Note by the editor:

In the 1993 SNA , asset accounts are only discussed in chapter 2. However, these are useful in making the links to the tables in chapter 26 linking SNA tables to monetary and financial statistics, integrating balance sheets with the information needed on capital stock of fixed capital and also to environmental accounting. I have therefore recast some of the material previously in section C of chapter 13 to bring in asset accounts explicitly and moved this to the introductory section of the chapter.

Section D describes tables of stocks with from whom to whom detail. This was initially be moved to chapter 26, but in fact there is so much duplication with the similar paragraphs moved from chapter 11, that much of it was deleted.

The annex to this chapter in the 1993 text is a list of the definitions of non-financial and financial assets. These have been dispersed throughout chapters 10 and 11 so that the asset concerned is defined when it is first elaborated. The abbreviated version of the definitions which were embodied in the text of chapter 13 have been removed to avoid confusion from slightly different formulations.

Text has been inserted discussing the ownership of assets to indicate on which sector's balance sheet the asset should appear. No such text exists in the 1993 version.

There are multiple consequences for the balance sheet arising from changes to both financial and non-financial assets. The major ones are the treatment of land, the valuation of unlisted equities and the entries under insurance, annuities, pension and standardized guarantee schemes. .

Non-performing loans intervene in the description of the balance sheet entries for loans.

A definition of own funds is now provided.

Anne Harrison

Chapter 12: Other Changes In Assets Accounts

A. Introduction

12.1. This chapter is concerned with the recording of changes in the values of assets, liabilities, and 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 consequences of transactions on net worth are recorded in the capital account and financial account. The value of assets is changed by consumption of fixed capital and by recurrent losses from inventories but these are treated as transactions and so do not appear in the other changes in assets account.

12.2. Although the entries relate to flows that are not transactions, they are not "residual" entries. Rather they serve to demonstrate significant changes to the value and composition of items in the balance sheet due to events that have important economic consequences.

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. The latter type may be subdivided into changes that affect the volume of assets and those that appear only because of changes in the level and structure of prices, which are reflected in holding gains and losses. All changes relating to holding gains and losses are included in the revaluation account. All other changes in the value of assets are treated as being due to a change in volume rather than prices and are recorded in the other changes in the volume of assets account.

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

B. 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. The structure 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, where non-financial assets, both produced and non-produced, and financial assets are all shown separately. The entries for changes in liabilities and the balancing item, change in net worth due to other changes in volume of assets, are on the right-hand side. The balancing item in the account is the sum of the entries for the various categories of changes recorded in the account.

Table 12.1 Other changes in the volume of assets account

Changes in assets

Other flows and balancing items	S.11 Non-financial corporations	S.12 Financial corporations	S.13 General government	S.14 Households	S.15 NPISHs	S.1 Total economy	Rest of the world account	Goods and services account	Total
Produced assets	0	0	3	0	0	3			3
Economic recognition of produced assets			3			3			3
Non-produced assets	17	0	2	0	0	19			19
Natural resources	16	0	2	0	0	18			
Entry of natural resources into the production boundary	22		4			26			26
Exit of natural resources from the production boundary	- 6		- 2			- 8			- 8
Contracts, leases and licences	3					3			
Initiation	4					4			
Cancellation and exhaustion	- 1					- 1			
Goodwill and marketing assets	- 2					- 2			
Amortization	- 2								
Financial assets/liabilities	0	0	0	0	0	0			0
Catastrophic losses	- 5	0	- 6	0	0	- 11			
Produced assets	- 5		- 4			- 9			- 9
Non-produced assets			- 2			- 2			- 2
Financial assets/liabilities						0			0
Uncompensated seizures	- 5	- 3	8	0	0	0			
Produced assets	- 1		1			- 1			- 1
Non-produced assets	- 4		4			- 4			- 4
Financial assets/liabilities		- 3	3			- 3			- 3
Other changes in volume n.e.c.	1	1	0	2	0	4			
Produced assets	1					1			1
Non-produced assets						0			0
Financial assets/liabilities		1		2		3			3
Changes in classification	6	0	- 6	0	0	0			
Produced assets	3	- 2	- 3	0	0	- 2			- 2
Changes in sector classification and structure	3		- 3			0			0
Changes in classification of assets and liabilities		- 2				- 2			- 2
Non-produced assets	1	0	- 1	0	0	0			0
Changes in sector classification and structure	1		- 1			0			0
Changes in classification of assets and liabilities	0	0	0			0			0
Financial assets/liabilities	2	2	- 2	0	0	2			2
Changes in sector classification and structure	2		- 2			- 2			- 2
Changes in classification of assets and liabilities		2				2			2
						0			0
Produced assets	- 2	- 2	- 3	0	0	- 7			- 7
Fixed assets	- 1		- 3			- 4			- 4
Inventories	- 1					- 1			- 1
Valuables		- 2				- 2			- 2
Non-produced assets	14	0	3	0	0	17			17
Natural resources	13	0	3	0	0	16			16
Contracts, leases and licences	3					3			3
Goodwill and marketing assets	- 2					- 2			- 2
Financial assets	2	0	1	2	0	5			5
Monetary gold and SDRs		7				7			7
Currency and deposits						0			0
Debt securities		- 3	3			0			0
Loans		- 4				- 4			- 4
Equity and investment fund shares/units	2		- 2			0			0
Insurance, pension and standardised guarantee schemes				2		2			2
Financial derivatives and employee stock options						0			0
Other accounts receivable/payable						0			0

