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Note by the editor:

The material in the introductory section of the chapter in the 1993 SNA has been moved to chapter 14.

The aggregate for gross capital formation has been introduced into the chapter. In the 1993 SNA it is part of the classification hierarchy but is not mentioned in the chapter.

The description of the treatment of costs of ownership transfer is substantially rewritten in accordance with the AEG's recommended change in recording.

The definitions of individual non-financial assets have been moved from the annex to chapter 13 and embedded in the text here.

The classification hierarchy is significantly changed, as agreed with the AEG and there are substantial changes for several assets, including cultivated biological resources, R&D, computer software and databases, land, weapons systems, contracts, leases and licences, goodwill and marketing assets.

Greater explanation of the distinction between storage and holding gains and losses is given.

The description of capital transfers in kind has been corrected.

I propose the existing annex be dropped because of the changed treatment of costs of ownership transfer. These is covered in chapter 19.

Anne Harrison

Chapter 10 The Capital Account

A. Introduction

10.1 The capital account is the first of four accounts dealing with changes in the values of assets held by institutional units. It records transactions in non-financial assets. The financial account records transactions in financial assets and liabilities. The other changes in the volume of assets account records changes in the value of both non-financial and financial assets that result from neither transactions nor price changes. The effects of price changes are recorded in the revaluation account. These four accounts enable the change in the net worth of an institutional unit or sector between the beginning and end of the accounting period to be decomposed into its constituent elements by recording all changes in the prices and volumes of assets held, whether resulting from transactions or not. The impact of all four accounts is brought together in the balance sheets. Immediately following chapters describe the other accounts just mentioned.

10.2 The purpose of the capital account, shown in table 10.1, is to record the values of the non-financial assets that are acquired, or disposed of, by resident institutional units by engaging in transactions and to show the change in net worth due to saving and capital transfers. The transactions may be either with other institutional units, both resident and non-resident, or internal transactions in which units retain for their own use assets that they have produced themselves.

10.3 When compiling balance sheets, it is customary to record assets on the left-hand side and liabilities and net worth on the right-hand side. The same convention is followed in the accumulation accounts, where changes in assets are recorded on the left-hand side and other items on the right-hand side. As in the current accounts, the balancing item of the capital account, net lending or borrowing, is recorded on the left-hand side. Consumption of fixed capital is also recorded on the left-hand side of the capital account.

10.4 The right-hand side of the capital account records the resources available for the accumulation of assets. These consist of net saving, the balancing item carried forward from the use of income account, and capital transfers. Capital transfers payable are recorded with a negative sign.

10.5 Insert resume of definition of assets in general and non-financial assets in particular. To be consistent across all chapters

1. Non-financial assets

10.6 Two different categories of non-financial assets need to be distinguished from each other: produced assets and non-produced assets.

> ***Produced assets are non-financial assets that have come into existence as outputs from production processes that fall within the production boundary of the System.***
>
> ***Non-produced assets are non-financial assets that have come into existence in ways other than through processes of production.***

Produced assets

10.7 There are three main types of produced assets: fixed assets, inventories and valuables. Both fixed assets and inventories are assets that are held only by producers for purposes of production. Valuables may be held by any institutional unit and are primarily held as stores of value.

10.8 ***Fixed assets are produced assets that are used repeatedly or continuously in***

production processes for more than one year. The distinguishing feature of a fixed asset is not that it is durable in some physical sense, but that it may be used repeatedly or continuously in production over a long period of time, which is taken to be more than one year. Some goods, such as coal, may be highly durable physically but cannot be fixed assets because they can be used once only. Fixed assets include not only structures, machinery and equipment but also cultivated assets such as trees or animals that are used repeatedly or continuously to produce other products such as fruit or dairy products. They also include intellectual property products such as software or artistic originals used in production.

10.9 ***Inventories are produced assets that consist of goods and services, which came into existence in the current period or in an earlier period and that are held for sale, use in production or other use at a later date.*** Inventories consist of stocks of outputs that are still held by the units that produced them prior to their being further processed, sold, delivered to other units or used in other ways and stocks of products acquired from other units that are intended to be used for intermediate consumption or for resale without further processing. Included are all inventories held by government, including, but not limited to, inventories of strategic materials, and grain and other commodities of special importance to the nation.

10.10 Valuables are produced goods of considerable value that are not used primarily for purposes of production or consumption but are held as stores of value over time. Valuables are expected to appreciate or at least not to decline in real value, nor to deteriorate over time under normal conditions. They consist of precious metals and stones, jewellery, works of art, etc.

Non-produced assets

10.11 Non-produced assets consist of three categories: natural resources, contracts, leases and licences, and goodwill and marketing assets.

10.12 ***Natural resources consist of naturally occurring assets such as land and certain uncultivated forests and deposits of minerals.*** They do not include environmental assets which have no economic value.

10.13 Contracts, leases and licences are treated as assets only when two conditions are both satisfied.

(i) The terms of the contract, lease or licence specify a price for the use of an asset or provision of a service that differs from the price that would prevail in the absence of the contract, lease or licence. .

Table 10.1: The capital account – concise form

Changes in assets

Transactions 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	Goods and services	Total
Saving, net									
Current external balance									
Net capital formation	141	- 1	10	26	16	192			192
Gross fixed capital formation	250	9	37	61	19	376			376
Consumption of fixed capital	- 137	- 10	- 30	- 42	- 3	- 222			- 222
Changes in inventories	26			2		28			28
Acquisitions less disposals of valuables	2		3	5		10			10
Acquisitions less disposals of non-produced assets	- 7	0	2	4	1	0			0
Capital transfers, receivable									
Capital transfers, payable									
Net lending (+) / net borrowing (–)	- 69	5	- 50	146	4	36	- 36		0

(ii) One party to the contract must be able legally and practically to realise this price difference.

It is recommended that in practice contracts, leases and licences should only be recorded in the accounts when the holder does actually exercise his right to realise the price difference.

10.14 ***Goodwill and marketing assets represent the whole or part of net worth of an institutional unit.*** They are recorded only when a unit is purchased in its entirety or an identifiable marketing asset is sold to another unit.

2. The structure of the capital account

Saving

10.15 As noted above, the right hand side of the account represents changes in liabilities and net worth. The first item recorded on the right-hand side is the balancing item carried down from the use of income account, net saving. When positive, net saving represents that part of disposable income that is not spent on consumption goods and services and must, therefore, be used to acquire non-financial or financial assets of one kind or another, including cash, or to repay liabilities. When negative, net saving measures the amount by which final consumption expenditure exceeds disposable income: the excess must be financed by disposing of assets or incurring new liabilities.

Capital transfers

10.16 ***Capital transfers are unrequited transfers where either the party making the transfer realises the funds involved by disposing of an asset (other than cash or inventories) or the party receiving the transfer is obliged to acquire an asset (other than cash) or both conditions are met.*** The cancellation of a liability by mutual agreement between the creditor and debtor or the assumption of another unit's liability is treated as a capital transfer. Capital transfers are often large and irregular but neither of these are necessary conditions for a transfer to be considered a capital rather than a current transfer. If there is doubt about whether a transfer should be treated as current or capital, it should be treated as current.

10.17 Capital transfers receivable represent an increase in net worth and so are shown on the right-hand side of the account. By convention, the matching amounts payable are also shown on the right-hand side of the account but as a negative entry (that is, a decrease in net worth).

Table 10.1: The capital account – concise form

							Changes in liabilities and net wort		
	S.11	S.12	S.13	S.14	S.15	S.1			
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Saving, net	48	11	- 10	158	24	231			231
Current external balance							- 39		- 39
Net capital formation								192	192
Gross fixed capital formation								376	376
Consumption of fixed capital								- 222	- 222
Changes in inventories								28	28
Acquisitions less disposals of valuables								10	10
Acquisitions less disposals of non-produced assets								0	0
Capital transfers, receivable	33	0	6	23	0	62	4		66
Capital transfers, payable	- 16	- 7	- 34	- 5	- 3	- 65	- 1		- 66
Changes in net worth due to saving and capital transfers	65	4	- 38	176	21	228	- 36		192

Changes in net worth due to saving and capital transfers

10.18 The total of the entries on the right-hand side of the account is explicitly shown and described as changes in net worth due to saving and capital transfers. It is not a balancing item. ***Net worth due to saving and capital transfers represents the positive or negative amount available to the unit or sector for the acquisition of non-financial and financial assets.***

Acquisitions less disposals of non-financial assets

10.19 The left-hand side of the capital account records how much of the change in net worth due to saving and capital transfers is used to acquire non-financial assets and how much is left to be explained by the acquisition of financial assets or liabilities in the financial account. Resources coming from the disposal of existing assets appear as negative entries on the left-hand side of the account also. As well as purchases and sales of assets, non-financial assets acquired (or disposed of) via barter or by means of production for own use are included.

10.20 Three headings for the net change in the value of non-financial assets are shown in the capital account:

(a) Gross capital formation;

(b) Consumption of fixed capital;

(c) Acquisitions less disposals of non-produced non-financial assets.

The treatment given to each of these categories of changes in assets is described in later sections of this chapter.

10.21 ***Gross capital formation shows the acquisition less disposal of produced assets for purposes of fixed capital formation, inventories or valuables.*** It is possible (if uncommon) for the gross capital formation of an individual institutional unit or sector to be negative if it sells off enough of its existing assets to other units or sectors.

10.22 ***Consumption of fixed capital represents the reduction in the value of the fixed assets used in production during the accounting period resulting from physical deterioration, normal obsolescence or normal accidental damage.*** When, as recommended in the System, the balancing item carried down from the use of income account is net saving, this already reflects the fact that net worth has been reduced by the amount of consumption of fixed capital, the amount by which fixed assets are reduced in the period. Since the capital account is designed to show the way in which net worth is augmented by the acquisition of non-financial assets, this amount has to be offset from the value of new acquisitions of fixed assets so the addition to the capital stock of fixed assets is a net amount. For this reason, consumption of fixed capital is recorded as a change in assets on the left-hand side of the capital account.

10.23 If it is not feasible to measure consumption of fixed capital because of lack of data, the saving figure carried forward from the use of income account has to be gross. In this case, there is no entry for consumption of fixed capital in the capital account. If consumption of fixed capital has to be omitted from both sides of the account, the balancing item of the account is not affected; net lending or borrowing can be derived residually whether or not consumption of fixed capital can be estimated. However, if consumption of fixed capital is not estimated, the accumulation accounts do not record all changes between two successive balance sheets.

10.24 The remaining item on the left-hand side of the capital account refers to non-produced non-financial assets. The total value of the acquisitions less disposals of non-produced non-financial assets may also be positive or negative. Since natural resources are owned by units that are either actually or notionally resident, this part will be zero for the economy as a whole. However, there may be transactions in contracts, leases and licences or marketing assets, with non-resident units.

Net lending

10.25 The balancing item of the capital account, ***net lending, is defined as the difference between changes in net worth due to saving and capital transfers and net acquisitions of non-financial assets***

(acquisitions less disposals of non-financial assets, less consumption of fixed capital). If the amount is negative it represents net borrowing. It shows the amount of the resources remaining for purposes of lending or that need to be borrowed. Even if funds are not actively lent but are retained in cash, or in a bank deposit the holder of the counterpart obligations represented by these financial assets has in effect borrowed from the unit holding the cash or bank deposit.

