the end of the period.

16.36 The nominal holding gains and losses shown in the revaluation account include both realized and unrealized holding gains and losses but the realized holding gains and losses are incorporated in the value of transactions of the

Table 16.3: Entries for the rest of the world using the *BPM6* structure of accounts

Uses		Resources	
Rest of the world		Rest of the world	
Transactions and balancing items			
Goods and services account			
	Imports of goods and services		499
540	Exports of goods and services		
- 41	<i>External balance of goods and services</i>		
Primary income account			
6	Compensation of employees		2
	Taxes on production and imports		
	Subsidies		
44	Property income		38
- 10	<i>External balance of primary income</i>		
- 51	<i>External balance of goods, services and primary income</i>		
Secondary income account			
17	Current transfers		55
38	<i>External balance of secondary income</i>		
	Adjustment for the changes in pension entitlements		
- 13	<i>Current external balance</i>		
Capital account			
	Acquisitions less disposals of non-produced assets		
	Capital transfers, receivable		4
	Capital transfers, payable		- 1
3	<i>External capital account balance</i>		
- 10	<i>Net lending (+) / net borrowing (-)</i>		

assets, leaving only the unrealized holding gains and losses in the closing balance sheet.

- 16.37 The link between the balance sheet and flow accounts in respect of financial assets and liabilities is often recognized and presented. Less attention has been focused on the links for non-financial assets though, as chapter 20 on capital services makes clear, it is no less important, especially as regards an understanding of productivity growth in the economy.

Net worth

- 16.38 The balancing item on a balance sheet is equal to the sum of all the assets less all the liabilities and is called net worth. The change in net worth between the opening and closing balance sheet can be shown to be composed of three items.
- a. The first of these is the change in net worth due to saving and capital transfers. This comes from the capital account and is the item shown as the total of resources on that account.
 - b. The second item is the change in net worth due to other changes in the volume of assets and is the sum of all the entries for assets in the other changes in the volume of assets account less all the entries for liabilities.
 - c. The third item is the change in net worth due to nominal holding gains and losses. This is the sum of the entries for nominal holding gains and losses for all assets recorded in the revaluation account less the entries for nominal holding gains and losses on all liabilities. This can be broken down into the change in net worth due to neutral holding gains and losses and the change in net worth due to real holding gains and losses in an obvious manner.

Asset accounts

- 16.39 The identity linking opening and closing balance sheets holds for assets in total, for every separate class of asset and indeed for every individual asset. An asset account describes the changes in the stock of an asset or class of assets from one balance sheet to the next, itemizing which changes are due to capital transactions, which to financial transactions and which to other changes in volume and revaluation. Asset accounts are described in chapter 13.

6. Consolidating the accounts

- 16.40 Although it is not usual to present the accounts in a fully consolidated form, it is useful from a pedagogical point of view to consider what results from a full consolidation of the accounts.

Consolidating the current accounts

- 16.41 All the items in table 16.1 relating to the distribution and redistribution of income appear on both sides of the account. Their inclusion permits the derivation of

significant balancing items but it is also possible to consider what entries are left if they are eliminated by consolidation. In fact what remains are the entries in the goods and services columns plus the entries for saving and the current external balance. This result can be seen from the following:

- a. Resources
 - Imports 499;
 - Output 3 604;
 - Taxes on products 141;
 - Subsidies on products -8;
 - Total 4 236;
- b. Uses
 - Exports 540;
 - Intermediate consumption 1 883;
 - Final consumption 1 399
 - Saving 427;
 - Current external balance -13;
 - Total 4 236.

- 16.42 The current external balance (-13) is equal to the external balance of goods and services (-41) plus the flows of income coming from the rest of the world (28). If imports, exports and the external balance of goods and services are removed from the consolidation just described, the following result can be derived:

Output 3 604
plus taxes on products 141
minus subsidies on products 8
minus intermediate consumption 1 883
 (result 1 854)
equals
 final consumption 1 399
plus saving 427
plus income from the rest of the world 28.

- 16.43 The first part of this identity is the definition of income generated in the economy. If the income from the rest of the

world is regarded as an analogue to saving generated within the domestic economy, this identity can be seen as the simple economic concept that income is equal to consumption plus saving.

Consolidating the accumulation accounts

16.44 When the capital and financial accounts are consolidated, all the entries in the financial account are eliminated and the entries for net lending or borrowing that appear in each account cancel. All that is left is:

capital formation (414)

plus the acquisition less disposals of non-produced assets (0)

equals

saving (427)

plus the current external balance (-13).

Consolidating the rest of the world account

16.45 Looking only at the capital and financial account of the rest of the world:

the current external balance (-13)

plus capital transfers receivable (4)

minus capital transfers payable (1)

equals net lending or borrowing (-10).

16.46 Combining this identity with the previous one reduces to:

Capital formation (414)

plus the acquisition less disposals of non-produced assets (0)

equals

saving (427)

plus net lending or borrowing to the rest of the world (-10)

minus capital transfers payable to the rest of the world (4).

plus capital transfers receivable from the rest of the world (1).

In other words investment is equal to saving generated from within the total economy or drawn in from the rest of the world.

C. The macroeconomic aggregates in the SNA

1. The GDP identities

There are thus two separate ways in which GDP can be defined:

16.47 Rearranging the order of items appearing in the goods and services account leads to the most familiar definitions of GDP:

Output (3 604)

minus intermediate consumption (1 883)

plus taxes less subsidies on products (141 - 8)

equals

final consumption (1 399)

plus capital formation (414)

plus exports (540)

minus imports (499)

equals GDP (1 854).

a. ***the production measure of gross domestic product (GDP) is derived as the value of output less intermediate consumption plus any taxes less subsidies on products not already included in the value of output,***

b. ***the expenditure measure of gross domestic product (GDP) is derived as the sum of expenditure on final consumption plus gross capital formation plus exports less imports.***

16.48 The production measure of GDP can also be expressed as value added adjusted to ensure all taxes less subsidies on products are included. As described in chapter 7, value added can be viewed as the elements comprising income: compensation of employees, operating surplus, mixed income and other taxes less subsidies on production. If separate estimates are available of these components, then a third way of compiling GDP is possible, that is, from the income side. Because other taxes less subsidies on production are included in value added and taxes less subsidies on products are to be included also, the two tax

items can be replaced by the term that is the sum of them both, taxes less subsidies on production and imports.

GDP (1 854)

equals

compensation of employees (1 150)

plus gross operating surplus (452)

plus gross mixed income (61)

plus taxes less subsidies on production and imports (191).

The third way in which GDP can be defined is thus

c. the income measure of gross domestic product (GDP) is derived as compensation of employees plus gross operating surplus plus gross mixed incomes plus taxes less subsidies on both production and imports.

2. A note on the valuation of output

16.49 In chapter 6, it is explained that the preferred measurement of output in the system is basic prices. At basic prices, the value of output excludes all taxes on products and includes all subsidies on products. It includes all other taxes on production and excludes all other subsidies on production. However, the data sources in some countries may not permit this valuation to be followed. In this case, output will be valued at producers' prices. All taxes on both products and production (possibly excluding any VAT type taxes) will be included in the value of output and all subsidies on both products and production will be excluded.

16.50 For this reason, the definition of GDP from the production side given above includes the phrase "plus any taxes less subsidies on products not already included in the value of output". When output is valued at producers' prices, there will be no further taxes on products to add in (except possibly VAT type taxes); they will be already included in the measure of output (and similarly subsidies on products will already be deducted). In this case, GDP may be defined as *the production measure of gross domestic product (GDP) is derived as the value of output at producers' prices less intermediate consumption*. When output is measured at basic prices (as preferred in the SNA and as followed in the numerical example) the definition can be rephrased as *the production measure of gross domestic product (GDP) is derived as the value of output at basic prices less intermediate consumption plus taxes less subsidies on products*.

3. Gross and net domestic product

16.51 While the third definition of GDP is correct both economically and statistically, it is held not to be the best measure of income. Income is usually defined as the amount that can be consumed while keeping the level of capital intact. (For further discussion on this see the

introduction to chapter 8.) It is for this reason that the item consumption of fixed capital is so important in the accounts and appears in every account as the difference between balancing items on a gross and net basis. To measure domestic production on a net basis, it is necessary:

- to deduct consumption of fixed capital from the production measure of GDP,
- to replace gross capital formation by net capital formation in the expenditure measure of GDP,
- to replace gross operating surplus by net operating surplus and gross mixed income by net mixed income in the income measure of GDP.

