

## 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 transactions in products, transactions showing how income is distributed and redistributed within the SNA, transactions in non-produced assets, financial assets and liabilities, and 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 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.

3.15 In principle, any lapse of time may be chosen as the accounting period. Periods that are too short have the disadvantage that statistical data are influenced by incidental factors, while long periods do not adequately portray changes going on in the economy. Merely seasonal effects can be avoided by having the accounting period cover a whole cycle of regularly recurrent economic phenomena. Most business and government accounting refers to complete years. In general, calendar or financial years or quarters are best suited for drawing up a full set of national accounts.

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. Entries are at current value on the market (that is, the amount agreed upon by two parties) or at its closest equivalent. The value on the market may need to be adjusted to the coverage of the flow or stock as defined in the SNA and expressed appropriately given the nature of the flow or stock with respect to taxes and subsidies on products, transport costs and trade margins.

b. Flows and stocks must be recorded consistently with respect to timing. Flows are recorded at the moment of accrual within the accounting period (that is, the moment economic value is created, transformed, exchanged, transferred or extinguished). Stocks are recorded at the moment to which the account relates, typically the beginning or end of the accounting period.

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.

d. Depending on the character of the entry, a distinction should be made between resources and uses or between assets and liabilities. In the process of grouping, netting is implicit for several items, but consolidation is not advised.

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.

## 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. Once the definitions are clear, the way in which assets and liabilities are classified within a balance sheet are touched on as well as the way in which items enter and leave the balance sheet.
- 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.

#### Contingent liabilities and provisions

3.40 A liability, as defined in paragraph 3.33 above, is unconditional once the contract establishing the liability is agreed by both parties. If the liability is established not by a legal contract but by long and well-established custom, it is referred to as a constructive liability. Some liabilities may involve a legal contract but specify that one party is obliged to provide a payment or series of payments to another unit only if certain specified conditions prevail. Such liabilities are called contingent liabilities. In general, the SNA includes (legal) liabilities and constructive liabilities but not contingent liabilities. An exception is made for standardized guarantees where, although each individual arrangement involves a contingent liability, the number of similar guarantees is such that an actual liability is established for the proportion of guarantees likely to be called.

3.41 A corporation may set aside funds to cover unexpected events or to cover default by their customers. Such monies may be described as provisions. These are not treated as liabilities in the SNA because they are not the subject of the sort of contract, legal or constructive, associated with a liability. Though financial institutions may regularly write off bad debts, for example, it would not be appropriate to regard the provisions set aside for this as assets of the borrowers. Even though they may be earmarked for specific purposes, the amounts designated as provisions remain part of the net worth of the corporation. Provisions are thus a designation of the purpose for which funds may

be used rather than a category of financial assets and liabilities in and of themselves.

## 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. Two exceptions exist. Historical monuments are included as produced assets even though they may have been constructed long before economic accounts existed. Occasionally a monument may be newly recognized as having value and thus enter the asset boundary as a produced asset other than through a current production process. Similar arguments apply to artefacts treated as valuables. 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:

- They are entitled to own goods or assets in their own right, and therefore are able to exchange them;
- 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;
- 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, service 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.

- 3.63 The recording of the payment of social security contributions is an example of the first kind of rerouting. In practice, employers typically deduct the contributions that the employees are obliged to make to social security funds from the employee's wages and salaries. In addition the employers make contributions to social security funds from their own resources on behalf of the employees. Both contributions go directly from the employer to social security funds. However, in the SNA, the employers' contributions are treated as part of compensation of employees and are recorded as being paid to the employee. The employee is then recorded as making a payment to social security funds consisting of both the employer's and employee's own contributions. Social security contributions are thus recorded strictly according to the general principles governing the recording of transactions in the SNA to bring out the economic substance behind arrangements adopted for administrative convenience. As a result of the rerouting, employers' social contributions are included as a part of labour cost.
- 3.64 An example of the second kind of rerouting is provided by the treatment of the retained earnings of foreign direct investment enterprises. The retention of some or all of the earnings of a foreign direct investment enterprise within that enterprise can be regarded as a deliberate investment decision by the foreign owners. Accordingly, the retained earnings are rerouted in the SNA by showing them as first remitted to the foreign owners as property income and then reinvested in the equity of the direct investment enterprise.
- 3.65 Similarly, the property income earned on the reserves of certain life insurance corporations is deemed to be paid out to policyholders and then paid back again as premium supplements even though in actuality the property income is retained by the insurance enterprises. As a result, the saving of persons or households includes the amount of the rerouted property income while the saving of insurance enterprises does not. This alternative picture of saving, which better reflects economic reality, is the purpose of the rerouting.

#### *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. For example, the rental actually paid by the lessee under a financial lease is not recorded as a payment for a service; instead, it is partitioned into two transactions, a repayment of principal and a payment of interest. This partitioning of the rental payment is part of a treatment that implements an economic view of financial leasing in the SNA. Financial leasing is viewed as a method of financing the purchase of a fixed asset and a financial lease is shown in the SNA as a loan from the lessor to the lessee.
- 3.67 Another example is the treatment of certain financial services. For example, the SNA prescribes partitioning interest payable by financial intermediaries on deposits and payable to financial intermediaries on loans into two

components. One component represents interest as defined in the SNA while the remainder represents the purchase of financial intermediation services for which the intermediaries do not charge explicitly. The purpose of the partitioning is to make the service item explicit. In consequence, intermediate and final consumption of particular industries and institutional sectors as well as gross domestic product are affected. However, the saving of all the units concerned, including the financial intermediaries themselves, is not affected.

