

Chapter 4 (2025 SNA)/Chapter 3 (BPM7): Flows, stocks and accounting rules (revised title)

(OLD Chapter 3: Stocks, flows and accounting rules)

This chapters uses chapter 3 of the 2008 SNA as a starting point. Please note that the order of the discussion of stocks (section B in the 2008 SNA) and flows (section C in the 2008 SNA) has been reversed. This has not been highlighted in the form of track changes.

A. Introduction

- 4.1 The SNA and the BOP/IIP are systems 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, including such claims between residents and non-residents. 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/BPM and are grouped into institutional sectors according to their economic objectives, functions and behaviour. Units and sectors are the subject of chapter 5/4.
- 4.2 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 /international investment position (IIP) and related tables. Flows appear in all the other accounts and tables of the SNA/BPM. The flow accounts in the full sequence of economic accounts for institutional sectors in the SNA consist of the current accounts, which deal with production, income and use of income, and the accumulation accounts (capital account, financial account and other changes in assets and liabilities account), which show all changes between two balance sheets. The flow accounts in external accounts consist of the current account, capital account, and the accumulation accounts (financial account and other changes in financial assets and liabilities account), which show all changes between two IIP statements.
- 4.3 In order to have a system that is complete and consistent, all changes in economic value between stock measures (IIP in the case of external accounts) 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 to ensure that the SNA/BPM is consistent in terms of value, time of recording and classification.

1. Stocks and flows

- 4.4 ***Stocks refer to the levels of financial/non-financial assets or liabilities at a point in time. In the case of financial assets/liabilities, usually the term "positions" is used, while for levels of non-financial assets, the term "stocks" is often applied.*** The SNA/BPM records stocks in accounts, usually referred to as balance sheets (or IIP in the case of external accounts), 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.
- 4.5 ***An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the item 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/BPM is given in section C of this chapter.
- 4.6 ***Economic flows reflect the creation, transformation, exchange, transfer or extinction of economic value; they typically 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., most of which record the ways in which a unit's assets and liabilities are changed.
- 4.7 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 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. In the case of external accounts, these flows occur between a resident and a non-resident institutional unit.

- 4.8 There is a discussion of the different types of economic flows in section B of this chapter.

2. Balancing items

4.9 Economic flows are grouped together into accounts with expenditures or changes in assets on the left-hand side and revenues, or changes in liabilities or net worth on the right-hand side. Economic flows are grouped together into accounts with credit entries on one side and debit entries on the other side. *A balancing item is an accounting construct obtained by subtracting the total value of the entries on one side of an account (credits, revenues or changes in liabilities) from the total value of the entries on the other side (debits, expenditures 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/IIP where the difference between assets and liabilities is known as net worth/net IIP.

4.10 Balancing items are constructed because they convey interesting economic information. Many of the key aggregates of the SNA/BPM actually emerge as balancing items. Balancing items are discussed in section D.

3. Grouping stocks and flows into accounts

4.11 The accounts and tables of the SNA/BPM contain information relating to the economic actions or events that take place within a given period of time (between residents and non-residents) and the effect of these events on the stocks of (external) assets and liabilities between the beginning and end of that period.

4.12 The flows and stocks are grouped according to the classification hierarchy of the SNA/BPM, shown in annex 1. The classification of transactions and other flows has five headings in SNA/BPM at the highest level, dealing with transactions in products (goods and services in balance of payments), transactions showing how income is distributed and redistributed within the SNA/BOP, transactions in non-produced assets, transactions in 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.

4.13 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 5. 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 6.

4.14 The flows and stocks of external assets and liabilities are entered in the accounts of the institutional units that issue liabilities (e.g., debt securities) or hold assets (e.g., deposits) 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.

4. Accounting rules

4.15 All entries in the accounts have to be measured in monetary terms, and therefore the elements from which the entries are built up must be measured in monetary terms. 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.

4.16 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/external accounts.

4.17 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. The BPM covers all economic activity between residents and non-residents in such a way that it is possible to derive current/capital account items and financial flows/stocks (functional categories/institutional sectors) by partner 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 flows, stocks, and balancing items in sections B, C and D.

- 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/BPM and expressed appropriately given the nature of the flow or stock with respect to taxes and subsidies on products, transport costs and trade margins.
- 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.
- 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.
- Depending on the character of the entry, a distinction should be made between revenues and expenditures (credits/revenues and debits/expenditures in balance of payments) or between assets and liabilities. In the process of grouping, netting is implicit for several items, but consolidation is not advised.

4.18 The basic accounting framework of the SNA/BPM 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. Flows

4.19 Economic flows are of two kinds. The first kind consists of transactions. Flows 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 and liabilities 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

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

4.21 Institutional units, referred to in the definition, are the fundamental economic units used in macroeconomic statistics. They are described and defined in chapter 5/4. The following are the main attributes of institutional units that are relevant to their engaging in transactions:

- They are entitled to own 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 typically able to incur liabilities on their own behalf, to take on other obligations or future commitments and to enter into contracts.

4.22 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.

- 4.23 In the external accounts (and the institutional sector accounts for the rest of the world in the SNA), transactions are recorded between two institutional units, one of which is a resident of the compiling economy and the other a non-resident. By the nature of external accounts, intra-unit or internal transactions are not recorded.¹ The flows between the branch and its parent enterprise are shown as interactions between institutional units, with a branch recognized as a separate institutional unit (a quasi-corporation). Similarly, when a notional enterprise (a quasi-corporation) is created for holding land and associated buildings by non-resident owners, the flows between the non-resident owners and the notional enterprise are considered interactions between institutional units.
- 4.24 Transactions between two resident institutional units in external assets are domestic transactions. Such transactions, however, affect the external asset positions of the two resident units involved. The external asset position of one resident unit is reduced and the position in the same external asset of another resident unit is increased, and thus leads to a change in domestic sectoral breakdown if the two parties are in different sectors. Such transactions result in changes in structure of external asset positions and should be recorded in the external accounts as a reclassification of sectors of holding (i.e., in the other changes in financial assets and liabilities account).² If both units fall in the same institutional sector, such reclassification entries cancel each other out and thus have no effect on sectoral positions. Similarly, when financial instruments issued by residents are exchanged between non-residents, no transactions are recorded in the balance of payments and there is no change in overall external liabilities.³
- 4.25 To establish whether a transaction involving an external financial asset is a transaction between a resident and a non-resident, the compiler must know the identities of both parties. The information available on transactions in claims constituting external assets may not, however, permit identification of the two parties to the transaction. That is, a compiler may not be able to ascertain whether a resident, who acquired or relinquished a claim on a non-resident, conducted the transaction with another resident or with a non-resident, or whether a non-resident dealt with another non-resident or with a resident. As a result, recorded external transactions may include not only those that involve assets and liabilities and take place between residents and non-residents but also those that involve financial assets of economies and take place between two residents and, to a lesser extent, transactions that take place between non-residents. (See also paragraphs xx, Annex 11 (BPM) on the additional issues associated with partner attribution of transactions in financial instruments between residents and non-residents. In addition, transactions between residents in external assets and liabilities may have to be taken into account for specific purposes, particularly as described in paragraph 14.21 (BPM).)
- 4.25-1 Some mutual agreements involve three parties. For example, guarantees involve the guarantor, the debtor, and the creditor. Transactions occurring between two parties (e.g., between the guarantor and debtor, or between the guarantor and creditor, or between the debtor and creditor) should always be identified and recorded as such. For one-off guarantees, the activation of the guarantee gives rise to transactions and, in some cases, other flows between each of the three pairs of the three parties. For each pair of parties, transactions in the external accounts are recorded if one party is a resident and another party is a nonresident.
- 4.26 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/BPM.

Monetary transactions

- 4.27 ***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/BPM, 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.
- 4.28 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:

¹ In the national accounts, transactions cover also some actions within an institutional unit (intra-unit transactions) with the purpose of providing a more analytically useful picture of output, final uses, and costs. Examples include depreciation and depletion, changes in inventories, and production for own final use of goods by producers. For further details on intra-unit (internal) transactions refer to paragraphs xx, Chapter 4, 2025 SNA.

² The resident-to-resident transaction between the buyer and seller is recorded in the national accounts.

³ As discussed in paragraph A3.4, national contributions for compiling financial flows data in currency and economic unions may be allocated along the debtor-creditor approach as a way to ensure bilateral symmetry.

- Purchases of goods and services,
- Acquisitions of securities,
- Wages and salaries,
- Interest, dividends and rent,
- Taxes,
- Social assistance benefits in cash.

Transactions with and without a recompense

- 4.29 The purchases of goods and services, the acquisitions of securities, 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.
- 4.30 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/BPM.
- 4.31 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 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.
- 4.32 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), or where a liability is forgiven by the creditor. 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 9 (SNA) / chapter 13 (BPM).

Rearrangements of transactions for statistical purposes

- 4.33 Monetary transactions may not always be recorded in the macroeconomic 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/BOP 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

- 4.34 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.
- 4.35 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/BPM, the employers’ contributions are treated as part of remuneration 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/BPM 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. (See [chapter 8 \(SNA\)](#) / [chapter 13 \(BPM\)](#).)

- 4.36 Similarly, the transfer elements of lotteries and other gambling are transactions through the gambling operator, but they are rerouted to occur directly between those participating in the lottery or gambling, that is, between households and possibly to charities (See [paragraph 9.xxx \(SNA\)](#) / [paragraph 9.xxx \(BPM\)](#).)
- 4.37 An example of the second kind of rerouting (also referred to as imputation in *BPM*) 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/BPM by showing them as first remitted to the foreign owners as property income and then reinvested in the equity of the direct investment enterprise. (See [paragraphs 8.xxx to 8.xxx \(SNA\)](#) / [paragraphs 12.xxx \(BPM7\)](#)). Retained earnings of investment funds are also treated as if they were distributed to shareholders who are then deemed to reinvest them in the investment fund. (See [paragraphs 8.xxx \(SNA\)](#) / [paragraphs 12.xxx \(BPM\)](#).)
- 4.38 Similarly, the property income earned on the reserves of 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. (See [paragraphs 8.xxx to 8.xxx \(SNA\)](#) / [paragraph 12.xxx and Annex 8 \(BPM\)](#).)
- 4.39 Another example of the second kind of rerouting relates to government having a non-resident entity that undertakes fiscal functions related to government borrowing or incurring government outlays abroad between the government and the non-resident entity related to these fiscal activities. In these cases, transactions are imputed in the accounts of both the government and the non-resident entity to reflect the fiscal activities of the government. (See [chapter 30 \(SNA\)](#) / [paragraphs 8.24 to 8.26, 12.xx, and 13.xx \(BPM\)](#).)
- 4.40 A further example of this type of rerouting, i.e., the recording of implicit taxes or subsidies associated with a multiple exchange rate regime is discussed in [paragraphs 8.98 e\), 8.99 c\) and 8.108 c\) \(SNA\)](#) / [paragraph 3.xx \(BPM\)](#).

Partitioning transactions

- 4.41 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/BPM. Financial leasing is viewed as a method of financing the purchase of a fixed asset and a financial lease is shown in the SNA/BPM as a loan from the lessor to the lessee. (For a further elaboration, see [SNA 2025 chapter 27](#) / [chapter 5, BPM7](#))
- 4.42 Partitioning of transactions in assets may also be relevant in the case of non-financial assets which are used for two distinct purposes. An example is the purchase of a car by a household, which is partly used in production, such as providing taxi services to third parties, and partly used for own personal use. The former part is considered as gross fixed capital formation, while the latter part is to be recorded as final consumption expenditure.
- 4.43 Another example is the treatment of certain financial services. For example, the SNA/BPM 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/BPM 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. (See [paragraphs 7.xxx to 7.xxx \(SNA\)](#) / [paragraphs 11.xx \(BPM\)](#).)
- 4.44 Likewise, when a financial derivative is settled with the delivery of the underlying asset, this single event should be broken down into a transaction in the financial derivative and a separate transaction in the underlying asset.
- 4.45 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.