16.52 Each deduction from GDP is equivalent because the difference between gross and net capital formation is the consumption of fixed capital as is the difference between the sum of operating surplus and mixed income on a gross basis as opposed to a net basis. Thus, *net domestic product (NDP) is defined as gross domestic product (GDP) less the consumption of fixed capital*.

NDP (1 632)

equals

GDP (1 854)

minus consumption of fixed capital (222).

4. Gross and net national income

16.53 In some countries, border or seasonal workers may have a significant effect on the amount of compensation of employees that is either payable abroad or receivable from abroad. Compensation earned abroad but repatriated to the country where the employee is resident (as opposed to where he or she works) adds to the income of households available for consumption. The concept of national income as opposed to domestic production is thus another key aggregate of the SNA. As well as labour income from abroad in the form of compensation of employees, income earned abroad on capital, especially financial capital, in the form of property income, is included in national income as well as any taxes on products payable by non-residents. Similar payments flowing out of the total economy to the rest of the world have to be deducted from GDP to reach national income.

16.54 *Gross national income (GNI) is defined as GDP plus compensation of employees receivable from abroad plus property income receivable from abroad plus taxes less subsidies on production receivable from abroad less compensation of employees payable abroad less property income payable abroad and less taxes plus subsidies on production payable abroad*. In the terms of an equation,

GNI (1 864)

equals

GDP (1 854)

plus compensation of employees receivable from abroad (6)

plus property income receivable from abroad (44)

plus taxes less subsidies on production and imports receivable from abroad (0)

minus compensation of employees payable abroad (2)

minus property income payable abroad (38)

minus taxes less subsidies on production and imports payable abroad (0).

16.55 As mentioned above, an income concept is better measured after deducting consumption of fixed capital so *Net national income (NNI) is defined as GNI less the consumption of fixed capital.*

NNI (1 642)

equals

GNI (1 864)

minus consumption of fixed capital (222).

5. National disposable income

16.56 A further step in examining the impact of the rest of the world on the national economy is to consider current transfers receivable from abroad and those payable abroad. Transfers receivable from abroad include remittances from nationals working abroad for long enough (more than one year) to be treated as resident elsewhere. However, like compensation of employees payable from abroad, these transfers from non-residents can have a major impact on the resources available to the national economy. Overseas assistance, other than development assistance for capital projects, is also shown here. As before, transfers payable abroad must be deducted in moving from national income to national disposable income.

16.57 National disposable income, more often than domestic product and national income, is usually shown on a net basis. *Net national disposable income (NNDI) is defined as net national income (NNI) plus current transfers receivable from abroad less current transfers payable abroad.* In equation terms,

NNDI (1 604)

equals

NNI (1 642)

plus current transfers receivable from abroad (17)

minus current transfers payable abroad (55).

D. An example set of integrated economic accounts

16.58 The T accounts shown in table 16.1 and 16.2 can be extended to cover all the sectors of the economy and as much detail as required in the accounts. Such an extended presentation is referred to as a set of integrated economic accounts. An example is tables 16.4 and 16.5 which show, simultaneously, the general accounting structure of the SNA and present a set of data for the individual institutional sectors, the economy as a whole and the rest of the world.

16.59 The table brings together in one presentation:

the institutional sector accounts,

the rest of the world accounts, and

the goods and services account.

16.60 In order to simplify this table while still having it comprehensive, classifications of sectors, transactions and other flows, assets and liabilities are at the highest level of aggregation compatible with understanding the structure of the SNA. However, columns and rows can be subdivided to

introduce subsectors or more detailed classifications of transactions and other flows, assets and liabilities.

1. Institutional sector accounts

Current accounts

16.61 As an example of the institutional sectors current accounts, consider the column for non-financial corporations.

16.62 The *production account* shows output (2 808) on the right-hand side, intermediate consumption (1 477) and value added (1 331 gross, 1 174 net, the difference referring to consumption of fixed capital (157), on the left-hand side). Value added, the balancing item of the production account, appears again in the same row as a resource of the *generation of income account*.

16.63 The uses of the *generation of income account* (compensation of employees (986) and other taxes (88) less subsidies on production (35)) are shown on the left-hand side, the balancing item being net operating surplus (135),

which appears again as a resource of the *allocation of primary income account*.

- 16.64 In the *allocation of primary income account*, property income receivable (96), along with operating surplus is recorded on the right-hand side, and property income payable (134) is recorded on the left-hand side. The balancing item is the net balance of primary incomes (97), which appears again as a resource of the *secondary distribution of income account*. The *secondary distribution of income account* shows current transfers, payable (98) and receivable (72), leading to the balancing item of net disposable income (71). This item, which can also be described as the undistributed income of non-financial corporations, appears as a resource in the *use of income account*.
- 16.65 The only transaction appearing in the *use of income account* for the corporations sectors is an entry for the change in pension entitlements. In this case the entry has a value of zero so the balancing item of the use of income account, saving, has the same value as disposable income.
- 16.66 The accounts for other institutional sectors may be read the same way, the relevant transactions varying according to the sector involved.

The use of income account

- 16.67 The presentation of the two ways in which disposable income is associated with final consumption, one taking account of the redistribution of income in kind leading to actual consumption and the other showing final consumption expenditure to disposable income directly, is simplified in table 16.4. The redistribution of income in kind account and the use of adjusted disposable income account are merged with the use of income account as follows. Disposable income, gross, is 317 for general government, 37 for NPISHs and 1 219 for households. Final consumption expenditure is 352 for government, 32 for NPISHs and 1 015 for households. Total consumption expenditure is 1 399. Saving is given by disposable income less final consumption expenditure.

The accumulation accounts

- 16.68 The accumulation accounts follow the sequence of current accounts for the institutional sectors. For example, net saving of households is 192. Households receive 23 and pay 5 as capital transfers. Thus the value of the changes in their net worth due to saving and capital transfers is 210. Households have 48 as gross fixed capital formation (25 as net fixed capital formation after deduction of consumption of fixed capital (23)), changes in inventories of 2 and acquisitions less disposals of valuables of 5. Their acquisitions less disposals of non-produced non-financial assets (land) are 4. The net lending of households is 174. They incur financial liabilities (net) of 15 and acquire financial assets (net) of 189. Other changes in volume of assets are 1. The value of the assets held by households increases by 96 due to changes in the prices of both non-financial assets (80) and financial assets (16); there are no nominal gains or losses on their liabilities, which means that all their liabilities are denominated in monetary terms

and probably in the national currency of the economy in question.

The balance sheets

- 16.69 The balance sheets are also part of the integrated economic accounts. In order to see the relationships between the accumulation accounts and balance sheets, take general government as the example. The opening assets are 1 185 (789 non-financial assets and 396 financial assets) and the opening liabilities 687, net worth thus being 498. The total value of non-financial assets increases by 57, which results from all changes in these assets recorded in the accumulation accounts, gross fixed capital formation (35), consumption of fixed capital (-27), acquisitions less disposals of valuables (3), acquisitions less disposals of non-produced non-financial assets (2), other volume changes (0) and nominal holding gains (44). Financial assets decrease by 9 (net disposal of financial assets, 10, other volume changes, 0, nominal holding gains, 1). On the right-hand side, liabilities increase by 102, which results again from all changes in liabilities recorded in the accumulation accounts (net incurrence of liabilities (93), other volume changes (2), revaluation of liabilities (7)). So the closing assets are 1 233 (846 + 387) and the closing liabilities are 789; closing net worth (444) shows a decrease over the year of 54. The sources of this change in net worth are summarized on the right-hand side of the account showing the change in balance sheets, changes in net worth due to saving and capital transfers (-90, see also the right-hand side of the capital account), to other changes in volume of assets (-2, see also the right-hand side of the other changes in volume of assets account), and to nominal holding gains or losses (38, see also the right-hand side of the revaluation account).

2. The rest of the world account

- 16.70 As explained earlier, the rest of the world accounts are presented from the viewpoint of the rest of the world. Imports of goods and services (499) are a resource for the rest of the world, even though they represent an outflow from the national economy and exports (540) are a use of the rest of the world. Thus imports appear on the right-hand side of the table and exports on the left. The external account of goods and services is shown at the same level as the production account for institutional sectors. The external balance of goods and services is -41. With a positive sign, it is a surplus of the rest of the world (a deficit of the nation) and vice versa.
- 16.71 As explained in connection with table 16.3, the external balance on primary income is -10 and on secondary income is 38, giving a current external balance of -13.
- 16.72 Transactions of the accumulation accounts appear in the columns for the rest of the world when relevant (mainly capital transfers and financial transactions). The rest of the world columns show the assets and liabilities position of the rest of the world vis-à-vis the nation (external assets and liabilities account). The row "changes in net worth due to saving and capital transfers" corresponds, for the rest of the world, to the current external balance and capital transfers.