- 3.68 The recording in the SNA of transactions for wholesalers and retailers does not mirror the way in which those involved view them. The purchases of goods for resale by wholesalers and retailers are not recorded by these units explicitly, and they are viewed as selling, not the goods, but the services of storing and displaying a selection of goods in convenient locations and making them easily available for customers. This partitioning measures output for traders by the value of the margins realized on goods they purchase for resale.

#### *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. For example, purchases a commercial agent makes under the orders of, and at the expense of, another party are directly attributed to the latter. The accounts of the agent only show the fee charged to the principal for the facilitation services rendered.
- 3.70 A second example is the collection of taxes by one government unit on behalf of another. The SNA follows the guidance of the *Government Finance Statistics Manual* (International Monetary Fund (IMF), 2001), known as *GFSM2001* as follows. In general, a tax is attributed to the government unit that
- a. exercises the authority to impose the tax (either as a principal or through the delegated authority of the principal), and
  - b. has final discretion to set and vary the rate of the tax.
- 3.71 Where an amount is collected by one government for and on behalf of another government, and the latter government has the authority to impose the tax, set and vary its rate, then the former is acting as an agent for the latter and the tax is reassigned. Any amount retained by the collecting government as a collection charge should be treated as a payment for a service. Any other amount retained by the collecting government, such as under a tax-sharing arrangement, should be treated as a current grant. If the collecting government was delegated the authority to set and vary the rate, then the amount collected should be treated as tax revenue of this government.

3.72 Where different governments jointly and equally set the rate of a tax and jointly and equally decide on the distribution of the proceeds, with no individual government having ultimate overriding authority, then the tax revenues are attributed to each government according to its respective share of the proceeds. If an arrangement allows one government unit to exercise ultimate overriding authority, then all of the tax revenue is attributed to that unit.

3.73 There may also be the circumstance where a tax is imposed under the constitutional or other authority of one government, but other governments individually set the tax rate in their jurisdictions. The proceeds of the tax generated in each respective government's jurisdiction are attributed as tax revenues of that government.

3.74 Similar principles are applied for the payment of subsidies or social benefits.

### 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. (In the past, the estimation of a value has sometimes been called imputation, but it is preferable to reserve that term for the kind of situation that involves not only estimating a value but also constructing a transaction.)

3.76 The amounts of money associated with non-monetary transactions are entries whose economic significance is different from cash payments as they do not represent freely disposable sums of money. The various methods of valuation to be employed for non-monetary transactions are dealt with in the section on valuation in section E.

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.

### *Barter transactions*

3.79 Barter transactions involve two parties, with one party providing a good, service or asset other than cash to the

other in return for a good, service or asset other than cash. As mentioned above, barter is an example of an actual transaction for which a value must be estimated. Barter transactions in which goods are traded for goods have always been important. The barter of goods may be systematically organized on proper markets or, in some countries, may occur only sporadically on a small scale. Barter between nations involving exports and imports also occurs.

### *Remuneration in kind*

3.80 Remuneration in kind occurs when an employee accepts payment in the form of goods and services instead of money. This practice is extensive in most economies for reasons ranging from the desire of employers to find captive markets for part of their output, to tax avoidance or evasion. Remuneration in kind takes various forms and the following list 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,
- 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 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 coal for miners.

Further, in addition to goods and services, some employees may be willing, or obliged, to accept part of their compensation in the form of financial or other assets.

### *Payments in kind other than remuneration in kind*

3.81 Payments in kind other than remuneration in kind occur when any of a wide variety of payments are made in the form of goods and services rather than money. For example, a doctor may accept payment in wine instead of money. Or, instead of paying rent or rentals in money, the user of land or fixed capital, respectively, may pay the owner in goods or services. In agriculture, for example, the "rent" may be paid by handing over part of the crops produced to the landlord. (This is known as share cropping.) Tax payments, also, may be paid in kind; for example, inheritance taxes may be paid by making donations of paintings or other valuables.

### *Transfers in kind*

3.82 As noted above, transactions in kind are normally recorded in the accounts as if they are monetary transfers followed by the expenditure by the recipient on the products concerned. This treatment applies to government international cooperation, gifts and charitable contributions. Government international cooperation, gifts, and charitable contributions are often made in kind for convenience, efficiency, or tax purposes. For example,



international aid after a natural disaster may be more effective and delivered faster if made directly in the form of medicine, food, and shelter instead of money. Charitable contributions in kind sometimes avoid taxes that would be due if the item in question were sold and the money given to the charity.

- 3.83 A special case of transfers in kind is that of social transfers in kind. These consist of goods and services provided by general government and non-profit institutions serving households (NPISHs) that are delivered to individual households. Health and education services are the prime examples. Rather than provide a specified amount of money to be used to purchase medical and educational services, the services are often provided in kind to make sure that the need for the services is met. (Sometimes the recipient purchases the service and is reimbursed by the insurance or assistance scheme. Such a transaction is still treated as being in kind because the recipient is merely acting as the agent of the insurance scheme.)
- 3.84 Social transfers in kind are recorded as an implicit transfer of income from government and NPISHs to households and a transfer of consumption goods and services. The measure of income after the transfer is called adjusted disposable income (rather than disposable income) and the measure of consumption is called actual final consumption (rather than final consumption expenditure).