- 4.46 Another example of partitioning transactions concerns the recording of package tours offered by tour operators, where it is recommended to unbundle the total amounts paid into the various service components. (See [paragraph 11.xx \(BPM\)](#).)

Reassigning transactions

- 4.47 Reassignment refers to the recording of a transaction arranged by a third party on behalf of others as taking place directly by the two principal parties involved. 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.

- 4.48 A second example is the collection of taxes by one government unit on behalf of another. The SNA/BPM follows the guidance of the Government Finance Statistics Manual (International Monetary Fund (IMF), 2014), known as GFSM 2014 as follows. In general, a tax is attributed to the government unit that

- exercises the authority to impose the tax (either as a principal or through the delegated authority of the principal), and
- has final discretion to set and vary the rate of the tax.

- 4.49 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.

- 4.50 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.

- 4.51 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.

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

Non-monetary transactions

- 4.53 ***Non-monetary transactions are transactions that are not initially stated in units of currency.*** The entries in the SNA/BPM 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. Depreciation is an example.

- 4.54 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.

- 4.55 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 remuneration in kind and transfers in kind. These two-party transactions are discussed first, followed by a discussion of internal transactions.

- 4.56 Although two-party transactions in kind do exist in practice, in the SNA/BPM 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 9 \(SNA\) / \[chapter 13 \\(BPM\\)\]\(#\)](#) and of capital transfers in [chapter 11 \(SNA\) / \[chapter 14 \\(BPM\\)\]\(#\)](#).

Barter transactions

- 4.57 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

- 4.58 Remuneration in kind occurs when an employee accepts payment in the form of goods and services instead of money or another financial asset. 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:

- Meals and drinks,
- Housing services or accommodation of a type that can be used by all members of the household to which the employee belongs,
- The services of vehicles provided for the personal use of employees,
- Goods and services produced as outputs from the employer's own processes of production, such as free transport services provided to employees of transport companies.

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

Payments in kind other than remuneration in kind

- 4.59 Payments in kind other than remuneration in kind occur when any of a wide variety of payments is 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

- 4.60 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.
- 4.61 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.)
- 4.62 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 disposable income adjusted for social transfers in kind (rather than disposable income) and the measure of consumption is called actual final consumption (rather than final consumption expenditure).

Internal transactions

- 4.63 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.
- 4.64 Some households, all NPISHs and general government units, and the central bank 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.
- 4.65 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. The same holds for the production of services for own final use by households which are considered to be part of the SNA production boundary, owner-occupied housing services being the most important example.
- 4.66 Establishments owned by governments or NPISHs commonly provide education, health, or other kinds of services to individual households, or society at large, 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. The same holds for the central bank. (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.)
- 4.67 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.
- 4.68 The recording of deliveries between one establishment and another belonging to the same enterprise is discussed in [paragraph 6.104](#).

Externalities and illegal actions

- 4.69 The sections above describe the kinds of actions that are considered transactions in the SNA/BPM. 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

- 4.70 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.
- 4.71 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.
- 4.72 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.

- 4.73 This sort of example illustrates why some analyses are best carried out in the context of an extended account where some of the normal constraints and conventions of the SNA/BPM are relaxed. In the case of pollution, the System of Environmental-Economic Accounting (SEEA) has been developed precisely to explore this issue among other environmental topics.

Illegal actions

- 4.74 Macroeconomic statistics, including national accounts and external accounts, cover all economic phenomena irrespective of whether they are illegal or legal. Illegal actions that fit the characteristics of transactions (notably the characteristic that there is mutual agreement between the parties) are therefore treated the same way as legal actions. The production or consumption, including exports and imports, 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. It is important to note that the differences in the definition of illegal transactions between economies or within an economy over time would cause inconsistencies in the national/external accounts if illegal transactions were omitted. Furthermore, illegal transactions generally affect other legal transactions (e.g., certain legal financial assets may be purchased with income generated through illegal transactions). 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. Similarly, if exports and imports of illegal goods and services were to be ignored, the external balance on goods and services would be misrepresented. 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 to obtain high-quality estimates about illegal transactions, but in principle they should be included in the accounts if only to reduce error in other items, including balancing items.
- 4.75 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.
- 4.76 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

- 4.77 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. In the context of external accounts, other flows are recorded only for financial assets and liabilities that represent claims on and liabilities to non-residents and gold bullion, because the IIP relates only to external financial assets and liabilities.
- 4.78 The entries for other flows appear in one of the two accounts that comprise the other changes in assets and liabilities accounts. The other changes in the volume of assets and liabilities 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 and liabilities

- 4.79 Other changes in the volume of assets and liabilities fall into three main categories.
- 4.80 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.

- 4.81 Write-offs of claims by creditors, as well as monetization and demonetization of gold bullion, also typically feature under this first category. However, if debt forgiveness is provided, such as in a non-commercial setting, transactions are recorded. In the case of debt cancellations, it may sometimes be unclear whether they should be classified as transactions or other flows. In commercial settings, in the absence of specific information, debt cancellation can be treated as other changes in the volume of assets and liabilities. On the other hand, assumption of debts arising from the activation of guarantees and rescheduling of debts is typically the result of a mutual agreement between the parties involved, and, hence, should be classified as transactions. (See [chapter 13 \(SNA\)](#) / [chapter 9 \(BPM\)](#) for more details.)
- 4.82 A final example of the first category relates to the creation of crypto assets without a corresponding liability designed to act as a general medium of exchange, or designed to act as a medium of exchange within a platform or network only. These are treated as non-produced non-financial assets, whose creation is to be recorded as an other change in the volume of assets. See [chapter 22 \(SNA\)](#) / [chapter 17 \(BPM\)](#) for more information on the recording and classification of crypto assets.
- 4.83 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 depreciation or change in inventories, refer to normal rates of loss or damage.
- 4.84 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.
- 4.85 Finally, changes in the status of existing financial claims and liabilities arising from the change in residence of individuals from one economy to another are treated as other changes in the volume of assets and liabilities. These flows result from a change in the classification of the owner's residence status, and hence, they should not be classified as transactions (See also [paragraphs 9.xx to 9.xx \(BPM\)](#).)

Revaluations (holding gains and losses)

- 4.86 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. 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 nor closing balance sheet. In external accounts, revaluations are further classified into those that are due to exchange rate changes and those that are due to other price changes.
- 4.87 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.

C. Stocks

- 4.88 Stocks, which in the case of financial assets and liabilities are also often referred to as positions, relate to the level of assets or liabilities at a point of time. 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

- 4.89 The heart of the SNA describes how labour, and non-financial assets, including land and other natural resources, 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.
- 4.90 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

- 4.91 Two types of ownership can be distinguished, legal ownership and economic ownership. *The legal owner refers to the institutional unit entitled in law and sustainable under the law to claim the benefits associated with goods, services, natural resources, financial assets or liabilities (which may be different from the economic owner).*
- 4.92 Sometimes government may claim legal ownership of an item on behalf of the community at large. No item that does not have a legal owner that can claim the associated benefits, either on an individual or collective basis, is recognized in macroeconomic statistics.
- 4.93 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 non-financial assets. The consequence is that benefits from non-financial assets and labour in the form of operating surplus and income from employment are not wholly predictable in advance, but embody a degree of risk.
- 4.94 The second type of risk refers to the process of transferring benefits between time periods. It arises because of uncertainty over interest rates and other financial developments in future periods, which in turn affects the comparative performance of different types of benefits.
- 4.95 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.
- 4.96 *The economic owner refers to the institutional unit entitled to claim the benefits associated with the use of goods, services, natural resources, financial assets in the course of an economic activity by accepting the associated risks.*
- 4.97 Every item has both a legal owner and an economic owner, though in many cases the economic owner and the legal owner of an item are the same. Where they are not, the legal owner has handed responsibility for the risk involved in using the item 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/BPM, 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. Chapter 27 on contracts, leases, licences and permits, discusses a number of cases where legal and economic ownership are different.
- 4.98 When government claims legal ownership of an item 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 items.
- 4.99 Especially in relation to natural resources, a government is typically the legal owner and grants rights or permissions to exploit the resources to another institutional unit. In such cases, the benefits may be shared between the government and the exploiter of the resources, and the economic ownership of the resources is split between the two entities involved, in line with the shares each entity appropriates.
- 4.100 In the case of multinational enterprise groups, the economic ownership of intellectual property products may be difficult

to determine. Various arrangements, including the routing via special purpose entities, exist. The use of a special decision tree is recommended for the appropriate allocation and recording of these assets across the MNE. See [chapter 23 \(SNA\)](#) / [chapter 15 \(BPM\)](#) for more information.

- 4.101 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

- 4.102 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 item over a period of time. It is a means of carrying forward value from one accounting period to another.*

- 4.103 All assets in the SNA/BPM are economic assets. Attributes such as skills, which are sometimes described in common parlance as an asset, are not recognized as such in the SNA/BPM because they do not meet the criteria of an asset, as defined in the above paragraph.

4. Types of assets and liabilities

- 4.104 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.

- 4.105 *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.

- 4.106 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. An example relates to pensions provided by government as part of a social security scheme. In the context of the SNA/BPM, they are generally not recognized as being part of liabilities.

- 4.107 Whenever a liability exists, there is a corresponding financial claim that the creditor has against the debtor. *Financial claims are financial instruments that give rise to an economic asset that has a counterpart liability, including shares and other equity in corporations.* As such, a financial claim gives rise to 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. Specific guidance on the recognition and the recording of pension entitlements and various types of insurance technical reserves is provided in chapter 12 and 24.

- 4.108 *Financial assets consist of all financial claims, including 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 (see paragraphs 6.xx-xx, *BPM7* for the definition of reserve assets) 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.

- 4.109 The IIP covers financial assets and liabilities that have an external character. All financial claims involve two parties, so they have an external character if the claim is on a non-resident. Similarly, all liabilities involve two parties, so they have an international character if the obligation is to a non-resident. The gold bullion component of monetary gold is the only case of a financial asset with no counterpart liability; its external character arises from the historical role of gold in the international financial system. IIP is described in [chapter 7 \(BPM\)](#).

- 4.110 All items that meet the definition of an asset given above are included in the asset boundary of the SNA/BPM. Assets that are not financial assets are non-financial assets. In the case of non-financial assets, a distinction can be made between those that are produced and those that are non-produced. In the SNA/BPM balance sheet classification, a similar distinction has been applied, although natural resources, both produced and non-produced, have been grouped together to emphasize the special character of this group of non-financial assets.

5. The asset boundary

- 4.111 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 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 the annex to this chapter.
- 4.112 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 actually 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 of the domestic economy. Portable non-financial assets that are physically located in an economy but are owned by non-residents are excluded from the balance sheet of the domestic economy; 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. As noted in paragraph 4.93 (SNA) / paragraph 3.93 (BPM), the ownership of intellectual property products, especially within multinational enterprise groups, may be difficult to determine; more guidance is provided in chapter 23 (SNA) / chapter 15 (BPM).

Contingent liabilities and provisions

- 4.113 A liability, as defined in paragraph 4.105 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/BPM includes (legal) liabilities but not constructive and 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.
- 4.114 A corporation may set aside funds to cover, for example, unexpected events, default by their customers, or terminal costs related to the disposal of an asset. Such monies may be described as provisions. These are not treated as liabilities in the SNA/BPM, because they are not the subject of the sort of (legal) contract 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. More information on the treatment of provisions is provided in chapter 14 (SNA).