Table 16.4: Summary current account with sector details – uses

Uses	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items									
Imports of goods and services								499	499
Imports of goods								392	392
Imports of services								107	107
Exports of goods and services							540		540
Exports of goods							462		462
Exports of services							78		78
Production account									
Output								3 604	3 604
Market output								3 077	3 077
Output for own final use								147	147
Non-market output								380	380
Intermediate consumption	1 477	52	222	115	17	1 883			1 883
Taxes on products								141	141
Subsidies on products (-)								- 8	- 8
Value added, gross / Gross domestic product	1 331	94	126	155	15	1 854			1 854
Consumption of fixed capital	157	12	27	23	3	222			222
Value added, net / Net domestic product	1 174	82	99	132	12	1 632			1 632
External balance of goods and services							- 41		- 41
Generation of income account									
Compensation of employees	986	44	98	11	11	1 150			1 150
Taxes on production and imports						235			235
Taxes on products						141			141
Other taxes on production	88	4	1	0	1	94			94
Subsidies						- 44			- 44
Subsidies on products						- 8			- 8
Other subsidies on production	- 35	0	0	- 1	0	- 36			- 36
Operating surplus, gross	292	46	27	84	3	452			452
Mixed income, gross				61		61			61
Consumption of fixed capital on gross operating surplus	157	12	27	15	3	214			
Consumption of fixed capital on gross mixed income				8		8			
Operating surplus, net	135	34	0	69	0	238			238
Mixed income, net				53		53			53
Allocation of primary income account									
Compensation of employees							6		6
Taxes on production and imports									0
Subsidies									0
Property income	134	168	42	41	6	391	44		435
Balance of primary incomes, gross / National income, gross	254	27	198	1 381	4	1 864			1 864
Balance of primary income, net / National income, net	97	15	171	1 358	1	1 642			1 642
Secondary distribution of income account									
Current transfers	98	277	248	582	7	1 212	17		1 229
Current taxes on income, wealth, etc.	24	10	0	178	0	212	1		213
Net social contributions				333		333	0		333
Social benefits other than social transfers in kind	62	205	112	0	5	384	0		384
Social assistance benefits in cash			52			52			52
Other current transfers	12	62	136	71	2	283	16		299
Disposable income, gross	228	25	317	1 219	37	1 826			1 826
Disposable income, net	71	13	290	1 196	34	1 604			1 604
Use of disposable income account									
Final consumption expenditure			352	1 015	32	1 399			1 399
Adjustment for the change in pension entitlements	0	11	0		0	11	0		11
Saving, gross	228	14	- 35	215	5	427			427
Saving, net	71	2	- 62	192	2	205			205
Current external balance							- 13		- 13

Table 16.4 (cont): Summary current account with sector details – resources

	Resources								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items									
Imports of goods and services							499		499
Imports of goods							392		392
Imports of services							107		107
Exports of goods and services								540	540
Exports of goods								462	462
Exports of services								78	78
Production account									
Output	2 808	146	348	270	32	3 604			3 604
Market output	2 808	146	0	123	0	3 077			3 077
Output for own final use	0	0	0	147	0	147			147
Non-market output			348		32	380			380
Intermediate consumption								1 883	1 883
Taxes on products							141		141
Subsidies on products (-)							- 8		- 8
Generation of income account									
Value added, gross / Gross domestic product	1 331	94	126	155	15	1 854			1 854
Value added, net / Net domestic product	1 174	82	99	132	12	1 632			1 632
Compensation of employees									
Taxes on production and imports									
Taxes on products									
Other taxes on production									
Subsidies									
Subsidies on products									
Other subsidies on production									
Allocation of primary income account									
Operating surplus, gross	292	46	27	84	3	452			452
Mixed income, gross				61		61			61
Operating surplus, net	135	34	0	69	0	238			238
Mixed income, net				53		53			53
Compensation of employees				1 154		1 154	2		1 156
Taxes on production and imports			235			235			235
Subsidies			- 44			- 44			- 44
Property income	96	149	22	123	7	397	38		435
									0
									0
Secondary distribution of income account									
Balance of primary incomes, gross / National income, gross	254	27	198	1 381	4	1 864			1 864
Balance of primary income, net / National income, net	97	15	171	1 358	1	1 642			1 642
Current transfers	72	275	367	420	40	1 174	55		1 229
Current taxes on income, wealth, etc.			213			213	0		213
Net social contributions	66	213	50	0	4	333	0		333
Social benefits other than social transfers in kind				384		384	0		384
Social assistance benefits in cash				52		52			52
Other current transfers	6	62	104	36	36	244	55		299
Use of disposable income account									
Disposable income, gross	228	25	317	1 219	37	1 826			1 826
Disposable income, net	71	13	290	1 196	34	1 604			1 604
Final consumption expenditure								1 399	1 399
Adjustment for the change in pension entitlements				11		11	0		11

Table 16.5: Summary of the accumulation accounts and balance sheets with sector details – assets and changes in assets

Changes in assets									
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Transactions and balancing items									
Capital account									
Gross capital formation	308	8	38	55	5	414			414
Net capital formation	151	-4	11	32	2	192			192
Gross fixed capital formation	280	8	35	48	5	376			376
Consumption of fixed capital	-157	-12	-27	-23	-3	-222			-222
<i>Gross fixed capital formation by type of asset</i>									
Changes in inventories	26	0	0	2	0	28			28
Acquisitions less disposals of valuables	2	0	3	5	0	10			10
Acquisitions less disposals of non-produced assets	-7	0	2	4	1	0			0
Capital transfers, receivable									
Capital transfers, payable									
<i>Net lending (+) / net borrowing (-)</i>	-56	-1	-103	174	-4	10	-10		0
Financial account									
Net acquisition of financial assets	83	172	-10	189	2	436	47		483
Monetary gold and SDRs		-1				-1	1		0
Currency and deposits	39	10	-26	64	2	89	11		100
Debt securities	7	66	4	10	-1	86	9		95
Loans	19	53	3	3	0	78	4		82
Equity and investment fund shares	10	28	3	66	0	107	12		119
Insurance, pension and standardized guarantee schemes	1	7	1	39	0	48	0		48
Financial derivatives and employee stock options	3	8	0	3	0	14	0		14
Other accounts receivable/payable	4	1	5	4	1	15	10		25
Other changes in the volume of assets account									
Total other changes in volume	14	-1	0	0	0	13			13
Produced non-financial assets	-2	-2	-3	0	0	-7			-7
Non-produced non-financial assets	14	0	3	0	0	17			17
Financial assets	2	1	0	0	0	3			3
Revaluation account									
Nominal holding gains and losses									
Non-financial assets	144	4	44	80	8	280			280
Financial assets/liabilities	8	57	1	16	2	84	7		91
Neutral holding gains and losses									
Non-financial assets	101	3	32	56	6	198			198
Financial assets/liabilities	18	71	8	36	3	136	12		148
Real holding gains and losses									
Non-financial assets	43	1	12	24	2	82			82
Financial assets/liabilities	-10	-14	-7	-20	-1	-52	-5		-57
Stocks and changes in assets									
Opening balance sheet									
Non-financial assets	2 151	93	789	1 429	159	4 621			4 621
Financial assets/liabilities	982	3 421	396	3 260	172	8 231	805		9 036
Total changes in assets and liabilities									
Non-financial assets	300	-2	57	116	11	482			482
Financial assets/liabilities	93	230	-9	205	4	523	54		577
Closing balance sheet									
Non-financial assets	2 451	91	846	1 545	170	5 103			5 103
Financial assets/liabilities	1 075	3 651	387	3 465	176	8 754	859		9 613

Table 16.5(cont): Summary of the accumulation accounts and balance sheets with sector details – liabilities, net worth and changes in them

