Chapter 12: The other changes in assets accounts....................3

Chapter 12: The other changes in assets accounts

A. Introduction

12.1 This chapter is concerned with the recording of changes in the values of assets and liabilities, and thus of the changes in net worth between opening and closing balance sheets that result from other flows, that is, flows that are not transactions. Transactions in assets and liabilities and the immediate consequences of transactions on net worth are recorded in the capital account and financial account. The change in the value of produced assets resulting from consumption of fixed capital and from recurrent losses from inventories are treated as transactions and so do not appear in the other changes in assets accounts.

12.2 Although the entries relate to flows that are not transactions, they are not "residual" entries. Rather they serve to demonstrate significant changes in the value and composition of items between the opening and closing balance sheets due to other events.

12.3 The entries in the other changes in assets accounts cover many different kinds of changes in assets, liabilities and net worth. Some of these are particular to the type of asset concerned, some may apply to all types of assets. All changes relating to holding gains and losses are included in the revaluation account. Holding gains and losses arise from changes over time in the level and structure of prices. All other changes in the value of assets are treated as being due to a change in volume due to quality change rather than due to changes in prices and are recorded in the other changes in the volume of assets account. This includes changes in value that result instantaneously, for example from a reclassification of an asset or from other one-off events.

12.4 The chapter discusses the two accounts in turn, beginning with the other changes in the volume of assets account and proceeding to the revaluation account. Under each account, the entries for each type of asset are discussed separately.

B. The other changes in the volume of assets account

12.5 The other changes in the volume of assets account records the changes in assets, liabilities, and net worth between opening and closing balance sheets that are due neither to transactions between institutional units, as recorded in the capital and financial accounts, nor to holding gains and losses as recorded in the revaluation account. The format of the other changes in the volume of assets account, shown in table 12.1, is similar to that of the other accumulation accounts. The entries for changes in assets are on the left-hand side and the entries for changes in liabilities are on the right-hand side. Non-financial assets, both produced and non-produced, and financial assets are shown separately. The balancing item in the account, the change in net worth due to other changes in volume of assets, is the sum of the entries for the various categories of changes recorded in the account and is shown on the right-hand side of the account.

1. Functions of the other changes in the volume of assets account

12.6 In the capital account, produced assets enter and leave the System through acquisition less disposal of fixed assets, consumption of fixed capital and additions to, withdrawals from and recurrent losses from inventories. In the financial account, most financial assets enter the System when the debtor acquires something of value and accepts the obligation to make payment, or payments, to the creditor. Financial assets are extinguished when the debtor has fulfilled the financial obligation under the terms of the agreement.

12.7 Both the capital and financial accounts also record transactions in existing assets among the institutional sectors. However, these acquisitions and disposals merely change the ownership of the assets without changing the total net worth for the economy as a whole except where the transactions are between residents and the rest of the world.

12.8 One important function of the other changes in the volume of assets account is to allow certain assets to enter and leave the System other than by transactions. The acts of entering and exiting from the balance sheet are referred to as economic appearances and disappearances. Some entrances and exits happen when naturally occurring assets, such as subsoil assets, gain economic value or become worthless. Such entrances and exits come about as interactions between institutional units and nature, thus contrasting with entrances and exits that come about as a result of transactions, which typically are interactions by mutual agreement between institutional units. Yet other entrances and exits may also relate to assets created by human activity, such as valuables and purchased goodwill or gold.

12.9 A second function of the account is to record the effects of exceptional, unanticipated events that affect the economic benefits derivable from assets (and corresponding liabilities).

These occurrences are referred to as the effect of external events. They include one institutional unit's effectively removing an asset from its owner without the owner's agreement, an action that is not considered a transaction because the element of mutual agreement is absent. These events also include those that destroy assets, such as natural disaster or war.

12.10 A third function of the account is to record changes in classifications of institutional units and assets and in the structure of institutional units.

12.11 The three sections that follow discuss first the recording of the economic appearance and disappearance of assets, then the effects of external events on the value of assets and finally changes in the classification and structure of assets.

2. Appearance and disappearance of assets other than by transactions (K1, K2)

12.12 Entries relating to the appearance and disappearance of assets can be grouped according to the main type of asset under consideration as follows:

a. entries relating to recognition of produced assets;

b. entries relating to entry and exit from the asset boundary of natural resources;

c. entries relating to contracts, leases and licences;

d. changes in goodwill and marketing assets; and

e. entries relating to financial assets.

Table 12.2 shows a disaggregation of table 12.1 including the various entries for economic appearance and disappearance of assets.

Economic recognition of produced assets

12.13 Two types of assets can appear under this item: public monuments and valuables. As was described in chapter 10, public monuments are objects, structures or sites of significant or special value. The capital account records the acquisition of valuables and public monuments when these are newly produced goods or imported and it records transactions in existing goods already classified as valuables and public monuments.

12.14 However, existing goods, valuables and public monuments may not already have been recorded in the balance sheets for any of several reasons; they may date from a time before the time period covered by the accounts, they were originally recorded as consumption goods, or, if structures, they have already been written off.

Public monuments

12.15 Public monuments are included with dwellings and with other buildings and structures in the classification of fixed assets. When the special archaeological, historical or cultural significance of a structure or site not already recorded in the balance sheet is first recognized, it is classified as an economic appearance and recorded in the other changes in the volume of assets account. For example, such recognition might be accorded to an existing structure or site that is fully written off and thus no longer recorded in the balance sheet. Alternatively, a structure or site that is already within the asset boundary but is new or only partially written off, may be assessed as having the status of a public monument. If the monument was previously written off, then its recognition as a public monument is recorded as an economic appearance of an asset. If it was previously classified as another type of asset, it is recorded as a reclassification of an asset (discussed below) and if at the same time a new valuation is placed on the monument, this increase in value is recorded under economic appearance. If the reclassification occurs at the time of a sale of the asset, for example the acquisition of an asset by general government, this acquisition is recorded in the capital account as normal.

Table 12.1 Other changes in the volume of assets account – concise form - changes in assets

	Changes in assets	S11	S12	S13	S14	S15	S1	S2		
	Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
K1	Economic appearance of assets	26	0	7	0	0	33			33
K2	Economic disappearance of non-produced assets	- 9	0	- 2	0	0	- 11			- 11
K3	Catastrophic losses	- 5	0	- 6	0	0	- 11			
K4	Uncompensated seizures	- 5	- 3	8	0	0	0			
K5	Other changes in volume n.e.c.	1	1	0	2	0	4			
K6	Changes in classification	6	0	- 6	0	0	0			
	Total other changes in volume	14	- 2	1	2	0	15			15
AN1	Produced assets	- 2	- 2	- 3	0	0	- 7			- 7
AN2	Non-produced assets	14	0	3	0	0	17			17
AF	Financial assets	2	0	1	2	0	5			5
AF8	Other accounts receivable/payable						0			0

Valuables

12.16 For valuables, such as precious stones, antiques and other art objects, when the high value or artistic significance of an object not already recorded in the balance sheet is first recognized, it is classified as an economic appearance. Hitherto, the object may have been of little value and not considered an asset. For example, the item might have been considered an ordinary good whose purchase had been included in household final consumption expenditure or been regarded as a consumer durable. Recognition of its worth as a store of value leads to its entrance into the balance sheet as a valuable. The recognition of the value of a previously unvalued item is often associated with a sale (for example at auction). The sale is recorded in the capital account as the sale and purchase of a valuable, it having been entered first into the balance sheet of the seller.

Entry of natural resources into the asset boundary

Discoveries and upwards reappraisals of sub-soil resources

12.17 In the System, subsoil assets are defined as those proven subsoil reserves of coal, oil and natural gas, of metallic minerals or of non-metallic minerals that are economically exploitable, given current technology and relative prices. The capital account records acquisitions and disposals among sectors of the reserves that exist under those conditions. The other changes in the volume of assets account, in contrast, records increases and decreases that change the total volume for the economy as a whole.

12.18 One way in which the reserves may increase is by the discovery of new exploitable deposits, whether as a result of systematic scientific explorations or surveys or by chance. Economic appearance may occur because reserves may be increased by the inclusion of deposits for which exploitation was previously uneconomic but becomes economic as a result of technological progress or relative price changes.

Natural growth of uncultivated biological resources

12.19 The natural growth of uncultivated biological resources, such as natural forests and fish stocks, may take various forms: a stand of natural timber may grow taller, or fish in the estuaries may become more numerous. Although these resources are economic assets, growth of this kind is not under the direct control, responsibility and management of an institutional unit and thus is not production. The increment in the asset must then be regarded as an economic appearance, and it is recorded in the other changes in the volume of assets account.

12.20 In principle, natural growth should be recorded gross, and the depletion of these resources should be recorded as economic disappearance, as described below. This recording would be consistent with the separate recording of acquisitions and disposals described in the capital account. In practice, however, many countries will record natural growth net because the physical measures that are likely to be the only basis available for the recording are, in effect, net measures. These measures may be used in conjunction with a market price for a unit of the asset to estimate the value of the volume change to be recorded.