6. Entry and exit of assets from the balance sheet

- 4.115 All assets owned by (notional) resident units appear on the balance sheet of the domestic economy. The first level of classification of assets distinguishes four types of assets: produced non-financial assets (excluding produced natural capital); non-produced non-financial assets (excluding non-produced natural capital); natural capital, and financial assets (and liabilities). In view of arriving at an improved accounting for the role of the environment in economic developments, natural capital is separately identified, grouping together both produced and non-produced natural resources. For the other assets, the breakdown makes clear the difference in the process by which assets enter and leave the balance sheet.
- 4.116 Produced non-financial assets come into being via the production process or as imports. The same holds for produced natural capital, such as cultivated biological resources. 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.
- 4.117 Non-produced non-financial assets, excluding non-produced natural capital, are of three types; contracts, leases and licences; crypto assets without a corresponding liability designed to act as a medium of exchange; and purchased goodwill and marketing assets. 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. Crypto assets without a corresponding liability designed to act as a medium of exchange are considered as non-produced assets, because the miners solving cryptographic puzzles, and (partly) receiving crypto assets in return, are

considered to be producers of validation services, not as producers of the assets themselves. Goodwill and marketing assets are only recognized as assets in the SNA when they are evidenced by a sale.

- 4.118 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

- 4.119 The coverage of assets in the integrated framework of national accounts is limited to those assets used in economic activity and that are subject to ownership rights, either individually or collectively; thus for example, natural resources that are not owned, are excluded.

- 4.120 Consumer durables are not regarded as assets in the integrated framework of national accounts, 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 supplementary item in the balance sheet but not be integrated into the totals of the table.

- 4.121 Human capital is also not treated by the as an asset in the integrated framework of national accounts; see paragraphs 1.77 and 1.78. However, as explained in chapter 35, it is encouraged to compile extended accounts on education and training, including experimental estimates of the value of human capital.

- 4.122 Some environmental resources are excluded from the asset boundary in the integrated framework of national accounts. These are usually of the same type as those within the boundary but are of no economic value.

D. Balancing items

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

Balancing items in the flow accounts

- 4.124 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 in the national accounts for the accounts containing flows reproduced below:

- Value added or domestic product,
- Operating surplus,
- Disposable income,
- Saving,
- Net lending / net borrowing.



- 4.125 In the external accounts, some important measures derived as balances for the accounts containing flows are as follows:

- Balance on trade in goods,
- Balance on trade in services,
- Balance on goods and services,
- Balance on goods, services, and earned income,
- Current account balance,
- Net lending /net borrowing
 - from current and capital accounts
 - from financial account
- Changes in net IIP arising from other flows (in total, and for each of other changes in volume, exchange rate changes, and other price changes)

Balancing items in the balance sheets

- 4.126 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.

4.127 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.

4.128 In the external accounts, the main balancing item derived from stocks is the net IIP, which represents the total external financial assets minus total external liabilities.

4.129 This list is not comprehensive; other balancing items can be derived as needed for analysis. For example, balances on components in the financial account may be of interest, such as net direct investment or net portfolio investments.



E. Accounting rules

4.130 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 sequence of economic accounts/balance of payments and IIP. The details on classifications of accounting entries are discussed, account by account, in chapters 7 to 14 (SNA) / 7 to 14 (BPM).

1. Quadruple-entry accounting

4.131 The accounting system underlying the SNA/BPM derives from broad bookkeeping principles. To understand the accounting system for the SNA/BPM, 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.

Vertical double-entry bookkeeping – corresponding entries

4.132 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. The external accounts for an economy are to be compiled on a vertical-double entry bookkeeping basis from the perspective of the residents of that economy.

4.133 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. In the external accounts, net IIP provides a measure of net financial claims with non-residents plus gold bullion held as monetary gold. These terms are discussed in paragraphs 7.xx (BPM).

Horizontal double-entry bookkeeping – counterpart entries

4.134 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. While the horizontal double entry applies to the national accounts of a particular country, similar principles apply to external accounts at a worldwide level: for example, at the worldwide level, dividends payable by all economies should be equal to dividends receivable by all economies.

Quadruple-entry bookkeeping

- 4.135 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 national accounts and external accounts. Additionally, definitions, classifications, and accounting principles in the external accounts are derived from the viewpoint of conceptual symmetry as well as symmetric reporting by partner economies. The quadruple-entry system 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 and external 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 in the case of national accounts, or regional or global totals in the case of external accounts). The same is also true for all transactions and other flows that affect balance sheets of two counterparties.

Types of accounting entries – SNA

- 4.136 The SNA uses the following conventions and terminologies for recording flows with the rest of the world. Imports, for instance, are a revenue 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 revenue 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 external accounts show the consolidated accounts 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.
- 4.137 More generally, in the national accounts, credit entries in the accounts representing current transactions are denoted as revenues, while debit entries are referred to as expenditures. In the case of transactions in assets and liabilities, including capital transfers, reference is made to changes in assets and changes in liabilities (and net worth). The same holds for the accounts which reflect flows affecting the level of assets and liabilities other than transactions. The two sides of balance sheets are referred to as assets, and liabilities and net worth, respectively.

Types of accounting entries – BPM

- 4.138 The external accounts use the following conventions and terminologies for recording flows. In the current and capital accounts, a credit/revenue denotes entries from exports, earned income receivable, transfers receivable, and disposals of non-produced non-financial assets. A debit/expenditure is used to record entries for imports, earned income payable, transfers payable, and acquisitions of non-produced nonfinancial assets.
- 4.139 In the case of transactions in financial assets and liabilities, the terms “net acquisition of financial assets” and “net incurrence of liabilities” are used. Financial account items are recorded on a net basis separately for each financial asset and liability (i.e., they reflect changes due to all credit and debit entries during an accounting period). The use of the terms “net acquisition of financial assets” and “net incurrence of liabilities” highlights the impact of the financial account on the IIP. The use of these terms also simplifies the interpretation of data. A positive change indicates an increase in assets or liabilities and a negative change indicates a decrease in assets or liabilities. 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; a debit for a liability is a decrease). Although the debit and credit presentation is not emphasized for the 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 a reduction in a liability (see Box 2.1, BPM7). The conventions for aggregation, consolidation, and netting assets against liabilities are described in Section F.

2. Valuation

General rules

- 4.140 The power of the SNA and the BOP/IIP as analytical tools stem largely from their ability to link numerous, very varied economic phenomena by expressing them in a single accounting unit. The SNA and the BOP/IIP do not attempt to determine the utility of the flows and stocks that come within their scope. Rather, they measure the current exchange value of the entries in the accounts in monetary terms.
- 4.141 In line with the above, market prices refer to the current exchange value, that is, the values at which goods, services, labour or assets are exchanged, or else could be exchanged, for cash (currency or transferable deposits). Market prices are the basis for valuation of transactions in the SNA/BPM. This section describes the general principles for valuation of

flows and positions.

Valuation of transactions

- 4.142 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.
- 4.143 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.
- 4.144 Observed exchange values in most cases will represent market prices as described in the preceding paragraph. Paragraphs 4.147 to 4.151 describe cases where actual exchange values may 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.
- 4.145 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 (to be recorded as transactions in services), differs from the valuation of non-financial assets, which includes any costs of ownership transfer.
- 4.146 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.
- 4.147 If there is no appropriate market from which the value of a particular 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. Output valued in this way should include a mark-up that reflects the return to capital used in the production of the relevant goods and services.
- 4.148 More details on the methods for valuing transactions are provided in the annex to this chapter, while the valuation of specific types of flows is discussed in further detail in relevant chapters.

Agricultural products sold from the farm

- 4.149 A significant qualification to the use of market-equivalent prices 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

- 4.150 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.

- 4.151 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.
- 4.152 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/BPM 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.
- 4.153 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

- 4.154 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, the exchange value at the time of change of ownership should be estimated. The estimate should be revised with the observed exchange value, when known. The exchange value is given by the contract price even if it is unknown at the time of change of ownership.

Valuation of transfers in kind

- 4.155 When non-financial resources are provided without a quid pro quo, such resources should be valued at the prices that would have been received if the resources had been sold in the market. In the absence of an observable 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.

Acquisition of goods under financial lease

- 4.156 Acquisition of goods under financial lease should be valued at market prices at the time of acquisition, if such prices are available. When no price is determined, it may be necessary to use the estimated written-down current acquisition values of fixed assets or the present value of expected future returns.

Transfer pricing

- 4.157 In some cases observed 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 the observed 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. Moreover, the adjustments need to be made consistently in the accounts of both units involved in the transaction. This may be difficult to apply in practice in the case the relevant units are resident in different countries, and the statistical offices responsible for making the adjustments represent different countries as well.
- 4.158 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 preferably 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.

- 4.159 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. The valuation of management fees and other similar cases in the case of balance of payments is elaborated in paragraph 11.xx, *BPM7*.
- 4.160 All in all, because of all the complexities involved to arrive at a consistent recording of the adjustments, not to mention the availability of relevant information on the distortions in the observed exchange values, national accounts and external accounts often refrain from trying to approximate true market prices. Here, one can also add that the observed exchange values, which may be motivated by global tax avoidance or other reasons, also represent an economic reality of its own, albeit not one which is based on market prices and other commercial considerations.

Concessional pricing

- 4.161 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 by governments is described in chapter 30 (SNA). Other examples of concessional lending may relate to the provision of loans at reduced interest rates by employers to their employees. In the sequence of economic accounts/external accounts, adjustments for concessional lending are restricted to the latter; the provision of adjusted information on concessional lending in a non-market context by governments, central banks and international organizations is encouraged as supplementary items. See paragraphs 14.xxx (SNA / paragraphs 13.51 and 14.xx (BPM) for further guidance on the treatment and recording of concessional loans.
- 4.162 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 of assets and liabilities

- 4.163 As a general principle, stocks of assets and liabilities should be valued as if they were being acquired on the date to which the balance sheet relates. This implies that when they are exchanged on a market, assets and liabilities are to be valued using a set of prices that are current on the date to which the balance sheet relates and that refer to specific assets.
- 4.164 It is important though to make a clear distinction between the initial recognition of assets, and the subsequent valuation of assets. Regarding the initial recognition, i.e., the time at which the asset (or liability) enters the balance sheet, the valuation principles for valuing transactions are relevant. When it comes to the subsequent valuation, it is often not possible to use a set of prices that are current on the date to which the balance sheet relates, because there are no active markets in which the relevant assets are traded. This is not only true for most non-financial assets, certainly when taking into account the second-hand nature and the partial depreciation of these assets, but also for various financial instruments. As a consequence of the unavailability of observable market or near-market prices, alternative valuation methods need to be applied to arrive at an appropriate valuation.
- 4.165 For valuing non-financial assets, two basic approaches can be distinguished, the first one based on the market prices for similar (second-hand) assets, and the second one based on the contribution of capital services, including depreciation, to the production process in the remaining service life of the asset. The latter approach is usually approximated by estimating the written-down replacement cost, adequately adjusted for changes in prices. To compile these estimates, the perpetual inventory method is applied, which – if applied properly – replicates the net present value of future capital services derived from the asset in question. This method is described further in chapter 17).
- 4.166 In the case of non-financial assets for which active second-hand markets exist, such as for generic transport equipment and dwellings, it can be assumed that the value derived from the capital services approach will closely follow the observable market prices of the relevant second-hand assets, as the economic agents can make an explicit choice between investing in new assets, or purchasing second-hand assets. However, most non-financial assets used in production are not generic, but specifically designed and constructed for a certain production activity. Moreover, the markets for these second-hand assets may be extremely thin. As a consequence, the observable market prices for these second-hand assets may be close to their scrap value, thus not providing a good representation of the capital services that can be derived

from them in the remainder of the service life, the latter representing the value of the asset in an enterprise as a going concern. One could also argue that the second-hand assets in these types of markets are not the same as the assets used in production, thus not being a good representation of the assets being valued.