									Changes in liabilities and net worth
	S.11	S.12	S.13	S.14	S.15	S.1			
Other flows and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
Produced assets									
Economic recognition of produced assets									
Non-produced assets									
Entry of natural resources into the production boundary									
Exit of natural resources from the production boundary									
Contracts, leases and licences									
Initiation									
Cancellation and exhaustion									
Goodwill and marketing assets									
Amortization									
Financial assets/liabilities									
Catastrophic losses									
Produced assets									
Non-produced assets									
Financial assets/liabilities									
Uncompensated seizures									
Produced assets									
Non-produced assets									
Financial assets/liabilities									
Other changes in volume n.e.c.									
Produced assets									
Non-produced assets									
Financial assets/liabilities	- 4	2				- 2			
Changes in classification									
Produced assets									
Changes in sector classification and structure									
Changes in classification of assets and liabilities									
Non-produced assets									
Changes in sector classification and structure									
Changes in classification of assets and liabilities									
Financial assets/liabilities	1		- 1			0			0
Changes in sector classification and structure	1		- 1			0			0
Changes in classification of assets and liabilities									
Produced assets									
Fixed assets									
Inventories									
Valuables									
Non-produced assets									
Natural resources									
Contracts, leases and licences									
Goodwill and marketing assets									
Financial assets	- 3	2	- 1			- 2			- 2
Monetary gold and SDRs									
Currency and deposits									
Debt securities									
Loans	- 3		- 1			- 4			- 4
Equity and investment fund shares/units									
Insurance, pension and standardised guarantee schemes		2				2			2
Financial derivatives and employee stock options									
Other accounts receivable/payable									
Changes in net worth due to other changes in volume of assets	17	- 4	2	2	0	17			

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. Some entrances and exits happen when naturally occurring assets, such as subsoil assets, gain economic value or become worthless. Other entrances and exits 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 financial assets for which there is neither an actual nor a notional liability.

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 events 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 appearance and disappearance of assets, then the effects of externalities on the value of assets and finally changes in the classification and structure of assets.

2. Appearance and disappearance of assets other than by transactions

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

(a) entries relating to recognition of produced assets;

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

(c) entries relating to contracts, leases and licences;

(d) changes in goodwill and marketing assets; and

(e) entries relating to financial assets.

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 X, they are objects, structures or sites of significant or special value. The capital account records the acquisition of valuables and historical monuments as newly produced goods or as imports, and it records transactions in existing goods already classified as valuables and historical monuments.

12.14. As 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. An entry for economic appearance of produced assets is shown in table 12.1 on the left-hand side of the account for general government, when the government's stock of fixed assets increases by 3, reflecting the recognition of the historical significance of a monument.

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 this recognition accompanies a sale of the asset from its previous owner to, say, the government, then there is a change of classification registered but there is no volume change to record in the other changes in assets account. However, if no such sale takes place and the reclassification simply leads to a change in value, this should be recorded in the other changes in volume of assets account.

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, a piece of jewellery might have been considered an ordinary good whose purchase would be included in household final consumption expenditure were it not to make its appearance as a valuable because it was made of precious metals or stones. Such an appearance would be recorded for the valuable in the other changes in the volume of assets account, even though it is immediately the subject of a transaction recorded in the capital account.

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. The definition of subsoil assets points to the other way in which economic appearance may occur, by change of the conditions. That is, reserves may be increased by the inclusion of deposits for which exploitation may have been 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. Table 12.1 shows an entry for natural growth of non-cultivated biological resources on the left-hand side of the account for general government, reflecting growth of 4 in, for example, natural forests owned by government.

