

3. Flows, Stocks, and Accounting Rules

This chapter describes the flows and stocks of the GFS system and the accounting rules used to determine their time of recording, valuation, and other aspects of recording.

A. Introduction

3.1 All of the data recorded in the GFS system are either flows or stocks. Flows are monetary expressions of economic actions engaged in by units and other events affecting the economic status of units that occur within an accounting period. Stocks refer to a unit's holdings of assets and liabilities at a specific time and the unit's resulting net worth, equal to total assets less total liabilities.

3.2 The flows and stocks recorded in the GFS system are integrated, which means that all changes in stocks can be fully explained by the flows. In other words, the following relationship is valid for each stock:

$$S_1 = S_0 + F$$

where S_0 and S_1 represent the values of a specific stock at the beginning and end of an accounting period, respectively, and F represents the net value of all flows during the period that affected that particular stock. More generally, the value of any stock held by a unit at a given time is the cumulative value of all flows affecting that stock that have occurred since the unit first acquired the stock.

3.3 A great diversity of flows needs to be recorded in the GFS system. This chapter first describes several important characteristics of flows that underlie their classification and treatment. It then describes in a general way the accounting rules used for recording flows and stocks in the GFS system. Descriptions of specific categories of flows and

stocks and the application of the general rules to their recording are discussed in later chapters.

B. Types of flows

3.4 Flows reflect the creation, transformation, exchange, transfer, or extinction of economic value. They involve changes in the volume, composition, or value of a unit's assets, liabilities, and net worth. A flow can be a single event, such as a cash payment for the purchase of goods, or the cumulative value of a set of events occurring during an accounting period, such as the continuous accrual of interest expense on a government bond. All flows are classified as transactions or as other economic flows. The following sections describe these two types of flows.

I. Transactions

3.5 A *transaction* is an interaction between two units by mutual agreement or an action within a unit that is analytically useful to treat as a transaction. Mutual agreement means that there was prior knowledge and consent by the units, but it does not mean that both units entered into the transaction voluntarily. Some transactions, such as the payment of taxes, are imposed by force of law. Although individual units are not free to fix the amounts of taxes they pay, there is collective recognition and acceptance by the community of the obligation to pay taxes. Thus, payments of taxes are considered transactions despite being compulsory. Similarly, the actions necessary to comply with judicial or administrative decisions may not be undertaken voluntarily, but they are taken with prior knowledge and consent of the parties involved.

3.6 Although most transactions take place between two units, in some cases a single unit acts in two different capacities and it is analytically useful to treat

this act as a transaction. Such an act is referred to as an internal transaction. The choice of which internal actions to treat as transactions is subjective. This manual follows the *1993 SNA* by treating consumption of fixed capital, the transfer of materials and supplies from inventories to production, and other internal changes in inventories as transactions. This manual does not follow the *1993 SNA* with regard to the treatment of assets produced by a unit for its own use and goods and services produced by a general government unit and distributed to individuals or to the community as a whole without charge or for prices that are not economically significant.¹

3.7 Every transaction is either an *exchange* or a *transfer*. A transaction is an exchange if one unit provides a good, service, asset, or labor to a second unit and receives a good, service, asset, or labor of the same value in return.² Compensation of employees, purchases of goods and services, the incurrence of interest expense, the sale of an office building, and all internal transactions are exchanges.

3.8 A transaction is a transfer if one unit provides a good, service, asset, or labor to a second unit without receiving simultaneously a good, service, asset, or labor of any value in return. Typically, general government units engage in a large number of transfers, which may be compulsory or voluntary. Taxes and most social security contributions are compulsory transfers imposed by government units on other units. Subsidies, grants, and social assistance benefits are voluntary transfers from general government units to other units.

3.9 Some transactions appear to be exchanges but are actually combinations of an exchange and a transfer. In such cases, the actual transaction should be partitioned into two transactions, one that is only an exchange and one that is only a transfer. For example, a general government unit might sell an asset at a price that is clearly less than the market value of the asset. The sale should be divided into an exchange at the asset's market value and a transfer equal in value

¹The scope of internal transactions is described in paragraphs 3.44 through 3.49 of the *1993 SNA*. Actions that are treated as internal transactions in the *1993 SNA* but not in this manual are described further in paragraphs 3.23 and 3.24.

²The term "provides a good, service, asset . . ." is meant to include one unit allowing a second unit to use an asset owned by the first unit as well as a change in the ownership of the asset. Interest and other property income transactions are exchanges because one unit provides an asset, such as cash or other means of payment, and the second unit provides the use of one of its assets.

to the difference between the actual transaction value and the market value of the asset.³

3.10 Taxes are treated as transfers even though the units making these payments may receive some benefits from services provided by the government unit receiving the taxes. For example, no one can be excluded from sharing in the benefits provided by collective services such as public safety. In addition, a taxpayer may be able to consume certain individual services provided by government units. Usually, however, it is not possible to identify a direct link between the tax payments and the benefits received by individual units. Moreover, the value of the services received by a unit usually bears no relation to the amount of the taxes paid by the same unit.