- 4.167 Similar valuation issues may exist in the case of, for example, natural resources, the stocks of which are generally not traded in the market, so any values derived from occasionally traded stocks cannot be used for the valuation of similar assets because of the heterogeneity of the resources in question. In these cases, the value on the balance sheet can be approximated by the net present value of future benefits derived from these resources, using the residual value method, i.e., the output generated with the exploitation of the resources minus all costs associated with the exploitation. Exploitation rights are often provided by government for a series of rent payments. The (present value of) actual rent payments may not account for the full value of resource rents that can be derived from these assets, and the asset in question may clearly generate a future stream of resource rents, going well beyond the payments of rent to the (legal) owner. The unit having the rights to exploit the resources thus appropriates part of the resource rents, reflecting the future capital services derived from these assets by the unit having the exploitation rights. In these cases, the value of the resources in question is split between the legal owner and the unit exploiting the resources. (See also paragraphs 14.xxx (SNA).)
- 4.168 Finally, when it comes to applying the method of the net present value of future benefits, it is important to acknowledge that it may be difficult to determine the future earnings with the appropriate degree of certainty. Assumptions also need to be made about the asset's life length and the discount factor to be applied. Therefore, the other possible sources of valuation described in the preceding paragraphs should be exhausted before resorting to this method. It should be noted, however, that the method as such is theoretically sound as can often be verified for a number of financial assets. 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 depreciation 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.
- 4.169 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 it is recommended to compile supplementary data on the nominal values of positions of debt securities as well. (See paragraph 4.xxx for the definition of nominal value.)
- 4.170 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.
- 4.171 For most non-negotiable financial assets, particularly those with a face value applicable at some point in the future (e.g., loans, deposits, and other accounts receivable and payable), the present market value can be 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 net present value to be established. However, another principle for valuing stocks is the need for consistency in the valuation of debtor and creditor positions for financial instruments. This is one of the pragmatic reasons to apply nominal values for financial instruments, such as deposits and loans, which are not (actively) traded on the market. Moreover, conceptually, the nominal value of a debt instrument can also be calculated by discounting future interest and principal payments at the existing contractual interest rate(s) on the instrument; these interest rates may be fixed rate or variable rate. However, some would argue that such a valuation is somewhat inconsistent with a valuation at fair value of the relevant asset positions, while others would argue that nominal values, reflecting the actual payments of principal to be made in the future, including interest accrued to date, can be considered as a good approximation of the fair value. Nominal value is also considered useful because it shows actual legal liability and the starting point of creditor recovery behaviour. It is recognized, however, that nominal value provides an incomplete view of the financial position, particularly when the loans are non-performing. Therefore, information on the nominal value of non-performing loans should be included as a memorandum or supplementary item. (See paragraph 14.xx to 14.xx (SNA) / paragraph 7.xx (BPM).). Loans that have become negotiable de facto should be reclassified under debt securities. (See paragraph 12.xx (SNA) / paragraph 5.xx (BPM).)
- 4.172 Positions on deposits and other accounts receivable/payable are also recorded at nominal value. They give rise to the same issues of nominal and fair values as loans. Deposits at banks and other deposit-taking corporations in liquidation should also be recorded at their nominal value until they are written off. If significant, however, such deposits should be shown separately as a supplementary item. The same treatment is applicable for any other cases of impaired deposits (i.e., where the deposit-taking corporation is not in liquidation but faces liquidity issues).
- 4.173 When securities are quoted on markets with a buy-sell spread, the midpoint should be used to value the instrument. The spread is an implicit service of the dealer, paid by buyers and sellers (see paragraphs 11.xx–11.xx, (BPM) /

paragraphs xx.xx (SNA)). Similarly, positions in financial assets and liabilities denominated in foreign currency should be valued using the midpoint at close of business between the buying and selling rates on the reference date.

- 4.174 For a restricted group of financial instruments, the above valuation methods cannot be applied. Examples relate to unlisted equity and defined benefit pension entitlements. While for the latter the present value of future pension benefits is the generally accepted method for valuation, various approaches can be considered in the case of unlisted equity.
- 4.175 More details on the methods for valuing assets are provided in the annex to this chapter, while the valuation of specific types of assets is discussed in further detail in relevant chapters.
- 4.176 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

- 4.177 Business accounts, tax returns, supervisory data, and other administrative records are main sources of data for drawing up macroeconomic statistics. One should be aware, however, that none of these necessarily satisfies the valuation requirements of macroeconomic statistics 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 macroeconomic statistics. 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 depreciation employed in the SNA, particularly with their use of historical cost. (Further details on the commonalities and differences between the recording in macroeconomic statistics, particularly focusing on national accounts, and the recording in business accounting and public sector accounting are provided in chapters 28 and 30, 2025 SNA)
- 4.178 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 except when they are to be recorded at nominal values.

Valuation of partitioned flows

- 4.179 Where a single payment refers to more than one transaction category (as they are defined in the macroeconomic statistics), the individual flows need to be recorded separately. In such a case, the total value of the individual transactions after partitioning must equal the observed exchange value 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/BPM recommends dividing interest transactions with financial corporations between two transaction categories, one showing interest as understood in the SNA/BPM and the other representing the implicit payment for financial intermediation services.
- 4.180 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; see [redacted].
- 4.181 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. This recording of interest becomes even more relevant in periods of high inflation and interest. In all these 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 generally not recommended for normal trade credit.

Valuation of rerouted transactions

- 4.182 Values of rerouted transactions will have to be derived from values of other observed transactions to which they are related. For example, values of transactions in reinvested earnings are derived from the direct investors' shares in the net saving of the (foreign) direct investment enterprise before reinvested earnings are distributed. (See paragraphs 8.xxx and 12.xxx (SNA) / paragraphs 8.15–8.16 and 11.33–11.47 (BPM).)

Special valuations concerning products

- 4.183 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 distribution 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.
- 4.184 **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.
- 4.185 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.*
- 4.186 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:
- a. Taxes less subsidies on products payable by the producer;
 - b. Trade and transport margins, including taxes less subsidies on products payable by wholesale and retail traders;
 - c. Transport, including taxes less subsidies on products, paid separately by the consumer;
 - d. Predictable quality increases producing additional output volume less current losses during storage;
 - e. 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 pure 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.

- 4.187 Imports and exports of goods are recorded in the SNA/BPM 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.
- 4.188 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/BPM. 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 15 and 33 (SNA) / chapters 10 and 11 (BPM).
- 4.189 In relation to the valuation of exports and imports, it is generally acknowledged that a valuation at the observed exchange values, which is closely aligned to the invoice values, is the conceptually preferred method. Subject to further testing of the implementation in practice, it is intended to be introduced as the basic principle for valuing imports and exports in the next versions of SNA/BPM.

Valuation of other flows

Other changes in the volumes of assets and liabilities

- 4.190 In order to determine the valuation of the other changes in the volume of assets and liabilities, 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 and holding gains and losses as the value of the other change in volume.
- 4.191 **Other** changes in the volume of financial assets and liabilities are recorded at the observable market 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 and liabilities 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

- 4.192 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.
- 4.193 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 the net changes of 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.
- 4.194 For loans, deposits, and other accounts receivable and payable sold at a discount, the transaction values recorded in the financial account may differ from the nominal values recorded in the balance sheets, or in the case of external accounts, in the IIP. Such differences are recorded as holding gains and losses in the other changes in financial assets and liabilities account. (See also paragraph 13.xx (SNA) / paragraph 9.33 (BPM7).)

3. Time of recording



Choice of time of recording

- 4.195 When discussing timing in the SNA/BPM, 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 other 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.
- 4.196 Thus, the SNA/BPM does not show individual transactions or other flows, but there are four 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/IIP due to transactions and those due to other changes (e.g., other changes in volume and holding gains or losses). This distinction is particularly important in situations of high inflation. Thirdly, the integrated nature of the system means that the stocks recorded on the balance sheet are influenced by the timing of flows. Finally, the quadruple accounting system requires that entries for a transaction are made by the counterparties at the same time. This ensures the consistency of accounts for each party.
- 4.197 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 (in external accounts relating to exports and imports of goods) commence with the signing of a contract between a seller and a buyer, encompass a date of delivery (dates of crossing border in the case of exports/imports) 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 and may result in multiple transactions in national accounts/external accounts.
- 4.198 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.
- 4.199 Clearly, making entries for all successive stages discernible within the activities of institutional units, although theoretically possible, would severely overburden the SNA/BPM. A choice has to be made, recognizing (a) the needs of macroeconomic analysis, (b) micro-economic 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. As explained in the following paragraphs, the SNA/BPM and other macroeconomic statistics recommend recording each transaction on an accrual basis.

Choice for recording on an accrual basis

- 4.200 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 and external 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/BPM seeks to portray. Moreover, cash recording cannot be applied to the many non-monetary flows included in the SNA/BPM.
- 4.201 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 recording is still limited to monetary flows.
- 4.202 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. In other words, the effects of economic events are recorded in the period in which they occur, irrespective of whether cash was received or paid or was due to be received or paid. When an economic event is accompanied by a settlement at a later date, such as a purchase of goods financed by a trade credit, the time lag is bridged by recording each event separately, with the corresponding entry at the time of the change in ownership being trade credit payable. The SNA/BPM favours accrual accounting because:
- a. The timing of accrual accounting is in full agreement with the way transactions, other flows, and main economic aggregates (value added, external balance on goods and services, saving and net lending/net borrowing) are defined in the SNA/BPM. 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, or a country's IIP, to be calculated correctly at any point in time;
 - b. Accrual accounting provides the most comprehensive information because all flows can be recorded consistently, including non-monetary transactions, imputed transactions, and other flows.
- 4.203 The change of economic ownership is central in determining the time of recording on an accrual basis for transactions in goods, non-financial assets, and financial assets. A change in ownership from an economic point of view means that all risks, rewards, and rights and responsibilities of ownership in practice are transferred. In general, a change in legal ownership also involves a change in economic ownership. In some cases, a change of economic ownership takes place even though the legal ownership remains unchanged (e.g., financial leases and transactions between an enterprise and its foreign branches). In other cases, there is no change in economic ownership, even though there is a change in legal ownership. For example, for repurchase agreements involving the provision of securities for cash, the risks and rewards attached to the securities remain with the original holder (as discussed in paragraph 12.xx (SNA) / paragraphs 5.xx–5.xx (BPM)) and the only transaction is a loan. Similarly, in the case of securities lending without cash collateral, there is no change in ownership of the securities, although securities lending fees may arise (see paragraph xx.xx (SNA) / paragraphs 12.xx–12.xx (BPM)).
- 4.204 Many transactions, such as everyday purchases of households in shops, are monetary transactions in which a product is delivered against immediate, or nearly immediate, payment in cash. In those instances there are no differences between the three methods discussed in the above. 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).
- 4.205 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/BPM 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 transactions in goods and services

- 4.206 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. Similar rules of change in economic ownership apply to transactions in non-produced non-financial assets.
- 4.207 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.
- 4.208 Transactions in goods should be recorded as of the time that the change of economic ownership takes place. Goods are considered to change economic ownership when the parties enter the goods in their books and make a corresponding change to their financial assets and liabilities. For high-value capital goods such as ships, heavy machinery, and other equipment, ownership changes are recorded at the time agreed between the parties as to when ownership changes (see paragraph 10.xx, BPM7). When a contract for building and other construction is agreed in advance, progressive change of ownership occurs for the work-in-progress, which may take several months or years to complete. When the contract calls for stage payments (progress payments), the transaction values may often be approximated by the value of stage payments made each period (see paragraphs 5.xx and 10.xx, BPM7). A difference in timing between the change of ownership and payments may give rise to trade credit and advances.
- 4.209 The timing used in international merchandise trade statistics generally follows customs procedures, which are set up to record the movement of goods across borders. The time at which goods cross the border can be taken only as an approximation to the time when the change of economic ownership occurs. A customs-based collection system usually provides a choice of dates at which transactions may be recorded (e.g., lodgement of customs declaration, customs clearance of goods). The time of recording in the international guidelines for merchandise trade statistics is when the customs declaration is lodged. Ideally, for external accounts purposes, customs data should be adjusted (see paragraphs 3.xx–3.xx, BPM7). Likewise, an exchange record system that reflects payments may not coincide in timing with the change in economic ownership of the goods.
- 4.210 Goods on consignment (i.e., goods intended for sale but not actually sold when the goods cross the frontier) should be recorded only at the time economic ownership changes. Goods under financial lease arrangements are considered to change economic ownership at the inception of the lease (see paragraph 5.xx on the definition of a financial lease and paragraphs 7.xx and 10.xx for positions and transactions arising from financial leases). Goods sent abroad for processing under the ownership of the same party are not treated as if they change economic ownership. Goods may move between a parent and its branch abroad. In that case, possibilities exist that either the goods have changed economic ownership or they may have been sent for processing. The correct statistical treatment is to identify which location assumes the risks and rewards of ownership most strongly (e.g., from factors such as whether the goods are included in the accounts, and which location is responsible for subsequent sale of the goods). For goods under merchanting, purchases and resales are recorded at the time the change in economic ownership of goods occurs.