#### *Internal transactions*

- 3.85 The SNA treats certain kinds of actions within a unit as transactions to give a more analytically useful picture of final uses of output and of production. These transactions that involve only one unit are called internal, or intra-unit, transactions.
- 3.86 Some households, all NPISHs and general government units operate as both producers and as final consumers. When an institutional unit engages in both activities, it may make the choice to consume some or all of the output itself after the production is completed. In such a case, no transaction takes place between institutional units, but it is useful to construct a transaction and estimate its value to record both output and consumption in the accounts.
- 3.87 For households, the principle in the SNA is that all goods produced by persons that are subsequently used by the same persons, or members of the same households, for purposes of final consumption are to be included in output in a manner analogous to that for goods sold on the market. This means that transactions are assumed in which the persons responsible for the production of the goods are deemed to deliver the goods to themselves as consumers, or members of their own households, and then values have to be associated with them in order to enter them in the accounts.
- 3.88 Establishments owned by governments or NPISHs commonly provide education, health, or other kinds of services to individual households without charge or at prices that are not economically significant. The costs of providing these services are incurred by the governments or NPISHs, and the values are recorded as internal transactions: that is, as final expenditures by governments

or NPISHs on outputs produced by establishments they own themselves. (As already explained, the acquisition of these services by households is recorded separately under social transfers in kind, another form of non-monetary transactions that take place between the government units or NPISHs and the households in question.)

- 3.89 The SNA recognizes several other transactions within enterprises to give a fuller view of production. For example, when enterprises produce fixed assets for their own use, the SNA records deliveries by the enterprises to themselves as the subsequent users. Also, when enterprises use fixed assets (whether own-account or purchased) during production, the SNA charges the decline in the value of the asset during the period of production as a cost.
- 3.90 The recording of deliveries between one establishment and another belonging to the same enterprise is discussed in paragraph 6.104.

#### **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.
- 3.93 It is necessary to consider, however, whether values should be assigned to such externalities. Economic accounts have to measure economic functions such as production or consumption in the context of a particular legal and socio-economic system within which relative prices and costs are determined. Further, there would be considerable technical difficulties involved in trying to associate economically meaningful values with externalities when they are intrinsically non-market phenomena. As externalities are not market transactions into which institutional units enter of their own accord, there is no mechanism to ensure that the positive or negative values attached to externalities by the various parties involved would be mutually consistent. Moreover, accounts including values for externalities could not be interpreted as representing equilibrium, or economically sustainable, situations. If such values were to be replaced by actual payments the economic behaviour of the units involved would change, perhaps considerably.
- 3.94 A typical example is the pollution by one producer of the air or water used by other units for purposes of production or consumption. If the producer is allowed to pollute without charge or risk of being penalized, the private costs of production of the polluter will be less than the social

costs to the community. Some countries, at least at certain points in their history, may choose to frame their laws so that some producers are permitted to reduce their private costs by polluting with impunity. This may be done deliberately to promote rapid industrialization, for example. The wisdom of such a policy may be highly questionable, especially in the long run, but it does not follow that it is appropriate or analytically useful for economic accounts to try to correct for presumed institutional failures of this kind by attributing costs to producers that society does not choose to recognize. For example, the whole purpose of trying to internalize some externalities by imposing taxes or other charges on the discharge of pollutants is to bring about a change in production methods to reduce pollution. A complete accounting for externalities would be extremely complex as it is not sufficient merely to introduce costs into the accounts of the producers but would also necessitate introducing various other adjustments of questionable economic significance to balance the accounts.

- 3.95 This sort of example illustrates why some analyses are best carried out in the context of a satellite account where some of the normal constraints and conventions of the SNA are relaxed. In the case of pollution, the SEEA2003 has been developed precisely to explore this issue among other environmental topics.

#### *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. If expenditures on illegal goods or services by households were to be ignored on grounds of principle, household saving would be overestimated and households presumed to obtain assets that they do not in fact acquire. Clearly, the accounts as a whole are liable to be seriously distorted if monetary transactions that in fact take place are excluded. It may be difficult, or even impossible, to obtain data about illegal transactions, but in principle they should be included in the accounts if only to reduce error in other items, including balancing items.
- 3.97 However, many illegal actions are crimes against persons or property that in no sense can be construed as transactions. For example, theft can scarcely be described as an action into which two units enter by mutual agreement. Conceptually, theft or violence is an extreme form of externality in which damage is inflicted on another institutional unit deliberately and not merely accidentally or casually. Thus, thefts of goods from households, for example, are not treated as transactions and estimated values are not recorded for them under household expenditures.
- 3.98 If thefts, or acts of violence (including war), involve significant redistributions, or destructions, of assets, it is necessary to take them into account. As explained below, they are treated as other flows, not as transactions.

## 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.

### 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. Some of these may relate to naturally occurring assets, such as subsoil resources, so that the entrances and exits come about as interactions between institutional units and nature. Others relate to assets created by human activity, such as valuables. For valuables, for example, the capital account records their acquisition as newly produced goods or imports in transactions, and it records transactions in existing goods already classified as valuables. It is the recognition of a significant or special value for goods not already recorded in the balance sheets that is considered an economic appearance to be recorded as an other flow. These valuables may not be in the balance sheets for any of several reasons. For example, they may antedate the accounts or were originally recorded as consumption goods.
- 3.103 The second category relates to the effects of externalities and disasters. One such event is 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. In contrast, transactions, such as consumption of fixed capital or change in inventories, refer to normal rates of loss or damage.
- 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. For example, if an unincorporated enterprise becomes more financially distinct from its owner and takes on the characteristics of a quasi-corporation, it and the assets and liabilities it holds move from the household

sector to the non-financial corporations sector and changes in the sector allocation of the assets and liabilities owned by the quasi-corporation are recorded under this heading.