3.11 Non-life insurance premiums and claims are also treated as transfers.⁴ The premiums for this type of insurance entitle the units making the payment to benefits only if one of the events specified in the policy occurs. That is, one unit pays a second unit to accept the risk that a specified event may occur to the first unit. These transactions are considered transfers because it is uncertain if the first unit will receive any benefits and, if it does receive benefits, they may bear no relation to the amount of the premiums previously paid. Non-life insurance includes social security schemes and employer social insurance schemes for government employees that do not provide retirement benefits. Thus, social security contributions received and social security benefits paid by government units are treated as transfers in the GFS system.

3.12 All transactions can also be classified as monetary or nonmonetary. A *monetary transaction* is one in which one unit makes a payment or incurs a liability stated in units of currency and the second unit receives the payment or another asset, also stated in units of currency. For example, goods are usually purchased at a given number of units of currency per unit of the good, and social security benefits are often paid in fixed amounts of cash.

3.13 All other transactions are *nonmonetary*, but they must be assigned a monetary value as the GFS system

³See paragraph 3.21 for a general statement of partitioning transactions.

⁴More precisely, the payment of a premium is the acquisition of a financial asset. As the insurance enterprise earns the premium over the period covered by the policy, the premium is converted to a transfer payment. In *1993 SNA*, a portion of each actual non-life insurance premium is considered the purchase of a service rather than a transfer. In the GFS system, the entire premium is treated as a transfer because estimating the service component requires statistics for all sectors of the economy.

deals only with flows and stocks expressed in monetary terms. The values assigned to nonmonetary transactions have a different economic significance than do cash payments of the same amount, as they are not freely disposable sums of money. Nevertheless, to have a comprehensive and integrated system, it is necessary to assign the best estimate of market values to the items involved in nonmonetary transactions.

3.14 Nonmonetary transactions can be either two-party transactions or internal transactions, and they can be exchanges or transfers. Barter, remuneration in kind, and other payments in kind are nonmonetary exchanges. Transfers in kind are nonmonetary transfers. Internal transactions were described in paragraph 3.6.

3.15 In a *barter* transaction, two units exchange goods, services, or assets other than cash of equal value. For example, a government unit may agree to trade a parcel of land in an industrial area to a private corporation for a different parcel that the government will use as a national park.

3.16 *Remuneration in kind* occurs when a government employee is compensated with goods, services, or assets other than money. Types of compensation that employers commonly provide without charge or at reduced prices to their employees include meals and drinks, uniforms, housing services, transportation services, and child care services.

3.17 *Other payments in kind* occur when a payment to settle a liability is made in the form of goods, services, or noncash assets rather than money. For example, a government unit may agree to settle a claim for past-due taxes if the taxpayer transfers ownership of land or fixed assets to the government.

3.18 *Transfers in kind* may be used rather than cash for efficiency or to insure that the intended goods and services are consumed. For example, aid after a natural disaster may be more effective and be delivered faster if it is provided in the form of medicine, food, and shelter instead of money. Also, a general government unit might provide medical and educational services in kind to make sure that the need for the services is met.

3.19 Some transactions are not recorded in the form in which they appear to take place. Instead they are modified to bring out their underlying economic relationships more clearly. Rerouting, partitioning, and

reassignment are the three types of modifications employed in the GFS system.

3.20 *Rerouting* is required when a unit that is in fact a party to a transaction does not appear in the actual accounting records because of administrative arrangements. For example, if government employees are enrolled in a retirement scheme, accounting records may show the government unit making payments directly to the retirement scheme on behalf of its employees. In such a case it is necessary to reroute the payments so that the government is seen as paying the employees, who then are deemed to make payments of the same amount to the retirement scheme.

3.21 *Partitioning* is the division of a single transaction as viewed by the parties involved into two or more transactions for recording in the GFS system. For example, when a general government unit acquires a fixed asset under a financial lease, the periodic lease payments need to be partitioned into two transactions, a repayment of principal and a payment of interest. The division of actual transactions into an exchange and a transfer described in paragraph 3.9 is another example of partitioning.

3.22 *Reassignment* is required when a unit acts as an agent for another unit. For example, reassignment may occur when one government unit collects taxes and then transfers some or all of the taxes to another government unit. In some arrangements of this nature, the collecting unit retains a small portion of the tax collected in return for its collection efforts. The amount retained is treated as the sale of a service by the collecting unit. For guidelines on the reassignment or attribution of taxes to collecting or beneficiary governments, see paragraphs 5.24 to 5.28 of Chapter 5.