Time of recording of transactions in services

- 4.211 Transactions in services are recorded when the services are provided. Some services, such as some transport or hotel services, are provided within a discrete period, in which cases, there is no problem in determining the time of recording. Other services are supplied or take place on a continuous basis. For example, construction services, operating leasing, and insurance services are recorded continuously as long as they are being provided. When construction takes place with a prior contract, the ownership of the structure is effectively transferred progressively as the work proceeds. When services are provided over a period of time, there may be advance payments or settlements at later dates for such services (e.g., freight, insurance, port services). The provision of services should be recorded on an accrual basis in each accounting period (i.e., they should be recorded as they are rendered, not when payments are made). Entries for advance payments or settlements at later dates should be made in the appropriate accounts when they occur (as explained in paragraph 3.xx in the case of import of goods).

Time of recording of distributive transactions

- 4.212 Distributive transactions are recorded at the moment the related claims arise. As a result, for example, remuneration of employees, interest, social contributions and benefits are all recorded in the period during which the amounts payable accrue. (See paragraphs 12.xx–12.xx for the recording of remuneration of employees associated with employee stock

options.) With respect to some distributive transactions, the time of accrual depends on the unit's decision as to when to distribute earned income or make a transfer.

- 4.213 **Interest** is recorded as accruing on a continuous basis because the financial resources are provided for use on a continuous basis. For some financial instruments, the debtor does not make any payments to the creditor until the financial instrument matures, at which time a single payment discharges the debtor's liability; the payment covers the amount of funds originally provided by the creditor and the interest accumulated over the entire life of the financial instrument. Corresponding entries to the interest accruing in each period before maturity should be recorded as financial transactions that represent an additional acquisition of the financial asset by the creditor and an equal incurrence of a liability by the debtor.
- 4.214 Dividends are recorded at the moment the shares go ex-dividend. Three dates are associated with dividends:
- the date they are declared;
 - the date they are excluded from the market price of shares, known as the ex-dividend date. The recipients of the dividends are determined from the register of shareholders at this time and subsequent shareholders do not have a right to the dividends; and
 - the date they are settled.
- 4.215 Although dividends sometimes may be related to the enterprise's profits in the previous period, in other cases, they are only loosely related or not at all. The price of shares includes declared dividends up to the ex-dividend date, thus the holder of the shares before the ex-dividend date owns the share and does not hold a separate debt instrument reflecting **declared** and unpaid dividends. Between the ex-dividend date and actual settlement, the amount payable is recorded as **other** accounts receivable/payable. Withdrawals from income of quasi-corporations, such as distributed branch profits, are recorded when they actually take place. Reinvested earnings are derived from retained earnings, and therefore they are recorded in the period in which retained earnings accrue. (See **paragraphs 12.xx–12.xx (BPM)** for issues in the calculation of reinvested earnings.)
- 4.216 Taxes and other compulsory transfers should be recorded when the activities, transactions, or other events occur that create the government's claim to the taxes or other payments. In principle, income taxes and social contributions based on income should be attributed to the period in which the income is earned. In practice, however, some flexibility may be needed so that income taxes deducted at the source and regular prepayments of income taxes may be recorded in the periods in which they are paid, and any final tax liability on income may be recorded in the period in which it is determined.
- 4.217 Some compulsory transfers, such as fines, penalties, and property forfeitures, are determined at a specific time. These transfers are recorded at the time the issuing unit has an unconditional claim on the funds; if a fine or penalty is subject to further appeal, an unconditional claim only exists once the appeal has been resolved
- 4.218 Determining the time of recording for grants and other voluntary transfers can be complex because there is a wide variety of eligibility conditions that have varying legal powers. In some cases, a potential grant recipient has a legal claim when it has satisfied certain conditions, such as the prior incurrence of expenses for a specific purpose or the passage of legislation. These transfers are recorded when all requirements and conditions are satisfied. In other cases, the grant recipient never has a legal claim on the donor, and the transfer should be attributed to the time at which the settlement is made (e.g., cash payment). In general, the time of recording of voluntary transfers is determined by the time at which there is a change in the economic ownership of the resources (such as goods, services, or financial assets) that are corresponding entries to transfers.

Time of recording of transactions in non-produced non-financial assets

- 4.219 Transactions in non-produced nonfinancial assets are recorded at the time economic ownership of these assets changes. The treatment is similar to those for goods and financial assets, as discussed in **paragraphs 4.xx and 4.xx–4.xx (BPM)**, respectively.

Time of recording of transactions in financial assets and liabilities

- 4.220 Transactions in financial assets (including payments of cash) are recorded in the SNA/BPM when economic ownership changes. Some financial claims or liabilities defined in the SNA/BPM, 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/BPM records between a quasi-corporation and its owner/branch and its parent.

- 4.221 In some cases, 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 usually 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, the timing of the change of economic ownership is determined according to the date on which the creditor receives his payment.
- 4.222 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. In practice, when the delay between the transaction and settlement is short, the time of settlement may be considered as an acceptable proxy, so that accounts receivable/payable would not arise. In cases of longer delays, however, accounts receivable/payable should be identified.
- 4.223 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. Consistent with the accrual principle, an overdue obligation to settle a financial derivative contract is not recorded as a transaction; however, the obligation is reclassified to a debt liability because of the change in the nature of the claim (see [paragraph xx.xx \(SNA\)](#) / [paragraph 5.xx \(BPM\)](#)).
- 4.224 Data on arrears are important in their own right, and thus should be presented as supplementary items, where significant (or memorandum items in the case of Exceptional Financing, see Appendix 1). Although it is useful to identify some commonly important arrears (such as arrears on public and publicly guaranteed debt), flexibility is needed in determining which items of arrears are important to disseminate, depending on each economy’s circumstances. Arrears are described further in [paragraphs 5.xx–5.xx \(BPM\)](#)
- 4.225 Activation of one-off (non-standardized) guarantees gives rise to financial transactions because this involves a creation of a new liability. The time of recording of flows arising from activation of one-off guarantees (including capital transfers and other changes in the volume of assets and liabilities, if applicable) is determined by the occurrence of the events activating the guarantee. The treatment of flows arising from the activation of one-off guarantees is described in more detail in [paragraphs 25.xx to 25.xx \(SNA\)](#) / [paragraphs 8.42 to 8.45 \(BPM\)](#).
- 4.226 Employee stock options (ESOs) are recognized at grant date. Remuneration of employees associated with employee stock options should be recorded as accruing over the period to which the option relates, which generally is the period between the granting and vesting dates. Sometimes, the options may cover the period before the granting date, which should also be taken into account when allocating the remuneration of employees. Recording of flows associated with ESOs are discussed in [paragraphs 25.xx to 25.xx \(SNA\)](#) / [paragraphs 8.xx, 9.xx and 11.xx \(BPM\)](#).

Time of recording of output and intermediate consumption

- 4.227 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.
- 4.228 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, depreciation and depletion

- 4.229 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.
- 4.230 The timing of depreciation and depletion is inextricably linked with the question of its valuation. Depreciation and depletion are cost categories that accrue over the whole period the fixed asset or the natural resource in question is used for productive purposes. The exact proportioning to accounting periods depends on the rate of depreciation or depletion.

Time of recording of composite transactions and balancing items

- 4.231 Transactions that are measured as the balance of two or more other transactions follow the timing of the constituent basic flows. For example, implicit financial services on loans and deposits are recorded as interest on loans and deposits accrues.
- 4.232 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

- 4.233 Other changes in the volume of assets and liabilities are usually discrete events that accrue at precise moments or within fairly short periods of time, and should be recorded when the events occur.
- 4.234 Revaluations can occur continuously as prices and exchange rates change. Changes in prices and exchange rates often have a more continuous character, particularly in respect of assets with international character and 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.
- 4.235 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/exchange rate changes is being transferred? The SNA/BPM, 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/exchange rate 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.
- 4.236 Changes in structure and classification should be entered at the moment when, according to the rules adopted in the SNA/BPM, a unit or an asset is moved to a different category than that to which it was classified previously. Integrated stock-flow systems like the SNA or the integrated IIP require that all reclassifications are recorded and all entries for the reclassification are recorded at the same time.
- 4.237 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/BPM, 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 external transactions

- 4.238 Differences in the time of recording by partner economies may occur due to various factors. One of the intrinsic problems

with recording external 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 external 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.

- 4.239 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 the purpose of compiling external accounts.
- 4.240 Timing adjustments to international merchandise trade statistics may be necessary because these statistics may not reflect changes in economic ownership. Moreover, they may not always reflect physical movements correctly. Timing adjustments should be made when practices in customs statistics lead to distortions. For example, in the case of the purchase or sale of ships and aircrafts, information on the time at which the goods are entered in the books of the supplier or customer could be used. It is a good practice to identify the timing of large individual shipments or transactions (such as a ship or aircraft) to ensure that the goods flow and corresponding financing transactions are recorded in the same period.
- 4.241 A change in the economic ownership of goods can vary widely from the time at which the goods are recorded in trade statistics, if a lengthy voyage is part of the process of importing or exporting. If the unit value of trade changes substantially from the beginning to the end of the reporting period, the possible difference of one or more months between the shipment or receipt of goods and the change of ownership can be a source of error in the statement for a particular economy and a source of asymmetries between partner economies. Inquiries, perhaps on a sample basis, are required to ascertain specific practices, and timing adjustments should, in principle, be applied to correct the trade statistics for those classes of goods that are found to change ownership at times other than those at which the goods were recorded in the trade statistics.
- 4.242 Goods on consignment may often be recorded at the time the goods cross the frontier, on the assumption that a change of economic ownership has occurred or will shortly occur. If that treatment is followed and there is no change of ownership, adjustments will have to be made, preferably by revising the original entries. In practice, these adjustments may be made in the periods when the goods are returned, if goods returned involve minor cases.
- 4.243 Information based on exchange records provides data on a cash basis. For certain transactions, cash and accrual bases for recording may be the same, but for many they will differ. In particular, transactions in goods, services, and income may not coincide with the corresponding payments for settling the transactions. Alternative information should be used routinely to verify or adjust selected transaction categories. Compilers using an exchange record system should check each large settlement transaction. Information on interest from either the payments records or debt service schedule may not be appropriate for accrual accounting. Other possibilities of deriving interest accrual, such as using the data on positions and contractual interest rates, should be explored and implemented.

Balance sheet items

- 4.244 Stocks of assets and liabilities, as included in 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. The same principles hold for the net IIP, as included in the external accounts.