Transactions and balancing items	Changes in liabilities and net worth								
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Capital account									
<i>Saving, net</i>	71	2	-62	192	2	205			205
<i>Current external balance</i>							-13		-13
Gross capital formation								414	414
Net capital formation								192	192
Gross fixed capital formation								376	376
Consumption of fixed capital								-222	-222
<i>Gross fixed capital formation by type of asset</i>									
Changes in inventories								28	28
Acquisitions less disposals of valuables								10	10
Acquisitions less disposals of non-produced assets								0	0
Capital transfers, receivable	33	0	6	23	0	62	4		66
Capital transfers, payable	-16	-7	-34	-5	-3	-65	-1		-66
<i>Changes in net worth due to saving and capital transfers</i>	88	-5	-90	210	-1	202	-10		192
Financial account									
<i>Net lending (+) / net borrowing (-)</i>	-56	-1	-103	174	-4	10	-10		0
Net acquisition of liabilities	139	173	93	15	6	426	57		483
Monetary gold and SDRs									
Currency and deposits		65	37			102	-2		100
Debt securities	6	30	38	0	0	74	21		95
Loans	21	0	9	11	6	47	35		82
Equity and investment fund shares	83	22				105	14		119
Insurance, pension and standardized guarantee schemes		48	0			48	0		48
Financial derivatives and employee stock options	3	8	0	0	0	11	3		14
Other accounts receivable/payable	26	0	9	4		39	-14		25
Other changes in the volume of assets account									
Total other changes in volume	0	0	2	1	0	3			3
Produced non-financial assets									
Non-produced non-financial assets									
Financial assets	0	0	2	1	0	3			3
<i>Changes in net worth due to other changes in volume of assets</i>	14	-1	-2	-1	0	10			
Revaluation account									
Nominal holding gains and losses									
Non-financial assets									
Financial assets/liabilities	18	51	7	0	0	76	15		91
<i>Changes in net worth due to nominal holding gains/losses</i>	134	10	38	96	10	288	-8		280
Neutral holding gains and losses									
Non-financial assets									
Financial assets/liabilities	37	68	13	5	3	126	22		148
<i>Changes in net worth due to neutral holding gains/losses</i>	82	6	27	87	6	208	-10		214
Real holding gains and losses									
Non-financial assets									
Financial assets/liabilities	-19	-17	-6	-5	-3	-50	-7		-57
<i>Changes in net worth due to real holding gains/losses</i>	52	4	11	9	4	80	2		66
Stocks and changes in liabilities and net worth									
Opening balance sheet									
Non-financial assets									
Financial assets/liabilities	3 221	3 544	687	189	121	7 762	1 274		9 036
<i>Net worth</i>	-88	-30	498	4 500	210	5 090	-469		4 621
Total changes in assets and liabilities									
Non-financial assets									
Financial assets/liabilities	157	224	102	16	6	505	72		577
<i>Changes in net worth, total</i>	236	4	-54	305	9	500	-18		482
<i>Saving and capital transfers</i>	88	-5	-90	210	-1	202	-10		192
<i>Other changes in volume of assets</i>	14	-1	-2	-1	0	10			10
<i>Nominal holding gains/losses</i>	134	10	38	96	10	288	-8		280
Neutral holding gains/losses	82	6	27	87	6	208	-10		198
Real holding gains/losses	52	4	11	9	4	80	2		82
Closing balance sheet									
Non-financial assets									
Financial assets/liabilities	3 378	3 768	789	205	127	8 267	1 346		9 613
<i>Net worth</i>	148	-26	444	4 805	219	5 590	-487		5 103

3. The goods and services account

16.73 In the integrated economic accounts, the goods and services account is shown in a column, not in a row. It reflects the various transactions in goods and services that appear in the accounts of the institutional sectors. Intermediate consumption and final consumption appear as uses in the institutional accounts on the left-hand side of the accounts. For the goods and services account, they appear in the right-hand side column, even though the right-hand side is generally reserved for resources and consumption is a use. This device of using the opposite side of the account from normal gives a balance for the row for each of the items appearing in the goods and services account. On the resources side of the table, the figures appearing in the column for goods and services are the counterparts of the uses made by the various sectors and the rest of the world: exports (540), intermediate consumption (1 883), final consumption expenditure or actual final consumption (1 399), gross fixed capital formation (376), changes in inventories (28) and acquisitions less disposals of valuables (10). On the use side of the table, the figures in the column for goods and services are the counterparts of the resources of the various sectors and the rest of the world: imports (499) and output (3 604). On the same side taxes less subsidies on products (133) are shown directly in the column for goods and services. They are a component of the value of the supply of goods and services that has no counterpart in the value of the output of any institutional sector.

4. The total economy column

16.74 The columns for the total economy remain to be explained. Except for taxes less subsidies on products and gross and net domestic product, the figures in these columns are simply the sum of the corresponding figures for the institutional sectors. The production account for the total economy includes, as resources, output (that is, the total output of the economy (3 604)) and taxes less subsidies on products (133), the latter being the counterpart of the figure appearing on the left-hand side in the column for goods and services. The uses side of the production account for the total economy shows intermediate consumption (1 883) and domestic product at market prices (1 854 gross, 1 632 net). The latter is the sum of value added of the various sectors and taxes less subsidies on products. Domestic product then appears on the right-hand side as a resource of the generation of income account for the total economy. Taxes less subsidies on products are shown again on the left-hand side in the column for total economy and on the right-hand side as a resource of government (and the rest of the world if relevant). This double routing of taxes less subsidies on products is made in order to get domestic product, gross and net, directly in the overall accounts, as explained above.

16.75 The other items in the columns for the total economy are self-explanatory. Net national income at market prices (1 642) is shown directly as the sum of balance of primary incomes of the various sectors; national disposable income, national saving, etc. are also obtained directly.

Chapter 17: The other parts of the SNA

Chapter 17 in the full version of the 2008 SNA deals with a number of complicated issues most of which are related directly or indirectly to financial instruments. It consists of six parts. The first of these considers the treatment of insurance. The second considers social insurance schemes and in particular the means of recording pensions. The third part discusses the treatment of standardised guarantee schemes. The fourth part describes how all flows associated with financial assets and liabilities are to be recorded. The fifth discusses the concepts and recording associated with contracts, leases and licences. The sixth and last part discusses employee stock options.

Chapter 18 is entitled elaborating and presenting the accounts. It is mainly concerned with questions of how to present in the accounts to users how to deal with revisions and discrepancies. It is included in its entirety in the compilation guide.

Chapter 19 is concerned with population and labour inputs and the ways in which information from the SNA can be used in association with measures on employment and population to be used in studies of labour productivity.

Chapter 20 is entitled capital services in the national accounts. One of the major theoretical developments that has been recognized since the publication of the 1993 SNA is the development of the theory of capital services and estimations of productivity that take account of both the fixed assets used by industry and their labour input. This chapter shows the links between this theory and the development of estimates of consumption fixed capital which must be made in the accounts in order to reduce aggregates from a gross to a net basis. The chapter is a very elementary introduction to the subject; more detailed information is available in a number of other publications that are referred to in the chapter in particular two publications from the OECD one called *Measuring capital* and the other *Measuring productivity*.

Chapter 21 is entitled measuring corporate activity. This is concerned with the various sorts of issues and that those responsible for business registers need to consider such as how to monitor and see demography of corporations. It also treats the question of relationship between corporations in different economies in particular foreign direct investment and looks at the consequences of financial distress. Lastly it has a short section on the links to commercial accounting.

Chapter 22 covers the general government and public sectors. One of the major statistical systems related to the SNA is government finance statistics. This chapter shows the links between the two systems and shows how as well as developing statistics of the general government sector it is possible to look only at central government or to expand general government to include corporations controlled by government in order to reach a view of the total public sector. The treatment of debt is one topic dealt with in some detail.

Chapter 23 discusses non-profit institutions. There is increasing interest in the activities of non-profit institutions. In some countries, and in particular in some developing countries, non-profit institutions fill some of the functions that might be undertaken by general government if it had greater resources. In particular there are activities of non-profit institutions in the area of education and health that may be significant. This chapter reviews some of these issues and makes reference to a recent publication developed in conjunction with the Johns Hopkins University.

Chapter 24 discusses the households sector. Ultimately economic activity is undertaken to benefit the individuals in the economy, individuals who are clustered into households. Making the connection between individuals as employees and as recipients of various forms of transfers into the households in which they live is not simple and so no international standard on how to sub-sector households has been agreed. This chapter however discusses how information from household surveys can be used in the national accounts and looks to the possibility of analysing household wealth as well as household income and consumption.

Chapter 25 covers informal aspects of the economy. Over the last 20 years there has been increasing interest in measuring two concepts that are distinct but overlap to a great extent. One of these is described as the not observed economy and includes not only much informal activity but also activity that is deliberately concealed from government or is misrepresented or misinterpreted in statistical collections. However, especially for developing countries where the process of incorporation or the activities of individuals into the market economy is of particular interest, attention focuses rather on the area of informal activity whether or not it is captured by statistical enquiries. This chapter discusses the two concepts and shows how they may be related. It draws heavily on work undertaken by the International Labour Organisation in the area.