12.20. In principle, natural growth should be recorded gross, and the depletion of these resources should be recorded as an economic disappearance, as described below. This recording would be consistent with the separate recording of acquisitions and disposals described, for example, 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 makes its appearance in the System, therefore, 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. Creation of land by reclaiming land from the sea by the construction of dykes is not treated as an other change in the volume of assets but the creation of a produced asset.

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 XVI, 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 counterpart 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.

Exit of natural resources from the asset boundary

12.24. In table 12.1, entries for depletion of natural economic assets are shown on the left-hand side of the accounts for non-financial corporations and general government, reflecting depletion of mineral reserves or other natural assets owned by non-financial corporations (-6) and by general government (-2).

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. In table 12.1 ~~,~~other economic disappearance of non-produced assets is illustrated by an entry of -1 on the left-hand side of the account for non-financial corporations, reflecting such events as revisions in estimated proven reserves.

Harvesting of uncultivated biological resources

12.27. In principle, 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 should be included here. One form of economic disappearance is depletion. Economic disappearance can take other forms as well, for example, reductions in the level of proven reserves that reflect changes in technology and relative prices or degradation of land and wildlife from improper agricultural practices.

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, demand for the resulting product or for legislative reasons, for example a moratorium on fish stocks to ensure their survival.

Quality changes in natural resources due to changes in economic uses

12.29. The changes recorded here are, the counterpart in value terms of the changes in classification, described ~~below~~. 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. Although this is a change in value, it is recorded in the changes in the volume of assets account because the change in value is not due to changes in relative prices or either category involved in the change in classification.

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, licences and leases

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 service contract relating to future services to be provided by a named individual or a permit to undertake some specific economic activity. Holding the operating lease, the resource lease, the service contract or the permit represents an asset for the holder only when two conditions hold

a. the current prevailing price for the use of the asset, provision of the service or permit 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.

12.32. In practice, it is recommended to try to record such assets only when they are realised. 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.

12.33. The value of the contract, licence or lease treated as an asset is equal to the net present value 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 goodwill and marketing assets

12.34. 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.

12.35. 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.

12.36. 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

12.37. Those 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. Those assets for which not even a notional liability exists, however, cannot be created and extinguished in this way; hence, they enter and leave 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.

Debt operations

12.38. There are a number of circumstances that may lead to reduction or cancellation~~,~~ by other than normal repayment~~,~~ of liabilities. The usual instances re described below.

12.39. A debtor and creditor may become parties to a bilateral agreement (often referred to as "debt forgiveness") that a financial claim no longer exists. Such an agreement gives rise in the 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).

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

12.41. 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, write-downs or write-offs that are imposed solely to meet regulatory or supervisory requirements and do not reflect the actual market values of those financial assets should not be recorded in the System.

12.42. Debt forgiveness usually concerns government debt~~; m~~ost commercial situations where the impossibility of debt collection is recognised are treated as unilateral cancellation of debt.

12.43. Another debt related operation that is allowed by generally accepted accounting principles in many countries and 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 (a) by placing the paired assets and liabilities in a trust account within the institutional unit concerned, or (b) they may be transferred to another statistical 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 statistical 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.

Creation and exhaustion of financial derivatives

12.44. Financial derivatives are first recorded in the other changes in the volume of assets account when an agreement is reached between the two parties concerned. Employee stock options are similarly recorded in the same account when the vesting date of the agreement is reached. 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 externalities on the value of assets

12.45. There are three principle 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.

Catastrophic losses

12.46. The volume changes recorded as catastrophic losses in the other changes in the volume of assets account are the result of large scale, discrete, and recognizable events that may destroy assets within any of the asset categories. Table 12.1 shows entries for catastrophic losses on the left-hand side of the accounts for general government and non-financial corporations, reflecting damage resulting from a major earthquake, for example. These catastrophic losses are shown for produced assets (fixed assets (-4) and inventories (-1)) held by non-financial corporations (-5 in all), for fixed produced assets held by general government (-1), and for natural resources, such as natural forests, held by general government (-2).

12.47. 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.

12.48. 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.

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

Uncompensated seizures

12.50. 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. The seizures of assets by governments or other institutional units may contravene national, or international, law. Such seizures are not treated as capital transfers recorded in the capital account.

12.51. 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 12.1 illustrates the recording of such uncompensated seizures when government seizes assets from corporations. The left-hand side of the account for general government records increases in holdings of produced fixed assets (1), natural resources (4) and debt securities (3). The left-hand side of the account for non-financial corporations records decreases in holdings of produced fixed assets (-1) and natural resources (-4), and the left-hand side of the account for financial corporations records decreases in holdings of debt securities (-3).