4. Unit of account and currency conversion

Unit of account

- 4.245 Values of non-financial and financial transactions as well as the values of stocks or positions of (financial) assets and liabilities may be expressed initially in a variety of currencies or in other standards of value, such as Special Drawing Rights (SDRs). The conversion of these values into a reference unit of account is a requisite for the construction of consistent and analytically meaningful accounts.
- 4.246 National and external accounts can be compiled in the domestic currency as well as in another currency. Data in domestic currency are needed because several other macroeconomic and micro data are compiled in domestic currency, except when a foreign currency is used as a legal tender. Economic analysis often uses data from several macroeconomic statistical systems. Conversely, data in an international unit of account (a foreign currency) may be needed for international liquidity management and to address special issues for high inflation, significant exchange rate fluctuations, and multiple exchange rates. In addition, a standard or international unit of account is necessary to allow for aggregation

on a global or regional basis and to facilitate international comparisons.

- 4.247 For compiling the external accounts, a standard unit of account is required for global presentation and analysis. It is preferable that the unit of account be a stable one; that is, values of transactions expressed in that unit should not be significantly affected by changes (relative to the unit of account) in values of currencies in which those transactions occur. Transactions expressed in a unit that is stable in this sense nonetheless may reflect price changes resulting from other causes; that is, a series expressed in a so-called stable unit of account is not the equivalent of a volume measure or constant price series. The theoretical ideal of a widely recognized and perfectly stable standard unit of account simply does not exist in practice.

Domestic versus foreign currency

- 4.248 For an economy, a domestic currency is distinguished from foreign currency. Domestic currency is that which is legal tender in the economy and issued by the monetary authority for that economy; that is, either that of an individual economy or, in a currency union, that of the common currency area to which the economy belongs. All other currencies are foreign currencies.
- 4.249 Under this definition, an economy that uses as its legal tender a currency issued by a monetary authority of another economy – such as U.S. dollars – or of a common currency area to which it does not belong should classify the currency as a foreign currency, even if domestic transactions are settled in this currency. The term “currency” should be understood in the broad sense (i.e., currency includes not only banknotes and coins but all means of payments issued by financial institutions in an economic territory). Unallocated gold accounts and other unallocated accounts in precious metals giving title to claim the delivery of gold or precious metal are treated as denominated in foreign currency. The treatment of unallocated accounts in other commodities will need to be decided at the time such cases arise in the future.
- 4.250 SDRs are considered to be foreign currency in all cases, including for the economies that issue the currencies in the SDR basket. Any other currency units issued by an international organization, except in the context of a currency union (see paragraph 5.221 (SNA) / paragraph 4.221 (BPM)), are considered foreign currency.

Currency of denomination and currency of settlement

- 4.251 A distinction should be made between the currency of denomination and the currency of settlement. The currency of denomination is determined by the currency in which the value of flows and stocks is fixed as specified in the contract between the parties. Accordingly, all cash flows are determined using the currency of denomination and, if necessary, converted into the domestic currency or another unit of account for the purpose of settlement or compilation of accounts. The currency of denomination is important for distinguishing transaction values and holding gains and losses.
- 4.252 The currency of settlement may be different from the currency of denomination. Using a currency of settlement that is different from the currency of denomination simply means that a currency conversion is involved each time a settlement occurs. The currency of settlement is important for international liquidity and measurement of potential foreign exchange drains. The currency of settlement is also important for defining reserve assets (see paragraph 6.64 (BPM)).
- 4.253 The currency of denomination of equity and investment fund shares is generally the domestic currency of the economy in which the issuer is resident. However, when equity is issued in a currency other than the domestic currency, then that currency is the currency of denomination.
- 4.254 Debt instruments with both the amount to be paid at maturity and all periodic payments (such as coupons) indexed to a foreign currency are classified and treated as being denominated in that foreign currency.
- 4.255 Some financial assets and liabilities are denominated in more than one currency. However, if the amounts payable are linked to one specific currency, then the liability should be attributed to that currency. Otherwise, compilers are encouraged to disaggregate such multicurrency instruments by the component currencies.
- 4.256 Determining the currency of denomination is not always clear in financial derivative contracts to purchase or sell foreign currency using domestic currency. The decisive factor in determining the currency of denomination for these contracts is the exposure to currency movements. If settlement of a financial derivative contract is linked to a foreign currency, even though payment is required in domestic currency, then the financial derivative is to be classified as denominated in foreign currency.

Currency conversion principles

- 4.257 Flows denominated in a foreign currency are converted to their value in the domestic currency at the rate prevailing when the flows take place, and positions are converted at the rate prevailing on the balance sheet date. The midpoint between

the buying and selling rates should be used at the time of transaction (for transactions) and at the close of business on the reference date for positions, with the difference between buying or selling prices and midpoint prices to be treated as service charges. The valuation in the domestic currency of a purchase or sale on credit denominated in a foreign currency may differ from the value in domestic currency of the subsequent cash payment because the exchange rate changed in the interim. Both transactions should be valued at their current market values as of the dates they actually occurred, and a holding gain or loss resulting from the change in the exchange rate should be recorded for the period or periods in which the gain or loss occurs.

- 4.258 In principle, the actual exchange rate applicable to each transaction should be used for currency conversion. The use of a daily average exchange rate for daily transactions usually provides a good approximation. If daily rates cannot be applied, average rates for the shortest period should be used. Some transactions occur on a continuous basis, such as the accrual of interest over a period of time. For such flows, therefore, an average exchange rate for the period in which the flows occur should be used for currency conversion.
- 4.259 Derived measures relating to a period are calculated by subtracting one type of flow from another. In principle, therefore, derived measures of flows in one currency (e.g., domestic currency) should not be directly converted into another currency (e.g., foreign currency). First, the underlying flows themselves should be converted from the domestic currency into the foreign currency. Then, the derived measures in foreign currency can be calculated from the relevant flows denominated in foreign currency. It is possible that a derived measure, such as saving and the current external account balance, denominated in one currency may be different or even with the opposite sign from that denominated in another currency. In addition to the variations in exchange rates, the variations in the timing of underlying flows cause the differences in a derived measure denominated in different currencies.
- 4.260 Under a multiple exchange rate regime, two or more exchange rates are applicable to different categories of transactions; the rates favour some categories and discourage others. Such rates incorporate elements similar to taxes or subsidies. Because the multiple rates influence the values and the undertaking of transactions expressed in domestic currency, net proceeds implicitly accruing to authorities as a result of these transactions are calculated as implicit taxes or subsidies. The amount of the implicit tax or subsidy for each transaction can be calculated as the difference between the value of the transaction in domestic currency at the actual exchange rate applicable and the value of the transaction at a unitary rate that is calculated as a weighted average of all official rates used for external transactions. For conversion of positions of external financial assets and liabilities in a multiple rate system, the actual exchange rate applicable to specific assets or liabilities at the beginning or end of the accounting period is used.
- 4.261 Parallel (unofficial) or black market rates cannot be ignored in the context of a multiple rate regime and can be treated in different ways. For instance, if there is one official rate and a parallel market rate, the two should be handled separately. Transactions in parallel markets should be converted using the exchange rate applicable in that market. If there are multiple official rates and a parallel rate, the official rates and the parallel rate should be treated as distinct markets in any calculation of a unitary rate. Transactions effected at the parallel rate usually should be converted separately at that rate. In some instances, however, parallel markets may be considered effectively integrated with the official exchange rate regime. Such is the case when most or all transactions in the parallel market are sanctioned by the authorities or when the authorities actively intervene in the market to affect the parallel rate. In these cases, the calculation of the unitary rate should include both the official and parallel market rates. If only limited transactions in the parallel market are sanctioned by the authorities, the parallel rate should not be included in the calculation of a unitary rate.

5. Aggregation, netting, consolidation

Aggregation

- 4.262 The immense number of individual transactions, other flows, and assets and liabilities within the scope of the SNA/BPM have to be arranged in a manageable number of analytically useful groups. In the SNA/BPM, such groups are constructed by crossing two or more classifications.
- 4.263 As a minimum, in SNA, a classification of institutional sectors or industries is crossed with the classification of transactions, other accumulation entries or assets. Additionally, revenues must be distinguished from expenditures 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.
- 4.264 The classification of transactions, other flows, and stocks, or positions, of financial assets and liabilities is aimed at developing aggregates that group similar items and separate those items that have different characteristics. Aggregates and classifications are closely linked in that classifications are designed to produce the aggregates thought to be most useful.
- 4.265 Aggregates are summations of elementary items in a class of transactions, other flows, or positions. For example, remuneration of employees is the sum of all flows that are classified as remuneration of employees. For financial assets

and liabilities, the aggregation of stock or flow data is usually done across all institutional units within a subsector or sector. Aggregation is hierarchical in the sense that upper-level aggregates are derived directly by summing the lower-level aggregates.

- 4.266 Individual units may have the same kind of transaction both as a credit and a debit – for example, they may pay as well as receive interest or may acquire foreign currency as well as sell the foreign currency. Similarly, individual units may have the same kind of financial instrument both as an asset and as a liability – for example, they may have a claim in the form of debt securities as well as a liability in the form of debt securities.
- 4.267 Since the classifications in the SNA/BPM contain a number of levels made explicit in the codes for the various transactions, other flows and assets, corresponding levels of aggregation may be distinguished.
- 4.268 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 the aggregate level are necessary to reconcile them.

Netting

- 4.269 Individual units or sectors may have the same kind of transaction both as an expenditure (debit/expenditure in balance of payments **current and capital accounts**) and as a revenue (credit/revenue in balance of payments **current and capital accounts**) (for example, they both pay and receive interest) and the same kind of financial instrument both as an asset and as a liability (for example, they may have a claim in the form of debt securities as well as a liability in the form of debt securities). Aggregations or combinations in which all elementary items are shown for their full values are called **gross** recordings (e.g., all interest credits/revenues are aggregated separately from all interest debits/expenditures). Aggregations or 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 (e.g., transactions of financial assets are netted with the transactions in liabilities of the same financial instrument).
- 4.270 The SNA/BPM 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/BPM. It mostly serves to highlight an economically important property that is not apparent from gross data.
- 4.271 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/BPM uses the words “gross” and “net” in a very restrictive sense. Apart from a few headings (“net worth”, “net lending or net borrowing” and, in the case of external accounts, “net IIP”), the SNA classifications employ the word “net” exclusively to indicate the value of **variables** after deduction of depreciation and depletion.
- 4.272 The external accounts follow gross recording in the current and capital accounts. For goods under merchanting, both purchases and resales of goods are shown on a gross basis, although both entries are shown under exports with a negative sign for purchases (this is elaborated further in **paragraph 10.xx, BPM7**). Gross recording is applicable in particular to income on reverse investment where the direct investment enterprise owns less than 10 percent of the voting power in the direct investor (reverse investment is described in **paragraphs 6.xx–6.xx, BPM7**). Acquisitions and disposals of non-produced, non-financial assets are recorded on a gross basis. Capital transfers receivables and payables are also recorded separately on a gross basis. Flows on transactions in non-produced, non-financial assets and capital transfers are recorded on a gross basis, because they are important in the context of cross-border analysis. At the same time, the gross recording allows the derivation of net flows, if needed, provided that a sufficient level of detail is available.
- 4.273 In the case of flows in financial assets and liabilities, the term “net” may have dual meanings (summing all debits and credits for a financial asset type or a liability type and netting of an asset against a liability). To avoid confusion, the following conventions are adopted:
- In the case of flows, net recording always refers to aggregations for which all debit entries of a particular asset or a particular liability are netted against all credit entries in the same asset type or in the same liability type (e.g., acquisitions of foreign currency are netted against the sales of the foreign currency; bond issues are netted against redemption of bonds).
 - When net is used together with a category of financial instrument (net financial instrument), such as “net financial derivatives,” netting of a financial asset against the same type of liability is understood.