Chapter 26 is concerned with the rest of the world accounts and links to the balance of payments. A second linked system of macroeconomic statistics concerns the presentation of balance of payments account and international investment position. The methodology in the balance of payments manual was revised at the same time as that in the SNA and the latest version of the balance of payments manual was also issued in 2008. This chapter looks at the relationship between BPM6 and the 2008 SNA pointing out how far the same concepts are used between the two systems and looking at some extra analyses that are undertaken within the balance of payments context.

Chapter 27 describes links to monetary statistics and the flow of funds. Monetary and financial statistics represent a third major statistical macroeconomic system which is linked to the SNA. This chapter gives an overview of the similarities and differences between the two systems and looks briefly at the flow of funds and analyses that can be developed as an adjunct to the financial accounts and balance sheets of the SNA.

Chapter 28 covers input output and other matrix-based analyses. This chapter discusses how supply and use tables can be elaborated initially to produce input output tables and more extensively to compile social accounting matrices.

Chapter 29 is entitled satellite accounts and other extensions. Although this chapter comes at the end of the SNA, in many ways is one of the most important in the whole of the SNA manual because it emphasises that the system should be used in a flexible manner in order to highlight those issues that are of particular interest to policy makers in the country. It shows how particular aspects of interest can be elaborated initially through a satellite account and discusses four types of accounts briefly. These are accounts for tourism, environmental accounting, health and unpaid household activity. In addition the chapter discusses functional classifications that can be used in order to cross class classify types of expenditure between the type of

product being acquired and the use to which it is being acquired.

There are four annexes to the SNA. The first of these lists the classification hierarchy used within the system with the codes that are used in the context of submission of data to the international statistical agencies.

The second annex contains the full sequence of accounts that pick up all the details that have been discussed in earlier chapters and shows them together in one place. The third annex looks at the changes from the 1993 SNA and lists these both by topic and by where they fall in each of the chapters. The fourth and last annex shows those items which were not resolved, sometimes not discussed, in the 2008 revision to the SNA and so remain on the research agenda for consideration in the future.

Annex 1: Topics omitted from chapters 1 to 16

Chapter 1: Introduction

A summary of the accounts of the system is omitted but the same material is presented in chapter 2. The description of the international comparison project is omitted; this is discussed in chapter 15.

Chapter 2: Overview

Here and in subsequent chapters, the description of the redistribution of income in kind via the alternative recording of social transfers in kind provided by government and non-profit institutions serving households is omitted. The integrated presentation of the accounts is also omitted.

Chapter 3: Stocks, flows and accounting rules

The discussion on re-routing and partitioning transactions, examples on the measurement of non-monetary transactions, the treatment of externalities, examples of valuation, some details on the time of recording and also on the treatment of aggregation, netting and consolidation are reduced. These topics are discussed in subsequent chapters in contexts where they become relevant.

Chapter 4: Institutional units and sectors

The introduction of sub-sectors has been omitted as well as the extensive discussion of how control by government is determined. It is assumed that in practice most countries will have established a list of public corporations.

Chapter 5: Enterprises, establishments and industries

The treatment of integrated enterprises and of government establishments is not dealt with in as great detail as in the full manual. The alternative recording of ancillary activities is not described. Units of homogeneous production are omitted.

Chapter 6: The production account

There has been some abbreviation in a number of areas, for example concerning the measurement of household production, the measurement of the non-observed economy (this is discussed in the compilation volume) the alternative means of recording value added taxes, elaboration of valuation in the case of market and non-market production, the treatment of market production by the central bank, some of the detail on financial services, research and development, and the measurement of originals and copies. The description of the boundary between intermediate consumption and compensation of employees and fixed capital is omitted as is

discussion of the implications of renting rather than owning fixed assets.

The annex on the treatment of storage is moved to the compilation volume.

Chapter 7: The distribution of income accounts

The disaggregation of the primary distribution of income account into the entrepreneurial account and the other distribution of primary income is omitted. There is less discussion on wages and salaries in kind than in the full manual some of this being moved to the compilation volume. The whole area of social insurance is omitted on the grounds that for very few developing countries is this a significant issue. Here and in other chapters where taxes are discussed the detailed correlation between the SNA headings and those of the government finance statistics manual and the OECD revenue statistics classifications is omitted. There is less discussion on the interest payable on debt securities and investment income distribution than in the full manual.

Chapter 8: The redistribution of income accounts

The discussion of social insurance is omitted. So is the redistribution of income in kind account and a discussion of social transfers in kind. As noted there is less detail on the tax classifications than in the full manual.

Chapter 9: The use of income accounts

The use of adjusted disposable income account is omitted as is the distinction between consumption expenditure and actual consumption though the difference between individual and collective consumption is maintained.

Chapter 10: The capital account

This chapter is included in its entirety.

Chapter 11: The financial account

Most of the discussion on contingent liabilities is omitted as well as most of the discussion on netting and consolidation. Although the list of financial instruments is included, much of the detailed elaboration following the definition of each instrument is omitted.

Chapter 12: The other changes in assets accounts

Discussion on public monuments and valuables is omitted. So is discussion of the initiation and cancellation of contracts leases and licences and changes in the value of goodwill and marketing assets. Debt defeasance it is omitted as well as

creation and exhaustion of financial derivatives. The discussion about changes to fixed assets because of errors in the calculation of consumption fixed capital is omitted as is the discussion on life insurance, pension and annuity entitlements and provisions for calls under standardised guarantee schemes. Little detail is given on changes in sector classification and structure and classifications of assets and liabilities.

As far as the revaluation account is concerned, only nominal gains holding gains and losses are discussed and not the disaggregation into neutral and real holding gains.

Chapter 13: The balance sheet

The whole of section C that discusses the valuation to be applied to individual assets in the balance sheet is removed from this publication for inclusion in the compilation volume.

Chapter 14: The supply and use tables and goods and services account

The whole of section D concerning the further elaboration of the use table, in particular of the partitioning of each entry into one part corresponding to domestic production one to imports one to trade and transport margins and one to taxes and

subsidies, is omitted as is the discussion of the deflation of the tables to volume terms. The latter is included in the compilation volume.

Chapter 15: Price and volume measurements

Much of the theoretical elaboration of index number theory is omitted. The description of the alternative aggregation methods for the international comparison project is also omitted. A significant part of section C explaining how to deflate in the main components of the goods and services account is moved to the compilation volume.

Chapter 16: Summarising and integrating the accounts

This chapter is included in its entirety.

Chapter 17: The other parts of the SNA

As noted this is the only chapter in this document that does not correspond in terms of subject matter to the chapter with the same number in the full 2008 SNA. This chapter contains a summary of the contents of chapters 17 to 29.

References

- Bank for International Settlements, the Commonwealth Secretariat, Eurostat, International Monetary Fund, Organisation for Economic Co-operation and Development, the Paris Club Secretariat, the United Nations Conference on Trade and Development and World Bank (2003): *External Debt Statistics: Guide for Compilers and Users*.
Also available from: <http://www.imf.org/external/pubs/ft/eds/Eng/Guide/file1.pdf>
- Canberra Group (2001): Expert Group on Household Income Statistics *The Canberra Group: Final Report and Recommendations*, Ottawa.
Available from: <http://www.lisproject.org/links/canberra/finalreport.pdf>
- EU KLEMS Project: *Productivity in the European Union: A Comparative Industry Approach (EU KLEMS 2003)*.
Available from: <http://www.euklems.net/>
- European Central Bank (2007): *Monetary Financial Institutions And Markets Statistics Sector Manual*. Frankfurt am Main.
Available from: <http://www.ecb.int/pub/pdf/other/mfmarketstatisticssectormanual200703en.pdf>
- Eurostat (1995): *Regional accounts methods - Gross value-added and gross fixed capital formation by activity*. Office for Official Publications of the European Communities, Luxembourg.
- Eurostat (1996): *Regional accounts methods – Households Accounts*. Office for Official Publications of the European Communities, Luxembourg
- Eurostat (1999): *Handbook on Quarterly National Accounts*. Office for Official Publications of the European Communities, Luxembourg.
Available from: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/CA-22-99-781/EN/CA-22-99-781-EN.PDF
- Eurostat (2001): *Handbook on Price and Volume Measures in National Accounts*. Office for Official Publications of the European Communities, Luxembourg.
Also available from: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-41-01-543/EN/KS-41-01-543-EN.PDF
- Eurostat (2002a): *ESA95 Manual of Government Deficit and Debt*. Office for Official Publications of the European Communities, Luxembourg.
Also available from: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-42-02-585/EN/KS-42-02-585-EN.PDF
- Eurostat (2002b): *Manual on Sources and Methods for the Compilation of ESA95 Financial Accounts*. Office for Official Publications of the European Communities, Luxembourg.
Also available from: http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-BE-02-004
- Eurostat (2003): *Household Production and Consumption: Proposal for a Methodology of Household Satellite Accounts*. Office for Official Publications of the European Communities, Luxembourg
- Eurostat (2007): *Recommendations Manual on the Production of Foreign Affiliates Statistics (FATS)*. Office for Official Publications of the European Communities, Luxembourg.
Also available from: http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-RA-07-002
- Eurostat (2008): *Eurostat Manual of Supply, Use and Input-Output Tables*. Office for Official Publications of the European Communities, Luxembourg.
Available from: http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-RA-07-013
- Eurostat and Organisation for Economic Co-operation and Development (2005): *Methodological Guide for Developing Producer Price Indices for Services*.
Also available from: <http://www.oecd.org/dataoecd/44/40/36274111.pdf>