10.26 The identity between the balancing items of the capital account and the financial account is an important feature of the set of the accounts as a whole. What is borrowed by one unit must be lent by another and vice versa. The conceptual identity between the balancing items provides a check on the numerical consistency of the set of accounts as a whole, although the two balancing items are likely to diverge in practice because of errors of measurement.

10.27 In general in the System, and especially in balancing items, the prefix net means excluding the consumption of fixed capital. For net lending this is not the case; it represents the difference between those assets giving rise to making funds available to other units and those drawing funds from other units.

B. Gross capital formation

10.28 Gross capital formation is measured by the total value of the gross fixed capital formation, changes in inventories and acquisitions less disposals of valuables. Before discussing in detail the entries to be recorded under each of these items, it is necessary to clarify the coverage of the item and the application of accounting rules such as valuation, time of recording and the identification of ownership.

1. Gross fixed capital formation

10.29 ***Gross fixed capital formation is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain specified expenditure on services that adds to the value of non-produced assets.*** In order to ensure that the coverage of gross fixed capital formation is precisely defined, it is necessary first to define what does and what does not constitute a fixed asset and what activities are treated as adding to the value of non-produced assets.

The asset boundary

10.30 All goods and services supplied to the economy by means of production, imports or the disposal of non-produced assets must be used for exports, consumption (intermediate or final) or as part of capital formation. The boundary line between those products which are retained in the economy and are used for consumption and those products that are used for capital formation is known as the asset boundary. ***The asset boundary for fixed assets consists of goods and services that are used in production for more than one year.***

10.31 Two exclusions from the asset boundary should be noted at the outset. The first is that consumer durables are not treated as fixed assets. The services these durables produce are household services outside the production boundary of the System. If, for example, a washing machine were to be treated as a fixed asset, the production boundary would have to be extended to include all laundry services, whether undertaken by machine or by hand. As it stands, the production boundary restricts laundry services to those services provided to other units but includes services provided by both machine and by hand. However, owner-occupied dwellings are not treated as consumer durables but are included within the asset boundary. The owner-occupiers are treated as owners of unincorporated enterprises producing housing services for their own consumption.

10.32 The second exclusion is pragmatic rather than conceptual and concerns small tools. Some goods may be used repeatedly, or continuously, in production over many years but may nevertheless be small, inexpensive and used to perform relatively simple operations. Hand tools such as

saws, spades, knives, axes, hammers, screwdrivers and spanners or wrenches are examples. If expenditures on such tools take place at a fairly steady rate and if their value is small compared with expenditures on more complex machinery and equipment, it may be appropriate to treat the tools as materials or supplies used for intermediate consumption. Some flexibility is needed, however, depending on the relative importance of such tools. In countries in which they account for a significant part of the value of the total stock of an industry's durable producers' goods, they may be treated as fixed assets and their acquisition and disposal by producers recorded under gross fixed capital formation.

10.33 Not all goods included within the asset boundary must be newly produced. Since assets have a long life, they may change hands but continue to function as fixed assets for their new owners. Thus it is important to define what existing fixed assets are and how they are treated in measuring gross fixed capital formation.

10.34 Nor do all services included within the asset boundary consist of free-standing capital. Important classes of services are included in the asset boundary because of the impact they have on the value of new or existing assets. These are improvements to existing assets and the cost of ownership transfer on assets. These are described below after defining existing fixed assets.

Existing fixed assets

10.35 Because assets have service lives that may range up to 50 years or more for dwellings or other structures, their ownership may change several times before they are eventually scrapped, demolished or abandoned. ***An existing fixed asset is one whose value was included in the gross fixed capital formation of at least one producer unit at some earlier point in time either in the current period or in some previous accounting period.*** In many countries, well-organized markets exist to facilitate the buying and selling of many kinds of existing fixed assets, notably automobiles, ships, aircraft, dwellings and other structures. Indeed, the number of existing dwellings bought and sold within a given time period may considerably exceed the number of new dwellings. In practice, most existing fixed assets will have been used in production by their current owners, but an existing capital good might be sold by its owner before it has actually been used.

10.36 In general, sales or other disposals of existing goods, whether fixed assets or not, are recorded as negative expenditures or negative acquisitions. Thus, when the ownership of an existing fixed asset is transferred from one resident producer to another, the value of the asset sold, bartered or transferred is recorded as negative gross fixed capital formation by the former and as positive gross fixed capital formation by the latter. The value of the positive gross fixed capital formation recorded for the purchaser exceeds the value of the negative gross fixed capital formation recorded for the seller by the value of the costs of ownership transfer incurred by the purchaser. The treatment of these costs is explained in more detail in a later section.

10.37 When the sale takes place between two resident producers, the positive and negative values recorded for gross fixed capital formation cancel out for the economy as a whole except for the costs of ownership transfer. Similarly, if an existing immovable fixed asset, such as a building, is sold to a non-resident, by convention the latter is treated as purchasing a financial asset that is the equity of a notional resident unit while the notional resident unit is deemed to purchase the asset, so that the sale and purchase of the asset takes place between resident units. However, if an existing movable fixed asset, such as a ship or aircraft, is exported, no positive gross fixed capital formation is recorded elsewhere in the economy to offset the seller's negative gross fixed capital formation.

10.38 Some durable goods, such as vehicles, may be classified as fixed assets or as consumer durables depending upon the owner and the purpose for which they are used. If, therefore, the ownership of such a good were transferred from an enterprise to a household to be used for final consumption, negative gross fixed capital formation is recorded for the enterprise and positive consumption expenditure by the household. If a vehicle owned by a household were to be acquired by an

enterprise, it would be recorded as an acquisition of a "new" fixed asset by the enterprise even though it is an existing good .and as negative consumption expenditure by the household. A similar treatment is applied to imports of used assets acquired by resident producers.

10.39 Thus, it is perfectly possible for the gross fixed capital formation of individual institutional units to be negative as a result of the sale or disposal of existing fixed assets, although aggregate gross fixed capital formation is unlikely to be negative for large groups of units such as sub-sectors, sectors or the economy as a whole.

Improvements to existing assets

10.40 Gross fixed capital formation may take the form of improvements to existing fixed assets, such as buildings or computer software, that increase their productive capacity, extend their service lives, or both. By definition, such gross fixed capital formation does not lead to the creation of new assets that can be separately identified and valued, but to an increase in the value of the asset that has been improved..

10.41 A different treatment is applied to improvements to land in its natural state. In this case the improvements are treated as the creation of a new fixed asset and are not regarded as giving rise to an increase in the value of the natural resource. If land, once improved, is further improved, then the normal treatment of improvements to existing fixed assets applies.

10.42 The distinction between which ordinary maintenance and repairs constitute intermediate consumption and which are treated as capital formation is not clear cut. As explained in paragraphs 6.166 to 6.169 of chapter VI, ordinary maintenance and repairs are distinguished by two features:

(a) They are activities that must be undertaken regularly in order to maintain a fixed asset in working order over its expected service life. The owner or user of the asset has no choice about whether or not to undertake ordinary maintenance and repairs if the asset in question is to continue to be used in production;

(b) Ordinary maintenance and repairs do not change the fixed asset's performance, capacity or expected service life. They simply maintain it in good working order, if necessary by replacing defective parts by new parts of the same kind.

10.43 On the other hand, improvements to existing fixed assets that constitute gross fixed formation must go well beyond the requirements of ordinary maintenance and repairs. They must bring about significant changes in some of the characteristics of existing fixed assets. They may be distinguished by the following features:

(a) The decision to renovate, reconstruct or enlarge a fixed asset is a deliberate investment decision that may be taken any time, even when the good in question is in good working order and not in need of repair. Major renovations of ships, buildings or other structures are frequently undertaken well before the end of their normal service lives;

(b) Major renovations, reconstructions or enlargements increase the performance or productive capacity of existing fixed assets or significantly extend their previously expected service lives, or both. Enlarging or extending an existing building or structure constitutes a major change in this sense, as does the refitting or restructuring of the interior of a building or ship or a major extension to or enhancement of an existing software system.

10.44 It is difficult to provide simple objective criteria that enable improvements to be distinguished from repairs because any repair may be said to improve the performance or extend the working life of the unrepaired asset. For example, machines may cease to function at all because of the failure of one small part. The replacement of such a part does not, however, constitute gross fixed capital formation. Thus, improvements have to be identified either by the magnitude of the changes in the characteristics of the fixed assets such as size, shape, performance, capacity, or expected service

lives, or by the fact that improvements are not the kinds of changes that are observed to take place routinely in other fixed assets of the same kind, as part of ordinary maintenance and repair programmes.

10.45 Gross fixed capital formation in the form of improvements to existing fixed assets is to be classified with acquisitions of new fixed assets of the same kind. Accordingly, it is the improved asset that is henceforth relevant to the System and on which consumption of fixed capital must be calculated subsequently.

Costs incurred on acquisition and disposal of assets

10.46 Purchasing a fixed asset is often a complicated procedure that may involve using lawyers to establish legal title to the asset, engineers to certify that it is in satisfactory working order and so on. There may also be taxes to be paid occasioned by the change of ownership of the item. Further, in the case of highly complex machinery there may be significant costs associated with delivery and installation that were not included in the purchase price.

10.47 The benefits to be derived from the use of the asset in production have to cover these costs as well as the initial price of the asset. Costs incurred on acquisition of an asset are therefore treated as an integral part of the value of that unit's gross fixed capital formation. The value at which the asset enters the balance sheet of its new owner therefore includes these costs. This applies to both new and existing assets.

10.48 Just as there may be costs incurred on the acquisition of an asset, there may also be costs incurred on the disposal of an asset. Some of these may be parallel to those costs incurred on acquisition, for example legal fees and disinstallation costs. However, in the case of some significantly large and important assets, such as oil rigs and nuclear power stations, there may also be major costs associated with the decommissioning of the asset at the end of its productive life. For some land sites, such as those used for landfill, there may be large costs associated with rehabilitation of the site. These are referred to collectively as terminal costs.

10.49 All these costs associated with acquiring and disposing of assets may be described as costs of ownership transfer. ***The costs of ownership transfer consist of the following kinds of items:***

a. All professional charges or commissions incurred by the unit acquiring or disposing of an asset such as fees paid to lawyers, architects, surveyors, engineers and valuers, and commissions paid to estate agents and auctioneers;

b. All taxes payable by the unit acquiring the asset on the transfer of ownership of the asset;

c. Any tax payable on the disposal of an asset

d. Any delivery and installation or disinstallation costs not included in the price of the asset being acquired or disposed of; and

e. Any terminal costs incurred at the end of an asset's life such as those required to render the structure safe or to restore the environment in which it is situated.

10.50 All these costs of ownership transfer are treated as gross fixed capital formation. They are attributed to the purchaser or seller of the asset according to which unit bears the responsibility of meeting the costs. The time of recording of these costs is discussed below and the period when the costs are written off via consumption of fixed capital is discussed in the section on consumption of fixed capital.