- Titles of some derived measures, such as “net lending/borrowing” and “net IIP”, also use the term “net” (see paragraph 4.270 (SNA) / paragraph 3.270 (BPM)).
- 4.274 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.
- 4.275 In some cases, a clear distinction between assets and liabilities may not be feasible (such as for financial derivatives in the form of forward contracts, which could change between assets and liabilities). In such cases, it may not be possible to apply the net recording principle, which requires separate presentation of transactions in assets and transactions in liabilities. For such financial instruments, net transactions in assets and liabilities combined may have to be recorded.
- 4.276 The external accounts follow net recording in the financial account and other changes in financial assets and liabilities account. Net recording, as explained above, means aggregations or combinations that show net changes (increases less reductions) in a particular financial asset or a liability category on the same side of the balance sheet. Financial assets (changes in financial assets) should not be netted against liabilities (changes in liabilities), except in certain circumstances as explained in paragraph 4.275.
- 4.277 Transactions and other flows in financial assets and liabilities are recorded as net changes in financial assets and changes in liabilities, respectively. The net recording principle should be applied at the lowest level of classification of financial instruments taking into account the functional, institutional sector, maturity, and currency classifications, as applicable. Generally, the net recording principle should be applied within a given standard component of assets or liabilities
- 4.278 In general, net recording of flows in financial assets and liabilities is recommended in the external accounts from both the analytical and pragmatic perspectives. Net acquisition of external financial claims and net incurrence of external liabilities are generally of more analytical interest than the gross flows. Gross reporting of data may not be possible for different classes of units and for some financial instruments. Furthermore, transactions in some financial assets and liabilities often have to be derived from balance sheet data because gross transactions are not available. Nonetheless, gross flows may be a relevant factor in analysing aspects of the payments positions or financial markets (e.g., securities transactions) of economies, and such data can be used in supplementary presentations when appropriate. For example, for direct investment, equity increases and equity decreases may be of analytical interest and may be shown separately in supplementary presentations.
- 4.279 Similar to the recording of flows of financial assets and liabilities, stocks, or positions of the same type of a financial instrument held as both a financial asset and a liability should be recorded separately, so that assets are recorded under assets and liabilities are recorded under liabilities. For example, holding of short-term debt securities as assets is presented separately from the liability for short-term debt securities.

Consolidation

- 4.280 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 corporations and general government. There is more detail on this in chapters 30 and 37. 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/BPM are not consolidated. Because the external accounts reflect transactions involving residents and non-residents and external financial assets and liabilities, including other flows associated with them, consolidation is not relevant for external accounts of an individual economy
- 4.281 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.

- 4.282 Accounts for a currency union, economic union, or other regional arrangement may be compiled by eliminating all transactions and asset-liability relationships that occur between member economies of the region. In other words, in the relevant accounts, a transaction of one economy is paired with the same transaction as recorded for another member economy and both transactions are eliminated. For example, if a unit in one economy owns a bond issued by a unit in another member economy, then the stocks of bonds held as assets and liabilities are reported excluding the matched positions between the units of the member economies. At the same time, interest receivable and payable consolidated at the regional or currency union level exclude the interest payable by residents of the debtor economy to residents of the creditor economy in the region or currency union. Similarly, sales of goods and services between consolidated economies are also eliminated. (For further information, see Appendix 3, Regional Arrangements: Currency Unions, Economic Unions, and Other Regional Statements (BPM).)

F. Symmetry of reporting

- 4.283 Symmetry of reporting by counterparties is important to ensure consistency, comparability, and analytical usefulness of national and external accounts. The quadruple-entry accounting system discussed in paragraphs 4.123 – 4.127 underlies symmetry of reporting. The internationally agreed guidelines for definitions, classifications, time of recording and valuation principles, and the quadruple-entry accounting system provide a basis for conceptual consistency of international reporting by both parties or economies involved in a transaction or financial position. Correct application of these guidelines and principles is important for bilateral comparisons, global balances, and regional and global aggregates. While symmetry rules apply to all financial instruments, they do not fully apply to functional categories of financial positions and transactions, as used in external accounts. For example, transactions and stocks in reserve assets are reflected in the liabilities of counterparties in the rest of the world under other functional categories, particularly portfolio and other investment.
- 4.284 National and external accounts group the flow and stock data of individual units into sectoral and national aggregates. The accounts can also be prepared for a region and the world as a whole. Without applying strict consistency rules, it would be impossible to give proper interpretation to various aggregates. These requirements apply whether or not the data consolidate flows and stocks of the units they cover, and whether or not they show any subgroups of units within the overall total. However, consolidation is clearly impossible without consistency in the basic data, and the requirements of consistency are more obvious when disaggregation of sectors is used.
- 4.285 Micro-level data on the basis of which the national and external accounts are compiled do not necessarily meet the consistency requirements needed for (inter)national accounts. Differences in valuation, timing, and classification may occur in many cases. Inconsistency in valuation may often occur for barter transactions. Different valuation bases may have been used by creditors and debtors for some financial assets, such as non-performing loans. Timing differences may occur not only due to differences in timing zones and delays in check-clearing systems, but also because units' perceptions of the timing of changes in ownership and recognition of revenues and expenditures may vary.
- 4.286 Significant achievements have been made at the national and international levels to come to more uniform business accounting standards. Accordingly, disparities between individual micro accounts have tended to fall. Business accounting standards are geared toward individual accounts, however, and therefore do not necessarily ensure consistency across units. Current business accounting standards prescribe that loans be treated differently depending on whether they appear as a credit or a debit. This approach cannot be applied in a consistent horizontal double-entry bookkeeping system. Tax and supervisory regulations are a second source for harmonization of accounting practices. In so far as these rules differentiate between specific sections of the economy, however, they also may be a cause for discrepancies between micro accounts.



Annex: Methods to value transactions and stocks

4.287 This annex starts with an overview of the various methods for valuing transactions, in order of preference, although not all methods are applicable for each and every type of transaction. Subsequently, the methods to value stocks of assets and liabilities are described. The latter does not concern the initial recognition, i.e., the time at which the assets enter the balance sheets, as the valuation of these flows is already covered under transactions.

Methods for valuing transactions

Observed exchange values (or observed market prices)

4.288 Values based on the prices actually observed in the exchange of goods, services and assets, are generally considered as the most appropriate measure in line with the valuation principles for macroeconomic statistics. From a conceptual point of view, exceptions could be made for distorted transfer prices between affiliated enterprises and concessional pricing (see paragraphs 4.147 – 4.152), although in practice adjustments are not made, mainly for reasons of feasibility and (international) consistency, and to rely on the source data provided.

Market-equivalent prices

4.289 In quite a number of cases, actual exchange values are not available. Market prices could then be approximated by using the prices of similar goods, services and assets. This valuation method is particularly relevant in the following areas:

- barter transactions;
- consumption of goods produced for own final use;
- housing services from owner-occupied dwellings; and
- exceptional cases of own-account capital formation of assets, for which a full range of the assets are regularly traded on the market (e.g., dwellings, cloud services providers building their own servers, or other cases in which equipment is constructed by producers).

4.290 An important prerequisite for applying this valuation method is the homogeneity, or comparability, of the relevant goods, services and assets. Where homogeneity does not exist, it is also considered acceptable to apply, for example, hedonics to adjust for different characteristics in the goods and services under consideration, although these hedonic valuation methods may be rather complicated, requiring significant amounts of source data. Moreover, the goods, services and assets which are used to arrive at a market-equivalent price should be traded under the same market conditions as the goods, services and assets under consideration. For example, using data on rentals for dwellings, which are subsidised by government, is not considered appropriate for arriving at market-equivalent prices for owner-occupied housing services in a competitive market. Finally, the markets for the goods, services and assets which are used for the comparison should be well-established, and not too thin, which sometimes may be problematic for e.g., certain types of dwellings in the case of estimating owner-occupied housing services.

Indirect valuation

4.291 There are a few cases, in which the transactions have to be based on what is here referred to as an “indirect valuation” method. One example concerns the imputation of reinvested earnings. In this case, the valuation is based on the net saving of direct investment enterprises before “distribution” of the reinvested earnings. Instead of referring to this as an example of indirect valuation, one could also argue that the reinvested earnings are derived, although indirectly, from observed exchange values. Other examples of indirect valuation relate to the measurement of non-life insurance output, as the difference between premiums, including supplements, minus claims, or the derivation of implicit financial services on loans and deposits as the difference between bank interest and SNA interest. (See chapter 7 for more details.)

Sum-of costs

4.292 A method, which is frequently applied in the system of national accounts, is the sum-of-costs method. According to this method, it is assumed that market prices, or exchange values, can be approximated by summing up the costs of production, as follows:

- intermediate consumption;
- remuneration of employees;
- other taxes less subsidies on production;
- rents payable on the use of non-produced non-financial assets;
- depreciation and depletion; and
- return on capital used in production.

4.293 This method is applied in various circumstances, in particular in the following cases:

- non-market output of government, NPISHs and the central bank;
 - own-account production of fixed assets; and
 - although less frequently, other goods produced for own final use, for which it is not feasible to make an estimate on the basis of similar goods traded on the market.
- 4.294 Regarding remuneration of employee, also the labour input of the owner of the unincorporated enterprise and his/her family members may need to be estimated. As the remuneration for this labour input is not explicitly known, because of it being implicitly included in mixed income, an estimate of the relevant labour input could be based on wage rates paid for similar types of work.
- 4.295 Regarding the extent of capital services, i.e. depreciation, depletion and return to capital, all non-financial assets used in the production of the relevant goods and services should be included, thus not only fixed assets but also inventories and non-produced non-financial assets. Having said that, one may assume that natural resources such as mineral and energy resources produced on own account are typically not used in the relevant production processes. Furthermore, in the case of measuring the output of government services, by convention, due to significant issues regarding data availability, city parks and historical monuments, and undeveloped land, are to be excluded from the scope of assets to which a return to capital should be applied.
- 4.296 For the return to capital, it is recommended to use a rate of return from an opportunity costs perspective. Such a rate could be approximated by applying a mark-up for normal net operating surplus. A more prudent approach is to use a rate based on the interest rate paid for the borrowing of funds, which may differ across institutional sectors and/or industries, given differences in the perceived risks attached to borrowing funds to the relevant economic agents. The latter approach would be preferable for non-market producers, who do not aspire to make profits.
- 4.297 Beyond the integrated framework of national accounts, the sum-of-costs is also often used for valuing the output of unpaid household services for own final use. Here, the conceptually preferable option for valuation is to look at the market prices of similar goods and services, but it may not be that easy to find relevant information on the quantities of the services produced, and also to collect data on comparable services produced for the market, adequately adjusted for quality and productivity. For these reasons, in practice, the output of these services produced by households for own final use is valued using the sum-of-costs approach.
- 4.298 Importantly, when applying the sum-of-costs method for unpaid household services, a value for the labour input, adequately adjusted for quality and productivity, has to be imputed. An issue is whether to estimate the labour input with replacement costs (i.e., the labour costs of similar occupations in the market) or with opportunity costs (i.e., the costs foregone when producing unpaid household services). The latter may be relevant in the case a household is unconstrained in its allocation of time between selling its labour services and other usages of time, and/or in the case one wants to arrive at a welfare-measure of consumption. For this reason, the use of replacement costs is considered the most appropriate way of valuation for arriving at an approximation of the market price, consistent with the national accounts.

Short summary of methods for valuing transactions

- 4.299 Apart from the relatively exceptional case of indirect valuation, the preferred methods for valuing transactions can be summarised as follows:
- In the case of goods, services and assets, which are transacted on the market via monetary settlement, the values actually exchanged are the basis for valuation.
 - In the case of goods, services and assets, which are transacted via barter type, and also the consumption of goods produced for own final use, usually prices can be derived from market transactions of similar goods, services and assets.
 - In the case of unpaid household services produced for own final use, a distinction should be made between housing services from owner-occupied dwellings, which are included in the production boundary of the SNA versus other services which are not included in the production boundary:
 - For the former services, the preferred method is to use market-equivalent prices which can be derived from market transactions of similar services. However, as this often concerns relatively heterogeneous products and assets, adequate adjustments need to be made to account for this heterogeneity.
 - For the other unpaid household services, market-equivalent prices may also be used. However, as it may be hard to find relevant data on the quantities of services provided, the default option is to use the sum-of-costs method.
 - In the case of own-account capital formation of assets, the default option is the application of the sum-of-costs method. However, when the assets are relatively homogeneous and regularly traded on the market (e.g., dwellings), preference is given to market-equivalent prices, adequately adjusted for heterogeneity.

