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**Note by the editor:**

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

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

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

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

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

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

*A description of own funds is now provided.*

*Anne Harrison*

## Chapter 13 The Balance Sheet

### A. Introduction

- 13.1. This chapter is concerned with measuring the stocks of assets, both non-financial and financial, and financial liabilities. Assets can be aggregated across all types so as to show the total value of assets, or net worth, of an institutional unit. Alternatively, the total value of a given type of asset across all units in the economy can be derived. Tables depicting the first sort of aggregation are called balance sheets; those depicting the second sort are called asset accounts. For both balance sheets and asset accounts, it is also important to show how the transactions and other flows recorded during the course of an accounting period account for the changes in value of the stock in question between the start and end of the period. The value of the stock at the start of the period is referred to as the opening stock and the value at the end of the period is referred to as the closing stock.
1. **Balance sheets**
- 13.2. *A balance sheet is a statement, drawn up at a particular point in time, of the values of assets owned and of the liabilities owed by an institutional unit or group of units.* A balance sheet may be drawn up for institutional units, institutional sectors and the total economy.
- 13.3. Assets appear in the balance sheet of the unit that is the economic owner of the asset. In many cases this unit will also be the legal owner but in the case of a financial lease, the leased asset appears on the balance sheet of the lessee, while the lessor has a financial asset of similar amount and a corresponding claim against the lessee. On the other hand, when a natural resource is the subject of a resource lease, the asset continues to appear in the balance sheet of the lessor even though most of the economic risks and rewards of using the asset in production are assumed by the lessee. A fuller description of the treatment of leases is given in [chapter 19](#), and of the distinction between legal and economic owner, is given in [chapter 3](#).
- 13.4. The financial and non-financial resources at the disposal of an institutional unit or sector shown in the balance sheet provide an indicator of economic status. These resources are summarized in the balancing item, net worth. *Net worth is defined as the value of all the assets owned by an institutional unit or sector less the value of all its outstanding liabilities.* For the economy as a whole, the balance sheet shows the sum of non-financial assets and net claims on the rest of the world. This sum is often referred to as national wealth.
- 13.5. The balance sheet completes the sequence of accounts, showing the ultimate result of the entries in the production, distribution and use of income, and accumulation accounts.
- 13.6. The existence of a set of balance sheets integrated with the flow accounts encourages analysts to look more broadly in monitoring and assessing economic and financial conditions and behaviour. Balance sheets provide information necessary for analysing a number of topics. For example, in studies of the factors determining household behaviour, consumption and saving functions often include wealth variables to capture the effects of such factors as price fluctuations in corporate securities or the deterioration and obsolescence of stocks of durable consumer goods on households' purchasing patterns. Further, household balance sheets are needed in order to assess the distribution of wealth and liquidity.