Time of recording

10.51 The general principle for the time of recording of acquisitions less disposals of fixed assets is when the ownership of the fixed assets is transferred to the institutional unit that intends to use them in production. Except in two special cases, this time is not generally the same as the time at which the fixed assets are produced. Nor is it necessarily the time at which they are put to use in the production of other goods or services.

10.52 The two exceptions cover assets that take some time to produce such as construction projects and some cultivated biological resources. In general, incomplete construction projects and immature animals and plantations are treated as work-in-progress. They are reclassified from inventories to fixed capital when complete and delivered to the unit intending to use them as fixed assets. However, when the assets are being produced on own account, the partially complete products are recorded as capital formation as work takes place. When the assets are developed under a contract of sale, the producer records work-in-progress as normal but when stage payments are made, these are regarded as purchase of [part of] a fixed asset or as a trade advance if the value of the stage payment exceeds the value of the work put in place. In the latter case, work is recorded as fixed capital delivered to the final owner as work proceeds until the trade credit is exhausted.

10.53 When there is no contract of sale agreed in advance, the output produced by the enterprise must be recorded as work-in-progress or as additions to the producers' inventories of finished goods, depending on whether the product is completed. For example, finished dwellings built speculatively remain as additions to the producers' inventories of finished goods until they are sold or otherwise acquired by users.

Ownership of assets

10.54 In most cases, the ownership of fixed assets is straightforward; it is the unit that acquires the asset for use in production. There are however, three exceptions to be noted. One concerns assets subject to a financial lease; the second concerns assets produced by communal effort; the third concerns immovable assets owned by non-residents.

10.55 A financial lease is a contract between a lessor and a lessee whereby the lessor legally owns the good but the terms of the lease are such that the lessee takes over both the economic risks and rewards of using the asset in production. In effect, therefore, the lessee becomes the economic owner of the asset even if the lessor remains the legal owner. In these cases, the asset is recorded as being acquired by the lessee in return for a loan extended by the lessor to the lessee. The asset is then recorded on the balance sheet of the lessee and not the lessor. The payments due under the lease arrangement are treated as forming a repayment of the principal of the loan and a payment of interest. More details of these arrangements are given in chapter 17.

10.56 Certain structures may be produced for own communal use by groups of households: for example, buildings, roads, bridges, etc. After they are finished, the ownership of such structures may then be transferred to some government unit that assumes responsibility for their maintenance. When the transfer occurs, the gross fixed capital formation on own account originally attributed to the group of households is cancelled by their negative gross fixed capital formation resulting from the capital transfers in kind made to the government unit. The final gross fixed capital formation remaining is that of the government unit resulting from its acquisition of the asset through the capital transfer in kind. If no such transfer exists and the structure remains the communal property of the group of households responsible for its construction, an NPISH providing collective services should be created.[i]

10.57 A further consideration to be taken into account in determining ownership concerns assets built under a private finance initiative (PFI) sometimes also describes as a public-private partnership (PPP) or a build, own, operate, transfer (BOOT) scheme or some other similar shorthand. Such schemes are under accounting scrutiny at the time of writing. Provisional guidance on how to ascribe the ownership of such schemes is given in chapter 20.

10.58 All buildings and other structures within the economic territory are deemed, by convention, to be owned by resident units. If an owner (or lessee under a financial lease) would not otherwise qualify as a resident unit, a notional resident unit is created for this purpose. The notional resident unit is assumed to purchase (or lease) the building or structure. The legal owner (or lessee) is deemed to hold equivalent equity in the notional resident unit.

Valuation

10.59 The various components of acquisitions and disposals of fixed assets are listed below:

(a) Value of fixed assets purchased;

(b) Value of fixed assets acquired through barter;

(c) Value of fixed assets received as capital transfers in kind;

(d) Value of fixed assets retained by their producers for their own use, including the value of any fixed assets being produced on own account that are not yet completed or fully mature;

less

(e) Value of existing fixed assets sold;

(f) Value of existing fixed assets surrendered in barter;

(g) Value of existing fixed assets surrendered as capital transfers in kind.

Items (a) to (d) include new assets, existing assets, the value of improvements to assets and the cost of ownership transfers in respect of these assets. Items (e), (f) and (g) include disposals of assets that may cease to be used as fixed assets by their new owners: for example, vehicles sold by businesses to households for their personal use or assets that are scrapped or demolished by their new owners.

10.60 Fixed assets acquired through barter are valued at their estimated basic prices plus any taxes payable and costs of ownership transfer. Fixed assets produced for own gross fixed capital or assets transferred in kind are valued at their estimated basic prices, or by their costs of production when satisfactory estimates of their basic prices cannot be made.

10.61 The only type of capital transfer in kind concerns communal construction by households. If the value of the asset must be estimated on the basis of costs, and some or all of the labour is provided free, as may happen, an estimate of what the cost of paid labour would be must be included in the estimated total production costs using wage rates for similar kinds of labour in the vicinity or region. Otherwise, the value of the finished structure will be seriously underestimated. However, this estimate is not treated as compensation of employees and an income to households; it is merely a component of estimating the appropriate value of the end product of the communal production.

Transactions in fixed assets

10.62 ***Gross fixed capital formation in a particular category of fixed asset consists of the value of producers' acquisitions of new and existing products of this type less the value of their disposals of fixed assets of the same type.*** Gross fixed capital formation is not recorded until the ownership of the fixed assets is transferred to the unit that intends to use them in production unless it is being constructed to order under a contract agreed in advance. Thus, new assets that have not yet been sold form part of additions to inventories of finished goods held by the producers of the assets. Similarly, an imported product is not recorded as gross fixed capital formation until it is acquired by the unit that intends to use it.

10.63 Table 10.2 shows the changes in assets side of table 10.1 expanded to show the entries for transactions in fixed assets. It will be noted that the System recommends showing acquisitions of certain categories of assets separately from disposals of those assets when this provides analytically useful data.

10.64 In presentations of the capital account, gross fixed capital formation is usually shown by type of asset, where the accounting principles of the last paragraph are applied to each category of fixed asset in turn. Table 10.2 also incorporates the classification of fixed assets used in the System. Each of the main categories of fixed assets are defined and described in turn below.

10.65 The System does not formally include a division between tangible and intangible assets in the classification. However, the categories of dwellings, other buildings and structures, machinery and equipment, weapons systems and cultivated biological

resources can be taken to correspond to tangible assets and the other categories to intangible assets.

Dwellings

10.66 ***Dwellings are buildings that are used entirely or primarily as residences, including any associated structures, such as garages, and all permanent fixtures customarily installed in residences***. Houseboats, barges, mobile homes and caravans used as principal residences of households are also included, as are public monuments identified primarily as dwellings.

10.67 Examples include products included in Central Product Classification (CPC class 5311, residential buildings and CPC group 387, prefabricated buildings, such as one- and two-dwelling buildings and other residential buildings intended for non-transient occupancy).

10.68 The costs of clearing and preparing the site for construction are part of the costs of new dwellings (and other buildings and structures) and are therefore included in the value of the buildings.

Table 10.2: The capital account showing the classification of fixed assets

Changes in assets									
	S.11	S.12	S.13	S.14	S.15	S.1			
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Saving, net									
Current external balance									
Net capital formation	141	- 1	10	26	16	192			192
Gross fixed capital formation	250	9	37	61	19	376			376
Acquisitions less disposals of fixed assets	230	9	35	61	19	354			354
Acquisitions of new fixed assets	232	8	36	59	23	358			358
Acquisitions of existing fixed assets	5	1	3	7	1	17			17
Disposals of existing fixed assets	- 7		- 4	- 5	- 5	- 21			- 21
Additions to the value of non-produced assets	20	0	2	0	0	22			22
Improvements to non-produced assets	3		2			5			5
Costs of ownership transfer on non-produced assets	17					17			17
Consumption of fixed capital	- 137	- 10	- 30	- 42	- 3	- 222			- 222
Gross fixed capital formation									
Dwellings									
Other buildings and structures									
Non-residential buildings									
Other structures									
Land improvements									
Machinery and equipment									
Transport equipment									
ICT equipment									
Other machinery and equipment									
Weapons systems									
Cultivated biological resources									
Animal resources yielding repeat products									
Tree, crop and plant resources yielding repeat products									
Costs of ownership transfer on non-produced assets									
Intellectual property products									
Research and development									
Mineral exploration and evaluation									
Computer software and databases									
Computer software									
Databases									
Entertainment, literary or artistic originals									
Other intellectual property products									
Changes in inventories	26			2		28			28
Acquisitions less disposals of valuables	2		3	5		10			10
Acquisitions less disposals of non-produced assets	- 7	0	2	4	1	0			0
Capital transfers, receivable									
Capital transfers, payable									
Net lending (+) / net borrowing (–)	- 69	5	- 50	146	4	36	- 36		0

10.69 Incomplete dwellings are included to the extent that the ultimate user is deemed to have taken ownership, either because the construction is on own-account or as evidenced by the existence of a contract of sale/purchase. Dwellings acquired for military personnel are included because they are used for the production of housing services, in the same way as dwellings acquired by civilian units.

Other buildings and structures

10.70 ***Other buildings and structures comprise non-residential buildings, other structures and land improvements.*** These are described in turn below.

Non-residential buildings

10.71 ***Non-residential buildings consist of buildings other than dwellings, including fixtures, facilities and equipment that are integral parts of the structures***. For new buildings, costs of site clearance and preparation are included. Public monuments identified primarily as non-residential buildings are also included.

10.72 Examples include products included in CPC class 3212, non-residential buildings, such as warehouses and industrial buildings, commercial buildings, buildings for public entertainment, hotels, restaurants, educational buildings, health buildings, etc.

Other structures

10.73 ***Other structures include structures other than buildings, including the cost of the streets, sewer, etc***. The costs of site clearance and preparation are also included. Public monuments for which identification as dwellings or non-residential buildings is not possible are included as are shafts, tunnels and other structures associated with mining mineral and energy reserves, and the construction of sea walls, dykes flood barriers etc. intended to improve the quality and quantity of land adjacent to them. The infrastructure necessary for aquaculture such as fish farms and shellfish beds is also included.

10.74 Examples include products included in CPC group 532, civil engineering works, such as highways, streets, roads, railways and airfield runways; bridges, elevated highways, tunnels and subways; waterways, harbours, dams and other waterworks; long-distance pipelines, communication and power lines; local pipelines and cables, ancillary works; constructions for mining and manufacture; and constructions for sport and recreation.

10.75 The construction of new public monuments constitutes gross fixed capital formation and similarly, major improvements to existing public monuments are also included in gross fixed capital formation. ***Public monuments are identifiable because of particular historic, national, regional, local, religious or symbolic significance.*** They are accessible to the general public, and visitors are often charged for admission to the monuments or their vicinity. Their owners, who may be government units, non-profit institutions (NPIs), corporations or households, typically use public monuments to produce cultural or entertainment-type services. In principle, the gross fixed capital formation in public monuments should be included in dwellings, non-residential buildings, and other structures as appropriate; in practice, it may be desirable to classify them with other structures. Consumption of fixed capital on new monuments, or on major improvements to existing monuments, should be calculated on the assumption of appropriately long service lives.