3.23 The treatment of some activities in the GFS system differs from the treatment of the same activities in the *1993 SNA*. For example, general government units are nonmarket producers, which means they normally consume economic resources in a production process, produce outputs of goods and services, and then distribute those goods and services without charge or for prices that are not economically significant to society collectively or to individual households. The production of the output and its distribution are both nonmonetary transactions that must be recorded in the *1993 SNA* to have a complete accounting of production. The GFS system, however,

is focused on the financial activities of government. Because the value of the output produced and the value of the distribution are equal by definition, there cannot be any change in the financial position of the general government unit involved. As a result, these transactions do not need to be recorded to meet the purposes of the GFS system. The transactions associated with the production process, such as compensation of employees and the purchase of goods and services for use in production, do affect the financial position of the general government unit and are recorded in the GFS system. Despite different treatments of some activities, both systems include all flows that change stocks so that all changes in the balance sheet can be explained by the flows recorded.

3.24 The exact scope of flows recorded in the GFS system is specified in later chapters. In general, however, the transactions of the 1993 SNA that are not recorded in the GFS system are explained in Appendix 3 and include the following:

- The output and simultaneous distribution of non-market goods and services;
- The output of fixed assets constructed on own account and the costs of producing those assets;
- Certain transactions related to employer social insurance schemes providing retirement benefits managed by general government units;⁵ and
- Transactions reflecting the reinvestment of earnings on direct foreign investment.

2. Other economic flows

3.25 An *other economic flow* is a change in the volume or value of an asset or liability that does not result from a transaction. Volume changes are described as *other changes in the volume of assets* or, more simply, other volume changes, and value changes are described as *holding gains and losses*.⁶ In all cases, a reference to a change in the volume or value of an asset refers also to changes in liabilities as appropriate.

3.26 Other changes in the volume of assets cover a wide variety of events. For the purpose of description

⁵These transactions are explained in Chapters 5 and 6 in the sections about social contributions and social benefits.

⁶Holding gains and losses are also referred to as revaluations in the 1993 SNA.

here, these events are divided into three groups. The first group consists of events that involve the addition to or deletion from the balance sheet of an existing asset or liability with no changes in its quantity or quality. The second group consists of events that change the quantity or quality of assets. The final group is made up of changes in the classification of assets.

3.27 An entity may be known to exist but not be on the balance sheet of a general government unit because its market value is zero, such as a proven reserve of subsoil assets that is not economically exploitable given current technology and relative prices. If the market value becomes positive because of a change in technology or relative prices, then an other volume change is recorded to add the item to the balance sheet. Conversely, an asset may need to be removed from the balance sheet because a change in technology or relative prices makes the asset no longer economically exploitable.

3.28 There is a wide range of events that could trigger this type of flow. A few examples follow:

- A subsoil deposit of minerals may become economically exploitable as a result of technological progress or an increase in market prices.
- Improved access may make commercial harvesting of timber feasible in a particular forest.
- A construction project might lose its economic rationale before it is completed and the partially completed asset is abandoned.
- A government might grant patent protection to an invention.
- A creditor may determine that a financial claim can no longer be collected because of the debtor's bankruptcy.

3.29 The second group of other volume changes includes changes in the quantities or qualities of assets. Such changes arise because the assets have been discovered, created, destroyed, cancelled, or seized by one unit from another unit. Some examples of these types of events include:

- The partial or complete catastrophic destruction of an asset resulting from a large-scale event, such as a major earthquake or hurricane.

- An increase in the quantity of forests and fish-stocks from natural growth.
- A depletion of the volume of mineral deposits and natural forests as a result of the physical removal of the assets.
- The exhaustion of a patent over time.
- A unilateral change by an employer in the benefit structure of a retirement scheme.
- The creation of land by reclaiming it from the sea with the use of dikes or other sea barriers.
- The discovery of a new deposit of minerals.
- The seizure of assets by a government unit without full compensation for reasons other than the failure to pay taxes, fines, or similar levies.
- A decrease in the quality of an asset resulting from environmental damage, erosion, deforestation, or unforeseen obsolescence.
- A change in the permitted or designated use of a parcel of land, such as from agricultural use to a commercial building site.

3.30 The third category relates to changes resulting from reclassifications of entire units from one sector to another or the reclassification of individual assets and liabilities from one category to another category. Net worth will not change as a result of a classification change.

3.31 Several events can cause a change in the classification of units. If a government unit begins to charge economically significant prices for its output, then it would become a public corporation. All of its assets and liabilities would be reclassified from the general government sector to either the nonfinancial or financial corporations sector. At the same time, a financial asset with a value equal to the net value of the assets and liabilities reclassified would be added to the balance sheet of the general government sector, leaving its net worth unchanged. Conversely, a public corporation might cease charging economically significant prices and become a government unit. It is also possible for two units to merge or a single unit to split into two units.

3.32 It is also possible for individual assets or groups of assets to be reclassified from one category to

another, usually because of a change in the purpose for which an asset is used. A conversion of gold from nonmonetary gold to monetary gold is one such event.

3.33 Holding gains and losses on assets and liabilities, together with the corresponding changes in net worth, arise as a result of changes in the prices of those assets and liabilities, including changes resulting from exchange rate movements. In concept, holding gains and losses are continuously recorded as prices change.