Transfers of other natural resources to economic activity

12.21 Not all land included in the geographic surface area of a country is necessarily within the System's asset boundary. Land may make its economic appearance either because its value is directly enhanced by means of some activity on the parcel of land itself, such as when it is transferred from a wild or waste state to one in which ownership may be established and the land can be put to economic use. It may also acquire value because of activity in the vicinity, for example, land

Table 12.1: Other changes in the volume of assets account – concise form -changes in liabilities and net worth

		S11	S12	S13	S14	S15	S1	S2		
		Changes in liabilities and net worth								
	Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
K1	Economic appearance of assets									
K2	Economic disappearance of non-produced assets									
K3	Catastrophic losses									
K4	Uncompensated seizures									
K5	Other changes in volume n.e.c.	- 4	2	0	0	0	- 2			
K6	Changes in classification						0			
	Total other changes in volume	- 4	2	0	0	0	- 2			
AN1	Produced assets									
AN2	Non-produced assets									
AF	Financial assets	- 3	2	- 1	0	0	- 2			- 2
AF8	Other accounts receivable/payable									
	Changes in net worth due to other changes in volume of assets	17	- 4	2	2	0	17			

that becomes more desirable and thus more valuable because a new development is established nearby or the creation of an access road. The cost of land improvements, affecting the parcel of land being considered directly, is treated as gross capital formation, recorded as land improvements and subsequently subject to consumption of fixed capital. Any excess in the increase in value of the land over the value of land improvements or any increase due to adjacent capital activity is recorded as economic appearance.

12.22 For other natural resources, the first substantial market appearance, generally involving commercial exploitation, is the reference point for recording in this account. For virgin forests, gathering firewood is not commercial exploitation, but large-scale harvesting of a virgin forest for timber is and brings the forest into the asset boundary. Similarly, drawing water from a natural spring does not bring an aquifer into the asset boundary of the System, but a significant diversion of groundwater does.

Quality changes in natural resources due to changes in economic uses

12.23 The System, in general, treats differences in quality as differences in volume. As explained with respect to goods and services in chapter 15, different qualities reflect different use values (and in the case of goods and services, different resource costs). Different qualities are, therefore, economically different from each other. The same principle applies to assets. The quality changes recorded here occur as the simultaneous counterparts of the changes in economic use that are shown as changes in classification, as described below. For example, the reclassification of cultivated land to land underlying buildings may result in a change of value as well as a change in classification. In this case, the asset is already within the asset boundary, and it is the change in quality of the asset due to changes in its economic use that is regarded as the appearance of additional amounts of the asset. Another example is that of livestock treated as capital formation, for example, dairy cattle, if they are sent to slaughter earlier than expected.

Exit of natural resources from the asset boundary

12.24 Exits of natural resources from the balance sheets are shown as negative entries on the left-hand side of the account. Many of the possible entries are simply the negative alternative to the positive entries just discussed.

Extractions and downwards reappraisals of sub-soil resources

12.25 The changes recorded here are the negative analogues of gross additions to the level of exploitable subsoil resources that result from reassessments of exploitability because of changes in technology or relative prices. In practice, only net additions may be available, and these will be recorded under discoveries and upwards reappraisals of sub-soil resources.

12.26 The depletion of natural deposits covers the reduction in the value of deposits of subsoil assets as a result of the physical removal and using up of the assets.

Table 12.2: Other changes in the volume of assets – changes in assets due to economic appearances and disappearances

		Changes in assets	S11	S12	S13	S14	S15	S1	S2		
		Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
K1		Economic appearance of assets	26	0	7	0	0	33			33
	AN1	Produced assets			3			3			3
	AN2	Non-produced assets	26	0	4	0	0	30			
	AN21	Natural resources	22		4			26			26
	AN22	Contracts, leases and licences	4					4			
	AN23	Goodwill and marketing assets						0			
K2		Economic disappearance of non-produced assets	- 9	0	- 2	0	0	- 11			- 11
K21		Depletion of natural resources	- 6	0	- 2	0	0	- 8			
	AN21	Natural resources	- 6		- 2			- 8			
K22		Other economic disappearance of non-produced assets	- 3	0	0	0	0	- 3			
	AN21	Natural resources						0			
	AN22	Contracts, leases and licences	- 1					- 1			
	AN23	Goodwill and marketing assets	- 2					- 2			
K3		Catastrophic losses	- 5	0	- 6	0	0	- 11			
K4		Uncompensated seizures	- 5	- 3	8	0	0	0			
K5		Other changes in volume n.e.c.	1	1	0	2	0	4			
K6		Changes in classification	6	0	- 6	0	0	0			
		Total other changes in volume	14	- 2	1	2	0	15			15
	AN1	Produced assets	- 2	- 2	- 3	0	0	- 7			- 7
	AN2	Non-produced assets	14	0	3	0	0	17			17
	AF	Financial assets	2	0	1	2	0	5			5
	AF8	Other accounts receivable/payable						0			0

Harvesting of uncultivated biological resources

12.27 The depletion of natural forests, fish stocks in the open seas and other uncultivated biological resources included in the asset boundary as a result of harvesting, forest clearance, or other use beyond sustainable levels of extraction should be included here.

Transfers of other natural resources out of economic activity

12.28 It is possible that some natural resources cease to be deployed in economic activity because of changing technology, or reduced demand for the resulting product or for legislative reasons, for example the suspension of fishing to ensure the survival of fish stocks.

Quality changes in natural resources due to changes in economic uses

12.29 The changes recorded here are the negative equivalent of the upward changes in volume associated with the changes in classification. For example, if a change in land use leads to reclassifying some land from cultivated land to communal grazing land, there well may be a resulting change in the value of the land.

12.30 All degradation of land, water resources and other natural assets caused by economic activity is recorded in the other changes in the volume of assets account. The degradation may be an anticipated result from regular economic activity or less predictable erosion and other damage to land from deforestation or improper agricultural practices.

Initiation and cancellation of contracts, leases and licences

12.31 The contracts, leases and licences that can be treated as assets in their own right are all some form of transferable lease, contract or permit. They may relate to the use of a fixed asset under an operating lease, the use of a natural resource under a resource lease, a permit to undertake some specific economic activity or a service contract relating to future services to be provided by a named individual. Holding the operating lease, the resource lease, the permit or the service contract represents an asset for the holder only when two conditions hold:

a. the current prevailing price for the use of the asset, permit or provision of the service differs from the price specified in the contract or lease or paid for the permit, and

b. the holder of the lease, contract or permit can legally and practically realise this difference by sub-contracting the lease or contract or on-selling the permit.

Table 12.2: Other changes in the volume of assets – changes in liabilities and net worth due to economic appearances and disappearances

Other changes n the volume of asssets account

Changes in liabilities and net worth

		S11	S12	S13	S14	S15	S1	S2		
	Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
K1	Economic appearance of assets									
AN1	Produced assets									
AN2	Non-produced assets									
AN21	Natural resources									
AN22	Contracts, leases and licences									
AN23	Goodwill and marketing assets									
K2	Economic disappearance of non-produced assets									
K21	Depletion of natural resources									
AN21	Natural resources									
K22	Other economic disappearance of non-produced assets									
AN21	Natural resources									
AN22	Contracts, leases and licences									
AN23	Goodwill and marketing assets									
K3	Catastrophic losses									
K4	Uncompensated seizures									
K5	Other changes in volume n.e.c.	- 4	2	0	0	0	- 2			- 2
K6	Changes in classification	1	0	- 1	0	0	0			0
	Total other changes in volume	- 3	2	- 1	0	0	- 2			- 2
AN1	Produced assets									
AN2	Non-produced assets									
AF	Financial assets	- 3	2	- 1	0	0	- 2			- 2
AF8	Other accounts receivable/payable									
	Changes in net worth due to other changes in volume of assets	17	- 4	2	2	0	17			

In practice, it is recommended to try to record such assets only when they are sold. In this case they are first recorded in the other changes in the volume of assets account and subsequently form the basis of a transaction (or series of transactions) in the capital account.

12.32 The value of the contract, lease or licence treated as an asset is equal to the net present value of the excess of the prevailing price over the contract price. It will decline as the period of the agreement declines and the difference in price is no longer evident. Changes in the value of the contract, lease or licence due to changes in the prevailing price are recorded as revaluation; changes due to the expiration of the advantage given by the asset as the time over which it is valid are recorded as other changes in volume. There is more extensive discussion of the treatment of contracts, leases and licences in part 5 of chapter 17.

Changes in the value of goodwill and marketing assets

12.33 When an enterprise, whether a corporation, quasi-corporation or unincorporated enterprise, is sold, the price paid may not equal the sum of all the assets less the liabilities of the enterprise. The difference between the price paid and the sum of all the assets less liabilities is called the purchased goodwill and marketing assets of the enterprise. The value may be positive or negative (or zero). By its calculation and designation as an asset of the enterprise, the net worth of the enterprise at the moment it is bought is exactly zero, whatever the legal status of the enterprise.