	Stocks and changes in liabilities and net worth								
	S.11	S.12	S.13	S.14	S.15	S.1			
	Non-financial corporations	Financial corporations	General government	Households	NPISHs	Total economy	Rest of the world account	Goods and services account	Total
<b>Other flows and balancing items</b>									
<b>Non-financial assets</b>									
<b>Produced assets</b>									
Fixed assets									
Inventories									
Valuables									
<b>Non-produced assets</b>									
Natural resources									
Contracts, leases and licences									
Goodwill and marketing assets									
<b>Financial assets/liabilities</b>									
Monetary gold and SDRs						0			0
Currency and deposits	40	1 281	102	10	38	1 471	116		1 587
Debt securities	44	1 053	212	2		1 311	77		1 388
Loans	897		328	169	43	1 437	17		1 454
Equity and investment fund shares/units	687	715	4			1 406	3		1 409
Insurance, pension and standardised guarantee schemes	12	335	19		5	371	25		396
Financial derivatives and employee stock options									
Other accounts receivable/payable	137		22	108	35	302	59		361
<b>Net worth</b>	<b>4 121</b>	<b>268</b>	<b>1 300</b>	<b>4 352</b>	<b>375</b>	<b>10 416</b>	<b>276</b>		<b>10 692</b>
<b>Total changes in assets/liabilities:</b>									
<b>Non-financial assets</b>									
<b>Produced assets</b>									
Fixed assets									
Inventories									
Valuables									
<b>Non-produced assets</b>									
Natural resources									
Contracts, leases and licences									
Goodwill and marketing assets									
<b>Financial assets/liabilities</b>									
Monetary gold and SDRs						132	-2		130
Currency and deposits	0	130	2	0	0	165	22		187
Debt securities	7	87	71	0	0	213	37		250
Loans	68	0	93	28	24	77	4		81
Equity and investment fund shares/units	43	30	0	0	4	38	0		38
Insurance, pension and standardised guarantee schemes	0	38	0	0	0	0	0		0
Financial derivatives and employee stock options	0	0	0	0	0	0	0		0
Other accounts receivable/payable	37	0	10	5	0	52	30		82
<b>Changes in net worth, total</b>	<b>215</b>	<b>11</b>	<b>2</b>	<b>276</b>	<b>31</b>	<b>535</b>	<b>0</b>		<b>535</b>
<b>Saving and capital transfers</b>									
Other changes in volume of assets	17	-4	2	2	0	17	0		17
<b>Nominal holding gains/losses</b>									
Neutral holding gains/losses	82	6	27	87	6	208	0		208
Real holding gains/losses	52	4	11	9	4	80	0		80
<b>Non-financial assets</b>									
<b>Produced assets</b>									
Fixed assets									
Inventories									
Valuables									
<b>Non-produced assets</b>									
Natural resources									
Contracts, leases and licences									
Goodwill and marketing assets									
<b>Financial assets/liabilities</b>									
Monetary gold and SDRs						1 603	114		1 717
Currency and deposits	40	1 411	104	10	38	1 476	99		1 575
Debt securities	51	1 140	283	2	0	1 650	54		1 704
Loans	965	0	421	197	67	1 483	7		1 490
Equity and investment fund shares/units	730	745	4	0	4	409	25		434
Insurance, pension and standardised guarantee schemes	12	373	19	0	5				
Financial derivatives and employee stock options									
Other accounts receivable/payable	174	0	32	113	35	354	89		443
<b>Net worth</b>	<b>4 336</b>	<b>279</b>	<b>1 302</b>	<b>4 628</b>	<b>406</b>	<b>10 951</b>	<b>276</b>		<b>11 227</b>

13.7. For corporations, balance sheets permit the computation of widely used ratios that involve data on the level of the item. Banks and other financial institutions, for example, observe specific reserve ratios. Non-financial corporations also pay heed to certain ratios such as current assets in relation to current liabilities and the market value of corporate shares in relation to the adjusted book value. Data on the stocks of fixed assets owned by corporations, as well as by other institutional units, are useful also in studies of their investment behaviour and needs for financing. Balance sheet information on financial assets held by, and liabilities owed to, non-residents also are of considerable interest as indicators of the economic resources of a nation and for assessing the external debtor or creditor position of a country.

## 2. Asset accounts

13.8. As well as drawing up a balance sheet showing the values of all assets held by an institutional unit, it is possible to draw up a similar account for the value of a single type of asset held by all institutional units in the economy. This is called an asset account. Basic accounting identity links the opening balance sheet and the closing balance sheet for a given asset:

- (a) The value of the stock of a specific type of asset in the opening balance sheet;

*plus*

- (b) The total value of the same type of asset acquired, less the total value of those disposed of, in transactions that take place within the accounting period: transactions in non-financial assets are recorded in the capital account and transactions in financial assets in the financial account;

*plus*

- (c) The value of other positive or negative changes in the volume of these assets held, for example, as a result of the discovery of a subsoil asset or the destruction of an asset (as a result of war or a natural disaster): these changes are

recorded in the other changes in the volume of assets account;

*plus*

- (d) The value of the positive or negative nominal holding gains accruing during the period resulting from a change in the price of the asset: these changes are shown in the revaluation account;

*equals*

- (e) The value of the stock of the asset in the closing balance sheet.

13.9. Asset accounts for mineral deposits, land and similar natural resources owned by all institutional units in the economy are of interest for monitoring the availability and exploitation of these resources and for formulating environmental policies.