System of National Accounts

- Eurostat, Organisation for Economic Co-operation and Development, World Tourism Organization, United Nations (2008): *2008 Tourism Satellite Account: Recommended Methodological Framework*. Luxembourg, Madrid, New York, Paris. United Nations publication sales No. E.01.XVII.9.
Available from: <http://unstats.un.org/unsd/tradeserv/TSA%20RMF%202008%20edited%20whitecover.pdf>
- Husmanns, R.; du Jeu, B. (2002): *ILO Compendium of Official Statistics on Employment in the Informal Sector*, Working Paper No.1, Bureau of Statistics, ILO, 2002. Paper prepared for the discussion on Decent Work and the Informal Economy during the 90th Session of the International Labour Conference, Geneva.
Available from: <http://www.ilo.org/public/english/bureau/stat/download/ilocomp.pdf>
- Husmanns, Ralf (2004): *Measuring the Informal Economy: from: Employment in the Informal Sector to Informal Employment*, ILO, Working Paper No. 53, Geneva.
Available from: <http://www.ilo.org/public/english/bureau/stat/download/papers/wp53.pdf>
- Husmanns, Ralf (2005): *Measurement of Informal Employment: Recent International Standards 2005*. Paper presented to the 14th Conference of Commonwealth Statisticians, Cape Town South Africa.
Available from: <http://www.ilo.org/public/english/bureau/stat/papers/comp.htm>
- International Labour Office (1993): *Resolution Concerning Statistics of Employment in the Informal Sector* 15th International Conference of Labour Statisticians: Highlights of the Conference and text of the three resolutions adopted. In Bulletin of Labour Statistics 1993-2, IX-XXIV, Geneva 25.87
- International Labour Office (2002): *Women and Men In The Informal Economy: A Statistical Picture*, Geneva.
Available from:
<http://www.wiego.org/publications/women%20and%20men%20in%20the%20informal%20economy.pdf>
- International Labour Office (2003): *Guidelines Concerning a Statistical Definition of Informal Employment* Report of the 17th International Conference of Labour Statisticians, Geneva.
Available from: <http://www.ilo.org/public/english/bureau/stat/download/17thicls/final.pdf>
- International Labour Office (2003): *Household Income and Expenditure* Report of the 17th International Conference of Labour Statisticians, Geneva.
Available from: <http://www.ilo.org/public/english/bureau/stat/download/17thicls/r2hies.pdf>
- International Labour Office (forthcoming): *Manual on the Measurement of Volunteer Work*.
Available from: http://www.ilo.org/global/What_we_do/Statistics/events/icls/lang_en/docName_WCMS_100574/index.htm
- International Labour Organization, International Monetary Fund, Organisation for Economic and Co-operation and Development, Eurostat, United Nations Economic Commission for Europe and World Bank (2004): *Consumer Price Index Manual: Theory and Practice*, Geneva, International Labour Organisation.
Also available from: <http://www.ilo.org/public/english/bureau/stat/guides/cpi/index.htm>
- International Labour Organization, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, Economic Commission for Europe and the World Bank (2004): *Producer Price Index Manual: Theory and Practice*, Washington, International Monetary Fund.
Also available from: <http://www.imf.org/external/np/sta/teggppi/index.htm>
- International Labour Organization, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations Economic Commission for Europe and World Bank (2009): *Export and Import Price Index Manual. Theory and Practice*. Washington, International Monetary Fund.
Also available from: <http://www.imf.org/external/np/sta/tegeipi/index.htm>
- International Monetary Fund (2000): *Monetary and Financial Statistics Manual*, IMF, Washington DC.
Available from: <http://www.imf.org/external/pubs/ft/mfs/manual/index.htm>
- International Monetary Fund (2001a): *Government Finance Statistics Manual*. IMF, Washington DC.
Available from: <http://www.imf.org/external/pubs/ft/gfs/manual/pdf/all.pdf>

- International Monetary Fund (2001b): *Quarterly National Accounts Manual – Concepts, Data Sources, and Compilation*. IMF, Washington DC.
Available from: <http://www.imf.org/external/pubs/ft/qna/2000/Textbook/index.htm>
- International Monetary Fund (2008a): *Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6)*, IMF, Washington DC.
Also available from: <http://www.imf.org/external/pubs/ft/bop/2007/bopman6.htm>
- International Monetary Fund (2008b): *International Transactions in Remittances: Guide for Compilers and Users* (draft). IMF, Washington DC.
Available from: <http://www.imf.org/external/np/sta/bop/2008/rcg/pdf/guide.pdf>
- International Monetary Fund (2008c): *Monetary and Financial Statistics: Compilation Guide*, IMF, Washington DC.
Available from: <http://www.imf.org/external/pubs/ft/cgmfs/eng/pdf/cgmfs.pdf>
- International Monetary Fund (Annual): *Balance of Payments Statistics Yearbook*, IMF, Washington DC.
- Jalava, Jukka; Kavonius, Ilja Kristian, (2006): *Durable Goods and their Effect on Household Saving Ratios in the Euro Area*. VATT Discussion Paper, Government Institute for Economic Research, Helsinki, Finland.
Available from: http://www.vatt.fi/file/vatt_publication_pdf/k409.pdf
- Organisation for Economic Co-operation and Development (1996): *Inflation Accounting - A Manual on National Accounting Under Conditions of High Inflation*, OECD, Paris.
Available from: <http://browse.oecdbookshop.org/oecd/pdfs/browseit/3096061E.PDF>
- Organisation for Economic Co-operation and Development (2000): *A System of Health Accounts*. OECD, Paris.
Available from: <http://www.oecd.org/dataoecd/41/4/1841456.pdf>
- Organisation for Economic Co-operation and Development (2001): *Measuring Productivity: Measurement of Aggregate and Industry-level Productivity Growth*; OECD, Paris.
Available from: <http://www.oecd.org/dataoecd/59/29/2352458.pdf>
- Organisation for Economic Co-operation and Development (2004): *Handbook on Hedonic Indexes and Quality Adjustments in Price Indexes: Special Application to Information Technology Products*.
Also available from: <http://browse.oecdbookshop.org/oecd/pdfs/browseit/9306081E.PDF>
- Organisation for Economic Co-operation and Development (2005): *Measuring Globalisation: OECD Handbook on Economic Globalisation Indicators*, OECD, Paris.
Available from: <http://browse.oecdbookshop.org/oecd/pdfs/browseit/9205061E.PDF>
- Organisation for Economic Co-operation and Development (2008): *OECD Benchmark Definition of Foreign Direct Investment, fourth edition*; OECD, Paris; Available from: <http://www.oecd.org/dataoecd/26/50/40193734.pdf>
- Organisation for Economic Co-operation and Development (2009): *Towards Measuring the Volume of Health and Education Services*: OECD Handbook; OECD, Paris.
- Organisation for Economic Co-operation and Development (2009): *Measuring Capital: (revised version)* OECD, Paris.
Also available from: [http://www.oilis.oecd.org/oilis/2009doc.nsf/LinkTo/NT00000962/\\$FILE/JT03258144.PDF](http://www.oilis.oecd.org/oilis/2009doc.nsf/LinkTo/NT00000962/$FILE/JT03258144.PDF)
- Organisation for Economic Co-operation and Development: (forthcoming): *Handbook on Deriving Capital Measures of Intellectual Property Products*; OECD, Paris.
- Organisation for Economic Co-operation and Development (Annual): *Revenue Statistics*, OECD, Paris.
- Organisation for Economic Co-operation and Development and Eurostat (2008): *Guidelines on Revisions Policy and Analysis*
Available from: http://www.oecd.org/document/21/0,3343,en_2649_34257_40016853_1_1_1_1,00.html
- Organisation for Economic Co-operation and Development, International Monetary Fund, International Labour Organisation and CIS STAT (2002): *Measuring the Non-Observed Economy - A Handbook*; OECD, Paris:
Available from: <http://www.oecd.org/dataoecd/9/20/1963116.pdf>