3.34 A holding gain or loss accrues purely as a result of holding an asset or liability over time without transforming it in any way. It can apply to virtually any type of asset, and it may accrue on an asset held for any length of time during the accounting period.

C. Accounting rules

3.35 Accounting rules for recording flows and stocks in the GFS system are designed to ensure that the data generated by the system conform with accepted standards for the compilation of economic statistics. With the exception of consolidation, as noted later in this chapter, the accounting rules of the GFS system are the same as those of the *1993 SNA*. There are also many similarities between the rules used in the GFS system and those applied by businesses and governments in their financial statements.⁷ The following sections describe the type of accounting system used, the rules governing the time of recording and the valuation of flows and stocks, and miscellaneous other topics.

I. Type of accounting system

3.36 *Double-entry accounting* is used for recording flows. In a double-entry system each flow gives rise to two equal-value entries, traditionally referred to as a credit entry and a debit entry. A debit is an increase in an asset, a decrease in a liability, or a decrease in net worth. A credit is a decrease in an asset, an increase in a liability, or an increase in net worth. Revenue entries, which represent an increase in net worth, are recorded

⁷The relationship between statistics of the GFS system and the *1993 SNA* are discussed in more detail in Appendix 3. There is not a similar comparison with financial accounting standards in this manual, but it is recommended that, where possible, the financial statements of government entities compiled in accordance with international accounting standards for governments be reconciled with the equivalent GFS statements.

as credits. Conversely, an expense refers to a decrease in net worth and is recorded as a debit.

3.37 A balance sheet is a compilation of a unit's or sector's assets, liabilities, and net worth. The fundamental identity of the balance sheet and of accounting in general is that the total value of the assets always equals the total value of the liabilities plus net worth. Use of the double-entry system ensures that this identity is correctly maintained. There are several possible combinations of debits and credits affecting assets, liabilities, and net worth. For example, the purchase of a service by a general government unit with payment to be made in 30 days would be recorded as an expense (debit) and an increase in the liability, accounts payable (credit). Thus, net worth, through the expense, decreases by the same amount that liabilities increase, and assets are not affected. The subsequent payment would be recorded as a decrease in cash (credit) and a decrease in accounts payable (debit). In this case, assets and liabilities both decrease by the same amount and net worth is unaffected.

2. Time of recording flows

3.38 Once a flow has been identified, the time at which it occurred must be determined so that the results of all flows within a given accounting period can be compiled. Although this section is concerned with the time assigned to flows, the integrated nature of the system means that the stocks recorded on the balance sheet are also influenced by the timing of flows.

3.39 One of the problems in determining the timing of transactions is the frequent existence of a long period between the initiation of an action and its final completion. For instance, many purchases of goods commence with the signing of a contract between a seller and a buyer, followed by the initiation of production of the item ordered, completion of production, shipment from the seller's location, arrival at the buyer's location, preparation and mailing the invoice, receipt of the invoice, approval of payment, the beginning of interest accruing on a late payment or the expiration of a discount for prompt payment, signing a check for payment, mailing of the check by the buyer, receipt of the check by the seller, deposit of the check in the seller's bank, and finally the check is paid by the buyer's bank. Even then, the transaction may not be complete as there may be rights of return or warranty claims. Each of these distinct moments is to some extent economically relevant and may result

in multiple transactions in the GFS system, but only one time can be attributed to each transaction.

a. Alternative recording bases

3.40 Broadly, the time of recording could be determined on four bases: the accrual basis, the due-for-payment basis, the commitments basis, and the cash basis.

3.41 With the *accrual basis*, flows are recorded at the time economic value is created, transformed, exchanged, transferred, or extinguished. 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. Nevertheless, the time at which the economic events occur is not always clear. In general, the time attributed to events is the time at which ownership of goods changes, services are provided, the obligation to pay taxes is created, the claim to a social benefit payment is established, or other unconditional claims are established.

3.42 If an economic event requires a subsequent cash flow, such as purchases of goods and services on credit, then the length of time between the time attributed to an event with the accrual basis and the time of the cash flow is bridged by recording a receivable or a payable. For example, when a general government unit purchases goods on credit, it records a debit to an inventory account and a credit to accounts payable when ownership of the goods shifts. When the cash payment is made, the general government unit records a debit to accounts payable and a credit to cash.

3.43 All events that result in the creation, transformation, exchange, transfer, or extinguishment of economic value are recorded with the accrual basis in the GFS system. Thus, all nonmonetary transactions are included in statistics compiled on the accrual basis.

3.44 With the *due-for-payment basis*, flows that give rise to cash payments are recorded at the latest times they can be paid without incurring additional charges or penalties or, if sooner, when the cash payment is made. If a payment is made after it is due to be paid, then the gap is bridged by recording a receivable, just as with the accrual basis. If a payment is made before it is due, then no receivable is necessary. Depending on the goals of the accounting system, nonmonetary flows may or may not be recorded.