13.10. Information on stocks of fixed assets is used in the analysis of production and productivity. There is more extensive discussion on this in [chapter 19](#).

13.11. Although balance sheets are more familiar to those used to working with commercial accounts, asset accounts are particularly useful for some types of analyses. One example is in connection with environmental accounting where the asset account provides a particularly revealing picture of whether an asset is being used sustainably or not. Another example is in [monetary statistics accounts](#) and another is in connection with the development of capital stock series for fixed assets.

## 3. Structure of the balance sheet

13.12. The balance sheet records assets on the left and liabilities and net worth on the right, as do the accumulation accounts for changes in these items. In table 13.1, only a limited number of classes of assets are shown, though in principle the table can include all the detailed non-financial assets described and defined in chapter 10 and the full set of financial assets and liabilities described and defined in chapter 11. A balance sheet relates to the values of assets and liabilities at a particular moment of time. The System provides for balance sheets to be compiled at the beginning of the accounting period (the

same as the end of the preceding period) and at its end. The System then provides for a complete recording of the changes in the values of the various items in the balance sheet between the beginning and end of the accounting period to which the flow accounts of the System relate. The balancing item in the balance sheet is net worth, which, as noted earlier, is defined as the value of all the assets owned by an institutional unit or sector less the value of all its outstanding liabilities. Changes in net worth can thus be explained fully only by examining the changes in all the other items that make up the balance sheet.

- 13.13. Table 13.1 consists of three sections. The first shows the opening balance sheets and net worth for each institutional sector and the total economy. For the rest of the world, the only relevant entries are for financial assets and liabilities, and net worth.
- 13.14. The second part of table 13.1 consists of a summary of the entries in the capital, financial, other changes in volume of assets and revaluation accounts grouped by type of asset. The entries for fixed assets, for example, show the totals of the entries for fixed assets in each of the capital account, the other changes in volume of assets account and the revaluation account. Under these entries there is a breakdown showing how much of the change in net worth is due to saving and capital transfers, other changes in volume of assets and holding gains. There is no entry carried forward from the financial account because the changes in net worth due to saving and capital transfers are completely exhausted by changes in transactions in financial and non-financial assets<sup>1</sup>.

- 13.15. The third section of table 13.1 shows the closing balance sheet which is numerically equal, cell by cell, to the sum of the corresponding cells in the first two parts of the table. In practice, though, these figures will be determined independently and a reconciliation exercise needed to ensure the identities inherent in the table are satisfied.

#### **4. Structure of asset accounts**

- 13.16. An example of a set of asset accounts is given in table 13.2. The same data for the stock levels in the opening and closing balance sheets are given for the same range of assets but instead of the breakdown by sectors, the columns show the entries for each of the assets coming from the capital and financial account, the other changes in volume of assets account and the revaluation account.
- 13.17. Unlike table 13.1, table 13.2 does not include any entries for assets held by or due to the rest of the world because it focuses on the holding by resident units of particular assets and liabilities. However, by comparing the figures for financial assets and liabilities of the same instrument, it is possible to derive the balance with the rest of the world. For example, in the opening balance sheet figures, the financial assets for currency and deposits is 1,482 and liabilities are 1,471. This implies that the rest of the world has a net liability with the national economy of 11. Table 13.1 shows that the asset position of the rest of the world is 105 and the liability position 116.

## **B. General principles of valuation**

- 13.18. For the balance sheets to be consistent with the accumulation accounts of the System, a particular item in the balance sheet should be valued as if it were being acquired on the date to which the balance sheet relates. This implies that assets and liabilities (and thus net worth) are to be

valued using a set of prices that are current on the date to which the balance sheet relates and that refer to specific assets. In the case of non-financial assets, the value includes any associated costs of ownership transfer.