System of National Accounts

- Statistics Finland, National Consumer Research Centre (2006): *Household Production and Consumption in Finland 2001 - Household Satellite Account*, Helsinki.
Available from: http://www.stat.fi/tup/julkaisut/isbn_952-467-570-6_en.pdf
- United Nations (1975): *Towards a System of Social and Demographic Statistics*, New York. Studies in methods, Series: F, No.18, United Nations Publication Sales number: E.74.XVII.8
Available from: http://unstats.un.org/unsd/publication/SeriesF/SeriesF_18E.pdf
- United Nations (1998): *International Merchandise Trade Statistics: Concepts and Definitions*. Studies in Methods, Series M, No.52, Rev.2, United Nations Publication Sales No. E.98.XVII.16
Available from: http://unstats.un.org/unsd/publication/SeriesM/SeriesM_52rev2E.pdf
- United Nations (2000): *Classifications of Expenditure According to Purpose: Classification of the Functions of Government (COFOG); Classification of Individual Consumption According to Purpose (COICOP); Classification of the Purposes of Non-Profit Institutions Serving Households (COPNI); Classification of the Outlays of Producers According to Purpose (COPP)*. Statistical Papers, Series M, No. 84, United Nations Publication, Sales No. E.00.XVII.6
Also available from: http://unstats.un.org/unsd/publication/SeriesM/SeriesM_84E.pdf
- United Nations (2000): *Household Accounting: Experience in Concepts and Compilation, Volume 1 Household Accounts*. Studies in Methods, Series F, No. 75 (Vol 1). United Nations Publication Sales No. E.00.XVII.16 (Vol. 1)
Available from: http://unstats.un.org/unsd/publication/SeriesF/SeriesF_75v1E.pdf
- United Nations (2002): *SNA News and Notes*, Vol. 14, April 2002.
Available from: <http://unstats.un.org/unsd/nationalaccount/snaneews.asp>
- United Nations (2003): *Handbook on Non-Profit Institutions in the System of National Accounts*, New York. Studies in methods, Series: F, No.91, United Nations Publication Sales no. 03.XVII.9
Available from: http://unstats.un.org/unsd/publication/SeriesF/SeriesF_91E.pdf
- United Nations (2006): *Standard Industrial Trade Classification Revision 4*. Statistical papers, Series M, No 34, Rev. 4. United Nations Publications Sales No. E.06.XVII.10
Also available from: http://unstats.un.org/unsd/publication/SeriesM/SeriesM_34rev4E.pdf
- United Nations (2008a): *International Standard Industrial Classification of All Economic Activities Revision 4*, New York, Statistical Papers Series M No. 4 Rev.4 United Nations Publication Sales No. E.08.XVII
Also available from: <http://unstats.un.org/unsd/cr/registry/iscic-4.asp>
- United Nations (2008b): *Central Product Classification Version 2*. Department of Economic and Social Affairs, Statistics Division, Statistical Papers, Series M, No 77, Ver. 2. United Nations Publications, Sales No.E.08.XVII.7.
Also available from: <http://unstats.un.org/unsd/cr/registry/cpc-2.asp>
- United Nations (2008c): *International Recommendations on Industrial Statistics*. Statistical Papers, Series M, No. 90, United Nations publication sales no. E.08.XVII.8
Available from: <http://unstats.un.org/unsd/industry/docs/M90.pdf>
- United Nations (forthcoming): *Companion Guide to ISIC and CPC*, Statistical papers, series F, No. 101, United Nations publication
- United Nations Economic Commission for Europe (1992): *Guidebook to Statistics on the Hidden Economy*
- United Nations Economic Commission for Europe (1993): *Inventory of National Practices in Estimating Hidden and Informal Economic Activities for National Accounts*. Available from: <http://www.unece.org/stats/publications/NOE1993.pdf>
- United Nations Economic Commission for Europe (2003): *Non-observed Economy in National Accounts - Survey of National Practices*, Geneva. United Nations Publication Sales No. E.03.II.E.56.
Available from: <http://www.unece.org/stats/publications/NOE2003.pdf>
- United Nations Economic Commission for Europe (2008): *Non-observed Economy in National Accounts - Survey of Country Practices*, Geneva. United Nations Publication Sales No. E.08.II.E.8.
Available from: <http://www.unece.org/stats/publications/NOE2008.pdf>

- United Nations and the European Central Bank (forthcoming) *Financial Production, Flows and Stocks in the SNA*.
- United Nations, European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations Conference on Trade and Development and the World Trade Organization (2002): *Manual on Statistics of International Trade in Services*, New York. Statistical Papers Series M No. 86, United Nations Publication Sales No. E.02.XVII.11.
Available from: http://unstats.un.org/unsd/publication/Seriesm/Seriesm_86e.pdf
- United Nations, European Commission, International Monetary Fund, Organisation for Economic Cooperation and Development and World Bank (2003): *Integrated Environmental and Economic Accounting 2003*, Studies in Methods, Series F, No16 Rev. 1. United Nations Publication, Sales No. E.06.XVII.8
Also available from: <http://unstats.un.org/unsd/envaccounting/seea2003.pdf>
- United States National Research Council, Panel to Study the Design of Nonmarket Accounts (2005): *Beyond the Market: Designing Non-market Accounts for the United States*.
Available from: http://www.nap.edu/catalog.php?record_id=11181#toc
- World Bank (2008): *Global Purchasing Power Parities and Real Expenditure: 2005 International Comparison Program Methodological Handbook*. World Bank, Washington.
Also available from: <http://go.worldbank.org/MWS20NNFK0>
- World Customs Organization (2007): *Harmonized Commodity Description and Coding System, Revision 4*.
Also available from: <http://publications.wcoomd.org/index.php>

Glossary

Animal resources yielding repeat products cover animals whose natural growth and regeneration are under the direct control, responsibility and management of institutional units.	10.92
Asset An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another.	10.8
Asset boundary for fixed assets The asset boundary for fixed assets consists of goods and services that are used in production for more than one year.	10.33
Buildings other than dwellings include whole buildings or parts of buildings not designated as dwellings. Fixtures, facilities and equipment that are integral parts of the structures are included.	10.74
Capital taxes consist of taxes levied at irregular and infrequent intervals on the values of the assets or net worth owned by institutional units or on the values of assets transferred between institutional units as a result of legacies, gifts inter vivos or other transfers.	10.207
Capital transfers are unrequited transfers where either the party making the transfer realizes the funds involved by disposing of an asset (other than cash or inventories), relinquishing a financial claim (other than accounts receivable) or the party receiving the transfer is obliged to acquire an asset (other than cash) or both conditions are met.	10.19
Changes in inventories are measured by the value of the entries into inventories less the value of withdrawals and less the value of any recurrent losses of goods held in inventories during the accounting period.	10.118
Changes in net worth due to saving and capital transfers represent the positive or negative amount available to the unit or sector for the acquisition of non-financial and financial assets.	10.21
Computer software consists of computer programs, program descriptions and supporting materials for both systems and applications software.	10.110
Consumption of fixed capital is the decline, during the course of the accounting period, in the current value of the stock of fixed assets owned and used by a producer as a result of physical deterioration, normal obsolescence or normal accidental damage. ...	10.25
Contracts, leases and licences are treated as assets only when both the following conditions are satisfied. The terms of the contract, lease or licence specify a price for the use of an asset or provision of a service that differs from the price that would prevail in the absence of the contract, lease or licence. One party to the contract must be able legally and practically to realize this price difference.	10.186
Contracts, leases and licences are treated as assets only when both the following conditions are satisfied. The terms of the contract, lease or licence specify a price for the use of an asset or provision of a service that differs from the price that would prevail in the absence of the contract, lease or licence. One party to the contract must be able legally and practically to realize this price difference.	10.16
Costs of ownership transfer The costs of ownership transfer consist of the following kinds of items (i) All professional charges or commissions incurred by both units acquiring or disposing of an asset such as fees paid to lawyers, architects, surveyors, engineers and valuers, and commissions paid to estate agents and auctioneers. (ii) Any trade and transport costs separately invoiced to the purchaser, (iii) All taxes payable by the unit acquiring the asset on the transfer of ownership of the asset. (iv) Any tax payable on the disposal of an asset. (v) Any delivery and installation or disinstallation costs not included in the price of the asset being acquired or disposed of. (vi) Any terminal costs incurred at the end of an asset's life such as those required to render the structure safe or to restore the environment in which it is situated.	10.51
Cultivated biological resources cover animal resources yielding repeat products and tree, crop and plant resources yielding repeat products whose natural growth and regeneration is under the direct control, responsibility and management of an institutional unit.	10.88