12.34 The value of purchased goodwill and marketing assets is calculated at the time of the sale, entered in the books of the seller in the other changes in the volume of assets account and then exchanged as a transaction with the purchaser in the capital account. Thereafter the value of the purchased goodwill and marketing asset must be written down in the books of the purchaser via entries in the other changes in the volume of assets account. The rate at which it is written down should be in accordance with commercial accounting standards. These are typically conservative in the amount that may appear on the balance sheet of an enterprise and should be subject to an "impairment test" whereby an accountant can satisfy himself that the remaining value is likely to be realisable in case of a further sale of the enterprise.

12.35 Goodwill that is not evidenced by a sale/purchase is not considered an economic asset in the System. Exceptionally, a marketing asset may be subject to sale. When this is so, entries should be made for the buyer and the seller along the lines of those made for purchased goodwill and marketing assets when the entire enterprise is sold.

Appearance and disappearance of financial assets and liabilities

12.36 Financial assets that are claims on other institutional units are created when the debtor accepts the obligation to make a payment, or payments, to the creditor in the future; they are extinguished when the debtor has fulfilled the obligation under the terms of the agreement. Monetary gold, however, cannot be created and extinguished in this way; hence, it enters and leaves the System through the other changes in the volume of assets account. Also recorded here are the effects of events not anticipated when the terms of financial claims were set.

Table 12.3: The other changes in the volume of assets account – changes in assets due to external events

		Changes in assets	S11	S12	S13	S14	S15	S1	S2		
		Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
K1		Economic appearance of assets	26	0	7	0	0	33			33
K2		Economic disappearance of non-produced assets	- 9	0	- 2	0	0	- 11			- 11
K3		Catastrophic losses	- 5	0	- 6	0	0	- 11			
	AN1	Produced assets	- 5		- 4			- 9			- 9
	AN2	Non-produced assets			- 2			- 2			- 2
	AF	Financial assets/liabilities						0			0
K4		Uncompensated seizures	- 5	- 3	8	0	0	0			
	AN1	Produced assets	- 1		1			- 1			- 1
	AN2	Non-produced assets	- 4		4			- 4			- 4
	AF	Financial assets/liabilities		- 3	3			- 3			- 3
K5		Other changes in volume n.e.c.	1	1	0	2	0	4			
	AN1	Produced assets	1					1			1
	AN2	Non-produced assets						0			0
	AF	Financial assets/liabilities		1		2		3			3
K6		Changes in classification	6	0	- 6	0	0	0			
		Total other changes in volume	14	- 2	1	2	0	15			15
	AN1	Produced assets	- 2	- 2	- 3	0	0	- 7			- 7
	AN2	Non-produced assets	14	0	3	0	0	17			17
	AF	Financial assets	2	0	1	2	0	5			5
	AF8	Other accounts receivable/payable						0			0

Debt operations

12.37 There are a number of circumstances that may lead to reduction or cancellation of debt by other than normal repayment of liabilities. The most common instances are described below.

12.38 A debtor and creditor may become parties to a bilateral agreement (often referred to as "debt forgiveness") that a financial claim no longer exists. Such an agreement gives rise in the System to the recording of a capital transfer payable/receivable (recorded in the capital account at the time the debt forgiveness occurs) and the simultaneous extinction of the claim (recorded in the financial account). Debt forgiveness usually concerns government debt. Some taxes and social security contributions that government recognises as unlikely to be collected from the outset are excluded from tax and social security contribution receipts and so do not appear in the other changes in the volume of assets account.

12.39 Changes in claims resulting from debt assumption or rescheduling should be reflected in the financial account when the terms of the debt contract (maturity, interest rate, etc.) change, or when the institutional sector of the creditor or debtor changes, as these are considered new contractual arrangements. However, all other changes in claims resulting from write-offs and write-downs are excluded from the financial account because there is no mutual agreement between the parties. Specifically, a creditor may recognize that a financial claim can no longer be collected because of bankruptcy, liquidation or other factors and he may remove the claim from his balance sheet. This recognition (by the creditor) should be accounted for in the other changes in volume of assets account. (The corresponding liability must also be removed from the balance sheet of the debtor to maintain balance in the accounts of the total economy.)

12.40 Most commercial situations where the impossibility of debt collection is recognised are treated as unilateral cancellation of debt. Unilateral cancellation of a financial claim by a debtor (debt repudiation) is not recognized in the System. Write-downs that reflect the actual market values of financial assets should be accounted for in the revaluation account. However, changes in value that are imposed solely to meet regulatory, supervisory or accounting requirements do not reflect the actual market values of those financial assets and should not be recorded in the System.

12.41 Another debt-related operation that raises questions as to how it should be recorded in the System relates to debt defeasance. Debt defeasance allows a debtor (whose debts are generally in the form of debt securities and loans) to remove certain liabilities from the balance sheet by pairing irrevocably assets of equal value to the liabilities. Subsequent to the defeasance, neither the assets nor the liabilities are included in the balance sheet of the debtor, nor, frequently, need they be reported for statistical purposes. Defeasance may be carried out either by placing the paired assets and liabilities in a trust account within the institutional unit concerned, or by transferring them to another institutional unit. In the former case, no entry is recorded for defeasance and the assets and liabilities will not be excluded from the balance sheet of the unit. In the latter case, the transactions by which the assets and liabilities are moved to the second institutional unit are recorded in the financial account of the units concerned and reported in the balance sheet of the unit that holds the assets and liabilities. Therefore, debt defeasance as such never results in liabilities being removed from the System, although it sometimes leads to a change in the institutional unit that reports those liabilities.

Table 12.3: The other changes in the volume of assets account – changes in liabilities and net worth due to external events

		Changes in liabilities and net worth								
		S11	S12	S13	S14	S15	S1	S2		
	Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
K1	Economic appearance of assets									
K2	Economic disappearance of non-produced assets									
K3	Catastrophic losses									
AN1	Produced assets									
AN2	Non-produced assets									
AF	Financial assets/liabilities									
K4	Uncompensated seizures									
AN1	Produced assets									
AN2	Non-produced assets									
AF	Financial assets/liabilities									
K5	Other changes in volume n.e.c.	- 4	2	0	0	0	- 2			
AN1	Produced assets									
AN2	Non-produced assets									
AF	Financial assets/liabilities	- 4	2				- 2			
K6	Changes in classification						0			
	Total other changes in volume	- 4	2	0	0	0	- 2			
AN1	Produced assets									
AN2	Non-produced assets									
AF	Financial assets	- 3	2	- 1	0	0	- 2			- 2
AF8	Other accounts receivable/payable									
	Changes in net worth due to other changes in volume of assets	17	- 4	2	2	0	17			

Creation and exhaustion of financial derivatives

12.42 Financial derivatives appear in the financial account when an agreement is reached between the two parties concerned. Employee stock options are similarly recorded in the same account at the grant date. They then may be subject to transactions in the financial account. When the agreement described in the derivative is activated, or it lapses because the time period is exhausted, it is removed from the balance sheet of the holder by a negative entry in the other changes in the volume of assets account.

3. The effect of external events on the value of assets (K3, K4, K5)

12.43 There are three principal causes of the reduction in value of an asset, or even its total disappearance, that are not related to the nature of the asset but to conditions prevailing in the economy that impact either the value or ownership of assets. These are catastrophic losses, uncompensated seizures and other volume changes of assets. Each is discussed below. Table 12.3 shows an expansion of table 12.1 to include entries for these events.

Catastrophic losses (K3)

12.44 The volume changes recorded as catastrophic losses in the other changes in the volume of assets account are the result of large scale, discrete, and recognizable events that may destroy assets within any of the asset categories. Such events will generally be easy to identify. They include major earthquakes, volcanic eruptions, tidal waves, exceptionally severe hurricanes, drought and other natural disasters; acts of war, riots and other political events; and technological accidents such as major toxic spills or release of radioactive particles into the air. Included here are such major losses as deterioration in the quality of land caused by abnormal flooding or wind damage; destruction of cultivated assets by drought or outbreaks of disease; destruction of buildings, equipment or valuables in forest fires or earthquakes.

12.45 Catastrophic losses of financial assets are less common but where evidence of ownership depends on written records and these records are destroyed, it may not be possible to re-establish ownership. Accidental destruction of currency or bearer securities may result from a natural catastrophe or political events.