### 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.

## 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.

- d. Saving,
- e. Net lending or net borrowing,
- f. Current external balance.

### 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 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,

### 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:

1. Vertical double-entry bookkeeping, also known as simply double-entry bookkeeping used in business accounting,
  2. Horizontal double-entry bookkeeping, and
  3. 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 consistent 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. Paragraphs 3.131 to 3.134 describe cases where actual exchange values do not represent market prices. 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 instruments, 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.

#### *Barter*

- 3.125 The case of barter requires specific consideration. The products bartered must be valued when produced as well as when acquired for consumption or for capital formation. While it may often be the case that for small scale barter transactions entered into by the producer, there are no taxes on products payable (or if they are nominally payable the conditions of the barter means they are avoided and not paid) there is no automatic exclusion of bartered products from liability to taxes on products. Subsidies on bartered products are possible conceptually but unlikely to be significant. By the nature of barter, there are no wholesale or retail margins applicable to bartered products. Goods subject to barter may, however, have associated

transportation costs. If the unit providing the goods for barter also provides the transport, this will, in general, mean that the barter "package" includes some transportation services and the value to the recipient will be a purchaser's price including this transportation cost. If the unit receiving the goods must provide the transport, this may reduce the valuation of the goods to the recipient.

- 3.126 Barter transactions may concern new or existing goods acquired by one party to the barter in which case the value to that party will be the cost of acquisition (in the case of new goods) or the realizable value in the case of existing goods.
- 3.127 Barter transactions necessarily involve two units and (at least) two products. Each unit may place a different value on either item being bartered. In such a case, since the accounting rules of the SNA require a single value to be recorded for both parties, on pragmatic grounds a simple average of the different valuations (after allowing for any taxes and transportation costs) may be taken as the value of the transaction.
- 3.128 Barter transactions do not always take place simultaneously. When this is not the case, an account receivable/payable should be recorded even though neither part of the barter transaction takes place in monetary terms.

#### *Quotation prices*

- 3.129 Market valuation also poses problems for transactions in goods in which the contracts establish a quotation period often months after the goods have changed hands. In such cases, market value at the time of change of ownership should be estimated. The estimate should be revised with the actual market value, when known. Market value is given by the contract price even if it is unknown at the time of change of ownership.

#### *Valuation of transfers in kind*

- 3.130 When non-financial resources are provided without a quid pro quo, such resources should be valued at the market prices that would have been received if the resources had been sold in the market. In the absence of a market price, the donor's view of the imputed value of the transaction will often be quite different from that of the recipient. The suggested rule of thumb is to use the value assigned by the donor as a basis for recording.

#### *Transfer pricing*

- 3.131 In some cases actual exchange values may not represent market prices. Examples are transactions involving transfer prices between affiliated enterprises, manipulative agreements with third parties, and certain non-commercial transactions, including concessional interest (that is, interest payable at a reduced rate as a matter of policy). Prices may be under- or over-invoiced, in which case an assessment of a market-equivalent price needs to be made. Although adjustment should be made when actual exchange values do not represent market prices, this may not be practical in many cases. Adjusting the actual exchange values to reflect market prices will have

consequences in other accounts. Therefore, when such adjustments are made, corresponding adjustments in other accounts should also be made, for example, if prices of goods are adjusted, associated income account or financial account transactions or both should also be adjusted.

3.132 Values put on an invoice may deviate systematically or to such a large extent from the prices paid in the market for similar items that it must be presumed that the sums paid cover more than the specified transactions. An example is so-called transfer pricing: affiliated enterprises may set the prices of the transactions among themselves artificially high or low in order to effect an unspecified income payment or capital transfer. Such transactions should be made explicit if their value is considerable and would hinder a proper interpretation of the accounts. In some cases, transfer pricing may be motivated by income distribution or equity build-ups or withdrawals. Replacing book values (transfer prices) with market-value equivalents is desirable in principle, when the distortions are large and when availability of data (such as adjustments by customs or tax officials or from partner economies) makes it feasible to do so. Selection of the best market-value equivalents to replace book values is an exercise calling for cautious and informed judgment.

3.133 The exchange of goods between affiliated enterprises may often be one that does not occur between independent parties (for example, specialized components that are usable only when incorporated in a finished product). Similarly, the exchange of services, such as management services and technical know-how, may have no near equivalents in the types of transactions in services that usually take place between independent parties. Thus, for transactions between affiliated parties, the determination of values comparable to market values may be difficult, and compilers may have no choice other than to accept valuations based on explicit costs incurred in production or any other values assigned by the enterprise.

#### *Concessional pricing*

3.134 While some non-commercial transactions, such as a grant in kind, have no market price, other non-commercial transactions may take place at implied prices that include some element of grant or concession so that those prices also are not market prices. Examples of such transactions could include negotiated exchanges of goods between governments and government loans bearing lower interest rates than those with similar grace and repayment periods or other terms for purely commercial loans. Concessional lending is described in chapter 24. Transactions by general government bodies and private non-profit entities not engaged in purely commercial undertakings are often subject to non-commercial considerations. However transfers involving provision of goods and services may also be provided or received by other sectors of the economy.