Land improvements

10.76 ***Land improvements are the result of actions that lead to major improvements in the quantity, quality or productivity of land, or prevent its deterioration***. Activities such as land clearance, land contouring, creation of wells ad watering holes which are integral to the land in question are to be treated as resulting in land improvements. Activities such as the creation of seawalls, dykes, dams and major irrigation systems which are in the vicinity of the land but not integral to it, which often affect land belonging to several owners and which are often carried out by government, result in assets that are to be classified as structures.

10.77 Land improvements represent a category of fixed assets distinct from the non-produced land asset as it existed before improvement. Land before improvements

are effected remains a non-produced asset and as such is subject to holding gains and losses separately from price changes affecting the improvements. In cases where it is not possible to separate the value of the land before improvement and the value of those improvements, the land should be allocated to the category which represents the greater part of the value.

10.78 The costs of ownership transfer on all land are to be included with land improvements.

Machinery and equipment

10.79 ***Machinery and equipment covers transport equipment, machinery for information communication and telecommunications (ICT) equipment, and other machinery and equipment***. As explained above, machinery and equipment under a financial lease is treated as acquired by the user (lessee) rather than as acquired by the lessor. Tools that are relatively inexpensive and purchased at a relatively steady rate, such as hand tools, may be excluded. Also excluded are machinery and equipment integral to buildings that are included in dwellings and non-residential buildings. Machinery and equipment other than weapons systems acquired for military purposes are included; weapons systems form another category.

10.80 Machinery and equipment such as vehicles, furniture, kitchen equipment, computers, communications equipment, etc. that are acquired by households for purposes of final consumption are not fixed assets and their acquisition is not treated as gross fixed capital formation. However, houseboats, barges, mobile homes and caravans that are used as the principal residences of households are treated as dwellings, so that their acquisition by households is included in gross fixed capital formation.

Transport equipment

10.81 ***Transport equipment consists of equipment for moving people and objects.*** Examples include products other than parts included in CPC division 49, transport equipment, such as motor vehicles, trailers and semi-trailers; ships; railway and tramway locomotives and rolling stock; aircraft and spacecraft; and motorcycles, bicycles, etc.

ICT equipment

10.82 ***ICT equipment consists of devices using electronic controls and also the electronic components forming part of these devises.*** Examples are products within CPC categories 452 and 471.[ii]

Other machinery and equipment

10.83 ***Other machinery and equipment consists of machinery and equipment not elsewhere classified***. Examples include products other than parts included in CPC divisions 43, general purpose machinery; 44, special purpose machinery; 45, office, accounting and computing equipment, 46, electrical machinery and apparatus, 47, radio, television and communication equipment and apparatus; and 48, medical appliances, precision and optical instruments, watches and clocks. Other examples are products other than parts included in CPC groups 337, fuel elements (cartridges) for nuclear reactors; 381, furniture; 383, musical instruments; 384, sports goods; and 423, steam generators except central heating boilers.

Weapons systems

10.84 Weapons systems include vehicles and other equipment such as warships, submarines, military aircraft, tanks, missile carriers and launchers, etc. Most single-use weapons they deliver, such as ammunition, missiles, rockets, bombs, etc., are treated as military inventories. However, some single-use items, such as certain types of ballistic missile with a highly destructive capability, may provide an on-going service of deterrence against aggressors and therefore meet the general criteria for classification as fixed assets.

Cultivated biological resources

10.85 ***Cultivated biological resources cover animal resources yielding repeat products and tree, crop and plant resources yielding repeat products whose natural growth and regeneration is under the direct control, responsibility and management of institutional units***.

10.86 In general, when the production of fixed assets takes a long time to complete, those

assets whose production is not yet completed at the end of the accounting period are recorded as work-in-progress. However, when the assets are produced on own account they are treated as being acquired by their users at the same time as they are produced and not as work-in-progress. These general principles also apply to the production of cultivated assets such as animals or trees that may take a long time to reach maturity. Two cases need to be distinguished from each other: the production of natural assets by specialized producers, such as breeders or tree nurseries, and the own-account production of cultivated assets by their users.

10.87 In the case of the specialist producers, animals or trees whose production is not yet complete and are not ready for sale or delivery are recorded as work-in-progress. Examples are one-year-old horses bred for sale as two-year-old race horses, or young fruit trees that need further growth before being marketable. Such work-in-progress is recorded and valued in exactly the same way as that originating in any other kind of production.

10.88 However, when animals or trees intended to be used as fixed assets are produced on own account by farmers or others, incomplete assets in the form of immature animals, trees, etc. that are not ready to be used in production are not treated as work-in-progress but as gross fixed capital formation by the producing unit in its capacity as eventual user.

Animal resources yielding repeat products

10.89 ***Animal resources yielding repeat products cover animals whose natural growth and regeneration are under the direct control, responsibility and management of institutional units.*** They include breeding stocks, dairy cattle, draft animals, sheep or other animals used for wool production and animals used for transportation, racing or entertainment. Animals raised for slaughter, including poultry, are not fixed assets but inventories. Immature cultivated assets are excluded unless produced for own use.

10.90 This heading includes aquatic resources yielding repeat products, consisting of aquatic resources maintained for controlled reproduction. In all but exceptional cases, though, these will be small and may be ignored unless of significant importance.

10.91 Gross fixed capital formation in livestock that are cultivated for the products they yield year after year (dairy cattle, draught animals, etc.) is measured by the value of acquisitions less disposals, taking account of the treatment just described of immature livestock reared on own account. It is therefore equal to the total value of all mature animals and immature animals produced on own account acquired by users of the livestock less the value of their disposals. Disposals consist of animals sold or otherwise disposed of, including those sold for slaughter, plus those animals slaughtered by their owners. Exceptional losses of animals due to major outbreaks of disease, contamination, drought, famine, or other natural disasters are recorded in the other changes in the volume of assets account and not as disposals. Incidental losses of animals due to occasional deaths from natural causes form part of consumption of fixed capital. Consumption of fixed capital of an individual animal is measured by the decline in its value as it gets older.

Tree, crop and plant resources yielding repeat products

10.92 ***Tree, crop and plant resources yielding repeat products cover plants whose natural growth and regeneration are under the direct control, responsibility and management of institutional units.*** They include trees (including vines and shrubs cultivated for fruits and nuts, for sap and resin and for bark and leaf products. Trees grown for timber that yield a finished product once only when they are ultimately felled are not fixed assets, just as cereals or vegetables that produce only a single crop when they are harvested cannot be fixed assets.

10.93 Gross fixed capital formation in plantations, orchards, etc., consists of the value of the acquisitions less disposals of mature trees, shrubs, etc., including acquisitions of immature trees, shrubs, etc., produced on own account. As explained above, the value of the latter may be approximated, if necessary, by the value of costs incurred in their production during the period: for example, the costs of preparing the ground, planting, staking,

protection from weather or disease, pruning, training, etc., until the tree reaches maturity and starts to yield a product. Disposals consist of trees, shrubs, etc., sold or otherwise transferred to other units plus those cut down before the end of their service lives. Disposals do not include exceptional losses of trees due to drought or other natural disasters such as gales or hurricanes, these being recorded in the other changes in the volume of assets account.

Costs of ownership transfer on non-produced assets

10.94 The costs of ownership transfer on non-produced assets represent produced assets but their value cannot be integrated with the value of another produced asset. They must therefore be shown as a separate category of gross fixed capital formation. An exception is made in the case of land where costs of ownership transfer are treated by convention as land improvements. Costs of ownership transfer are defined in paragraphs 10.47 to 51.

Intellectual property products

10.95 ***Intellectual property products are the result of research, development, investigation or innovation leading to knowledge that the developer can market or use to their own benefit in production because use of the knowledge is restricted by means of legal or other protection.*** The knowledge may be embodied in a free-standing product or may be embodied in another. When the latter is the case, the product embodying the knowledge has an increased price relative to a similar product without this embodied knowledge. The knowledge remains an asset as long as its use can create some form of monopoly profits for its owner. When it is no longer protected or becomes out-dated by later developments, it ceases to be an asset.

10.96 Specific form of intellectual property products are research and development, mineral exploration and evaluation, computer software and databases, and entertainment, literary or artistic originals.

10.97 Some intellectual property products are used solely by the unit responsible for their development or by a single unit to whom the product is transferred. Mineral exploration and evaluation is an example. Other products, such as computer software and artistic originals, are used in two forms. The first is the original or "master copy". This is frequently controlled by a single unit but exceptions exist as explained below. The original is used to make copies that are in turn supplied to other units. The copies may be sold outright or made available under a licence. A copy sold outright may be treated as a fixed asset if it satisfies the necessary conditions, that is it will be used in production for a period in excess of one year. A copy made available under a licence to use, where the holder of the original is responsible for maintenance (fixing software bugs for example) and support is not an asset. The licence to use represents an operating lease and payments to the holder of the original represent payments for a service. This is so even if the payment coveys the right to use the copy for more than one year unless there is a specific financial lease agreement between the holder of the original and the user of the copy. If the licence allows the licensee to reproduce the original and subsequently assume responsibility for the distribution, support and maintenance of these copies, then this is described as a licence to reproduce and should be regarded as the sale of part or whole of the original to the unit holding the licence to reproduce

10.98 When copies are distributed by the owner free of charge then no flows between the owner and recipients are recorded in the System. If, despite making copies freely available, the owner still expects to obtain benefits then the present value of those benefits should be recorded in its balance sheet. It may be that when the information distributed freely it was incomplete and the owner intends to make more detailed information available at a price later. Software distributed freely at the beta test stage is one example. Alternatively, the owner justifies the expenditure on the basis of the benefits to its own production and may make copies available for marketing purposes, generating goodwill or in cases it considers deserving.

10.99 It is often the case for some intellectual property products that some of the benefits accrue to units other than the owner to the extent they stimulate the production of other intellectual property products by

other units. Examples of such spillovers include a breakthrough in the development of new class of drug leading other enterprises to develop competing drugs of the same type, and the success or failure of mineral exploration in a particular zone informing other units with exploration rights in a neighbouring zone. These are treated in the same way as other externalities in the System. Unless there is a quantifiable monetary impact for one or both parties, nothing is recorded in the system..

Research and development

10.100 ***Research and [experimental] development consists of the value of expenditures on creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and use of this stock of knowledge to devise new applications. This does not extend to including human capital as assets within the System.*** The value of research and development (R&D) should be determined in terms of the economic benefits it is expected to provide in the future. This includes the provision of public services in the case of R&D acquired by government. In principle, R&D that does not provide an economic benefit to its owner does not constitute a fixed asset and should be treated as intermediate consumption. Unless the market value of the R&D is observed directly, it may, by convention be valued at the sum of costs, including the cost of unsuccessful R&D.

10.101 With the inclusion of R&D expenditure as capital formation, patented entities no longer feature as assets in the System. The patent agreement is to be seen instead as the legal agreement concerning the terms on which access to the R&D is granted.