Uncompensated seizures (K4)

12.46 Governments or other institutional units may take possession of the assets of other institutional units, including non-resident units, without full compensation for reasons other than the payment of taxes, fines, or similar levies. If the compensation falls substantially short of the values of the assets as shown in the balance sheet, the difference should be recorded as an increase in assets for the institutional unit doing the seizing and a decrease in assets for the institutional unit losing the asset under the entry for uncompensated seizures of assets

Table 12.4: The other changes in the volume of assets account – changes in assets due to changes in classification

	Changes in assets	S11	S12	S13	S14	S15	S1	S2		
	Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
K1	Economic appearance of assets	26	0	7	0	0	33			33
K2	Economic disappearance of non-produced assets	- 9	0	- 2	0	0	- 11			- 11
K3	Catastrophic losses	- 5	0	- 6	0	0	- 11			
K4	Uncompensated seizures	- 5	- 3	8	0	0	0			
K5	Other changes in volume n.e.c.	1	1	0	2	0	4			
K6	Changes in classification	6	0	- 6	0	0	0			
K61	Changes in sector classification and structure	6	0	- 6	0	0	0			
AN1	Produced assets	3		- 3			0			0
AN2	Non-produced assets	1		- 1			0			0
AF	Financial assets	2		- 2			- 2			- 2
K62	Changes in classification of assets and liabilities	0	0	0	0	0	0			0
AN1	Produced assets		- 2				- 2			- 2
AN2	Non-produced assets	0	0	0			0			0
AF	Financial assets	0	2	0			2			2
	Total other changes in volume	14	- 2	1	2	0	15			15
AN1	Produced assets	- 2	- 2	- 3	0	0	- 7			- 7
AN2	Non-produced assets	14	0	3	0	0	17			17
AF	Financial assets	2	0	1	2	0	5			5
AF8	Other accounts receivable/payable						0			0

12.47 It should be noted that foreclosures and repossessions of goods by creditors are not treated as uncompensated seizures. They are treated as transactions, specifically as disposals by debtors and acquisitions by creditors, because, explicitly or by general understanding, the agreement between debtor and creditor provided this avenue of recourse.

Other changes in volume n.e.c. (K5)

12.48 The value of a fixed asset is continually reduced by the consumption of fixed capital until the asset is disposed of or has no remaining value. It is possible, though, for the assumptions underlying the calculation of consumption of fixed capital to be mistaken and when this is so, corrections need to be made in the other changes in the volume of assets account. Similarly, if the assumption about the rate of shrinkage of inventories is mistaken, this should also be corrected in the other changes in the volume of assets account. The financial assets and liabilities that can be affected by volume change are some of the reserves for insurance, pension and standardised guarantee schemes.

Fixed assets

12.49 The calculation of the consumption of fixed capital reflects an assumption about normal rates of physical deterioration, obsolescence and accidental damage. Each of these assumptions may prove to be faulty. In that case, an adjustment in the other changes in the volume of assets.

account must be made. In principle, revised assumptions, reflecting the new circumstances, should then be used to calculate consumption of fixed capital for the remainder of the asset's useful life. If this is not done, continual adjustment in the other changes in the volume of assets account is necessary and the measure of net value added in subsequent years is over-stated

12.50 Physical deterioration may include the effect of unforeseen environmental degradation on fixed assets. Entries must, therefore, be made in the other changes in the volume of assets account for the decline in the value of the fixed assets from, for example, the effects of acidity in the air and rain on building surfaces or vehicle bodies.

12.51 The introduction of improved technology such as improved models of the asset or of a new production process that no longer requires the asset may lead to unforeseen obsolescence. In consequence, the amount included for their previously expected obsolescence may fall short of the actual obsolescence.

12.52 The amount included for normally expected damage may fall short of the actual damage. For the economy as a whole, this difference should normally be small; for individual units this difference may be significant and may fluctuate in sign. Adjustments must therefore be made in the other changes in the volume of assets account for the decline in the value of the fixed assets due to these events. These losses are larger than normal, but are not on a scale sufficiently large to be considered catastrophic.

12.53 As explained in chapter 10, costs of ownership transfer should be written off over the expected time the asset will be in the possession of the purchaser. If the asset is disposed of before the costs of ownership transfer are completely written off, the remainder should also be recorded in the other changes in the volume of assets account.

12.54 It is possible that the initial assumptions on any or all of these conditions were over-cautious. If that proves to be so, then an upward revision to the value of the asset should be made rather than a downward one.

Table 12.4: The other changes in the volume of assets account – changes in liabilities and net worth due to changes in classification

		Changes in liabilities and net worth								
		S11	S12	S13	S14	S15	S1	S2		
	Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
K1	Economic appearance of assets									
K2	Economic disappearance of non-produced assets									
K3	Catastrophic losses									
K4	Uncompensated seizures									
K5	Other changes in volume n.e.c.	- 4	2	0	0	0	- 2			
K6	Changes in classification						0			
K61	Changes in sector classification and structure						0			
AN1	Produced assets						0			
AN2	Non-produced assets						0			
AF	Financial assets	1		- 1			0			
K62	Changes in classification of assets and liabilities						0			
AN1	Produced assets						0			
AN2	Non-produced assets						0			
AF	Financial assets						0			0
	Total other changes in volume	- 4	2	0	0	0	- 2			
AN1	Produced assets									
AN2	Non-produced assets									
AF	Financial assets	- 3	2	- 1	0	0	- 2			- 2
AF8	Other accounts receivable/payable									
	Changes in net worth due to other changes in volume of assets	17	- 4	2	2	0	17			

12.55 Production facilities with long construction periods may cease to have an economic rationale before they are complete or are put into service. For example, a nuclear power plant or industrial site may never be put into service. When the decision to abandon is made, the value of the fixed asset (or in some case, work-in-progress inventories, as explained in chapter 10), as recorded in the balance sheet should be written off in the other changes in the volume of assets account.

Exceptional losses in inventories

12.56 Exceptional losses from fire damage, from robberies, from insect infestation of grain stores, from an unusually high level of disease in livestock, etc., should be recorded here. In this context, exceptional losses indicate that the losses are not only large in value but also irregular in occurrence. Even very large losses, if they occur regularly, should be taken into account when calculating the change in inventories calculated for entry in the capital account as explained in chapter 10.

Life insurance and annuities entitlements

12.57 For an annuity, the relationship between premiums and benefits is usually determined when the contract is entered into, taking account of mortality data available at that time. Any subsequent changes will affect the liability of the annuity provider towards the beneficiary and the consequences are recorded here.

Pension entitlements

12.58 The changes in the volume of reserves for pension entitlements apply to defined benefit schemes, those where the pension to be provided is determined wholly or in part by a formula. No such adjustments are needed for defined contribution schemes where the benefits are determined solely in terms of the investment earnings on contributions fed into the scheme.

12.59 Under a defined benefit scheme, pension entitlements, like annuities, depend critically on demographic assumptions about expected life length. They also depend on the terms of the pension arrangement between the employer and employee, and any change in them affects the size of the entitlements due from the pension provider to the future pensioner. Such changes include changes to the retirement age, differences between payments for men and women, the formula by which the level of the future benefit is determined and so on.

12.60 Pension entitlements may be calculated by one of two formulae, according to an accrued benefit obligation (ABO) or a projected benefit obligation (PBO). An ABO relates only to service to date. It estimates what the pension provider would have to pay the future pensioner if he left the scheme at the date in question and his pension entitlements were frozen immediately. A PBO is based on simulations that estimate how much longer, on average, an individual will remain with the current employer and what real wage increases he will receive through promotions or pay increases. This estimate of the ultimate pension obligation is then prorated to the time actually spent in employment to date. A PBO is always higher than the ABO, the gap being highest at inception and gradually converging until they become equal at retirement.

Table 12.5: The other changes in the volume of assets account – changes in assets by type of asset

	Changes in assets									
		S11	S12	S13	S14	S15	S1	S2		
	Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
	Total other changes in volume	14	- 2	1	2	0	15			15
AN1	Produced assets	- 2	- 2	- 3	0	0	- 7			- 7
AN11	Fixed assets	1		- 3			- 2			- 2
AN12	Inventories	- 3					- 3			- 3
AN13	Valuables		- 2				- 2			- 2
AN2	Non-produced assets	14	0	3	0	0	17			17
AN21	Natural resources	10	0	1	0	0	11			11
AN22	Contracts, leases and licences	4		2			6			6
AN23	Goodwill and marketing assets	0					0			0
AF	Financial assets	2	0	1	2	0	5			5
AF1	Monetary gold and SDRs		7				7			7
AF2	Currency and deposits						0			0
AF3	Debt securities		- 3	3			0			0
AF4	Loans		- 4				- 4			- 4
AF5	Equity and investment fund shares/units	2		- 2			0			0
AF6	Insurance, pension and standardised guarantee schemes				2		2			2
AF7	Financial derivatives and employee stock options						0			0
AF8	Other accounts receivable/payable						0			0

12.61 If total entitlements are based on ABOs, and the structure of the population covered by the schemes changes in terms of age structure, the expected remaining working time and the expected level of promotions, then adjustments to the total level of entitlements must be made to take this into account. Similarly, if the demographic expectations of the work force change, PBO estimates may also have to be adjusted. However, while PBO adjustments may lead to an increase or decrease in total entitlements, adjustments to ABO based estimates cannot led to a decrease.

Provisions for calls under standardised guarantee schemes

12.62 If standardised guarantees are provided on a purely commercial basis, the provisions for calls will be covered by the fees paid and investment earnings on them and possible recoveries from the debtor in default. However, government often underwrites such schemes. When it does so, a provision should be entered in the government accounts for the expected excess of calls under the scheme over any fees received, investment income or recoveries made. If the guarantees cover a long period and there is provision for government to claim assets in the case of default, this expected excess should be calculated on the basis of the net present value of calls to be made under the scheme. An entry is required whenever a new scheme is introduced or a significant change to the expected level of calls is recognised, beyond what will be recovered by fees or other means.