12.52. 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 volume changes in fixed assets and inventories

12.53. 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.

Fixed assets

12.54. 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 te 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.

12.55. 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 air and rain on building surfaces or vehicle bodies.

12.56. 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.

12.57. 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 is normally 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.

12.58. 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 reminder should also be recorded in the other changes in assets account.

12.59. 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.

12.60. Production facilities with long construction periods may cease to have an economic rationale before they are complete or are put into service. For example, some nuclear power plants and industrial sites, especially in formerly centrally planned economies or developing countries, 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 X), as recorded in the balance sheet should be written off in the other changes in the volume of assets account.

Exceptional losses in inventories

12.61. Exceptional losses from fire damage, from robberies, from insect infestation of grain stores, 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 X.

Other volume changes in financial assets and liabilities

12.62. The financial assets and liabilities that can be affected by volume change are those that have the nature of provisions. These are the reserves for insurance, pension and standardised guarantee schemes.

Non-life technical provisions

12.63. Insurance corporations may decide to augment (or possibly reduce) the balance coming from the excess of premiums over claims, redress a negative balance, by diverting some of heir own funds to these reserves. They are typically described as equalisation provisions.

Life insurance and annuities entitlements

12.64. 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.

12.65. The funding of life insurance claims depends critically on the investment returns earned by the insurance corporation over he period between the receipt of premiums and the time for paying claims. Often interim bonuses may be announced to the policy holders. These amounts must be paid regardless of the subsequent investment performance and tend to be smoother than the actual investment earnings. This gives rise to the need for provisions to be set aside by the insurance corporation; these provisions are typically described as equalisation provisions and provisions for bonuses and rebates.

Pension entitlements

12.66. These adjustments apply to defined ~~contribution~~ scheme those where the benefit is determined 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.

12.67. Under a defined ~~contribution~~ 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 the ~~terms of the pension schemes~~ affect 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 he future benefit is determined and so on.

12.68. 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 promotions he is likely to enjoy. 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.

12.69. 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

12.70. If standardised guarantees are provided on a purely commercial basis, the provisions for calls will be covered by the difference between the fees paid (and investment earnings on them). 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–. 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.

4. Changes in classifications and structure

12.71. 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.

Changes in sector classification and structure

12.72. 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".

12.73. Table 12.1 shows an example of such a change in sector classification, for example, when an unincorporated government enterprise becomes a public non-financial quasi-corporation and moves from general government to non-financial corporations. The entries for changes in sector classification and structure are shown on the left-hand side of the account for general government as decreases in holdings of produced fixed assets (-3), natural resources (-1), and equity and investment fund shares (-2); on the right-hand side of the account for general government there is a decrease in loan liabilities (-1). Corresponding entries are shown on the left-hand side of the account for non-financial corporations as increases in holdings produced fixed assets (3), natural resources (1), and equity and investment fund shares (2); on the right-hand side of the account for non-financial corporations is an increase in loan liabilities (1).

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

12.75. Changes in structure are also recorded here. The financial account does not cover the disappearance or appearance of certain financial assets and liabilities because of corporate restructuring. When a corporation disappears as an independent legal entity, it ceases to be a separate institutional unit in the System because it is absorbed by one or more other corporations. In this case, all claims/liabilities, including equity and investment fund shares, which existed between that corporation and those that absorbed it are eliminated. The disappearance of these financial instruments is recorded under changes in sector classification and structure.

12.76. Symmetrically, when a corporation is legally split up into two or more institutional units, new claims and liabilities, including equity and investment fund shares, may appear between the new institutional units. The appearance of these financial instruments is recorded in this category also.

Changes in classification of assets and liabilities

12.77. 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 is 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 natural resources. 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.

12.78. 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.

Changes of classification involving inventories.

12.79. 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.

12.80. Sale of fixed assets for scrap or use as consumer goods. (This case is not strictly one where the classification of the asset changes but where the item ceases to be an asset in the national economy.) Vehicles which have been treated as fixed assets may be sold at the end of their useful life as scrap. The residual value needs to be removed from the capital stock of the owner as disposal of fixed assets. Assets that are disposed of become part of the supply of goods and may be acquired for any purpose, either as a capital good for another unit, for use as intermediate consumption (as might be the case for scrap), for use as consumption expenditure (as might be the case for hire cars) or for exports (as might be the case for second-hand aircraft).

Monetization of gold.