Mineral exploration and evaluation

10.102 ***Mineral exploration and evaluation consists of the value of expenditures on exploration for petroleum and natural gas and for non-petroleum deposits and subsequent evaluation of the discoveries made.*** These expenditures include pre-licence costs, licence and acquisition costs, appraisal costs and the costs of actual test drilling and boring, as well as the costs of aerial and other surveys, transportation costs, etc., incurred to make it possible to carry out the tests. Re-evaluations may take place after commercial exploitation of the reserve has started and the cost of these re-evaluations is also included in gross fixed capital formation.

10.103 Mineral exploration is undertaken in order to discover new deposits of minerals or fuels that may be exploited commercially. Such exploration may be undertaken on own account by enterprises engaged in mining or the extraction of fuels. Alternatively, specialized enterprises may carry out exploration either for their purposes or for fees. The information obtained from exploration influences the production activities of those who obtain it over a number of years. The expenditures incurred on exploration within a given accounting period, whether undertaken on own account or not, are therefore treated as expenditures on the acquisition of an intellectual property product and included in the enterprise's gross fixed capital formation.

10.104 The expenditures included in gross fixed capital formation include not only the costs of actual test drillings and borings, but also the costs incurred to make it possible to carry out tests, for example, the costs of aerial or other surveys, transportation costs, etc. The value of the resulting asset is not measured by the value of new deposits discovered by the exploration but by the value of the resources allocated to exploration during the accounting period. When the activities are carried out by contractors, the prices charged by these contractors, including their operating surplus, become part of the value of the expenditures incurred. Consumption of fixed capital may be calculated for such assets by using average service lives similar to those used by mining or oil corporations in their own accounts.

Computer software and databases

10.105 Computer software and databases are grouped together because a computerised database cannot be developed independently of a database management system (DBMS), which is itself computer software.

Computer software

10.106 ***Computer software consists of computer programs, program descriptions and supporting materials for both systems and applications software***. Gross fixed capital formation in computer software includes both the initial development and subsequent extensions of software as well as acquisition of copies that are classified as assets.

10.107 The development of computer software represents the development of an intellectual property product. It is treated as an asset if it is to be used in production by its developer for more than one year. The software may be intended only for own use or may be intended for sale by means of copies. If copies of the software are sold on the market, their treatment follows the principles described in paragraph 10.100. Software purchased on the market is valued at purchasers' prices, while software developed in-house is valued at its estimated basic price, or at its costs of production if it is not possible to estimate the basic price.

Databases

10.108 ***A database consists of files of data organised in such a way as to permit resource-effective access and use of the data.*** Databases may be developed exclusively for own use or for sale as an entity or for sale by means of a licence to access the information contained. The standard conditions for when an own-use database or a purchased database or the licence to access a database constitutes an asset apply.

10.109 The creation of a database will generally have to be estimated by a sum-of-costs approach. The cost of the DBMS used should not be included in the costs but be treated as a computer software asset unless it is used under an operating lease. The cost of preparing data in the appropriate format is included in the cost of the database but not the cost of acquiring or producing the data initially. Other costs will include staff time estimated on the basis of the amount of time spent in developing the database, an estimate of the capital services of the assets used in developing the database and costs of items used as intermediate consumption.

10.110 Databases for sale should be valued at their market price, which includes the value of the information content. If the value of a software component is available separately, it should be recorded as the sale of software.

Entertainment, literary and artistic originals

10.111 ***Entertainment, literary and artistic originals consist of the original films, sound recordings, manuscripts, tapes, models, etc., on which drama performances, radio and television programming, musical performances, sporting events, literary and artistic output, etc., are recorded or embodied.*** Such works are frequently developed on own account. Subsequently they may be sold outright or by means of licences. The standard conditions on when the originals and copies are recognised as fixed assets apply. If an original is acquired as a valuable, its production does not count as own account production of a fixed asset but it may have been classified as work-in-progress.

Other intellectual property products

10.112 ***Other intellectual property products includes any such products that constitute fixed assets but are not captured in one of the specific items above***.

2. Changes in inventories

10.113 ***Changes in inventories are measured by the value of the entries into inventories less the value of withdrawals and the value of any recurrent losses of goods held in inventories during the accounting period***. Some of these acquisitions and disposals are attributable to actual purchases or sales, but others reflect transactions that are internal to the enterprise.

10.114 It is useful to distinguish between two functions performed by an enterprise: its function as a producer of goods and services and its function as an owner of assets. When a good is entered into inventories it is acquired as an asset by the enterprise in its capacity as owner either by purchase (or barter) or by an internal transaction with itself as the producer. Conversely, a good leaving inventories

represents the disposal of an asset by the owner either by sale or other use, by an internal transfer to the producer or possibly as a result of recurrent losses (recurrent wastage, accidental damage or pilfering).

Storage and stocks of inventories

10.115 Most goods going into inventories simply remain there until they are withdrawn in the same state as when they entered. Not infrequently, the price of the goods will have increased while they are in inventories, but these increases are not due to production but are simply holding gains. There are some goods, though, where the passage of time in store changes the character of the goods. In such cases, the increase in value due to storage is to be treated as production and not as holding gains, though holding gains (or losses) may occur as well.

10.116 The indication that storage is being undertaken as a production activity is that the price of the good stored, relative to the general level of prices, is expected to increase by a certain amount over a pre-determined time. For example, winter wheat may be expected, on the basis of past experience, to fetch a given multiple of its price at harvest. Similarly wine that is several years old is more valuable than the current year's vintage by a predictable factor.

10.117 The activity of storage may be undertaken by any institutional unit, not just the original producer of the product or may be undertaken by several units in succession if the ownership of the goods changes during storage.

10.118 The goods in storage are classified as work-in-progress and not finished goods. The increase in value during the accounting period up to the expected level at that time is treated as production of storage; any difference from this level is treated as a holding gain or loss. The expected level of price increase for items being stored for more than one year, though, needs to be calculated in accordance with the principles of valuing work-in-progress described below.

Valuation

10.119 The enterprise in its capacity as a producer may obtain goods or services for intermediate consumption either by purchasing them on the market for immediate use or by internal transfers out of inventories. In order to ensure that all the goods and services used for intermediate consumption are consistently valued at current prices, the goods transferred out of inventories are valued at purchasers' prices current at the time of the withdrawal from

10.120 inventories. Similarly, the output produced by the producer may either be sold or otherwise disposed of or be transferred to inventories as finished products or work-in-progress. In order to ensure that output is consistently valued, finished goods transferred into inventories are valued as if they were sold at that time, while additions to work-in-progress are given the value they have at the time they are added to inventories.

Valuation of work-in-progress

10.121 Much work-in-progress is of short duration and occurs only because production is a continuous process and some goods will be incomplete at the end of one accounting period but will be completed long before the end of the next. For output with a production period of a year or less, and assuming that prices and costs remain stable during the period of production, the value of the additions to work-in-progress for non-agricultural products within a given accounting period can be approximated by calculating the proportion of the total production costs incurred in that period and applying that ratio to the basic price realized by the finished product. Thus, the value of the output of the finished product is distributed over the accounting periods in which it was produced in proportion to the costs incurred in each period. If the average levels of prices and costs change from period to period, the output should be allocated initially using the prices and costs at the time the production is finished, and then the values of the work-in-progress thus calculated for earlier periods should be re-valued in proportion to the change in average cost levels from period to period.

10.122 For agricultural products, this method of allocating output over multiple periods may not be satisfactory. A disproportionate share of the costs may be incurred in sowing a crop with little if any costs being incurred until harvest. Prorating the output to the physical growth of the crop may be considered a possibility but in cases where there is serious risk of climatic damage just before the crop is harvested, this may give over-optimistic indications of probable output. Pragmatic distributions over quarters based on past experience may have to be used, or where multi-cropping is the norm, to allow the whole output of each crop to be counted in the period when it is harvested.

10.123 There are important activities, such as construction of buildings, structures and complex machinery, where the production process may take several years. In these cases, the valuation of the partially complete product requires careful consideration especially since such large projects are by their nature very costly.

10.124 Even if one fifth of the work involved is put in place annually over a period of five years, it does not follow that one fifth of the value (assuming zero inflation for simplicity) should be recorded in each year. The work put in place in the first year cannot be used for four more years and so the value of it must be discounted to allow for this delay. In the second year, the value of the work put in place in the first year will increase by one discount factor and this should be added to the value of the work put in place in the second year and so on.

Transactions in inventories

10.125 The transactions in the capital account relating to inventories show the change in the level of inventories of each type. The changes comprise the additions less withdrawals and less regular losses from inventories. Table 10.3 shows the expansion of table 10.1 to incorporate changes in inventories. The classification of inventories is also given in table 10.4. Each of the categories is described and defined below.

Materials and supplies

10.126 ***Materials and supplies consist of all goods that an enterprise holds in stock with the intention of using them as intermediate inputs into production.*** Not all necessarily get used in this way, however, as some may be lost as a result of physical deterioration, or recurrent accidental damage or pilfering. Such losses of materials and supplies are recorded and valued in the same way as materials and supplies actually withdrawn to be used up in production.

Table 10.3: Table 10.1 expanded to include detailed changes in inventories

Changes in assets

Transactions 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	Goods and services	Total
Saving, net									
Current external balance									
Net capital formation	141	- 1	10	26	16	192			192
Gross fixed capital formation	250	9	37	61	19	376			376
Consumption of fixed capital	- 137	- 10	- 30	- 42	- 3	- 222			- 222
Gross fixed capital formation by type of asset									
Changes in inventories	26			2		28			28
Materials and supplies									
Work-in-progress									
Work-in-progress on cultivated biological assets									
Other work-in-progress									
Finished goods									
Military inventories									
Goods for resale									
Acquisitions less disposals of valuables	2		3	5		10			10
Acquisitions less disposals of non-produced assets	- 7	0	2	4	1	0			0
Capital transfers, receivable									
Capital transfers, payable									
Net lending (+) / net borrowing (–)	- 69	5	- 50	146	4	36	- 36		0

Materials and supplies

10.127 ***Materials and supplies consist of all goods that an enterprise holds in stock with the intention of using them as intermediate inputs into production.*** Not all necessarily get used in this way, however, as some may be lost as a result of physical deterioration, or recurrent accidental damage or pilfering. Such losses of materials and supplies are recorded and valued in the same way as materials and supplies actually withdrawn to be used up in production.

10.128 Enterprises may hold a variety of quite different kinds of goods under the heading of materials and supplies, the most common types being fuels, industrial raw materials, agricultural materials, semi-processed goods, components for assembly, packaging materials, foodstuffs, office supplies, etc. Every enterprise, including non-market producers owned by government units, may be expected to hold some inventories of materials and supplies, if only inventories of office supplies.

10.129 Materials and supplies do not include works of art or stocks of precious metals or stones acquired by enterprises as valuables. However, there are some producers that do use gold, diamonds, etc. as intermediate inputs into the production of other goods or services, for example, manufacturers of jewellery or dentists. Stocks of gold, diamonds, etc., intended for use in production are recorded under materials and supplies.