4. Changes in classifications (K6)

12.63 The other changes in the volume of assets account records changes in assets and liabilities that reflect nothing more than changes in the classification of institutional units among sectors, changes in the structure of institutional units and changes in the classification of assets and liabilities. Table 12.4 shows an expansion of table 12.1 to include the entries for changes in classification.

Changes in sector classification and structure (K61)

12.64 Reclassifying an institutional unit from one sector to another transfers its entire balance sheet. For example, if an unincorporated enterprise becomes more financially distinct from its owner and takes on the characteristics of a quasi-corporation, it and its balance sheet move from the household sector to the non-financial corporations sector; or if a financial corporation is newly authorized to take deposits, it may be reclassified from "other financial intermediaries" to "other deposit-taking corporations".

12.65 If a household moves from one economy to another, taking all its possessions (including financial assets) with it, they are also recorded under changes in classifications and structures.

12.66 Chapter 21 discusses the flows to be recorded when there is corporate restructuring, either when two corporations merge, when one is taken over by another group or when one corporation is split into two or more units. Most of the resulting financial consequences are recorded as transactions but some may be recorded as other volume changes. Chapter 21 also discusses the implications of nationalisation and privatisation, describing when the consequences are treated as transactions and when as other volume changes including reclassification by sector

Table 12.5: The other changes in the volume of assets account – changes in liabilities and net worth by type of asset

		Changes in liabilities and net worth								
		S11	S12	S13	S14	S15	S1	S2		
	Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
	Total other changes in volume	- 4	2	0	0	0	- 2			
AN1	Produced assets									
AN11	Fixed assets									
AN12	Inventories									
AN13	Valuables									
AN2	Non-produced assets									
AN21	Natural resources									
AN22	Contracts, leases and licences									
AN23	Goodwill and marketing assets									
AF	Financial assets	- 3	2	- 1	0	0	- 2			- 2
AF1	Monetary gold and SDRs									
AF2	Currency and deposits									
AF3	Debt securities									
AF4	Loans	- 3		- 1			- 4			- 4
AF5	Equity and investment fund shares/units									
AF6	Insurance, pension and standardised guarantee schemes		2				2			2
AF7	Financial derivatives and employee stock options									
AF8	Other accounts receivable/payable									
	Changes in net worth due to other changes in volume of assets	17	- 4	2	2	0	17			

12.67 Reclassification is needed as a result of trading in securities. When unit A sells a security to unit B, A has a liability and B an asset. If B now sells the same asset to unit C, the transaction between B and C is recorded in the financial account as the sale of a security. Although A is not involved in the sale and purchase of the security between B and C, A's balance sheet is affected as the liability originally owed to B is now owed to C. This reclassification is shown in the other changes in the volume f assets account.

Changes in classification of assets and liabilities (K62)

12.68 An asset may appear under one heading in the opening balance sheet and under another in the closing balance sheet. Since transactions in assets must be registered as an increase in holding by one party and a decrease in the holding of the same asset by another, the process of change of classification must be recorded in the other changes in the volume of assets account. The asset may be first recorded as a transaction under the original classification and then recorded as changing its classification in the balance sheet of the new owner. Alternatively, it may be shown first as a reclassification by the first owner and then as a transaction under its new classification. If the change in classification leads to a change in value, it is treated as a quality change, and thus a change in volume, as described earlier under the discussion on economic appearance and disappearance. The choice between whether to reclassify and then record transactions or vice versa depends on the nature of the transactors and the question of whether the original or new owner benefits from the change in price. Some examples of reclassifications are described below.

Sale and reclassification of land and buildings

12.69 Unit A sells farm land to unit B, which uses it to build houses on. If A acquires planning permission before selling the land it should be registered as a change in classification in A's accounts (with a probable gain in value to be recorded as an other volume change also in A's accounts), and then a sale of building land to B. If B acquires planning permission after the sale is complete, then it is farm land that is sold and B records a change of classification (and possibly an other volume change) in its books.

12.70 Similar considerations apply to buildings if they are converted from a dwelling to commercial premises or vice versa in response to official designation about the allowed purpose of a building in that location. A conversion resulting solely from new investment in a previous building is not an other change in the volume of the asset but the result of gross fixed capital formation.

Changes of classification involving inventories.

12.71 In all instances, work-in-progress needs to be reclassified to finished goods prior to sale. Some animals treated as fixed capital because they are kept as dairy stock or for their fleece may be slaughtered for meat at the end of their productive lives. In this case, they should in principle be reclassified from fixed capital to inventories when they cease to yield repeat products. If this is not practicable, or deemed too fastidious, then some of the source of meat should be accounted for by a reduction in fixed capital rather than a withdrawal from inventories. In principle, reclassification

from one type of inventory to another or from fixed capital to inventories, should not involve a change in value. If at the time of conversion the previous valuation is different from the appropriate new valuation, an entry in the other changes in the volume of assets account is recorded under economic appearance or disappearance as appropriate. If this is found to be happening systematically, the valuation techniques for inventories should be re-examined.

5. Summarising other volume changes

12.72 Tables 12.2 to 12.4 show details of other volume changes for each type of change with details for each asset as a second level of classification. The information there can be aggregated by type of assets, regardless of the cause for the volume change, as shown in table 12.5. This is the form in which information from the other volume change account feeds into the reconciliation between opening and closing balance sheets.

C. The revaluation account

1. Different holding gains and losses concepts

12.73 The revaluation account, shown in table 12.6, records the holding gains or losses accruing during the accounting period to the owners of financial and non-financial assets and liabilities. The first entries relate to nominal holding gains and losses which are then decomposed into neutral holding gains and real holding gains. Holding gains or losses on assets are recorded on the left-hand side of the account and those on liabilities on the right-hand side.

12.74 ***The nominal holding gain on a non-financial asset is the value of the benefit accruing to the owner of that asset as a result of a change in its price over a period of time. The nominal holding gain on a financial asset is the increase in value of the asset, other than transactions in the assets including the accrual of interest over a period of time and other changes in the volume of assets. The holding gain on a liability is the increase in value of the liability, other than transactions in the assets including the accrual of interest, over a period of time but with the sign reversed.*** A nominal holding gain that is negative is referred to as a holding loss. A positive holding gain, whether due to an increase in the value of a given asset or a reduction in the value of a given liability, increases the net worth of the unit in question. Conversely, a holding loss reduces the net worth of the unit in question, whether due to a reduction in the value of a given asset or an increase in the value of a given liability.

12.75 As well as the absolute change in value of an asset, it is interesting to know how the change in value compares with a general measure of inflation. When the value of an asset rises over a given period of time by more than the general price level, the asset can be exchanged for a greater volume of the goods, services and assets covered by the general price index at the end of the period than at the beginning. The increase that preserves exactly the same volume of goods and services is called a neutral holding gain. ***A neutral holding gain (loss) over a period is the increase (decrease) in the value of an asset that would be required, in the absence of transactions and other changes in the volume of assets, to maintain command over the same amount of goods and services as at the beginning of the period.***

12.76 The difference between the nominal holding gain or loss and the neutral holding gain or loss for the same asset over the same time period is called the real holding gain or loss. If the value of the asset increases faster than the neutral holding gain, then there is a real holding gain. If the value of the asset does not increase as fast as the overall increase in prices, or does not increase at all, the owner of the asset registers a real holding loss. ***A real holding gain (loss) is the amount by which the value of an asset increases (decreases) over the neutral holding gain for the period, in the absence of transactions and other changes in the volume of assets.*** Nominal, neutral and real holding gains, and the interrelationships between them are explained more fully in the following sections.

12.77 The balancing item in the revaluation account is described as ***changes in net worth due to nominal holding gains/losses. It is defined as the algebraic sum of the positive or negative nominal holding gains on all the assets and liabilities of an institutional unit.*** Just as nominal holding gains are decomposed into neutral and real holding gains, so changes in net worth due to nominal holding gains may be decomposed into changes in net worth due to neutral holding gains/losses and changes in net worth due to real holding gains/losses. The latter is an item of considerable analytic interest.

12.78 In order to simplify the terminology and exposition, holding losses will not usually be referred to explicitly unless the context requires it. The term "holding gains" is used to cover both holding gains and losses on the clear understanding that holding gains may be negative as well as positive. Similarly, the term "assets" is used collectively to cover both assets and liabilities, unless the context requires liabilities to be referred to specifically.

12.79 Holding gains are sometimes described as "capital gains". The term "holding gain" is widely used in business accounting and is preferred here because it emphasizes the fact that holding gains accrue purely as a result of holding assets over time without transforming them in any way. Holding gains include not only gains on "capital" such as fixed assets, land and financial assets but also gains on inventories of all kinds of goods held by producers, including work-in-progress, often described as "stock appreciation". For most financial assets, a holding gain experienced by one unit is matched, in whole or in part, by a holding loss for the unit holding the counterpart liability. This is not so for non-financial assets as there are no non-financial liabilities.