3.45 With the *commitments basis*, flows are recorded when a general government unit has committed itself to

a transaction. Normally, this basis applies only to purchases of assets, goods, and services, including compensation of employees. The time of recording generally is when a purchase order is issued by the general government unit. Flows for which the commitments basis is not applicable must be recorded on one of the other three bases. In-kind transactions may or may not be recorded.

3.46 With the *cash basis*, flows are recorded when cash is received or disbursed. Although nonmonetary flows can be recorded, most accounting systems using the cash basis do not record nonmonetary flows because the focus is on cash management rather than resource flows.

b. The reasons for using the accrual basis in the GFS system

3.47 The GFS system uses the accrual basis, primarily because the time of recording matches the time of the actual resource flows. As a result, the accrual basis provides the best estimate of the macroeconomic impact of government fiscal policy. With the cash basis, the time of recording may diverge significantly from the time of the economic activities and transactions to which they relate. For example, the interest paid on a zero-coupon bond would not be recorded until the bond matures, which could be many years after the expense was incurred. The due-for-payment basis will frequently record transactions after the resource flows have taken place, although the very long delays permitted by the cash basis would, in most cases, be reduced. The timing of the commitments basis will precede the actual resource flow.

3.48 The accrual basis provides the most comprehensive information because all resource flows are recorded, including internal transactions, in-kind transactions, and other economic flows. Moreover, this comprehensive recording permits the integration of flows with changes in the balance sheet. In general, accounts using the due-for-payment, commitments, or cash basis are restricted to monetary transactions.

3.49 Payment arrears arise when an obligatory payment is not made by its due-for-payment date. Because this date is always the same or later than the date attributed to a flow under the accrual basis, all arrears will be included in statistics compiled with the accrual basis. Without supplementary information, however, it may be difficult to estimate the share of total accounts payable that is in arrears as opposed

to the share that exists because of normal payment delays. By definition, the due-for-payment basis will show clearly the arrears arising from purchases on credit, but arrears from the failure to repay debt obligations, such as loans and securities other than shares, as scheduled will not be apparent without supplemental information. With the commitments basis, the availability of information on arrears will be the same as with the accrual basis. With the cash basis, there is no impact on the accounts when a general government unit does not pay for its purchases made on credit or comply with the terms for the repayment of debt. Thus, there will be no information on arrears unless a special compilation is made.

3.50 Managing liquidity is crucial for the operation of any unit. It is not necessary to use the cash basis to meet this need, however, as information on cash flows is not lost with the accrual basis. Normally a separate statement of cash flows is prepared. Moreover, it may be difficult to assess solvency and future cash flows with the cash basis because information on arrears is missing.

3.51 Accounts using the due-for-payment, commitments, or cash basis normally do not differentiate between expenses and acquisitions of nonfinancial assets. With the accrual basis, acquisitions of nonfinancial assets are recorded separately and the expense of using those assets in operating activities is matched with the period of their use rather than the period of their acquisition.

3.52 Additionally, the other major macroeconomic statistical systems (national accounts, balance of payments, and monetary and financial statistics) use the accrual basis. Thus, the joint use of statistics from two different systems is facilitated greatly by the use of the accrual basis in the GFS system.

3.53 Despite the advantages of the accrual basis, its implementation is likely to be more difficult than the other bases and will require more estimates. For example, it may be difficult for a government unit to know the full amount of tax revenue to which it is entitled because these amounts may depend on transactions and other events in which the government is not a party.

c. Implementation of the accrual basis

3.54 As a general rule, a flow is recorded under the accrual basis when the economic benefit associated with an event has flowed to or from the unit involved,

or it is probable that a future benefit will flow to or from the unit and the monetary value of the event can be measured reliably. More specific guidelines for the application of the accrual recording basis are described in the following paragraphs.

3.55 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. This time is not necessarily the time at which the event being taxed occurred. For example, the obligation to pay tax on capital gains normally occurs when an asset is sold, not when the asset's value appreciated.

3.56 Estimating the revenue from taxes and compulsory social insurance contributions must take many uncertainties into account. The primary uncertainty is that the government unit receiving the revenue is usually not a party to the transaction or other event that creates the obligation to pay the taxes or compulsory social security contributions. Consequently, many of these transactions and events permanently escape the attention of the tax authorities. The amount of revenue from taxes and social insurance contributions should exclude the amounts that possibly could have been received from such unreported events had the government learned about them. In other words, only those taxes and social security contributions that are evidenced by tax assessments and declarations, customs declarations, and similar documents are considered to create revenue for government units.

3.57 In addition, it is typical that some of the taxes and social insurance contributions that have been assessed will never be collected. It would be inappropriate to accrue revenue for an amount that the government unit does not realistically expect to collect. Thus, the difference between assessments and expected collections represents a claim that has no real value and should not be recorded as revenue. The amount of taxes and social security contributions that is recorded as revenue should be the amount that is realistically expected to be collected. The actual collection, however, may be in a later period, possibly much later.