12.81. If authorities add to their holdings of monetary gold by acquiring commodity gold, (newly mined gold or existing gold offered on the private market), they are deemed to have monetized gold. If they release monetary gold from their holdings for non-monetary purposes (for sale to private holders or users), they are deemed to have demonetized gold. When the authorities acquire gold, the transaction is recorded in the capital account as a positive entry under acquisitions less disposals of valuables or change in inventories, and counterpart entries are recorded in the accounts of the institutional units or the rest of the world supplying the gold. When non-monetary gold is acquired from abroad, the entry is recorded under imports. Monetization or demonetization itself does not give rise to entries in the financial accounts; instead, the change in balance sheet positions is accounted for by entries in the other changes in the volume of assets account as a reclassification, i.e., the reclassification of gold in inventories or gold as valuables to monetary gold. Demonetization is recorded symmetrically. If monetary gold is pledged by the authorities or otherwise used as collateral, no transaction is deemed to have taken place, nor has the gold been demonetized simply by the pledging. However, as pledging may affect the gold's usability as a reserve asset, supplementary information, such as that for contingencies, should be collected.

Other reclassifications

12.82. Impaired loans may be traded in the market. When there is an established market for the loans and trading takes place, these traded loans cease to be treated as loans and are re-classified as securities.

12.83. The amounts of unearned insurance premiums and claims outstanding are assigned to the items for insurance provisions in the in the financial account. It is the practice of insurance companies to increase these provisions by re-assigning owners' equity to these items, or a return of excess provisions to the owner's equity. In commercial accounting terms, these extra payments are often called equalisations provisions and provisions for bonuses and rebates. These must be registered in the other changes in the volume of assets account also. (There is fuller discussion of this in chapter 17).

C. The revaluation account

1. Different holding gains and losses concepts

12.84. The revaluation account, shown in table 12.2, 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, shown in two sub-accounts. 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.

12.85. ***The nominal holding gain on a given quantity of an asset is defined as the value of the benefit accruing to the owner of that asset as a result of a change in its price or, more generally, its monetary value over time. The value of the holding gain on a liability is equal to the change in the price, or monetary value, of that liability but with the sign reversed.*** 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 (which can be seen as a negative holding gain) 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.

12.86. 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 price of an asset rises over a given period of time 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 holding gain is described as "real" because it measures the value of the additional (positive or negative) goods, services and assets that may be acquired by the owner of the asset by disposing of it at the end of the period instead of at the beginning.

12.87. ***A real holding gain is defined as the value of the additional command over real resources accruing to the holding of an asset as a result of a change in its price relative to the prices of goods and services in general in the economy.*** The difference between a nominal holding gain and a real holding gain is described as a neutral holding gain. ***A neutral holding gain is defined as the value of the holding gain that would accrue if the price of the asset changed in the same proportion as the general price level, that is, merely kept pace with the general rate of inflation or deflation.*** It is the value of the holding gain needed to preserve the real value of the asset in question intact over time. Nominal, neutral and real holding gains, and the interrelationships between them are explained more fully in the following sections.

12.88. 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.*** As the revaluation account is decomposed into two separate accounts for neutral and real holding gains, its balancing item may similarly be decomposed into two further balancing items: changes in net worth due to neutral holding gains/losses and changes in net worth due to real holding gains/losses. The latter shows how much of the change in the real net worth of an institutional unit is attributable to real holding gains. It is therefore an item of considerable analytic interest.

12.89. 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" may be used collectively to cover both assets and liabilities, unless the context requires liabilities to be referred to specifically.

12.90. 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".

12.91. The nominal holding gains recorded in the revaluation account are those accruing on assets or liabilities, whether realized or not. ***A holding gain is said to be realized when the asset in question is sold, redeemed, used or otherwise disposed of, or the liability repaid. An unrealized gain is therefore one accruing on an asset that is still owned or a liability that is still outstanding at the end of the accounting period.*** A realized gain is usually understood as the gain realized over the entire period over which the asset is owned or liability outstanding whether this period coincides with the accounting period or not. However, as holding gains are recorded on an accruals basis in the System, the distinction between realized and unrealized gains, although useful for some purposes, is not so important in the System and does not appear in the classifications and accounts.

Nominal holding gains

12.92. Nominal holding gains depend upon changes in the prices or, more generally, the monetary values, of assets and liabilities over time. The relevant prices or values for assets that are exchanged in transactions between institutional units are those recorded in the accumulation accounts of the System. These are the values at which assets enter the balance sheets of their owners. In the case of non-financial assets this includes the costs of ownership transfer incurred by the purchaser. In the case of non-transferable financial assets and liabilities such as loans, the monetary value is the amount of principal outstanding.