Work-in-progress

10.130 ***Work-in-progress consists of output produced by an enterprise that is not yet sufficiently processed to be in a state in which it is normally supplied to other institutional units.*** Work-in-progress occurs in all industries, but is especially important in those in which some time is needed to produce a unit of finished output, for example, in agriculture, or in industries producing complex fixed assets such as ships, dwellings, software or films. Work-in-progress can therefore take a wide variety of different forms ranging from growing crops to partially completed film productions or computer programs. Although work-in-progress is output that has not reached the state in which it is normally supplied to others, its ownership is nevertheless transferable, if necessary. For example, it may be sold under exceptional circumstances such as the liquidation of the enterprise.

10.131 Work-in-progress must be recorded for any output that is not complete at the end of the accounting period. The shorter the accounting period, the more important work-in-progress is likely to be relatively to finished output. In particular, it is likely to be more significant for quarterly accounts than annual accounts, if only because the production of many agricultural crops is completed within a year but not necessarily within a quarter. The only exceptions to recording incomplete work as work-in-progress is for partially completed structures for which the ultimate owner is deemed to have taken ownership, either because the production is for own use or as evidenced by the existence of a contract of sale/purchase. They consist of work-in-progress on cultivated assets and other work-in-progress, as defined below.

10.132 Reductions in work-in-progress take place when the production process is completed. At that point, all work-in-progress is transformed into a finished product. Thus, the entire stock of work-in-progress carried forward from earlier accounting periods is recorded as being withdrawn from stock when the production process is finished. If prices and costs have risen, work-in-progress carried forward from previous periods must be revalued using the prices and costs of the period in which the production is finished. Current losses from work-in-progress resulting from physical deterioration or recurrent accidental damage or pilfering should be deducted from the additions to work-in-progress accruing as a result of the production carried out in the same period.

Work-in-progress on cultivated biological resources

10.133 ***Work-in-progress on cultivated biological resources consists of output produced by an enterprise that is not yet sufficiently processed to be in a state in which it is normally supplied to other institutional units.*** In the present context it is necessary to distinguish single-use plants, trees and livestock that produce an output once only (when the plants or trees are cut

down or uprooted or the livestock slaughtered) from trees (including vines and shrubs) and livestock that are used repeatedly or continuously for more than one year to produce outputs such as fruit, nuts, rubber, milk, wool, power, transportation and entertainment. Work-in-progress should be recorded for single use resources. For repeat yield resources, being cultivated on own account, or under an agreed contract with another unit, the growth is counted as fixed capital formation and so excluded from inventories. Any remaining cultivation of resources with repeat yields should be included in work-in-progress. This may be the case for nurseries and breeders of race horses or other special animals, for example.

Other work-in-progress

10.134 ***Other work-in-progress consists of output (other than on cultivated biological resources) produced by an enterprise that is not yet sufficiently processed to be in a state in which it is normally supplied to other institutional units.***

Finished goods

10.135 ***Finished goods consist of goods produced as outputs that their producer does not intend to process further before supplying them to other institutional units***. A good is finished when its producer has completed his intended production process, even though it may subsequently be used as an intermediate input into other processes of production. Thus, inventories of coal produced by a mining enterprise are classified as finished products, although inventories of coal held by a power station are classified under materials and supplies. Inventories of batteries produced by a manufacturer of batteries are finished goods, although inventories of the same batteries held by manufacturers of vehicles and aircraft are classified under materials and supplies.

10.136 Inventories of finished goods may be held only by the enterprises that produce them. Finished goods entering inventories are valued at the basic prices of those goods at the times the entries take place; finished goods withdrawn from inventories are valued at the basic prices at the time when their withdrawals take place. Current losses of finished goods resulting from physical deterioration or recurrent accidental damage or pilfering should be valued at the prices at the time when the losses occur.

Military inventories

10.137 Military inventories consist of the single use weapons, such as ammunition, missiles, rockets, bombs, etc., delivered by weapons or weapons systems. As noted above in the discussion of weapons systems as fixed capital, most single-use items are treated as inventories but some types of missiles with highly destructive capability may be treated as fixed capital because of their ability to provide an on-going deterrence service against aggressors.

Goods for resale

10.138 ***Goods for resale are goods acquired by enterprises, such as wholesalers or retailers, for the purpose of reselling them to their customers.*** Goods for resale are not processed further by the enterprises that purchase them, except for presenting them for resale in ways that are attractive to their customers. Thus, goods for resale may be transported, stored, graded, sorted, washed, packaged, etc. by their owners but are not otherwise transformed.

10.139 Goods for resale entering the inventories of the enterprises are valued at their actual or estimated purchasers' prices. These prices include any additional transportation charges paid to enterprises other than the suppliers of the goods, but not the costs of any transport services produced on own account by the enterprise taking delivery. Goods acquired by barter are valued at their estimated purchasers' prices at the time of acquisition.

10.140 Goods for resale withdrawn from inventories are valued at the purchasers' prices at which they can be replaced at the time they are withdrawn as distinct from the purchasers' prices that may have been paid for them when they were acquired. Reductions in inventories are valued in this way whether the goods withdrawn are sold at a profit or at a loss, or even not sold at all as a result of physical deterioration or recurrent accidental damage or pilfering.

10.141 By convention, goods for resale also include goods acquired by government for distribution as social transfers in kind but that have not yet been so delivered.

3. Acquisitions less disposals of valuables

The asset boundary

10.142 Valuables include precious metals and stones, antiques and other art objects and other valuables. However, not all items that may be described by one of these titles should necessarily be included as a valuable in the balance sheet of the owner. The intent of the heading is to capture those items that are often regarded as alternative forms of investment. At various times, investors may choose to buy gold rather than a financial asset, pension funds have been known to buy "old master" paintings when the prices of financial assets were behaving in a volatile manner. Individuals (households in SNA terminology) may also choose to acquire some of these items knowing that they may be sold if there is a need to raise funds.

Valuation

10.143 Costs of ownership transfer such as valuers' and auctioneers' margins are often incurred when valuables are exchanged. As with other non-financial assets, these costs are included in the value of the items when recorded in the balance sheet[iii].

Transactions in valuables

10.144 A possible categorisation of valuables is: precious metals and stones; antiques and other art objects; and other valuables. This list should be regarded as indicative and supplementary rather than a standard breakdown. The context of each category is described to assist in identifying and valuing valuables.

Precious metals and stones

10.145 Precious metals and stones are treated as valuables when they are not held by enterprises for sale or use as inputs into processes of production nor are held as monetary gold nor in the form of unallocated metal accounts as a form of financial asset.

Antiques and other art objects

10.146 Paintings, sculptures, etc., recognized as works of art and antiques are treated as valuables when they are not held by enterprises for sale. In principle museum exhibits are included under valuables.

Other valuables

10.147 Other valuables not elsewhere classified, include such items as collections of stamps, coins, china, books etc. that have a recognised market value and fine jewellery, fashioned out of precious stones, and metals of significant and realisable value.

C. Consumption of fixed capital

10.148 The concept of consumption of fixed capital is first described and defined in chapter 6 in connection with the difference between gross and net value added and then carries through all subsequent balancing items that may also be shown gross or net of consumption of fixed capital. The capital account is where the counterpart entry to the entry in the production account appears though unusually it appears on the same side as in the production account but with a negative sign rather than on the opposite side of the account.

10.149 Consumption of fixed capital applies to all fixed assets and for every year the asset is in use in production. Because costs of ownership transfer are treated as fixed assets, including terminal costs, they are also subject to consumption of fixed capital. All buildings and other structures are assumed to have finite service lives, even when properly maintained, so that consumption of fixed capital is calculated for all such fixed assets, including railways, roads, bridges, tunnels, airports, harbours, pipelines, dams, etc. Service lives are not determined purely by physical durability, and many pieces of

equipment as well as buildings and structures are eventually scrapped because they have become obsolete. However, the service lives for some structures such as certain roads, bridges, dams, etc., may be as long as a century or more.

10.150 Consumption of fixed capital thus measures the decline in the usefulness of a fixed asset for purposes of production. It is a measure that depends on the productive potential of an asset over its normal service life. The value of a fixed asset at any point in time inevitably involves expectations about the future, but this is true of virtually all assets including financial assets and valuables. It is possible to derive reasonable estimates of the consumption of fixed capital on the basis of the average service lives of assets and assumptions about the rates of decline of their efficiency in production over time. Despite elements of uncertainty, producers and users of fixed assets have to take views about their values in practice and markets in which new and existing fixed assets are actively traded provide information that should be taken into account in calculating consumption of fixed capital. Consumption of fixed capital has also to be calculated in respect of major improvements to non-produced assets and costs of ownership transfer associated with non-produced assets as these add to the value of such assets and are a component of gross fixed capital formation. The concept and measurement of the consumption of fixed capital has been explained in chapter VI, and it is not necessary to go into further detail at this point.

10.151 Consumption of fixed capital constitutes a negative change in the value of the fixed assets used in production. Consumption of fixed capital must be measured with reference to a given set of prices, that is, the average prices of the type of asset of constant quality over the period. It may then be defined as the decline, between the beginning and the end of the accounting period, in the value of the fixed assets owned by an enterprise, as a result of their physical deterioration and normal rates of obsolescence and accidental damage. The value of a fixed asset depends upon the benefits that can be expected from using it in production over the remainder of its service life. This value is given by the present discounted value, calculated at the average prices of the period, of the stream of rentals that the owner of a fixed asset could expect if it were rented out to producers over the remainder of its service life. Consumption of fixed capital is then measured by the decline in this value between the beginning and end of the accounting period.

10.152 Consumption of fixed capital may be deducted from gross fixed capital formation to obtain net fixed capital formation to match the balancing item of net saving carried down from the use of income account.

D. Acquisitions less disposals of non-produced non-financial assets

10.153 There are three distinct types of non-produced non-financial assets in the System: natural resources, contract, leases and licences, and goodwill and marketing assets. These three types of assets have little in common except that they are all non-produced and non-financial. A separate section discusses each of the three.

10.154 Table 10.3 shows table 10.1 expanded to show the standard detail of non-produced non-financial assets. Each of the categories is discussed under the appropriate section.

1. Natural resources

The asset boundary

10.155 Not all environmental resources qualify as economic assets. It is useful, therefore, to delineate those naturally occurring resources that fall within the asset boundary of the System from those that do not.

10.156 In the first place, it must be noted that the System's accounts and balance sheets are compiled for institutional units or groups of units and can only refer to the values of assets that belong to the units in question.

Only those naturally occurring assets over which ownership rights have been established and are effectively enforced can therefore qualify as economic assets and be recorded in balance sheets. They do not necessarily have to be owned by individual units, and may be owned collectively by groups of units or by governments on behalf of entire communities. Certain naturally occurring assets, however, may be such that it is not feasible to establish ownership over them: for example, air, or the oceans. In addition, there may be others that cannot be treated as economic assets because they do not actually belong to any particular units. These include not only those whose existence is unknown but also those, including uncultivated forests, that may be known to exist but remain so remote or inaccessible that, in practice, they are not under the effective control of any units.