#### *Valuation at cost*

3.135 If there is no appropriate market from which the value of a particular non-monetary flow or stock item can be taken by analogy, its valuation may be derived from prices that are established in less closely related markets. Ultimately,

some goods and services can only be valued by the amount that it would cost to produce them currently. Market and own-account goods and services valued in this way should include a markup that reflects the net operating surplus or mixed income attributable to the producer. For non-market goods and services produced by government units or NPISHs, however, no allowance should be made for any net operating surplus.

#### *Valuation of assets*

3.136 Sometimes it is necessary to value stocks at their estimated written down current acquisition values or production costs. The write-down should then include all changes that have occurred to the item since it was purchased or produced (such as consumption of fixed capital, partial depletion, exhaustion, degradation, unforeseen obsolescence, exceptional losses and other unanticipated events). The same method could be applied to non-monetary flows of existing assets.

3.137 If none of the methods mentioned above can be applied, stocks, or flows arising from the use of assets, may be recorded at the discounted present value of expected future returns. For some financial assets, particularly those with a face value applicable at some point in the future, the present market value is established as the face value discounted to the present by the market interest rate. In principle, therefore, if a reasonably robust estimate of the stream of future earnings to come from an asset can be made, along with a suitable discount rate, this allows an estimate of the present value to be established. However, because it may be difficult to determine the future earnings with the appropriate degree of certainty, and given that assumptions are also needed about the asset's life length and the discount factor to be applied, the other possible sources of valuation described in the preceding paragraphs should be exhausted before resorting to this method. Further, if this method is used, some sensitivity testing of the assumptions made may be appropriate. In fact, the method most commonly used to derive estimates of consumption of fixed capital and the capital stock of fixed assets associates a stream of future earnings with the decline in value of a fixed asset in use in production. (This method, the perpetual inventory method, is described further in chapters 13 and 20.)

3.138 Although the net present value method depends on making projections of future earnings and discount rates, it is theoretically sound as can often be verified for a number of financial assets. If it is used for non-financial assets, some sensitivity testing of the assumptions made may be appropriate.

3.139 In conformity with the general rule, provision of assets, services, labour or capital in exchange for foreign cash is recorded at the actual exchange value agreed upon by the two parties to the transaction. Flows and stocks concerning foreign currency are converted to their value in national currency at the rate prevailing at the moment they are entered in the accounts, that is, the moment the transaction or other flow takes place or the moment to which the balance sheet applies. The midpoint between the buying and selling rate should be used so that any service charge is excluded.

*Business accounting valuation*

- 3.140 Business accounts, tax returns and other administrative records are main sources of data for drawing up the national accounts. One should be aware, however, that none of these necessarily satisfies the valuation requirements of the SNA and that accordingly adjustments may have to be made. In particular, in the interest of prudence, business accounting often adopts valuations that are not appropriate for the national accounts. Similarly, valuations for tax purposes often serve objectives that differ from those of macroeconomic analysis. For example, the depreciation methods favoured in business accounting and those prescribed by tax authorities almost invariably deviate from the concept of consumption of fixed capital employed in the SNA.

**Valuation of partitioned flows**

- 3.141 Where a single payment refers to more than one transaction category (as they are defined in the SNA), the individual flows need to be recorded separately. In such a case, the total value of the individual transactions after partitioning must equal the market value of the exchange that actually occurred. For example, actual exchange values involving foreign currency include commission for currency conversion. The portion related to currency conversion should be recorded separately as transactions in services. As another example, the SNA recommends dividing interest transactions with financial corporations between two transaction categories, one showing interest as understood in the SNA and the other representing the implicit payment for financial intermediation services.
- 3.142 Partitioning is not limited to transactions; an example is real holding gains, which are separated for analytical reasons from neutral holding gains that are simply proportionate to changes in the general price level.
- 3.143 In some cases partitioning is connected with deceptive behaviour. An example is the sort of transfer pricing discussed in paragraph 3.132.
- 3.144 A less obvious mingling of transactions occurs when the provision of an asset and the related money payment or payments do not take place simultaneously. When the time gap becomes unusually long and the amount of trade credit extended is very large, the conclusion may be that implicitly an interest fee has been charged. In such extreme cases, the actual payment or payments should be adjusted for accrued interest in order to arrive at the correct value of the asset transferred. Such adjustments are not recommended for normal trade credit.

**Special valuations concerning products**

- 3.145 Usually, the producer and the user of a given product perceive its value differently owing to the existence of taxes and subsidies on products, transport costs to be paid and the occurrence of trade margins. In order to keep as close as possible to the views of the economic transactors themselves, the SNA records all uses at purchasers' prices including these elements, but excludes them from the value of output of the product.