12.93. Nominal holding gains may accrue on assets held for any length of time during the accounting period and not merely on assets that appear in the opening or closing balance sheets. Nominal holding gains may refer to any period of time and must be defined accordingly. The nominal holding gain accruing to the owner of a particular asset, or given quantity of a specific type of asset, between two points of time is defined as:

> the monetary value of that asset at the later point in time

minus

> the monetary value of that asset at the earlier point in time

assuming that the asset itself does not change, qualitatively or quantitatively, in the meanwhile.

12.94. It is useful to distinguish four different situations giving rise to nominal gains and the methods of valuation to be employed in each case:

(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 unrealized;

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

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

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

12.95. 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, except in certain special cases or on certain assumptions. 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. In practice, however, the requisite data are unlikely to be available, although the adoption of ever more sophisticated computerised management and accounting systems by businesses may make the direct calculation of total nominal holding gains using the kinds of formulae given in the annex increasingly feasible.

12.96. However, if records are kept of the values of all transactions and other volume changes in assets, without necessarily recording the prices at which those transactions or changes occur, it is shown in the annex that the value of the total nominal gains may be derived residually by subtracting the total value of all transactions and other volume changes from the difference between the values of the asset recorded in the closing and opening balance sheets. This indirect method of calculating total nominal holding gains is only valid when appropriate valuation methods are used both for balance sheets and for transactions and other changes. Quantities of the asset held at the beginning and end of the period must be valued in the opening and closing balance sheets at the prices that would have to be paid to acquire them at the times to which the balance sheets relate, and all actual or imputed transactions or other volume changes must be valued at the prices prevailing at the times they take place.

12.97. 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 quantities of the asset acquired, or disposed of, in transactions valued at the dates the transactions took place

plus

the value of other volume changes in 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 including the holding gains on an asset held from opening to closing balance sheet, the holding gains on an asset held from opening balance sheet until disposal plus holding gains from date of acquisition until the closing balance sheet (it being understood that in this case acquisition and disposal includes both acquisition and disposal via transactions and via other changes in volume)

equals

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

12.98. The identity follows from the ways in which the various items are defined and valued. Each of the five elements that make up the identity 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

12.99. Nominal holding gains are partitioned into neutral holding gains and real holding gains. Neutral holding gains can be regarded as analytical constructs designed to facilitate the derivation of real holding gains. A neutral holding gain is defined as the value of the holding gain that would accrue if the price of the asset changed over time in the same proportion as the general price level. If the price of the asset changes by the same proportion as other prices, on average, its real value (that is, the volume of other goods and services for which it can be exchanged) is neither increased nor decreased. In other words, a neutral holding gain is the value of the nominal holding gain needed to preserve the real value of the asset intact.

12.100. In order to calculate the neutral holding gain on an asset, it would be 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 would be 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 which 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.

12.101. 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 as it is necessary to know the times at which the various acquisitions and disposals took place, information that is unlikely to be available in practice. For this reason it will usually be difficult, and sometimes impossible, to obtain accurate, precise estimates of neutral, and hence real, holding gains.

12.102. It is worth noting that there is no simple method that can be used in all circumstances to divide, or partition, the absolute values of nominal holding gains into neutral and real holding gains given that any of the three types of holding gains can be negative as well as positive. For example, the nominal holding gains on monetary assets are zero, but there can nevertheless be substantial positive neutral gains and negative real gains, depending upon the general rate of inflation.