12.80 When an asset whose value has increased because of a nominal holding gain is sold or otherwise disposed of, the holding gain is said to be realised. If the asset is retained by the existing owner, the holding gain is unrealised. In common usage, a realised gain is usually understood as the gain realised over the entire period over which the asset is owned or liability is outstanding whether this period coincides with the accounting period or not. Within the System, however, all holding gains and losses are measured only from the start of the accounting period. ***A holding gain (loss) is realised when an asset that has increased (decreased) in value due to holding gains (losses) since the beginning of the accounting period is sold, redeemed, used or otherwise disposed of, or a liability incorporating a holding gain or loss is repaid. An unrealised gain is one accruing on an asset that is still owned or a liability that is still outstanding at the end of the accounting period.*** It follows that the nominal holding gain or loss on an asset is the sum of the realised and unrealised holding gain or loss for the period in question.

Nominal holding gains

12.81 It is useful to distinguish four different situations giving rise to nominal gains and the methods of valuation to be employed in each case. For clarity of exposition, it is assumed for the moment that there are neither transactions nor other changes in volume intervening between the two dates mentioned.

a. An asset held throughout the accounting period: the nominal holding gain accruing during the accounting period is equal to the closing balance sheet value minus the opening balance sheet value. These values are the estimated values of the assets if they were to be acquired at the times the balance sheets are drawn up. The nominal gain is unrealised;

b. An asset held at the beginning of the period that is sold during the period: the nominal holding gain accruing is equal to the actual or estimated disposal value minus the opening balance sheet value. The nominal gain is realised;

c. An asset acquired during the period and still held at the end of the period: the nominal holding gain accruing is equal to the closing balance sheet value minus the actual, or estimated, acquisition value of the asset. The nominal gain is unrealised;

d. An asset acquired and disposed of during the accounting period: the nominal holding gain accruing is equal to the actual, or estimated, disposal value minus the actual, or estimated, acquisition value. The nominal gain is realised.

Table 12.6: Revaluation account – changes in assets

Revaluation account
Changes in assets

		Other flows	S11 Non-financial corporations	S12 Financial corporations	S13 General government	S14 Households	S15 NPISHs	S1 Total economy	S2 Rest of the world account	Goods and services account	Total
Nominal holding gains and losses	*AN*	Non-financial assets	144	4	44	80	8	280			280
	AN1	Produced assets	63	2	21	35	5	126			126
	AN11	Fixed assets	58	2	18	28	5	111			111
	AN12	Inventories	4		1	2		7			7
	AN13	Valuables	1		2	5		8			8
	AN2	Non-produced assets	81	2	23	45	3	154			154
	AN21	Natural resources	80	1	23	45	3	152			152
	AN22	Contracts, leases and licences	1	1				2			2
	AN23	Goodwill and marketing assets									
	AF	Financial assets/liabilities	8	57	1	16	2	84	7		91
	AF1	Monetary gold and SDRs		11	1			12			12
	AF2	Currency and deposits						0			0
	AF3	Debt securities	3	30		6	1	40	4		44
	AF4	Loans						0			0
	AF5	Equity and investment fund shares/units	5	16		10	1	32	3		35
	AF6	Insurance, pension and standardised guarantee schemes						0			0
	AF7	Financial derivatives and employee stock options						0			0
	AF8	Other accounts receivable/payable						0			0
Neutral holding gains	*AN*	Non-financial assets	101	3	32	56	6	198			198
	AN1	Produced assets	60	2	20	34	5	121			121
	AN11	Fixed assets	58	2	18	28	5	111			111
	AN12	Inventories	1		1	2		4			4
	AN13	Valuables	1		1	4		6			6
	AN2	Non-produced assets	41	1	12	22	1	77			77
	AN21	Natural resources	40	1	12	22	1	76			76
	AN22	Contracts, leases and licences	1					1			1
	AN23	Goodwill and marketing assets									
	AF	Financial assets/liabilities	18	71	8	36	3	136	12		148
	AF1	Monetary gold and SDRs		14	2			16			16
	AF2	Currency and deposits	8		3	17	2	30	2		32
	AF3	Debt securities	2	18		4	1	25	3		28
	AF4	Loans	1	24	3			28	1		29
	AF5	Equity and investment fund shares/units	3	14		9		26	2		28
	AF6	Insurance, pension and standardised guarantee schemes	1	1		5		7	1		8
	AF7	Financial derivatives and employee stock options						0			0
	AF8	Other accounts receivable/payable	3			1		4	3		7
Real holding gains and losses	*AN*	Non-financial assets	43	1	12	24	2	82			82
	AN1	Produced assets	3	0	1	1	0	5			5
	AN11	Fixed assets	0	0	0	0	0				
	AN12	Inventories	3	0	0	0	0	3			3
	AN13	Valuables	0	0	1	1	0	2			2
	AN2	Non-produced assets	40	1	11	23	2	77			77
	AN21	Natural resources	40	0	11	23	2	76			76
	AN22	Contracts, leases and licences	0	1	0	0	0	1			1
	AN23	Goodwill and marketing assets									
	AF	Financial assets/liabilities	- 10	- 14	- 7	- 20	- 1	- 52	- 5		- 57
	AF1	Monetary gold and SDRs	0	- 3	- 1	0	0	- 4	0		- 4
	AF2	Currency and deposits	- 8	0	- 3	- 17	- 2	- 30	- 2		- 32
	AF3	Debt securities	1	12	0	2	0	15	1		16
	AF4	Loans	- 1	- 24	- 3	0	0	- 28	- 1		- 29
	AF5	Equity and investment fund shares/units	2	2	0	1	1	6	1		7
	AF6	Insurance, pension and standardised guarantee schemes	- 1	- 1	0	- 5	0	- 7	- 1		- 8
	AF7	Financial derivatives and employee stock options	0	0	0	0	0				
	AF8	Other accounts receivable/payable	- 3	0	0	- 1	0	- 4	- 3		- 7

Table 12.6: Revaluation account – changes in liabilities and net worth

Revaluation account

Changes in liabilities and net worth

			S11	S12	S13	S14	S15	S1	S2		
		Other flows	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
Nominal holding gains and losses	*AN*	Non-financial assets									
	AN1	Produced assets									
	AN11	Fixed assets									
	AN12	Inventories									
	AN13	Valuables									
	AN2	Non-produced assets									
	AN21	Natural resources									
	AN22	Contracts, leases and licences									
	AN23	Goodwill and marketing assets									
	AF	Financial assets/liabilities	18	51	7	0	0	76	3		79
	AF1	Monetary gold and SDRs									
	AF2	Currency and deposits									
	AF3	Debt securities	1	34	7			42	2		44
	AF4	Loans									
	AF5	Equity and investment fund shares/units	17	17				34	1		35
	AF6	Insurance, pension and standardised guarantee schemes									
	AF7	Financial derivatives and employee stock options									
	AF8	Other accounts receivable/payable									
		Changes in net worth due to nominal holding gains/losses	134	10	38	96	10	288	4		292
Neutral holding gains	*AN*	Non-financial assets									
	AN1	Produced assets									
	AN11	Fixed assets									
	AN12	Inventories									
	AN13	Valuables									
	AN2	Non-produced assets									
	AN21	Natural resources									
	AN22	Contracts, leases and licences									
	AN23	Goodwill and marketing assets									
	AF	Financial assets/liabilities	37	68	13	5	3	126	6		132
	AF1	Monetary gold and SDRs									
	AF2	Currency and deposits	1	26	2		1	30	2		32
	AF3	Debt securities	1	21	4			26	2		28
	AF4	Loans	18		7	3	1	29			29
	AF5	Equity and investment fund shares/units	14	14				28			28
	AF6	Insurance, pension and standardised guarantee schemes		7				7	1		8
	AF7	Financial derivatives and employee stock options									
	AF8	Other accounts receivable/payable	3			2	1	6	1		7
		Changes in net worth due to neutral holding gains/losses	82	6	27	87	6	208	6		214
Real holding gains and losses	*AN*	Non-financial assets									
	AN1	Produced assets									
	AN11	Fixed assets									
	AN12	Inventories									
	AN13	Valuables									
	AN2	Non-produced assets									
	AN21	Natural resources									
	AN22	Contracts, leases and licences									
	AN23	Goodwill and marketing assets									
	AF	Financial assets/liabilities	- 19	- 17	- 6	- 5	- 3	- 50	- 3		- 53
	AF1	Monetary gold and SDRs	0	0	0	0	0	0	0		0
	AF2	Currency and deposits	- 1	- 26	- 2	0	- 1	- 30	- 2		- 32
	AF3	Debt securities	0	13	3	0	0	16	0		16
	AF4	Loans	- 18	0	- 7	- 3	- 1	- 29	0		- 29
	AF5	Equity and investment fund shares/units	3	3	0	0	0	6	1		7
	AF6	Insurance, pension and standardised guarantee schemes	0	- 7	0	0	0	- 7	- 1		- 8
	AF7	Financial derivatives and employee stock options	0	0	0	0	0	0	0		0
	AF8	Other accounts receivable/payable	- 3	0	0	- 2	- 1	- 6	- 1		- 7
		Changes in net worth due to real holding gains/losses	52	4	11	9	4	80	- 2		78

12.82 The basic identity linking balance sheets, transactions, other volume changes and nominal holding gains may be expressed as follows:

the value of the stock of the asset in the opening balance sheet valued at the date of the opening balance sheet,

plus the value of the asset acquired, or disposed of, in transactions valued at the dates the transactions took place,

plus the value of other changes in the volume of the asset valued at the dates the other volume changes are recorded as taking place,

plus the value of the nominal holding gains on the asset,

equals the value of the stock of the asset in the closing balance sheet, valued at the date of the closing balance sheet.