- 3.146 Output of products is recorded at basic prices. The basic price is defined as the amount receivable by the producer from the purchaser for a unit of good or service produced as output minus any tax payable and plus any subsidy receivable on the product as a consequence of its production or sale. It excludes any transport charges invoiced separately by the producer. If it proves impossible to obtain the required information at basic prices, output may be valued at producers' prices. The producer's price is defined as the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any value added tax (VAT), or similar deductible tax, invoiced to the purchaser. It also excludes any transport charges invoiced separately by the producer.
- 3.147 Use of products is recorded at purchasers' prices. The purchaser's price is defined as the amount payable 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.
- 3.148 The difference in value recorded for a product between when it is produced and the moment it is used for, say, final consumption expenditure can be considerable. Components of this difference may be:
- Taxes less subsidies on products payable by the producer;
  - Trade and transport margins, including taxes less subsidies on products payable by wholesale and retail traders;
  - Transport, including taxes less subsidies on products, paid separately by the consumer;
  - Predictable quality increases producing additional output volume less current losses during storage;
  - Holding gains while the product is with the producer and with wholesale and retail traders.

As one can see from the above, the difference between the original basic price and ultimate purchasers' price of a particular good encompasses both pure price and volume elements. In practice, of course, the estimates do not keep track of individual products but are made at a more global level for groups of products.

- 3.149 Imports and exports of goods are recorded in the SNA at border values. Total imports and exports of goods are valued free-on-board (FOB, that is, at the exporter's customs frontier). As it may not be possible to obtain FOB values for detailed product breakdowns, the tables containing details on foreign trade show imports of goods valued at the importer's customs frontier (CIF, that is, cost, insurance and freight), supplemented with global adjustments to FOB values. CIF values include the insurance and freight charges incurred between the exporter's frontier and that of the importer. The value on the commercial invoice may of course differ from both of these.

3.150 As the overall balance of imports and exports must conform to actual circumstances, border valuation of goods has consequences for the recording of freight and insurance in the SNA. Usually, the values of both imports and exports for these service items have to be adapted to compensate for the special conventions on goods traded with the rest of the world. Further details on this treatment are in chapters 14 and 26.

### Valuation of other flows

#### *Other changes in the volumes of assets*

3.151 In order to determine the valuation of the other changes in the volume of assets, it is usually necessary to value the asset before and after the change in volume and take the difference that is not explained by any transaction as the value of the other change.

3.152 Other changes in the volume of financial assets and liabilities are recorded at the market-equivalent prices of similar instruments. For writing-off of financial instruments that are valued at nominal values, the value recorded in the other changes in the volume of assets account should correspond to their nominal value prior to being written off. For all reclassifications of assets and liabilities, values of both the new and old instruments should be the same.

#### *Holding gains and losses*

3.153 Holding gains and losses accrue continuously and apply to both non-financial and financial assets and liabilities. In general, they are estimated by deducting from the total change in the value of assets those that can be attributed to transactions and to other changes in volumes.

3.154 Since most financial assets are matched by liabilities, either within the domestic economy or with the rest of the world, it is important that holding gains in one are matched by holding losses in the other and vice versa. A holding gain occurs when an asset increases in value or a liability decreases in value; a holding loss occurs when an asset decreases in value or a liability increases in value. The value of holding gains and losses during an accounting period shows net changes in holding gains and holding losses for an asset and a liability separately. In practice, the value of holding gains and losses is calculated for each asset and liability between two points in time: the beginning of the period or when the asset or liability is acquired or incurred and the end of the period or when the asset or liability is sold or extinguished.

### Valuation of positions of financial assets and liabilities

3.155 Stocks of financial assets and liabilities should be valued as if they were acquired in market transactions on the balance sheet reporting date. Many financial assets are traded in markets on a regular basis and therefore can be valued by directly using the price quotations from these markets. If the financial markets are closed on the balance sheet date, the market prices that should be used in the valuation are those that prevailed on the closest preceding date when the

markets were open. Debt securities have a current market value as well as a nominal value, and for some purposes supplementary data on the nominal values of positions of debt securities may be useful.

3.156 Valuation according to market-value equivalent is needed for valuing financial assets and liabilities that are not traded in financial markets or are traded only infrequently. For these assets and liabilities, it will be necessary to estimate fair values that, in effect, approximate market prices. The present value of future cash flows can also be used as an approximation to market prices, provided an appropriate discount rate can be used.

3.157 Market values, fair values, and nominal values should be distinguished from such notions as amortized values, face values, book values, and historic cost.

a. Fair value is a market-equivalent value. It is defined as the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction. It thus represents an estimate of what could be obtained if the creditor had sold the financial claim.

b. Nominal value refers to the amount the debtor owes to the creditor, which comprises the outstanding principal amount including any accrued interest.

c. Amortized value reflects the amount at which the financial asset or liability was measured at initial recognition minus the principal repayments. Excess payments over the scheduled principal repayments reduce the amortized value whereas payments that are less than the scheduled principal repayments or scheduled interest increase the amortized value. On each scheduled date, amortized value is the same as nominal value, but it may differ from the nominal value on other dates due to the accrued interest being included in the nominal value.

d. Face value is the undiscounted amount of principal to be repaid.

e. Book value in business accounts generally refers to the value recorded in the enterprise's records. Book values may have different meanings because their values are influenced by timing of acquisition, company takeovers, frequency of revaluations, and tax and other regulations.

f. Historic cost, in its strict sense, reflects the cost at the time of acquisition, but sometimes it may also reflect occasional revaluations.

3.158 The valuation of financial assets and liabilities in data reported by enterprises or other respondents may be based on commercial, supervisory, tax, or other accounting standards that do not fully reflect the market prices of the assets and liabilities. In such cases, the data should be adjusted to reflect, as closely as possible, the market value of the financial assets and liabilities. (More information on valuation rules can be found in *External Debt Statistics: Guide for Compilers and Users* (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)), known as the *External Debt Guide*.)