**Table 13.2: Asset accounts for the total economy**

	Opening balance sheet	Capital and financial account	Other changes in the volume of assets account	Revaluation account			Closing balance sheet
				Nominal holding gains and losses	Neutral holding gains and losses	Real holding gains and losses	
Non-financial assets	9 922	192	10	280	198	82	10 404
Produced assets	6 047	170	- 7	126	121	5	6 338
Fixed assets	5 544	132	- 4	111	111	0	5 785
Dwellings							
Other buildings and structures							
Machinery and equipment							
Weapons systems							
Cultivated biological resources							
Costs of ownership transfer on non-produced assets							
Intellectual property products							
Inventories	231	28	- 1	7	4	3	265
Valuables	272	10	- 2	8	6	2	288
Non-produced assets	3 875	22	17	154	77	77	4 066
Natural resources	3 809	22	16	152	76	76	3 997
Land							
Mineral and energy reserves							
Non-cultivated biological resources							
Water resources							
Other natural resources							
Contracts, leases and licences	66		3	2	1	1	69
Goodwill and marketing assets	0		- 2	0	0	0	- 2
Financial assets	6 792	641	5	84	136	- 52	7 522
Monetary gold and SDRs	770	- 1	7	12	16	- 4	788
Currency and deposits	1 482	119	0	0	30	- 30	1 601
Debt securities	1 263	138	0	40	25	15	1 441
Loans	1 384	244	- 4	0	28	- 28	1 624
Equity and investment fund shares/units	1 296	44	0	32	26	6	1 372
Insurance, pension and standardised guarantee schemes	370	36	2	0	7	- 7	408
Financial derivatives and employee stock options	0	0	0	0	0	0	0
Other accounts receivable/payable	227	61	0	0	4	- 4	288
Financial liabilities	6 298	603	- 2	76	126	- 50	6 975
Monetary gold and SDRs			0	0	0	0	0
Currency and deposits	1 471	132	0	0	30	- 30	1 603
Debt securities	1 311	123	0	42	26	16	1 476
Loans	1 437	217	- 4	0	29	- 29	1 650
Equity and investment fund shares/units	1 406	43	0	34	28	6	1 483
Insurance, pension and standardised guarantee schemes	371	36	2	0	7	- 7	409
Financial derivatives and employee stock options	0	0	0	0	0	0	0
Other accounts receivable/payable	302	52	0	0	6	- 6	354
Net worth	10 416	228	17	288 208		80	10 951

13.19. Ideally these prices should be observable prices on markets whenever such prices are available for the assets and liabilities in question. Prices at which assets may be bought or sold on markets are the basis of decisions by investors, producers, consumers and other economic agents. For example, investors in financial assets (such as securities) and natural resources (such as land) make decisions in respect of acquisitions and disposals of these assets in the light of their values in the market. Producers make decisions about how much of a particular commodity to produce and about where to sell their output by reference to prices on markets. For a given asset, the price is the same for purchaser and seller, and, in the case of financial assets, for creditor and debtor.

13.20. When there are no observable prices because the items in question have not been purchased/sold on the market in the recent past, an attempt has to be made to estimate what the prices would be were the assets to be acquired on the market on the date to which the balance sheet relates. In estimating the current market price for balance sheet valuation, a price averaged over all transactions in a market can be used if the market is one on which the items in question are regularly, actively and freely traded.

13.21. In addition to prices observed in markets or estimated from observed prices, current prices may be approximated for balance sheet valuation in two other ways. In some cases, prices may be approximated by accumulating and revaluing acquisitions less disposals of the asset in



question over its lifetime; this generally is the most practical and also the preferred method for fixed assets, but it can be applied to other assets as well. In other cases, market prices may be approximated by the present, or discounted, value of future economic benefits expected from a given asset; this is the case for a number of financial assets, natural resources and even for fixed assets. With good information and efficient markets, the values of the assets obtained by accumulating and revaluing transactions should equal, or at least approximate, both the present, or discounted, value of the remaining future benefits to be derived from them and their market values when active second-hand markets exist. These three price bases are discussed below in general terms.