3.58 If taxes are imposed on specific transactions or events, they are recorded at the times the underlying transaction or event occurs, even though these times may not coincide with the actual payment of the tax to the government. Examples include sales taxes, value-added taxes, import duties, and estate and gift taxes.

3.59 In principle, income taxes and social contributions based on income should be attributed to the period in which the income is earned, even though there may be a significant delay between the end of the accounting period and the time at which it is feasible to determine the actual liability. In practice, however, some flexibility is permitted. In particular, as a practical deviation from the general principle, income taxes deducted at source, such as pay-as-you-earn taxes, and regular prepayments of income taxes may be recorded in the periods in which they are paid, and any final tax liability on income may be recorded in the period in which it is determined.

3.60 Income taxes are normally imposed on the income earned during an entire year. If monthly or quarterly statistics are compiled, indicators of seasonal activity or other appropriate indicators may be utilized to allocate the annual totals.

3.61 Taxes on the ownership of specific types of property often are based on the value of the property at a particular time but are deemed to accrue continuously over the entire year or the portion of the year that the property was owned, if less than the entire year. Similarly, taxes on the use of goods or the permission to use goods or perform activities usually relate to a specific time period, such as a license to operate a business during a specific period.

3.62 Some compulsory transfers, such as fines, penalties, and property forfeitures, are determined at a specific time. These transfers are recorded when the government has a legal claim to the funds, which may be when a court renders judgment or an administrative ruling is published.

3.63 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 claim on the donor, and the transfer should be attributed to the time at which the cash payment is made.

3.64 Dividends and withdrawals from income of quasi-corporations are recorded as of the date on

which they are declared payable or actually take place if no prior declaration occurs.

3.65 Transactions in goods and nonfinancial assets are recorded when legal ownership changes, which may depend on the provisions in the sales contract. If that time cannot be determined precisely, recording may take place when there is a change in physical ownership or control. For example, a change of ownership is imputed to have taken place under a financial lease when the lessee takes control of the asset.

3.66 Transactions in services normally should be recorded when the services are provided. If a service, such as transportation, is delivered at a specific time, then the transaction is recorded at that time. Other services are supplied or take place on a continuous basis. For example, operating leasing, insurance, and housing services are continuous flows and, in concept, are recorded continuously as long as they are being provided. More practically, the value of the services attributed to a period is based on the quantity supplied during the period rather than the payments required.

3.67 Several other transactions also relate to flows that take place continuously or over extended periods. For example, consumption of fixed capital accrues continuously over the whole period a fixed asset is available for productive purposes and interest accrues continuously over the period that the financial claim exists. Often an interest-bearing financial claim calls for periodic interest payments. These payments, however, reduce the liability that has already accrued over the previous period and are not expense transactions.

3.68 Additions to inventories are recorded when products are purchased, produced, or otherwise acquired. Withdrawals from inventories are recorded when products are sold, used up in production, or otherwise relinquished. Additions to work-in-progress inventory are recorded continuously as work proceeds. When production is completed, the production costs accumulated to that point are transferred to finished-goods inventory.

3.69 A transaction in the use of goods or services is recorded when the good or service enters the production process. For goods, this time may be quite different from the time they were acquired. In the meantime, they are classified as inventories.

3.70 Transactions in many types of financial assets, such as securities, loans, currency, and deposits, are

recorded when legal ownership changes. In some cases, the parties to a transaction may perceive ownership to change on different dates because they acquire the documents evidencing the transaction at different times. This variation usually is caused by the process of clearing, or the time checks are in the mail. The amounts involved in such “float” may be substantial in the case of transferable deposits and other accounts receivable or payable. If there is disagreement on a transaction between two general government units, the date on which the creditor records the transaction is the date of record.

3.71 The various types of accounts payable and receivable, such as general accounts payable, interest payable, and wages payable, are created by a counterpart transaction, such as the purchase of a good on credit, interest expense, and compensation of employees. These financial claims are deemed to arise when the counterpart flow occurs.

3.72 As indicated previously, there is a wide variety of other economic flows. Depending on the nature of the flow, they may take place at a specific time or continuously over a period. For example, the destruction of an asset by fire happens at a specific time, and holding gains and losses occur continuously as prices change.

3. Valuation

3.73 All flows and stocks should be valued at the amounts for which goods, assets other than cash, services, labor, or the provision of capital are in fact exchanged or could be exchanged for cash. These values are referred to as *current market prices* or values. Flows should be valued at the prices current on the dates for which they are recorded in accordance with the guidelines of the previous section. Stocks should be valued at the prices current on the balance sheet date.