10.157 Secondly, in order to comply with the general definition of an economic asset, natural assets must not only be owned but must also be capable of bringing economic benefits to their owners, given the technology, scientific knowledge, economic infrastructure, available resources and set of relative prices prevailing on the dates to which the balance sheet relates or expected to do so in the near future. Thus, known deposits of minerals that are not commercially exploitable in the foreseeable future are not included in the balance sheets of the System, even though they may possibly become commercially exploitable at a later date as a result of major, unforeseen advances in technology or major changes in relative prices.

10.158 Naturally occurring assets in the form of biota (trees, vegetation, animals, birds, fish, etc.) are renewable. The growth and regeneration of trees, crops or other vegetation or the rearing of animals, birds, fish, etc., may take place under the direct control, responsibility and management of institutional units. In this situation, the assets are cultivated, and the activity is treated as falling within the production boundary of the System. The growth of animals, birds, fish, etc., living in the wild, or growth of uncultivated vegetation in forests, is not an economic process of

Table 10. 3: Table 10.1 expanded to include details of non-produced non-financial assets

Changes in assets									
	S.11	S.12	S.13	S.14	S.15	S.1			
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Saving, net									
Current external balance									
Net capital formation	141	- 1	10	26	16	192			192
Gross fixed capital formation	250	9	37	61	19	376			376
Consumption of fixed capital	- 137	- 10	- 30	- 42	- 3	- 222			- 222
Gross fixed capital formation by type of asset									
Changes in inventories	26			2		28			28
Acquisitions less disposals of valuables	2		3	5		10			10
Acquisitions less disposals of non-produced assets	- 7	0	2	4	1	0			0
Acquisitions less disposals of natural resources	- 6		2	3	1	0			0
Land									
Mineral and energy reserves									
Non-cultivated biological resources									
Water resources									
Other natural resources									
Radio spectra									
Other									
Acquisitions less disposals of contracts, leases and licences	- 1			1		0			0
Third-party property rights									
Marketable operating leases									
Permissions to use natural resources									
Permissions to undertake specific activities									
Entitlement to future goods and services on an exclusive basis									
Purchases less sales of goodwill and marketing assets									
Capital transfers, receivable									
Capital transfers, payable									
Net lending (+) / net borrowing (–)	- 69	5	- 50	146	4	36	- 36		0

production so that the resulting assets cannot be classed as produced assets. Nevertheless, when the forests and/or the animals, birds, fish, etc. are actually owned by institutional units and are a source of benefit to their owners, they constitute economic assets. When wild animals, birds, fish, etc. live in locations such that no institutional units are able to exercise effective ownership rights over them they fall outside the asset boundary. Similarly, the forests or other vegetation growing in such regions are not counted as economic assets. On the other hand, fish stocks in the high seas which are now subject to international agreement on how much may be caught by individual countries may be counted as falling within the asset boundary.

Ownership

10.159 All owners and purchasers of land within the economic territory are deemed to have a centre of economic interest in the economy. If an owner or purchaser would not otherwise qualify as a resident unit, a notional resident unit is created for this purpose. The notional resident unit is deemed to purchase the land while the non-resident is deemed to purchase the equity of the notional unit and thus acquires a financial instead of a non-financial asset. Thus, all purchases and sales of land normally take place between resident units. The one exception is when the boundaries of the economic territory itself are changed as a result of the purchase or sale, for example, when a foreign government, or international organization, purchases or sells land that is added to, or taken away from, the enclave in which its embassy or offices are located. Moreover, as purchases and sales of land between residents are also recorded excluding costs of ownership transfer for both buyers and sellers, the total value of the purchases and sales of land between residents must be equal to each other at the level of the total economy, although not at the level of individual sectors or sub-sectors.

10.160 Similarly, it is assumed that extraction of sub-soil resources can only be undertaken by resident institutional units. As soon as an enterprise starts to prepare to establish for extraction, for example by obtaining the requisite licences, it is assumed to become resident at that point.

Valuation

10.161 Since natural resources are non-produced, the costs of ownership transfer, which are part of fixed capital formation, must be shown separately and not as part of the value of the transaction in the non-produced asset.

Transactions in natural resources

10.162 Transactions in natural resources are shown as acquisitions less disposals of the asset in question, according to the classification given in table 10.7.

Land

10.163 ***Land consists of the ground, including the soil covering and any associated surface waters, over which ownership rights are enforced and from which economic benefits can be derived by their owners by holding or using them.*** Excluded are any buildings or other structures situated on it or running through it; cultivated crops, trees and animals; mineral and energy reserves; non-cultivated biological resources and water resources below the ground. The associated surface water includes any inland waters (reservoirs, lakes, rivers, etc.) over which ownership rights can be exercised and tht can, therefore, be the subject of transactions between institutional units.

10.164 As explained above, land improvements and the costs of ownership transfer on land are treated as fixed assets and shown separately. In consequence, acquisitions and disposals of natural land are recorded at the same value for both the purchaser and the seller. Since both parties to the transaction must be residents, it follows that, for the economy as a whole, the aggregate value of total purchases of land must equal the aggregate value of total sales, although this is not generally true at lower levels of aggregation, such as individual sectors or sub-sectors. The value of acquisitions less disposals of land is thus zero for the economy as a whole (excluding transactions that change the boundary of the economic territory itself, as noted in paragraph 10.156).

10.165 Buildings, or other structures, and plantations are often purchased or sold together with the land on which they are

situated, without separate valuations being placed on the structures and the land. Even if it is not feasible to obtain separate valuations, as may be the case for existing structures, it may be possible to determine which out of the land or the structure accounts for most of their combined value and to classify the transaction as the purchase of land or of a structure depending upon which has the greater value. If it is not possible to determine whether the land or the structure is the more valuable, by convention, the transaction should be classified as the purchase of a structure, that is, as gross fixed capital formation. A similar convention holds for plantations.

10.166 The System does not specify a disaggregation of natural land but it is recommended that if a disaggregation is required, it should be according to that used in the SEEA (reference), viz:

Natural land under buildings and structures and associated surface water
Natural land under cultivation and associated surface water
Other natural land and associated surface water
Wooded land
Non-wooded land.

These categories are described and defined in the SEEA.

Mineral ands energy reserves

10.167 ***Mineral and energy reserves consist of proven reserves of mineral deposits and energy reserves located on or below the earth's surface that are economically exploitable, given current technology and relative prices.*** Ownership rights to the mineral and energy reserves are usually separable from those to the land itself. Mineral and energy reserves consist of known reserves of coal, oil, gas or other fuels and metallic ores, and non-metallic minerals, etc., that are located below or on the earth's surface, including reserves under the sea. The transactions recorded in the capital account refer only to those mineral and energy reserves over which ownership rights have been established. In most cases, mineral and energy reserves may be owned separately from land below which they are located, but in other cases the law may stipulate that the ownership of the mineral and energy reserves is inseparably linked to that of the land.

10.168 The transactions in mineral and energy reserves recorded in the capital account refer to acquisitions or disposals of deposits of mineral and energy reserves in which the ownership of such assets passes from one institutional unit to another. Reductions in the value of known reserves of mineral and energy reserves resulting from their depletion as a result of extracting the assets for purposes of production are not recorded in the capital account but in the other changes in the volume of assets account.

10.169 Again if a disaggregation is required, it is recommended to follow that in the SEEA, viz:

Coal, oil and mineral gas reserves
Metallic mineral deposits
Non-metallic mineral deposits

These categories are described and defined in the SEEA.

Non-cultivated biological resources

10.170 ***Non-cultivated biological resources consist of animals and plants that yield both once-only and repeat products over which ownership rights are enforced but for which natural growth and/or regeneration is not under the direct control, responsibility and management of institutional units.*** Examples are virgin forests and fisheries within the territory of the country. Only those resources that are currently, or are likely soon to be exploitable for economic purposes should be included.

10.171 In the SEEA, this category is further split into aquatic resources, animal resources other than aquatic resources, tree, crop and plant resources. Aquatic resources is further split into aquatic resources in national waters including the exclusive economic zone (EEZ) and those in the high seas.

Water resources

10.172 ***Water resources consist of surface and groundwater resources to the extent that their scarcity leads to the enforcement of***

ownership and/or use rights, market valuation and some measure of economic control. In the SEEA, water resources are divided between groundwater and surface water.

Other natural resources

10.173 The category other natural resources currently includes radio spectra. Given the increasing move to carry out environmental policy by means of market instruments, it may be that other natural resources will come to be recognised as economic assets. If so, this is the category to which they should be allocated.

2. Contracts, leases and licences

The asset boundary

10.174 The only contracts, leases and licences that are included here are those that are transferable in certain well specified circumstances. Chapter 17 contains a section discussing the whole question of the treatment of leases within the SNA and should be consulted if there is doubt about whether a contract, lease or licence should be treated as an asset.

Valuation

10.175 As with natural resources, the costs of ownership transfer on the acquisition and disposal of contracts, leases and licences should be shown separately as fixed capital formation.[iv]

Transactions in contracts, leases and licences

10.176 There are two classes of contracts, leases and licences considered to be assets in the System: third-party property rights and entitlement to future goods and services on an excusive basis.

Third-party property rights

10.177 ***Third-party property rights allow one party to a legal agreement concerning the use of an asset to convey his rights to a third party, not involved in the previous agreement.*** There are three types of third-party property rights recognised in the System; marketable operating leases, permissions to use natural resources and permissions to undertake specific activities.

Marketable operating leases

10.178 ***Marketable operating leases are third party property rights relating to fixed assets***. An example is the ability to sub-let a dwelling or business premises under a rental agreement.

Permissions to use natural resources

10.179 ***Permissions to use natural resources are third party property rights relating to natural resources.*** An example is the sale of a fishing quota.

Permissions to undertake specific activities

10.180 Permissions to undertake specific activities issued by units other than government are rare. They are treated as payment for a service or payment of rent depending on whether the activity permitted makes use of a non-produced non-financial asset belonging to the permit issuer or not. An example of the former is a hotel offering a concession to a firm to transport hotel guests. An example of the latter is an individual renting small amounts of land for use as market garden or allotments. This second example is consistent with the treatment of resource lease and in practice may be indistinguishable from it.)

10.181 In general permissions issued by government are treated as the payment of a tax. If the permit covers more than one year, and government recognises an obligation to make a reimbursement if the permit is withdrawn or surrendered before the end of the period originally covered, it is recorded an accrual basis with an accounts receivable/ payable entry recorded by both government and the permit holder in years before the last.

10.182 Permission to undertake specific activities are treated as assets only in the two sets of circumstances.

a. The first set of circumstances requires all the following conditions to be met:

i. The number of permits of the same type issued is strictly limited;

ii. The permit has to be valid for more than one year;

iii. The permit is issued by government but government does not recognise the obligation to make a reimbursement if the permit is withdrawn or surrendered before the end of the period originally covered

b. ***The second circumstance is that the holder of a multi-period permit issues by government , whether or not it is reimbursable, is legally and practically able to sell it to a third party.***

10.183 Under the first set of circumstances the value of the permit is the amount paid to government for the permit less a proportion corresponding to the length of the period of the permit that has expired. (This decrease in value is recorded in the other changes in the volume of assets account.) Under the second set of circumstances, the value of the asset is the amount at which it changes hands, suitable abated by a factor determined by the length of time the permit remains valid.