Table 12.2. Revaluation account

Changes in assets

~~Other flows and balancing items~~	S.11 Non-financial corporations	S.12 Financial corporations	S.13 General government	S.14 Households	S.15 NPISHs	S.1 Total economy	Rest of the world account	Goods and services account	Total
Non-financial assets	144	4	44	80	8	280			280
Produced assets	63	2	21	35	5	126			126
Fixed assets	58	2	18	28	5	111			111
Inventories	4		1	2		7			7
Valuables	1		2	5		8			8
Non-produced assets	81	2	23	45	3	154			154
Natural resources	80	1	23	45	3	152			152
Contracts, leases and licences	1	1				2			2
Goodwill and marketing assets						0			0
Financial assets/liabilities	8	57	1	16	2	84	7		91
Monetary gold and SDRs		11	1			12			12
Currency and deposits						0			0
Debt securities	3	30		6	1	40	4		44
Loans						0			0
Equity and investment fund shares/units	5	16		10	1	32	3		35
Insurance, pension and standardised guarantee schemes						0			0
Financial derivatives and employee stock options						0			0
Other accounts receivable/payable						0			0
Non-financial assets	101	3	32	56	6	198			198
Produced assets	60	2	20	34	5	121			121
Fixed assets	58	2	18	28	5	111			111
Inventories	1		1	2		4			4
Valuables	1		1	4		6			6
Non-produced assets	41	1	12	22	1	77			77
Natural resources	40	1	12	22	1	76			76
Contracts, leases and licences	1					1			1
Goodwill and marketing assets						0			0
Financial assets/liabilities	18	71	8	36	3	136	12		148
Monetary gold and SDRs		14	2			16			16
Currency and deposits	8		3	17	2	30	2		32
Debt securities	2	18		4	1	25	3		28
Loans	1	24	3			28	1		29
Equity and investment fund shares/units	3	14		9		26	2		28
Insurance, pension and standardised guarantee schemes	1	1		5		7	1		8
Financial derivatives and employee stock options						0			0
Other accounts receivable/payable	3			1		4	3		7
Non-financial assets	43	1	12	24	2	82			82
Produced assets	3	0	1	1	0	5			5
Fixed assets	0	0	0	0	0				
Inventories	3	0	0	0	0	3			3
Valuables	0	0	1	1	0	2			2
Non-produced assets	40	1	11	23	2	77			77
Natural resources	40	0	11	23	2	76			76
Contracts, leases and licences	0	1	0	0	0	1			1
Goodwill and marketing assets	0	0	0	0	0				
Financial assets/liabilities	- 10	- 14	- 7	- 20	- 1	- 52	- 5		- 57
Monetary gold and SDRs	0	- 3	- 1	0	0	- 4	0		- 4
Currency and deposits	- 8	0	- 3	- 17	- 2	- 30	- 2		- 32
Debt securities	1	12	0	2	0	15	1		16
Loans	- 1	- 24	- 3	0	0	- 28	- 1		- 29
Equity and investment fund shares/units	2	2	0	1	1	6	1		7
Insurance, pension and standardised guarantee schemes	- 1	- 1	0	- 5	0	- 7	- 1		- 8
Financial derivatives and employee stock options	0	0	0	0	0				
Other accounts receivable/payable	- 3	0	0	- 1	0	- 4	- 3		- 7
Changes in net worth due to real holding gains/losses									

									Changes in liabilities and net worth
	S.11	S.12	S.13	S.14	S.15	S.1			
Other flows and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
Non-financial assets									
Produced assets									
Fixed assets									
Inventories									
Valuables									
Non-produced assets									
Natural resources									
Contracts, leases and licences									
Goodwill and marketing assets									
Financial assets/liabilities	18	51	7	0	0	76	3		79
Monetary gold and SDRs									
Currency and deposits									
Debt securities	1	34	7			42	2		44
Loans									
Equity and investment fund shares/units	17	17				34	1		35
Insurance, pension and standardised guarantee schemes									
Financial derivatives and employee stock options									
Other accounts receivable/payable									
Changes in net worth due to nominal holding gains/losses	134	10	38	96	10	288	4		292
Non-financial assets									
Produced assets									
Fixed assets									
Inventories									
Valuables									
Non-produced assets									
Natural resources									
Contracts, leases and licences									
Goodwill and marketing assets									
Financial assets/liabilities	37	68	13	5	3	126	6		132
Monetary gold and SDRs									
Currency and deposits	1	26	2		1	30	2		32
Debt securities	1	21	4			26	2		28
Loans	18		7	3	1	29			29
Equity and investment fund shares/units	14	14				28			28
Insurance, pension and standardised guarantee schemes		7				7	1		8
Financial derivatives and employee stock options									
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
Non-financial assets									
Produced assets									
Fixed assets									
Inventories									
Valuables									
Non-produced assets									
Natural resources									
Contracts, leases and licences									
Goodwill and marketing assets									
Financial assets/liabilities	- 19	- 17	- 6	- 5	- 3	- 50	- 3		- 53
Monetary gold and SDRs	0	0	0	0	0	0	0		
Currency and deposits	- 1	- 26	- 2	0	- 1	- 30	- 2		- 32
Debt securities	0	13	3	0	0	16	0		16
Loans	- 18	0	- 7	- 3	- 1	- 29	0		- 29
Equity and investment fund shares/units	3	3	0	0	0	6	1		7
Insurance, pension and standardised guarantee schemes	0	- 7	0	0	0	- 7	- 1		- 8
Financial derivatives and employee stock options	0	0	0	0	0	0	0		
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

Real holding gains

12.103. The real holding gain on an asset can be expressed 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.

12.104. As already noted, the nominal holding gains on financial assets and liabilities whose values are fixed in monetary terms 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 an asset/liability of fixed monetary value 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 real net worth. In effect, there is 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 to compensate for the expected transfers or loans with fixed monetary values may be replaced by indexed loans.