### 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.
- 3.160 Thus, the SNA does not show individual transactions or other flows, but there are two reasons why precise rules on their individual timing must be given. In the first place, rules have to be formulated to say in which accounting period the discrete flows are to be recorded. Secondly, an exact timing of individual flows within the accounting period is crucial to distinguish between changes in net worth due to transactions and changes due to holding gains or losses. This distinction is particularly important in situations of high inflation.
- 3.161 One of the problems in pinning down the timing of transactions is that activities of institutional units often extend over periods in which several important moments can be distinguished. For instance, many commercial sales commence with the signing of a contract between a seller and a buyer, encompass a date of delivery and a date or dates on which payments become due and are only completed as of the date the last payment is received by the seller. Each of these distinct moments in time is to some extent economically relevant.
- 3.162 Similarly, in analysing government expenditure one can distinguish the day that a budget is voted upon by the legislature, the day on which the ministry of finance authorizes a department to pay out specified funds, the day a particular commitment is entered into by the departments, the day deliveries take place and finally the day payment orders are issued and cheques are paid. With regard to taxes, for example, important moments are the day or the period in which the liability arises, the moment the tax liability is definitively assessed, the day that it becomes due for payment without penalty and the day the tax is actually paid or refunds are made.
- 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:
- 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;
  - Accrual accounting can be applied to non-monetary flows.
- 3.167 Many transactions, such as everyday purchases of households in shops, are monetary transactions in which some asset is delivered against immediate, or nearly immediate, payment in cash. In those instances there are no differences between the three methods discussed here. Accrual accounting is particularly relevant to the timing of various internal transactions (such as output that is added to the inventories of the producer), exchanges in which the parties deliver at differing times (such as sales with deferred payments) and obligatory transfers (taxes and flows connected with social security).
- 3.168 Usually, accrual accounting is the norm for the institutional units involved. Numerous transactions consist of an exchange between two enterprises of, say, goods for

financial assets. In such an exchange, accounting entries will be made in the books of each enterprise, showing the same dates for the acquisition of the goods and the surrender of the financial assets, on the one hand, and for the acquisition of the financial assets and the surrender of the goods, on the other. Sometimes, however, the two parties involved in a transaction will not perceive it as occurring at the same moment. Furthermore, some transactors, in particular government units, do not keep records of purchases on an accrual basis. In these cases, the rules of consistency in the SNA require that efforts should be undertaken to correct basic statistics for major deviations and flaws. The application of the general rule of recording on an accrual basis to the most common circumstances is discussed below.

### 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. These subsidiary rules apply in particular to internal transactions or when a change of ownership is taken to occur under a financial lease or hire-purchase arrangement. Imports and exports of goods are recorded when change of ownership occurs. In the absence of sources specifying the date on which ownership changes, there is a strong presumption that the goods will cross the frontiers of the countries concerned either shortly before or soon after the change of ownership takes place. Trade statistics based on customs documents reflecting the physical movement of goods across the national or customs frontier may therefore often be used as an approximation.
- 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. As a result, for example, compensation of employees, interest, rent on land, social contributions and benefits are all registered in the period during which the amounts payable are built up. Equally, entries for taxes are made at the moment on which the underlying transactions or other flows occur that give rise to the liability to pay. This implies that taxes on products and imports are recorded at the times the products in question are produced, imported or sold, depending on the basis for taxation. Current taxes on income are recorded when the income to which they pertain is earned although taxes deducted at source may have to be recorded when they are deducted. With respect to some distributive transactions, the time of accrual depends on the unit's decision when to distribute income or make a transfer. The level of dividends is not unambiguously attributable to a

particular earning period, and dividends are to be recorded as of the moment the associated share starts to be quoted "ex dividend". Other examples are withdrawals from income of quasi-corporations and various voluntary transfers, which are recorded when effected.

### 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. Some financial claims or liabilities defined in the SNA, in particular trade credits and advances, are the implicit result of a non-financial transaction and are not otherwise evidenced. In these cases the financial claim is deemed to arise when its non-financial counterpart occurs. The same holds for financial transactions that the SNA records between a quasi-corporation and its owner.
- 3.173 Both parties involved in a financial transaction may record it at varying dates in their own books because they acquire the documents evidencing the transaction at different times. This variation is caused by the process of clearing, the time cheques are in the mail, etc. The amounts involved in such "floats" are generally substantial in the case of transferable deposits and other accounts receivable and payable. Again, reasons of consistency require that the transactions are entered on the same date for both parties. If no precise date can be fixed on which the change of ownership occurs, the date on which the transaction is fully completed (thus the date on which the creditor receives his payment) is decisive.
- 3.174 For securities, the transaction date (that is, the time of the change in ownership of the securities) may precede the settlement date (that is, the time of the delivery of the securities). Both parties should record the transactions at the time ownership changes, not when the underlying financial asset is delivered. Any significant difference between transaction and settlement dates gives rise to accounts payable or receivable.
- 3.175 According to the accrual basis, repayments of debts are recorded when they are extinguished (such as when they are paid, or rescheduled, or forgiven by the creditor). When arrears occur, no transactions should be imputed, but the arrears should continue to be shown in the same instrument until the liability is extinguished. If the contract provided for a change in the characteristics of a financial instrument when it goes into arrears, this change should be recorded as a reclassification in the other changes in the financial assets and liabilities account. The reclassification applies to situations where the original contract remains, but the terms within it changes (for example, interest rates or repayment periods). If the contract is renegotiated or the nature of the instrument changes from one instrument category to another (for example, from bonds to equity), the consequences are to be recorded as new transactions.