3.74 In general, flows expressed in monetary terms when they occur can be recorded at their actual value because that value is presumed to be the current market value. Some transactions expressed in monetary terms need to be partitioned into two transactions, as described in paragraphs 3.9 and 3.21. In that case, the total value of the two transactions must equal the monetary value of the single transaction that actually occurred. If a government unit sells an asset for less than its market value or purchases an asset for more than its market value, the sale or purchase should be valued at the true market price and a transfer for the remaining amount

should be imputed. Often transactions of this nature are structured so that the true market values are impossible to estimate accurately. Nevertheless, estimates should be made whenever possible.

3.75 Current market values of stocks are available for assets and liabilities that are traded in active markets, most commonly certain financial assets and their corresponding liabilities. Current market values of other assets and liabilities need to be estimated in a manner similar to nonmonetary flows, as described in paragraph 3.79.

3.76 Some financial assets and liabilities, such as bonds, have a nominal value as well as a current market value, and for some purposes supplemental data on the nominal values of stocks may be helpful.⁸ Transactions in these assets and liabilities, however, should be valued at the prices actually paid and not at their nominal value. Similarly, the stocks of such assets and liabilities should be valued at their current market value when recorded on the balance sheet.

3.77 Another type of actual transaction that may require a valuation adjustment occurs when a unit sells an item and does not receive the corresponding payment for an unusually long time. If the amount of trade credit extended in this way is large, then value of the sale should be reduced by means of an appropriate discount rate and interest should be accrued until the actual payment is made.

3.78 Flows expressed in a foreign currency are converted to their value in the national currency at the rate prevailing when they take place, and stocks are converted at the rate prevailing on the balance sheet date. The midpoint between the buying and selling rates should be used. The valuation in the national currency of a purchase or sale on credit expressed in a foreign currency may differ from the value 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 it occurs.

⁸The nominal value is the amount that the debtor owes to the creditor at any moment. It reflects the value of the instrument at creation and subsequent economic flows, such as transactions, valuation changes (excluding market price changes), and other changes, such as debt forgiveness. Conceptually, the nominal value is equal to the required future payments of principal and interest discounted at the existing contractual interest rate. Nominal value is not necessarily face value, which is the undiscounted amount of principal to be repaid.

3.79 The values of flows that are not already expressed at their current market value, such as barter transactions, must be estimated. In addition, current market values for many stocks will not be readily available and must be estimated. The following list suggests several estimation possibilities. The choice of which method to use in a given circumstance depends on the information available.

- It may be possible to estimate the values of transactions based on values taken from markets in which similar transactions take place under similar conditions. The value of certain stocks, primarily financial assets, may also be estimated using market transactions involving similar assets that take place at the end of the accounting period.
- Flows and stocks involving existing fixed assets can be valued using the market price for similar new goods, properly adjusted for consumption of fixed capital and other events that may have occurred since they were produced.
- If there is no appropriate market in which a particular good or service is currently traded, the valuation of a flow involving that good or service may be derivable from the market prices of similar goods and services by making adjustments for quality and other differences.
- The value of flows and stocks of assets may be able to be estimated on the basis of the historical or acquisition cost of the item, adjusted for all changes that have occurred since it was purchased or produced, such as consumption of fixed capital, holding gains or losses, depletion, exhaustion, degradation, unforeseen obsolescence, and exceptional losses.
- Goods and services can be valued by the amount that it would cost to produce them currently.
- Assets can be valued at the discounted present value of their expected future returns. This method is particularly prominent for a number of financial assets, natural assets, and intangible assets.

4. Derived measures

3.80 Derived measures consist of aggregates and balancing items. They are important analytic tools that summarize the values of selected flows or stocks that have been individually recorded in the GFS system.

3.81 *Aggregates* are summations of elements in a class of flows or stocks. For example, tax revenue is the sum of all flows that are classified as taxes. Aggregates and classifications are closely linked in that classifications are designed to produce the aggregates thought to be most useful.

3.82 *Balancing items* are economic constructs obtained by subtracting one aggregate from a second aggregate. For example, the net operating balance is obtained by subtracting the total expense aggregate from the total revenue aggregate. Net worth is equal to total assets less total liabilities.

5. Netting of flows and stocks

3.83 It is feasible to present many categories of flows and stocks on a gross or net basis. An item presented on a net basis is calculated as the sum of one set of flows or stocks less the sum of a second set. For example, total tax revenue could be presented on a gross basis as the total amount of all taxes accrued, or on a net basis as the gross amount less taxes refunded for one reason or another. The choice depends on the category of flows or stocks, the nature of the items that might be subtracted to obtain the net value, and the analytic utility of the gross and net values. The following choices are used in the GFS system.

3.84 Revenue categories are presented gross of expense categories for the same or related category and likewise for expense categories. In particular, interest revenue and interest expense are both presented gross rather than only net interest expense or revenue. Similarly, social benefits and social contributions, grant revenue and expense, and rent revenue and expense are presented gross. Also, sales of goods and services are presented gross of the expenses incurred in their production.