12.105. 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. It cannot be assumed that such real gains and losses cancel each other out, even in a closed economy, as it is possible that asset owners benefit at the expense of units that do not own any assets or vice versa. Whether or not they cancel out, it is clear that 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.

12.106. As real holding gains increase or decrease the purchasing power of the owners of assets, they must exert an influence on their economic behaviour. Real holding gains are important economic variables in their own right as well as income 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.

12.107. 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 neutral and nominal gains.

2. Holding gains and losses on specific assets

Fixed assets

12.108. 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.

12.109. Nominal holding gains may occur on existing fixed assets either because of general inflation or because the relative price of the asset 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 purchasers' 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.

Inventories

12.110. 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 VI, 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 in the same way as transactions in any other kind of asset. However, as explained in chapter VI, paragraphs 6.64 6.65, when the storage of goods whose supply or demand ~~is subject to seasonal influences~~ 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.

12.111. 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 grouped with 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.

12.112. 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. The difficulty of estimating the value of changes in inventories from balance sheet data alone obviously increases as the rate of inflation increases. 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.

Financial assets

12.113. Not all assets and liabilities have market prices in the ordinary sense of the term "price". In particular, assets and liabilities such as cash and deposits denominated in purely monetary terms in terms of the domestic currency do not have physical units with which prices can be associated. In such cases, the relevant "quantity" unit is effectively a unit of domestic currency itself (for example, one dollar) so that the price per unit is always unity. By definition, therefore, the market prices of such assets and their corresponding liabilities cannot change over time. On the other hand, the relevant quantity unit for an asset such as a bill, bond or share is the security itself, the market price of which may change over time. Equally, cash, loans and deposits may be denominated in a foreign currency in which case a change in the exchange rate is effectively a price change. The term “price” has therefore to be used in a broad sense to cover the unitary prices of assets such as cash, deposits, loans, etc., and the corresponding liabilities, whether in domestic or foreign currency, as well as conventional market prices.

12.114. The nominal holding gains on assets denominated in domestic currency are always zero. For this reason the difference between the values of the opening and closing stocks of such assets is entirely accounted for by the values of the transactions in the assets, this being one case in which it is possible to deduce the latter from the balance sheet figures. However, the neutral holding gains on monetary assets and liabilities are not zero when the general price level is changing, in which case the real holding gains are not zero either.

12.115. In order to calculate the neutral and real holding gains on assets of fixed monetary value, data on the times and values of transactions are needed as well as the opening and closing balance sheet values. Suppose, for example, a loan is made and repaid within the accounting period while the general price level is rising. The neutral gain on the loan is positive and the real gain negative, the amount depending upon the length of time the loan is outstanding and the rate of inflation. It is impossible to record such real losses without data on the value of the loans made and repaid during the accounting period and the times at which they are made and repaid. In general, it may be inferred that if the total absolute value of the positive and negative transactions is large in relation to the opening and closing balance sheet levels, approximate estimates of the neutral and real holding gains on monetary assets and liabilities derived from balance sheet data alone may not be very satisfactory. Even recording loans made and repaid separately as distinct from the total value of loans minus repayments may not be sufficient without information on the timing of the loans.

Bonds

12.116. 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.

12.117. As explained in chapter VII, 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 , that is, in the size of the asset. 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. Bonds change qualitatively over time as they approach maturity and it is essential to recognize that increases in their values due to the accumulation of accrued interest are not price changes and do not generate holding gains. The increases in value though are recorded in the financial account and not in the other changes in the volume of assets account.

12.118. The prices of marketable bonds also change, however, when the market rates of interest change, the prices varying 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. Because the interest payable on a bond is always calculated using the rate at inception, whenever the interest rate changes, there will be a revaluation to be recorded. This revaluation reflects the difference between the market price under the newer, prevailing interest rate and the price that would pertain had the interest rate at inception remained unaltered.

12.119. Prices of bonds may also change because of a change in the creditworthiness of the issue 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 para XXX above.

12.120. 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.

Assets denominated in foreign currency

12.121. 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 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. The total value of the nominal holding gains accruing over the period may be calculated in the usual way by subtracting the value of transactions from the difference between the opening and closing balance sheet values. For this purpose, transactions in foreign currency assets must be converted into the domestic currency using the exchange rates at the times the transactions occur.

12.122. 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.

Insurance, pension and standardised guarantee schemes

12.123. Payments to be made under these schemes, particularly in the case of life insurance, annuities and pensions, may contain a price escalation adjustment, typically that the payments keep pace with a nominated measure of inflation. Where this is so, the impact on the necessary reserves is treated as a nominal holding gain.