Entitlement to future goods and services on an exclusive basis

10.184 ***Entitlement to future goods and services on an exclusive basis relate to the case where one party which has contracted to purchase goods or services at a fixed price at a time in the future is able to transfer the obligation of the second party to the contract to a third party***. Examples are footballers' contracts, a publisher's exclusive right to publish new works by a named author or issue recordings by named musicians.

3. Goodwill and marketing assets

10.185 Potential purchasers of an enterprise are often prepared to pay a premium above the net value of its individually identified and valued assets and liabilities. This excess is described as "goodwill" and reflects the value of corporate structures and the value to the business of an assembled workforce and management, corporate culture, distribution networks and customer base. It may not have value in isolation from other assets, but it enhances the value of those other assets. Looked at another way, it is the addition to the value of individual assets because they are used in combination with each other.

10.186 Goodwill cannot be separately identified and sold to another party. The value has to be derived by deducting from the sale value of the corporation the value of assets and liabilities classified elsewhere within the SNA asset boundary. (n practice, since it is estimated as a residual, an estimate of goodwill will also reflect errors and omissions in the valuation of other assets and liabilities.

10.187 As well as residual errors, the value of goodwill may include the value to the corporation of items known as marketing assets**.** ***Marketing assets consist of items such as brand names, mastheads, trademarks, logos and domain names***. A brand can be interpreted as far more than just a corporate name or logo. It is the overall impression a customer or potential customer gains from their experience with the company and its products. Interpreted in that wider sense it can also be seen to encompass some of the characteristics of goodwill such as customer loyalty.

10.188 ***The value of goodwill and marketing assets is defined as the difference between the value paid for an enterprise as a going concern and the sum of its assets less the sum of its liabilities, each item of which has been separately identified and valued.*** Although goodwill is likely to be present in most corporations, for reasons of reliability of measurement it is only recorded in the System when its value is evidenced by a market transaction, usually the sale of the whole corporation. Exceptionally, identified marketing assets may be sold individually and separately from the whole corporation in which case their sale should also be recorded under this item.

E. Capital transfers

1. Capital versus current transfers

10.189 Capital transfers are unrequited transfers where either the party making the transfer realises the funds involved by disposing of an asset (other than inventories) or the party receiving the transfer is obliged to acquire an asset (other than cash) or both conditions are met. Capital transfers are often large and irregular but neither of these are necessary conditions for a transfer to be considered a capital rather than a current transfer.

10.190 A current transfer reduces the income and consumption possibilities of the first party and increases the income and consumption possibilities of the second party. Current transfers are therefore not linked to, or conditional on, the acquisition or disposal of a fixed asset or assets by one or both parties to the transaction. Some cash transfers may be regarded as capital by one party to the transfer but as current by the other.

10.191 For example, the payment of an inheritance tax may be regarded as the transfer of capital by the taxpayer but be regarded as a current receipt by government because it receives many such transfers. Similarly, a large country that makes investment grants to a number of smaller countries may regard the grants as current transfers even though they are specifically intended to finance the acquisition of capital assets. In an integrated system of accounts, such as the SNA, it is not feasible, however, to classify the same transaction differently in different parts of the System. Accordingly, a transfer should be classified as capital for both parties even if it involves the acquisition or disposal of an asset, or assets, by only one of the parties. By convention, social transfer are always treated as current transfers.

10.192 There may be cases in which it is difficult to decide on the evidence available whether to classify a cash transfer as current or capital. When there is serious doubt, the transfer should be classified as current rather than capital. It should be noted, however, that the decision as to which way to classify a transfer has important consequences for the allocation of saving between sectors and sub-sectors, and possibly between the economy as a whole and the rest of the world. Other things being equal, a current transfer increases the saving of the recipient and reduces that of the donor, whereas a capital transfer does not affect the saving of either party. If, therefore, cash transfers are incorrectly classified between current and capital, the saving behaviour recorded for the units or sub-sectors involved may be misleading for purposes of economic analysis and policymaking.

2. Transfers in cash and in kind

10.193 As explained in chapter 9, all current transfers are treated as transfers in cash except for social transfers in kind where a distinction is to be made between the unit incurring the expenditure and the unit benefiting, or using, the goods and services. Even when a good is bought by one unit and given to another, the usual recording is to impute a transfer in cash followed by the purchase of the item in question by the recipient.

10.194 Similar considerations apply to capital transfers. In particular, even when an asset is purchased by one unit and then transferred to another (possibly after some years' use by the first purchaser,) a transfer in cash is recorded followed by the purchase of the asset by the recipient. In this way the net worth of the recipient of the transfer increases and that of the donor decreases and the change in ownership of the asset is recorded as gross fixed capital formation.

10.195 A capital transfer in kind is recorded when the ownership of the asset is transferred or the liability cancelled by the creditor. A capital transfer in cash is recorded when the payment is due to be made.

10.196 If the gift is not of a physical asset but is the remission of a financial liability, the transfer is still recorded as a transfer in cash and the increase in lending for the

recipient is used in the financial account to liquidate the liability concerned.

10.197 The transfer value of a non-financial asset is valued by the estimated price at which the asset, whether new or used, could be sold on the market plus any transport, installation or other costs of ownership transfer incurred by the donor but excluding any such charges incurred by the recipient. Transfers of financial assets, including the cancellation of debts, are valued in the same way as other acquisitions or disposals of financial assets or liabilities.

10.198 There is one special case where a capital transfer in kind may be recorded. This covers the case of assets created by communal effort. Output is recorded for the work done but it cannot be recorded as being sold to the unit that assumes responsibility for upkeep. In effect the community both produces and acquires the asset but the "guardianship" of the communal asset is then passed to the government. The change in ownership in this case must be recorded as a classification change in the other changes in the volume of assets account.

3. Capital taxes

10.199 ***Capital taxes consist of taxes levied at irregular and infrequent intervals on the values of the assets or net worth owned by institutional units or on the values of assets transferred between institutional units as a result of legacies, gifts inter vivos or other transfers.*** They include capital levies and taxes on capital transfers:

a. Capital levies consist of taxes on the values of the assets or net worth owned by institutional units levied at irregular, and very infrequent, intervals of time. Capital levies are treated as exceptional both by units concerned and by the government. They may be payable by households or enterprises. They include betterment levies: i.e., taxes on the increase in the value of agricultural land due to planning permission being given by government units to develop the land for commercial or residential purposes (Government Finance Statistics (GFS): tax code 1133);

Table 10.4: Table 10.1 expanded to show details of capital transfers

								Changes in liabilities and net worth	
	S.11	S.12	S.13	S.14	S.15	S.1			
Transactions and balancing items	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world	Goods and services	Total
Saving, net	48	11	- 10	158	24	231			231
Current external balance							- 39		- 39
Net capital formation								192	192
Gross fixed capital formation								376	376
Consumption of fixed capital								- 222	- 222
Gross fixed capital formation by type of asset									
Changes in inventories								28	28
Acquisitions less disposals of valuables								10	10
Acquisitions less disposals of non-produced assets								0	0
Capital transfers, receivable	33	0	6	23	0	62	4		66
Capital taxes			2			2			2
Investment grants	23					23	4		27
Other capital transfers	10		4	23		37			37
Capital transfers, payable	- 16	- 7	- 34	- 5	- 3	- 65	- 1		- 66
Capital taxes, payable				- 2		- 2			- 2
Investment grants, payable			- 27			- 27			- 27
Other capital transfers, payable	- 16	- 7	- 7	- 3	- 3	- 36	- 1		- 37
Changes in net worth due to saving and capital transfers	65	4	- 38	176	21	228	- 36		192

b. Taxes on capital transfers consist of taxes on the values of assets transferred between institutional units. They consist mainly of inheritance taxes, or death duties, and gift taxes, including gifts inter vivos made between members of the same family to avoid, or minimize, the payment of inheritance taxes. They do not include taxes on sales of assets as these are not transfers (GFS: tax code 1134).

4. Investment grants

10.200 ***Investment grants consist of capital transfers made by governments to other resident or non-resident institutional units to finance all or part of the costs of their acquiring fixed assets.*** The recipients are obliged to use investment grants for purposes of gross fixed capital formation, and the grants are often tied to specific investment projects, such as large construction projects. If the investment project continues over a long period of time, an investment grant in cash may be paid in instalments. Payments of instalments continue to be classified as capital transfers even though they may be recorded in a succession of different accounting periods.

10.201 Investment grants in kind consist of transfers of transport equipment, machinery and other equipment by governments to other resident or non-resident units and also the direct provision of buildings or other structures for resident or non-resident units. These may be constructed by enterprises owned by the donor government or by other enterprises that are paid directly by the donor government.

5. Other capital transfers

10.202 ***Other capital transfers consist of all capital transfers except capital taxes and investment grants.*** One notable category included here is the cancellation of debt by mutual agreement between the creditor and the debtor. Such a cancellation is treated as a capital transfer from the creditor to the debtor equal to the value of the outstanding debt at the time of cancellation. It includes, but is not confined to, the cancellation of debt owned by non-residents to residents, and vice versa.

10.203 However, the unilateral writing off of debt is not a transaction between institutional units and therefore does not appear either in the capital account or the financial account of the System. If the creditor accepts such a write off or default, it should be recorded in the other changes in the volume of assets account of the creditor and the debtor. Provisions for bad debt are treated as book-keeping entries that are internal to the enterprise and do not appear in the System except in the case of expected losses on non-performing loans, which appear as memorandum items in the balance sheets. The unilateral repudiation of debt by a debtor is also not a transaction and is not recognized in the System.

10.204 Capital transfers may take various other forms, of which some examples are given below:

(a) Major payments in compensation for extensive damages or serious injuries not covered by insurance policies. The payments may be awarded by courts of law or settled out of court. They may be made to resident or non-resident units. They include payments of compensation for damages caused by major explosions, oil spillages, the side effects of drugs, etc.

(b) Exceptionally large insurance settlements in the wake of a disaster. For more details on when this is the appropriate form of recording see chapter 17;

(c) Transfers from government units to publicly or privately owned enterprises to cover large operating deficits accumulated over two or more years;

(d) Transfers from central government to units at lower levels of government to cover some, or all, of the costs of gross fixed capital formation or large expenditure deficits accumulated over two or more years;

(e) Legacies or large gifts inter vivos, including legacies to NPIs;

(f) Exceptionally large donations by households or enterprises to NPIs to finance gross fixed capital formation: for example, gifts to universities to cover the costs of building new residential colleges, libraries, laboratories, etc.

(g) community built assets where responsibility for maintenance is then assumed by government.

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[i] This sentence was added by the editor at the suggestion of one commentator to answer the question of what happen to any such structures not handed over to government.

[ii] To be confirmed in 2007.

[iii] That is what the AEG said. I am not sure it makes any sort of sense from an accounting point of view and raises the problem of writing off these costs as consumption of fixed capital even though valuables themselves are supposed to suffer no depreciation. AH

[iv] See my comment on costs of ownership transfer on valuables. Given the infrequent occasion of transactions in contracts, leases and licences, I cannot imagine that these costs would NOT be treated as current consumption, intermediate or final as appropriate. AH