- Finally, in the case of non-market output of government and NPISHs, output and final consumption should be valued by using the sum-of-costs method.

Methods for valuing stocks of assets and liabilities

4.300 In discussing each of the valuation methodologies for the valuation of stocks of assets and liabilities, a distinction is made between non-financial assets and financial assets, as the relevance of the various methodologies can differ quite significantly for these two types of assets. Moreover, when it comes to the valuation of financial instruments, it should be noted that the consistency in valuing assets and liabilities is an important prerequisite in the system of national accounts.

Observed market prices

4.301 The most obvious way to arrive at current (market) prices for positions recorded on the balance sheet at a certain point in time is the use of prices observed in the market. Preferably, the relevant markets should be trading in considerable volumes, with prices listed at regular intervals. However, if traded from time to time, recent market transactions could also be used as an approximation of the current market price.

4.302 Unfortunately, this valuation method, which is preferable from a conceptual point of view, can only be applied in a limited number of cases, mainly relating to financial assets, first and foremost for securities traded on a market, like the stock exchange, in which each asset traded is completely homogeneous, is often traded in considerable volume, and has its market price listed at regular intervals. It should also be noted that for debt securities, users often request supplementary information on the nominal value (see below) of the liabilities, in addition to the valuation at market prices. For example, in the case of government debt, the principal method of valuation is at nominal value, as this reflects, in addition to accrued interest, the actual repayments to be made in the future.

4.303 As already noted, this valuation method is conceptually sound, provided that the relevant assets are (relatively) homogenous, and regularly traded in active markets with regular price quotations. If the latter conditions are not met, other valuation methods may need to be applied.

Market-equivalent prices

4.304 The alternative for directly observed prices is to approximate current prices by using observable market prices of similar assets. This valuation method could also include expert estimates, which are typically based on information from the market as well.

4.305 Valuing assets at market-equivalent prices can be applied for less homogenous non-financial assets which are regularly traded on the market, such as dwellings and certain types of generic (second-hand) transport equipment. Of importance, especially in the case of dwellings, is the need to account for the various characteristics which are relevant for the market price setting. Moreover, it is important to realise that the market prices of dwellings and other real estate are a combination of the structure and the underlying land, which is less suitable for national accounts, in which these two elements are separated. Notwithstanding this separate recording, market prices could be used as a benchmark for arriving at appropriate estimates for the sum of the two elements. For more details, see the [Eurostat-OECD Compilation Guide on Land Estimations](#).

4.306 Expert estimates made for insurance purposes, for tax purposes, etc. may be the only viable option for valuing valuables, unless the valuable has been acquired relatively recently. In addition, expert estimates could also provide a source of information for valuing real estate in the absence of appropriate markets.

4.307 This valuation method may become less appropriate in the case of second-hand “special purpose” fixed assets, and/or in the case the markets are relatively thin. A combination of these two elements may lead to a market price close to scrap value, not representing the value of such an asset used in an enterprise as a going concern. Valuation according to the written-down replacement costs (see below) is then considered more appropriate.

Valuation based on past expenses

4.308 If market(-equivalent) prices are not available, the next best method to arrive at an appropriate value for assets is a valuation based on past expenses. Here, one can distinguish two basic methods, depending on whether or not the assets in question are subject to depreciation: (i) historical acquisition price; and (ii) written-down replacement costs. The costs in the case of the latter method do not only concern direct expenditures on purchases of capital goods, but may also relate to expenditures made for the own-account production of fixed assets, typically valued using the sum-of-costs method.

4.309 A valuation of assets based on past expenses can be applied to a considerable number of assets, but in practice it is most

often used in the case of non-financial assets. The use of the first method could be used for e.g., the valuation of valuables, but it may also be a valid alternative for some financial instruments. However, in case the acquisition has taken place further in the past, the acquisition price may need to be adjusted for price changes, certainly in cases where significant price changes have been observed in the period since the acquisition.

- 4.310 The second method is most commonly used for valuing fixed assets, through the application of the perpetual inventory method. The method can be considered superior to market(-equivalent) prices, if the market prices for second-hand assets cannot be considered as representative for the future capital services, which can be derived from the continued use of the asset in production. A problem in the application of this method relates to the information needed for the application of this estimation method. Most importantly, apart from long time series on past expenditures on the purchases, including price developments, of the assets in question, information is needed on the service life; the age-price or the age-efficiency profile; and discard patterns. More detailed guidance is provided in the [OECD Manual on Measuring Capital \(2009, 2nd edition\)](#)

Nominal value

- 4.311 Valuation at nominal values is typically applied to financial instruments which are not traded via markets, such as deposits, loans and other accounts receivable/payable. Nominal value at any moment in time reflects the value of the instrument at creation and subsequent economic flows, such as transactions, holding gains and losses other than market price changes, and other volume changes. It typically comprises the outstanding principal amount including any accrued interest.

- 4.312 Nominal value should be distinguished from such notions as fair value, amortized value, face value, book value, 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. 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.
- c. Face value is the undiscounted amount of principal to be paid to the holder at maturity. It is also known as "par value" or simply "par." Before maturity, the market value of a bond may be greater or less than face value, depending on the interest rate payable and the perceived risk of default. As bonds approach maturity, market value approaches face value. For example, if interest rates are higher than the bond's coupon rate, then the bond is sold at a discount (below par). Conversely, if interest rates are lower than the bond's coupon rate, then the bond is sold at a premium (above par).
- d. 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.
- e. Historic cost, in its strict sense, reflects the cost at the time of acquisition, but sometimes it may also reflect occasional revaluations.

- 4.313 The use of nominal value is partly influenced by pragmatic concerns about data availability and the need to maintain symmetry between debtors and creditors. In addition, because loans are not intended for negotiability, without an active market, estimating a market price can be somewhat subjective. Nominal value is also useful because it shows actual legal liability and the starting point of creditor recovery behaviour. In some instances, loans also may be traded, often at discount, or a fair value may exist or would be possible to estimate. It is recognised that nominal value provides an incomplete view of the financial position, particularly when the loans are non-performing. Therefore, it is recommended to include, as a supplementary item, information on the nominal value of non-performing loans. Loans that have become negotiable de facto should be reclassified under debt securities.

Indirect valuation

4.314 Financial assets and related liabilities can also be approximated with a method which could be referred to as “indirect valuation”. This method is often applied for unlisted equity. In this case, the intrinsic value of a corporation is considered a valid starting point for the valuation of the equity invested. More guidance on the valuation of unlisted equity, including alternative methods, is provided in chapter 14.

Net present value of future returns

4.315 In cases that the above valuation methods cannot be applied, the (net) present value of future benefits is considered as a viable alternative. This method is typically used in the following areas:

- defined benefit pension entitlements;
- unlisted equity in the case other methods are considered less appropriate; and
- natural resources.

4.316 The details of actuarial methods for estimating pension entitlements are not further elaborated here. Extensive guidance is available elsewhere, see e.g., [Technical Compilation Guide for Pension Data in National Accounts](#). For estimating the value of unlisted equity using the present value of (expectations about) future profits, reference is made again to chapter 14.

4.317 For natural resources, and possibly other non-financial assets, the method comes down to estimating the discounted value of future benefits derived from these assets, which often need to be approximated by the so-called “residual value method”, calculated using the following formula:

- output at basic prices (related to the extracted resources)
- less
- intermediate consumption
 - remuneration of employees
 - other taxes less subsidies on production
- equals
- gross operating surplus
- plus
- specific taxes less subsidies on extraction
- equals
- gross operating surplus for the derivation of resource rent
- less
- depreciation
 - return to capital used in production
- equals
- resource rent (= depletion plus return to natural resource)

4.318 In the case of non-financial assets, using the method of the present value of future benefits can only be used if there is a direct link between the future benefits and the asset in question, in the sense that one can assume that there are no other assets which may have generated the residual income. Furthermore, it requires forecasting a future path of income streams, which may be quite challenging. For this purpose, assumptions need to be made on the asset life; the future path of extractions and, in the case of renewable resources, the regeneration potential of the asset in question; and the expected flows of income associated with the extractions. The question of which discount rate is appropriate in which circumstances is also an important question to answer. Because of these issues, the method is often considered as a last resort option, to be applied only for certain classes of assets, such as natural resources.

4.319 Another issue, alluded to in section E of this chapter, concerns the way in which the ownership of the natural resources is accounted for. Often government, usually the legal owner of mineral and energy resources, provides extraction rights to private corporations, for a series of annual payments of royalties, either or not paid in advance for a certain period of time. In doing so, the government may not appropriate the full resource rent that can be derived from the relevant resource by the extractor. Moreover, as these rights are often not transferable, so without a price being established in a market, there is no observable value of the rights. However, the private corporation as a going concern still derives value from having the rights to extract, in the form of part of the resource rents being appropriated. It is therefore recommended to apply the split-asset approach, according to which the assets in question are recorded in the accounts of the legal owner and the extractor, in proportion to the share of the resource rent appropriated.

4.320 More detailed guidance on the recording and compilation of estimates for natural resources is provided in the SEEA 2012 Central Framework, as well as the [forthcoming compilation guidance developed by the OECD Expert Group on Natural Capital](#).

4.321 The method of the (net) present value of future benefits could be applied to other types of assets as well. However, in these cases, the written-down replacement costs method is usually to be preferred. This also holds for assets produced

in-house, the past investment expenditures of which are often on the sum-of-costs method.

- 4.322 Going beyond the sequence of economic accounts, the (net) present value method could also be applied for estimating the value of human capital. Again the choice is between this method and the written-down acquisition costs. Both methods have their advantages and disadvantages. Regarding the latter method, the relevant expenditures may be relatively easy to collect. However, service lives and depreciation patterns will have to rely on a set of assumptions. Another complication is the measurement of unpaid labour input (e.g., studying at home), which would need to rely on the income foregone. For the application of the (net) present value method, one needs to agree on which income to use, in addition the more general complexities of forecasting the future incomes, in this case over quite lengthy periods of time. In the end, no firm recommendation is made on the preferred method, before having gained more practical experience on the application of both methods. See chapter 34 for a more detailed discussion of human capital.

Short summary of methods for valuing stocks of assets and liabilities

- 4.323 In summary, the following can be noted in relation to the valuation of assets and liabilities, thereby distinguishing between financial assets and liabilities versus non-financial assets.
- 4.324 In the case of financial assets and corresponding liabilities, market(-equivalent) prices are the preferable option for valuation. However, its application is relatively limited, as most financial instruments are non-negotiable and not traded on active markets with regular price quotations, the obvious exception relating to tradable securities. For non-negotiable financial instruments, one could use market prices from recent market transactions. However, as this methodology cannot generally be applied, a valuation at nominal values is considered the most viable option. A special case is unlisted equity, for which various methodologies can be considered; see [chapter 14 \(SNA\)](#) / [chapter 7 \(BPM\)](#). Another exception concerns the estimation of defined benefit pension entitlements, which are based on actuarial type of calculations using the net present value of future benefits.
- 4.325 For non-financial assets, in the absence of market(-equivalent) prices, two valuation methods are applied most frequently, either the written-down replacement cost method or the (net) present value of future earnings. The former method is typically applied to fixed assets used in the production of goods and services, while the latter method is often the only alternative for arriving at an approximation of the value of natural resources. In addition, expert estimates may be the only viable option for estimating the value of valuables.