The value of the assets and liabilities in the closing balance sheet incorporate the unrealised holding gains or losses. The value of transactions includes the value of realised holding gains or losses. It therefore follows that the correct value of the revaluation item must cover both realised and unrealised holding gains, in other words to be the full value of the nominal holding gains or losses.

12.83 Because the total nominal holding gains accruing on a particular category of asset over a given period of time include those accruing on assets acquired or disposed of during the accounting period as well as on assets that figure in the opening or closing balance sheets, it is not possible to calculate total holding gains from balance sheet data on their own. This can be demonstrated by means of a simple example.

12.84 Suppose a corporation owns 100 units of a stock (inventories or shares, for instance) at the beginning of the period and these are worth 20 each or 2 000 in total. At some point in the period, when the price per unit has risen to 22, another15 units are bought; a cost of 330. At the end of the period, when the price has risen to 25, some 15 units are sold for a value of 375. The value of the stock in the closing balance sheet represents 100 units valued at 25 each or 2 500. The increase in the balance sheet of 500 represents unrealised holding gain on the stock of 100. The value of the transactions represents a decrease in the balance sheet since the value of the stock added to the balance sheet (330) is less than the value of stock sold (375). The difference, -45, is a reduction in net worth brought about by realising some holding gains. The total nominal holding gain is thus 545 which satisfies the identity that the opening stock (2 000) plus the transactions (-45) plus the nominal holding gains (545) plus the other changes in the volume of assets (0) equals the value in the closing balance sheet (2 500).

12.85 In order to calculate total holding gains directly, therefore, it is necessary to keep records of all the assets acquired and disposed during the accounting period and the prices at which they were acquired and disposed of, as well as the prices and quantities of assets held at the beginning and end of the period. This sort of recording is more common for financial assets and liabilities than for non-financial assets.

12.86 Each of the five elements that make up the identity in paragraph 12.84 explaining the changes in the balance sheet can be calculated directly and independently of the other four elements. Thus, each element has the same status, none of them being defined residually as a balancing item. Nevertheless, it follows that if any four out of the five elements are calculated directly, the fifth can be estimated residually. For this reason, the identity can be exploited to estimate nominal holding gains from the other four elements, but without this implying that nominal holding gains are a balancing item in the System.

Neutral holding gains

12.87 In order to calculate the neutral holding gain on an asset, it is desirable to select a comprehensive price index covering as wide a range of goods, services and assets as possible. In practice, the price index for final expenditures is an acceptable choice for most countries, although other comprehensive indices could be used depending upon the availability of data. A comprehensive index of this kind, however, may be available only once a year, or at best quarterly, and after a significant lapse of time. As holding gains may accrue on assets held for only short periods of time, it may also be necessary to make use of an index that measures changes in prices monthly and that becomes available without too much delay. The consumer price index (CPI) usually meets these requirements and an acceptable procedure would be to use the CPI to interpolate and extrapolate movements in a more broadly based index in order to calculate neutral holding gains.

12.88 The neutral holding gain on an asset over a given period of time is equal to the value of the asset at the beginning of the period multiplied by the proportionate change in some comprehensive price index selected to measure the change in the general price level. Neutral holding gains can, therefore, easily be calculated for assets held throughout the accounting period that appear in both the opening and closing balance sheets. It is more difficult, however, to keep track of the neutral holding gains on assets that are acquired or disposed of during the accounting period unless the times at which the various acquisitions and disposals took place are known.

Real holding gains

12.89 The real holding gain on an asset is defined as the difference between the nominal and the neutral holding gain on that asset. The values of the real holding gains on assets thus depend on the movements of their prices over the period in question, relative to movements of other prices, on average, as measured by the general price index. An increase in the relative price of an asset leads to a positive real holding gain and a decrease in the relative price of an asset leads to a negative real gain, whether the general price level is rising, falling or stationary.

12.90 The nominal holding gains on domestic currency, deposits and loans denominated in domestic currency are always zero. During inflation, the neutral gains on such assets and liabilities must be positive and hence the real holding gains must be negative and equal in absolute value to the neutral gains. In other words, the real value of these assets declines both for the creditor and the debtor as a result of inflation. From the point of view of the debtor a reduction in the real value of a liability represents an increase in net worth expressed in real terms. In effect, there is an implicit transfer of real purchasing power from the creditor to the debtor equal in value to the negative real holding gain on the asset/liability. When such transfers are anticipated by creditors, correspondingly higher nominal rates of interest may be demanded on loans and offered on deposits to compensate for the expected transfers, or loans with fixed monetary values may be replaced by indexed loans.

12.91 As changes in relative prices may be either positive or negative, the owners of some assets benefit from real holding gains while the owners of other assets experience real holding losses. Real holding gains may lead to a significant redistribution of real net worth among institutional units, sectors and even countries, the extent of which depends on the amount of variation in the relative price changes taking place. While such variation may occur even when there is no general inflation, there are systematic effects that are associated with the general rate of inflation as a result of the decline in the real values of monetary assets and liabilities when the general price level is rising.

12.92 As real holding gains increase or decrease the purchasing power of the owners of assets, they exert an influence on their economic behaviour. Real holding gains are important economic variables in their own right as well as for purposes of analysing consumption or capital formation. It can be argued that real holding gains ought to be assimilated with income as defined in the System to obtain a more comprehensive measure of income, but there is no consensus on this. Apart from the practical difficulty of estimating real holding gains and losses, it is likely that their impact on economic behaviour is not the same as that of income received in cash or in kind. Nevertheless, it is clear that information on real holding gains needs to be made available to users, analysts and policy makers.

12.93 As real holding gains may be obtained residually by subtracting neutral from nominal holding gains, the feasibility of calculating real holding gains depends on the feasibility of calculating nominal and neutral gains.

2. Holding gains and losses on specific assets

Fixed assets

12.94 Nominal holding gains are calculated with reference to assets or liabilities that themselves remain qualitatively and quantitatively unchanged during the period over which the holding gain is measured. Thus, changes in the value of physical assets such as structures, equipment or inventories held by producers that are attributable to some physical or economic transformation of those assets over time, whether improvement or deterioration, are not counted as holding gains. In particular, the decline in the value of the fixed assets owned by producers due to their physical deterioration or normal rates of obsolescence or accidental damage is recorded as consumption of fixed capital and not as a negative holding gain.

12.95 Consumption of fixed capital should be calculated by valuing the opening and closing stock at the average price of the period precisely in order to ensure it excludes any holding gains. Often the price at the mid-point of the period is taken as the average price of the period. Under moderate rates of inflation this may be an acceptable approximation but is less so the higher the rate of inflation and under severe inflation is very misleading.

12.96 Nominal holding gains may occur on existing fixed assets either because of general inflation or because the price of the asset itself changes over time. When assets of the same kind are still being produced and sold on the market, an existing asset should be valued in the opening or closing balance sheet at the current purchaser's price of a newly produced asset less the accumulated consumption of fixed capital up to that time also calculated on the basis of the prices prevailing at the time the balance sheet is drawn up. When new assets of the same type are no longer being produced, the valuation of existing assets may pose difficult conceptual and practical problems. If broadly similar kinds of assets are still being produced, even though their characteristics may differ significantly from those of existing assets (for example, new models of vehicles or aircraft), it may be reasonable to assume that, if the existing assets were still being produced, their prices would have moved in the same way as those of new assets. However, such an assumption becomes questionable when the characteristics of new assets are much improved by technical progress. There is further discussion on this topic in the OECD manual on *Measuring Capital*.

Inventories

12.97 The estimation of nominal holding gains on inventories may be difficult because of lack of data on transactions or other volume changes in inventories. As explained in chapter 6, transactions in inventories of work-in-progress and finished goods may not be adequately recorded because they are internal transactions. Goods entering inventories can be regarded as being acquired by the owner of an enterprise from itself as producer, while goods leaving inventories can be regarded as being disposed of by the owner to the producer for use in production or for sale. These internal transactions should be valued at the prices prevailing at the times they take place. The value of withdrawals thus includes any holding gains on the inventories when stored and this ensures that the value of the holding gain is not included in output. However, as explained in paragraphs 6.139 and 6.140, when the storage of goods is essentially an extension of the process of production, the increase in the value of the goods that is due to this production is not to be counted as a nominal holding gain. In the case of goods for resale, the value of the goods when withdrawn from inventory should include the value of any holding gain or loss that has occurred while they were in store but not the value of any margin to be realised by the wholesaler or retailer. That is to say, goods withdrawn from inventories are valued at the prices prevailing at the time of withdrawal for goods in the same state as when the goods entered inventories (except for the storage case).