Databases consist of files of data organized in such a way as to permit resource-effective access and use of the data.	10.112
Dwellings are buildings, or designated parts of buildings, that are used entirely or primarily as residences, including any associated structures, such as garages, and all permanent fixtures customarily installed in residences.	10.68
Economic owner The economic owner of entities such as goods and services, natural resources, financial assets and liabilities is the institutional unit entitled to claim the benefits associated with the use of the entity in question in the course of an economic activity by virtue of accepting the associated risks.	10.5
Entertainment, literary and artistic originals consist of the original films, sound recordings, manuscripts, tapes, models, etc., on which drama performances, radio and television programming, musical performances, sporting events, literary and artistic output, etc., are recorded or embodied.	10.115
Entitlement to future goods and services on an exclusive basis relates to the case where one party which has contracted to purchase goods or services at a fixed price at a time in the future is able to transfer the obligation of the second party to the contract to a third party.	10.195
Existing fixed asset An existing fixed asset is one whose value was included in the stock of fixed capital of at least one producer unit in the domestic economy at some earlier point in time either in the current period or in the immediately previous accounting period.	10.38
Expenditure measure of GDP The expenditure measure of gross domestic product (GDP) is derived as the sum of expenditure on final consumption plus gross capital formation plus exports less imports.	16.47
Finished goods consist of goods produced as outputs that their producer does not intend to process further before supplying them to other institutional units.	10.142
Fixed assets are produced assets that are used repeatedly or continuously in production processes for more than one year.	10.11
GNI Gross national income (GNI) is defined as GDP plus compensation of employees receivable from abroad plus property income receivable from abroad plus taxes less subsidies on production receivable from abroad less compensation of employees payable abroad less property income payable abroad and less taxes plus subsidies on production payable abroad.	16.54
Goods and services account The goods and services account shows the balance between the total goods and services supplied as resources to the economy as output and imports (including the value of taxes less subsidies on products not already included in the valuation of output) and the use of the same goods and services as intermediate consumption, final consumption, capital formation and exports.	16.27
Goods for resale are goods acquired by enterprises, such as wholesalers or retailers, for the purpose of reselling them to their customers. .	10.145
Goodwill and market assets The value of goodwill and marketing assets is defined as the difference between the value paid for an enterprise as a going concern and the sum of its assets less the sum of its liabilities, each item of which has been separately identified and valued.	10.199
Gross capital formation shows the acquisition less disposal of produced assets for purposes of fixed capital formation, inventories or valuables.	10.24
Gross fixed capital formation in a particular category of fixed asset consists of the value of producers' acquisitions of new and existing products of this type less the value of their disposals of fixed assets of the same type.	10.64
Gross fixed capital formation is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain specified expenditure on services that adds to the value of non-produced assets.	10.32
Income measure of GDP The income measure of gross domestic product (GDP) is derived as compensation of employees plus gross operating surplus plus gross mixed incomes plus taxes less subsidies on both production and imports.	16.48
Information, computer and telecommunications (ICT) equipment consists of devices using electronic controls and also the electronic components forming part of these devices.	10.85

Intellectual property products are the result of research, development, investigation or innovation leading to knowledge that the developers can market or use to their own benefit in production because use of the knowledge is restricted by means of legal or other protection.	10.98
Inventories are produced assets that consist of goods and services, which came into existence in the current period or in an earlier period, and that are held for sale, use in production or other use at a later date.	10.12
Investment grants consist of capital transfers made by governments to other resident or non-resident institutional units to finance all or part of the costs of their acquiring fixed assets.	10.208
Land consists of the ground, including the soil covering and any associated surface waters, over which ownership rights are enforced and from which economic benefits can be derived by their owners by holding or using them.	10.175
Land improvements are the result of actions that lead to major improvements in the quantity, quality or productivity of land, or prevent its deterioration.	10.79
Legal owner The legal owner of entities such as goods and services, natural resources, financial assets and liabilities is the institutional unit entitled in law and sustainable under the law to claim the benefits associated with the entities.	10.5
Machinery and equipment covers transport equipment, machinery for information, communication and telecommunications (ICT) equipment, and other machinery and equipment.	10.82
Marketable operating leases are third-party property rights relating to fixed assets.	10.190
Marketing assets consist of items such as brand names, mastheads, trademarks, logos and domain names.	10.198
Materials and supplies consist of all products that an enterprise holds in inventory with the intention of using them as intermediate inputs into production.	10.131
Military inventories consist of single-use items, such as ammunition, missiles, rockets, bombs, etc., delivered by weapons or weapons systems.	10.144
Mineral and energy resources consist of mineral and energy reserves located on or below the earth's surface that are economically exploitable, given current technology and relative prices.	10.179
Mineral exploration and evaluation consists of the value of expenditures on exploration for petroleum and natural gas and for non-petroleum deposits and subsequent evaluation of the discoveries made.	10.106
Natural resources consist of naturally occurring resources such as land, water resources, uncultivated forests and deposits of minerals that have an economic value.	10.15
NDP Net domestic product (NDP) is defined as gross domestic product (GDP) less the consumption of fixed capital.	16.52
Net borrowing see net lending	10.28
Net lending is defined as the difference between changes in net worth due to saving and capital transfers and net acquisitions of non-financial assets (acquisitions less disposals of non-financial assets, less consumption of fixed capital). If the amount is negative it represents net borrowing.	10.28
NNDI Net national disposable income (NNDI) is defined as net national income (NNI) plus current transfers receivable from abroad less current transfers payable abroad.	16.57
NNI Net national income (NNI) is defined as gross national income (GNI) less the consumption of fixed capital.	16.55
Non-cultivated biological resources consist of animals, birds, fish and plants that yield both once-only and repeat products over which ownership rights are enforced but for which natural growth and/or regeneration is not under the direct control, responsibility and management of institutional units.	10.182
Non-produced assets consist of three categories (i) natural resources, (ii) contracts, leases and licences, and (iii) purchased goodwill and marketing assets.	10.14

Other buildings and structures comprise non-residential buildings, other structures and land improvements.	10.73
Other capital transfers consist of all capital transfers except capital taxes and investment grants.	10.210
Other intellectual property products include any such products that constitute fixed assets but are not captured as research and development, mineral exploration and evaluation, computer software and databases or entertainment, literary and artistic originals. 10.117	
Other machinery and equipment consists of machinery and equipment not elsewhere classified.	10.86
Other structures include structures other than buildings, including the cost of the streets, sewer, etc.	10.76
Other work-in-progress consists of output (other than on cultivated biological resources) that is not yet sufficiently processed to be in a state in which it is normally supplied to other institutional units.	10.141
Permit to undertake a specific activity A permit to undertake a specific activity is one where: the permits are limited in number and so allow the holders to earn monopoly profits, the monopoly profits do not come from the use of an asset belonging to the permit-issuer, a permit holder is able both legally and practically to sell the permit to a third party.	10.192
Permits to use natural resources are third-party property rights relating to natural resources.	10.191
Production measure of GDP The production measure of gross domestic product (GDP) is derived as the value of output less intermediate consumption plus any taxes less subsidies on products not already included in the value of output	16.47
Public monuments are identifiable because of particular historical, national, regional, local, religious or symbolic significance.	10.78
Purchased goodwill and marketing assets represent the whole or part of the net worth of an institutional unit.	10.17
Research and development consists of the value of expenditures on creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and use of this stock of knowledge to devise new applications. This does not extend to including human capital as assets within the SNA.	10.103
Transport equipment consists of equipment for moving people and objects.	10.84
Tree, crop and plant resources yielding repeat products cover plants whose natural growth and regeneration are under the direct control, responsibility and management of institutional units.	10.95
Valuables are produced goods of considerable value that are not used primarily for purposes of production or consumption but are held as stores of value over time.	10.13
Water resources consist of surface and groundwater resources used for extraction to the extent that their scarcity leads to the enforcement of ownership and/or use rights, market valuation and some measure of economic control.	10.184
Weapons systems include vehicles and other equipment such as warships, submarines, military aircraft, tanks, missile carriers and launchers, etc.	10.87
Work-in-progress consists of output produced by an enterprise that is not yet sufficiently processed to be in a state in which it is normally supplied to other institutional units.	10.134
Work-in-progress on cultivated biological resources	10.140
Work-in-progress on cultivated biological resources consists of output that is not yet sufficiently mature to be in a state in which it is normally supplied to other institutional units.	10.140

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