3.85 Revenue categories are presented net of refunds of the relevant revenue, and expense categories are presented net of inflows of the same expense arising from erroneous or unauthorized transactions. For example, refunds of income taxes may be paid when the amount of taxes withheld or otherwise paid in advance of the final determination exceeds the actual tax due. Such refunds are recorded as negative tax revenue. Similarly, if social benefits that were paid in error are recovered, then such recoveries are recorded as a negative expense.

3.86 Acquisitions and disposals of nonfinancial assets other than inventories are presented gross. For exam-

ple, acquisitions of land are presented separately from disposals of land. For analytic presentations, the net acquisition of each category of nonfinancial asset may be preferable and can be derived easily.

3.87 Changes in each type inventory are presented net. That is, the change in materials and supplies is presented as the net value of additions less withdrawals.

3.88 Acquisitions and disposals of each category of financial assets are presented net. For example, only the net change in the holding of cash is presented, not gross receipts and disbursements of cash. Similarly, additions to liabilities are presented net of repayments.

3.89 Other economic flows are presented net. That is, the net holding gain for each asset and liability is presented, not gross holding gains and gross holding losses.

3.90 Stocks of the same type of financial instrument held both as a financial asset and a liability are presented gross. For example, a unit's holding of bonds as assets is presented separately from its liability for bonds.

6. Consolidation

3.91 Consolidation is a method of presenting statistics for a set of units as if they constituted a single unit. In the GFS system, the data presented for a group of units normally are consolidated. In particular, statistics for the general government sector and each of its subsectors are presented on a consolidated basis. When units of the public sector are included in a presentation, the data for public corporations should be presented in two ways, as a separate sector and together with general government units. In both cases, the statistics should be presented on a consolidated basis within each group.

3.92 Consolidation involves the elimination of all transactions and debtor-creditor relationships that occur among the units being consolidated. In other words, a transaction of one unit is paired with the same transaction as recorded for the second unit and both transactions are eliminated. For example, if one general government unit owns a bond issued by a second general government unit and data for the two units are being consolidated, then the stocks of bonds held as assets and liabilities are reported as if the bond did not exist. At the same time, consolidated interest revenue and expense exclude the interest paid by the debtor general government unit to the

creditor. Similarly, sales of goods and services between consolidated units are also eliminated.

3.93 The *1993 SNA* recommends that statistics of institutional units should not be consolidated and, in addition, sales of one establishment of an institutional unit to a second establishment of the same institutional unit also should not be consolidated. The difference between the *1993 SNA* and this manual reflects the different uses of the statistics. The GFS system is designed to produce statistics suitable for use in the analysis of the impact of government operations, either the entire general government sector or a specific subsector. In particular, assessing the overall impact of government operations on the total economy or the sustainability of government operations is more effective when the measure of government operations is a set of consolidated statistics rather than unconsolidated statistics. The GFS system also is not intended to produce a measure of production taking place in the general government sector. The *1993 SNA*, on the other hand, serves a much wider range of uses, including a comprehensive measure of production and relations among sectors.

3.94 In financial accounting reports, statistics are often presented on a consolidated basis for the reporting entity and all of its controlled entities without regard to whether the controlled entities are general government units or public corporations, as those terms are used in the manual. This use of consolidation attempts to portray the operations and financial position of a parent and its subsidiaries as though the group of enterprises were a single unit. For example, a financial report for a state government would include all public corporations controlled by that government but would not include the statistics of any other state government. In contrast, the consolidated statistics of the state government subsector in the GFS system would include all state government units but would exclude all public corporations owned or controlled by state governments.

7. Contingencies

3.95 Contingencies are conditions or situations that may affect the financial performance or position of the general government sector depending on the occurrence or nonoccurrence of one or more future events. For example, a general government unit's guarantee of a loan may result in an expense if the debtor defaults, but it will not be known whether the expense will be incurred or, if it is incurred, how much the expense will be until a default occurs or the loan is repaid fully. In another example, a government unit's tax assessment may be contested in court by the unit assessed. This contingent revenue will not be resolved until an agreement is reached by the two parties or a court issues a ruling and no further appeals are possible or planned.

3.96 This manual follows the *1993 SNA* by not treating any contingencies as financial assets or liabilities because they are not unconditional claims or obligations. Nevertheless, contingencies, especially those that may result in an expense, can be particularly significant for the general government sector. Aggregate data on all important contingencies should be recorded as memorandum items. In addition to the gross amount of possible revenue or expense, estimates of expected revenue or expense should be presented. This position is somewhat different from that of financial accounting standards, which recognize contingent liabilities when it is probable that future events will confirm that an asset has been impaired or a liability incurred and that a reasonable estimate of the amount can be made.

3.97 When a contingency is recognized as a liability of a general government unit, a flow is recorded with an expense as the debit and an increase in a liability as the credit. For example, if a loan guarantee has been called and the general government unit has no claim on the defaulter, then the general government unit would record a transfer to the defaulter and an incurrence of a liability to the creditor.