12.98 Other volume changes are likely to consist of inventories of goods destroyed as a result of exceptional events such as natural disasters (floods, earthquakes, etc.) or major fires. Recurrent losses of goods from inventories, such as losses due to regular wastage or pilfering, are treated in the same way as deliberate withdrawals. Nominal holding gains on inventories thus relate only to the level of inventories once both exceptional and recurrent losses on inventories have been taken into account.

12.99 Unless records are kept of the quantities of goods entering and leaving inventories and their prices at those times, it is not possible to measure the value of changes in inventories directly. As such records may not be available, it becomes necessary to try to deduce the value of changes in inventories from the value and quantities of the opening and closing inventories using methods that attempt to partition the difference between the values of the opening and closing stocks of assets into transactions and nominal holding gains. Such methods are only as good as the assumptions on which they are based. Estimating holding gains and losses based only on period end data involves two problematical assumptions. The first is that prices increase linearly throughout the period; the second is that the changes in volume of inventories increase or decrease linearly between opening and closing balance sheet. Both assumptions are improbable, especially in the case of seasonal products. It should also be noted that this is not only a problem for the accumulation accounts as the values of changes in inventories of inputs and outputs are needed in order to measure intermediate consumption, output and value added and hence all the balancing items of the System. In general, if these sorts of assumptions need to be made in order to derive holding gains and losses, they should be made over as short a period as possible. In particular, the aggregation of quarterly estimates of this type will be preferable to an annual estimate of the same type.

Valuables

12.100 The nature of valuables is that they are held as a store of value in the expectation that their value will increase over time. Any increase in value of an individual valuable is treated as a nominal holding gain. This may be partitioned into a neutral and a real holding gain as normal.

Financial assets and liabilities

12.101 Because it is not always appropriate to describe financial assets and liabilities as having a price, holding gains and losses appear to be treated differently for different categories though the same basic principles apply to all categories. Other changes in the volume of financial assets and liabilities are possible, as described in section B, but are generally ignored in what follows.

Monetary gold and SDRs

12.102 Because the price of gold is usually quoted in dollars, monetary gold is subject to nominal and real holding gains and losses because of changes in the exchange rate as well as in the price of gold itself.

12.103 Since the value of the SDR is based on a basket of four key currencies, the value of SDRs are always subject to nominal and real holding gains and losses. From time to time, new allocations of SDRs may be made; when this occurs the allocation is recorded as a transaction.

Currency

12.104 Domestic currency is not subject to any nominal holding gains or losses. It can be thought of as a fixed “quantity” of currency units (for example, one dollar) with a price that is always unity. However, although the nominal holding gains are zero, the neutral holding gains on currency are not. Under inflation, neutral holding gains are positive and so the associated real holding gains are negative and of an equal size.

Deposits and loans

12.105 Deposits and loans denominated in domestic currency also do not register nominal holding gains and losses for the same reasons as currency. There may be increases in the values of a loan or a deposit during an accounting period but this must be due to transactions including the addition of interest to the previous level of principal. As with currency, deposits and loans denominated in domestic currency register real holding losses of the same magnitude as their neutral holding gains.

Debt securities

12.106 Debt securities typically have market values and these market values change over time. However, not all of the changes in value are treated as holding gains and losses.

12.107 A bond is a security that gives the holder the unconditional right to a fixed money income or contractually determined variable money income over a specified period of time and (except in the case of perpetual bonds) the right also to a fixed sum as repayment of principal on a specified date or dates. Bonds are usually traded on markets and the holder of a bond may change several times during the life of the bond. The issuer of such a bond may sometimes be able to repay the principal outstanding at any time by purchasing it back in advance of the date on which it matures.

12.108 As explained in part 4 of chapter 17, when a bond is issued at a discount, including deep discounted and zero coupon bonds, the difference between its issue price and its face or redemption value when it matures measures interest that the issuer is obliged to pay over the life of the bond. Such interest is recorded as property income payable by the issuer of the bond and receivable by the holder of the bond in addition to any coupon interest actually paid by the issuer at specified intervals over the life of the bond. In principle, the interest accruing is treated as being simultaneously reinvested in the bond by the holder of the bond. It is, therefore, recorded in the financial account as the acquisition of additional value of the existing asset. Thus the gradual increase in the market price of a bond that is attributable to the accumulation of accrued, reinvested interest reflects a growth in the principal outstanding. It is essentially a quantum or volume increase and not a price increase. It does not generate any holding gain for the holder of the bond or holding loss for the issuer of the bond. The increases in value due to the accrual of interest are recorded in the distribution of primary income account and the financial account and not in the revaluation account (nor in the other changes in the volume of assets account).

12.109 The prices of fixed-rate marketable bonds also change, however, when the market rates of interest change, the prices vary inversely with the interest rate movements. The impact of a given interest rate change on the price of an individual bond is less, the closer the bond is to maturity. Changes in bond prices that are attributable to changes in market rates of interest constitute price and not quantum changes. They therefore generate nominal holding gains or losses for both the issuers and the holders of the bonds. An increase in interest rates generates a nominal holding gain for the issuer of the bond and an equal nominal holding loss for the holder of the bond, and vice versa in the case of fall in interest rates. Whenever the interest rate changes, the market value of the bond changes; this change in value is recorded as a revaluation. Within the System, the interest recorded due to the fact that the redemption date is nearer is calculated on the basis of the interest rate at the issue date. Over the whole of the life of the bond, therefore, the holding gains and losses are off-setting and total interest recorded is the difference between issue price and redemption price.

12.110 Prices of bonds may also change because of a change in the creditworthiness (up as well as down) of the issuer or guarantor. Such changes give rise to the same sorts of entries as changes in the interest rate. This is because the market price of the bond changes to reflect the market's view of the creditworthiness of the issuer. It does not imply that impairments to loans and deposits should be treated as revaluations. The appropriate treatment for impaired loans is discussed in paragraphs 13.65 to 67.

12.111 Nominal holding gains or losses may accrue on bills in the same way as for bonds. However, as bills are short-term securities with much shorter times to maturity, the holding gains generated by interest rate changes are generally much smaller than on bonds with the same face values.

Equity and investment fund shares

12.112 Corporations and investment funds may be direct investment enterprises, in which case, any undistributed earnings are shown as reinvested earnings in the distribution of primary income account and as reinvestment of earnings in the financial account. Reinvestment of earnings increases the value of equity and investment fund shares. For listed shares and investment fund shares and units, market prices exist and changes in the value other than via reinvested earnings are treated as holding gains and losses exactly as for inventories with no storage component or valuables.

12.113 For other forms of equity, holding gains are calculated in a manner similar to the way in which the value of the equity is calculated. For example, for a quasi-corporation where the value of other equity is derived as the balance of assets less liabilities, holding gain are calculated as the sum of holding gains on assets less the holding gains on liabilities.

Insurance, pension and standardised guarantees schemes

12.114 When the reserves and entitlements for insurance, pensions and standardised guarantees schemes are denominated in domestic currency, there are no nominal holding gains and losses just as there are none for currency or deposits and loans. The assets the financial institutions use to meet their commitments under these schemes do indeed benefit from holding gains, for example investments in equity and investment funds, but the liabilities towards the policy holders and beneficiaries change only as a result of transactions and other changes in the volume of assets.

Financial derivatives and employee stock options

12.115 Financial derivatives have quoted prices and thus register nominal holding gains and losses as for listed shares and investment fund shares and units. As explained in part 6 of chapter 17, employee stock options may also register nominal holding gains and losses.

Other accounts receivable/payable

12.116 Other accounts receivable/payable denominated in domestic currency do not register nominal holding gains and losses. All changes in value between the start and end of the accounting period are due to transactions, possibly including accrued interest. As with currency, there may be real holding gains equal in magnitude to the neutral holding losses under inflation.

Assets denominated in foreign currency

12.117 Residents may hold assets denominated in foreign currency just as non-residents may hold assets denominated in domestic currency. For balance sheet purposes, the value of an asset denominated in foreign currency is measured by its current value in foreign currency converted into the currency of the country in which its owner is resident at the mid-point of the bid and offer rate of the exchange rate on the balance sheet date. Nominal holding gains may therefore occur not only because the price of the asset in local currency changes but also because the exchange rate changes.

12.118 Neutral holding gains are calculated in the same way as for any other type of asset by calculating what the holding gains would have been if the prices of the assets, expressed in the domestic currency, had moved in the same way as the general internal price level. Real holding gains, again expressed in the domestic currency, can then be derived residually by subtracting the neutral from the nominal gains. If, in addition to the asset being denominated in foreign currency, either the creditor or debtor is non-resident, the real holding gains (losses) of the creditor need not be equal to the real holding losses (gains) of the debtor when the general rates of inflation are different in the two countries.

Electronic annex