### 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.

- 3.184 One may wonder why nominal holding gains and losses are not calculated over a period beginning at the moment on which two units agree to a mutual exchange of assets instead of the period that starts with the moment on which the assets are acquired. After all, does not the signing of the contract fix prices, implying that the risk for any later price changes is being transferred? The SNA, however, regards commitments resulting from a contract as contingent until one of the parties has performed its obligation (by passing the ownership of some asset to the other party, providing a service or providing labour or capital). Also, a unit can incur holding gains and losses only on the assets or liabilities over which it has economic ownership. The combination of these two rules implies that during the period between the signing of the contract and the date on which the first party delivers, the second party cannot incur any price risks on this contract: the second party neither owns the assets to be delivered nor owns a claim on the first party to be recorded in the financial accounts.

- 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.

- 3.186 In order to obtain statistical series that are more comparable over time, one might be tempted to stockpile major reclassifications for a number of years and enter them as one block at the end of this period. However understandable this procedure might be, it does not conform to the recommendations of the SNA, which aim at correct estimates on levels. Keeping records of reclassifications makes it possible in principle to reconstruct time series based on the situation in any accounting period.

#### Timing adjustments for international transactions

- 3.187 Differences in the time of recording by partner economies may occur due to various factors. One of the intrinsic problems with recording international transactions is the difference in time zones. Differences in time of recording may also arise from delays in mail deliveries or settlement clearing processes. In most cases, data at some aggregate level rather than individual records are used in the

compilation of international accounts. Several data sources may often only approximate the required basis. It is important to make timing adjustments where there are major divergences from the required basis.

- 3.188 In choosing among available statistical sources, compilers may wish to consider the advantage of using data for which the correct timing is already recorded. For example, records of actual drawings on loans are preferred to sources that quote authorization dates or program dates that may not be realized in fact. Some sources chosen by compilers as generally the most suitable may not have been specifically designed to yield information for balance of payments purposes.

### 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. In the SNA, such groups are constructed by crossing two or more classifications. As a minimum, a classification of institutional sectors or industries is crossed with the classification of transactions, other accumulation entries or assets. Additionally, resources must be distinguished from uses and assets from liabilities. In order to accommodate more detailed analysis, the classes thus generated may be further subdivided: examples are specifications of kind of product or asset, of function and of transaction partners.
- 3.191 Since the classifications in the SNA contain a number of levels made explicit in the codes, corresponding levels of aggregation may be distinguished.
- 3.192 Although conceptually the value for each aggregate is the sum of the values for all elementary items in the relevant category, in practice other estimation methods are frequently used. In the first place, information on elementary transactions, other flows and assets may be incomplete or even non-existent. Secondly, the data obtained from different primary sources are usually not fully consistent due to variations in definitions and coverage, so adjustments at aggregate level are necessary to reconcile them.

### 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. In fact, netting is already a feature of many of the recommendations of the SNA. It mostly serves to highlight an economically important property that is not apparent from gross data.
- 3.195 Netting is implicit in various transaction categories, the most outstanding example being “changes in inventories”, which underlines the analytically significant aspect of overall capital formation rather than tracking daily additions and withdrawals. Similarly, with few exceptions, the financial account and other changes in assets accounts record increases in assets and in liabilities on a net basis, bringing out the final consequences of these types of flows at the end of the accounting period. All balancing items also involve netting. To avoid confusion, the SNA uses the words “gross” and “net” in a very restrictive sense. Apart from a few headings (“net premiums”, “net worth” and “net lending or net borrowing”), the SNA classifications employ the word “net” exclusively to indicate the value of variables after deduction of consumption of fixed capital.

- 3.196 In the case of flows of financial assets and liabilities, the terms “net changes in assets” and “net changes in liabilities” are used to reflect the nature of the financial flows. Financial flows reflect changes due to all credit and debit entries during an accounting period. That is, financial flows are recorded on a net basis separately for each financial asset and liability. The use of the terms “net changes in assets” and “net changes in liabilities” brings the financial account into line with the convention used in the accumulation accounts. These are general terms that apply to both the financial account and other changes in financial assets and liabilities account. The use of these terms also simplifies the interpretation of data. For both assets and liabilities, a positive change indicates an increase in stocks and a negative change indicates a decrease in stocks. The interpretation of increase or decrease under the credit or debit notion, however, depends on whether the increase or decrease refers to assets or liabilities (a debit for an asset is an increase while a debit for a liability is a decrease). While the debit and credit presentation is not emphasized for financial account transactions, it is important to recognize and maintain the accounting identities; for example, a credit is always conceptually matched with a corresponding debit, the latter relating to either an increase in an asset, or reduction in a liability.

### 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. There is more detail on this in chapters 22 and 27. For certain kinds of analysis, information on the transactions of these (sub)sectors with other sectors and the corresponding “external” financial position is more significant than overall gross figures. As a rule, however, the entries in the SNA are not consolidated.

3.198 The rule of non-consolidation takes a special form regarding the transaction categories “output” and “intermediate consumption”. These transactions are to be recorded throughout at the level of establishments. This implies specifically that the accounts for institutional sectors and for industries should not be consolidated in respect of output delivered between establishments belonging to the same institutional unit.