## **1. Value observed in markets**

- 13.22. The ideal source of price observations for valuing balance sheet items is a market, like the stock exchange, in which each asset traded is completely homogeneous, is often traded in considerable volume and has its market price listed at regular intervals. Such markets yield data on prices that can be multiplied by indicators of quantity in order to compute the total market value of different classes of assets held by sectors and of different classes of their liabilities. These prices are available for nearly all financial claims, existing transportation equipment, crops, and livestock as well as for newly produced fixed assets and inventories.
- 13.23. For securities quoted on a stock exchange, for example, it is feasible to gather the prices of individual assets and of broad classes of assets and, in addition, to determine the global valuation of all the existing securities of a given type. In some countries, another example of a market in which assets may be traded in sufficient numbers to provide useful price information is the market for existing dwellings.
- 13.24. In addition to providing direct observations on the prices of assets actually traded there, information from such markets may also be used to price similar assets that are not traded. For example, information from the stock exchange also may be used to price unlisted securities by analogy with similar,

listed securities, making some allowance for the inferior marketability of the unlisted securities. Similarly, appraisals of assets for insurance or other purposes generally are based on observed prices for items that are close substitutes, although not identical, and this approach can be used for balance sheet valuation. For a discussion of the special valuation problems associated with direct investment enterprises, see chapter XIV, paragraphs 14.49 and 14.159.

## **2. Values obtained by accumulating and revaluing transactions**

- 13.25. For some assets, initial acquisition costs (appropriately revalued) are written off (amortized) over the asset's expected life. For this method, a pattern of decline must be chosen, and reference may be made to tax laws, accounting conventions, etc. The value of such an asset at a given point in its life is given by its current acquisition price less the accumulated value of these write-offs. This valuation is typically used for assets such as purchased goodwill and contracts, leases and licences.
- 13.26. In addition, most fixed assets are recorded in the balance sheets at current purchasers' or basic prices written-down for the accumulated consumption of fixed capital. This valuation is frequently referred to as "written-down replacement cost". When fixed assets are valued in this way, the balance sheet values are consistent with the measures of consumption of fixed capital elsewhere in the System.

## **3. Present value of future returns**

- 13.27. In the case of assets for which the returns either are delayed (as with timber) or are spread over a lengthy period (as with subsoil assets), although normal prices are used to value the ultimate output, a rate of discount must, in addition, be used to compute the present value of the expected future returns.

## **4. Assets denominated in foreign currencies**

- 13.28. Assets and liabilities denominated in foreign currencies should be converted into the national currency at the market exchange rate prevailing on the date to which the balance sheet relates. This rate should be the mid-point between the

buying and selling spot rates for currency transactions. Valuation when a multiple

exchange rate system is in operation is discussed in chapters XIV and XIX.

## C. The entries in the balance sheet

13.29. Definitions of the assets in the balance sheet at the most detailed level of the classification of assets are given in chapter 10 for non-financial assets and in chapter 11 for financial assets. Definitions are repeated in this section only to the extent needed to provide the context for information on valuation specific to particular assets and other specialized topics.

### 1. Produced assets

#### Fixed assets

13.30. In principle, fixed assets should be valued at the prices prevailing in the market for assets in the same condition as regards technical specifications and age. In practice, this sort of information is not available in the detail required and recourse must be had to valuation by another method, most commonly the value derived by adding the revaluation element that applied to the asset during the period covered by the balance sheet to the opening balance sheet value (or the time since acquisition for newly acquired assets) and deducting the consumption of fixed capital estimated for the period as well as any other volume changes and the value of disposals. In calculating the value of consumption of fixed capital, assumptions have to be made about the decline in price of the asset and even where full market information is not available, the partial information should be used to check that the assumptions made are consistent with this.

13.31. Estimates of consumption of fixed capital must include the decline in value of the purchasers' costs of ownership transfer associated with these assets. These are to be written off over the period the purchaser expects to own the asset. In many cases, this period may coincide with the expected life length of the asset but for some types of asset, particularly vehicles, the purchaser may intend to sell them after a certain period, for example, in order to acquire a newer model. with a higher level

of specification and lower maintenance costs. Installation costs should be treated in a similar manner. Where possible, the estimates of consumption of fixed capital should also allow for anticipated terminal costs such as decommissioning or rehabilitation. Further explanation of these adjustments can be found in chapters 6 and 19. More detail on the application of a perpetual inventory method (PIM) of estimating value of capital stock of fixed assets can be found in the OECD manual, *Measuring Capital* (ref).

13.32. For dwellings, there may be adequate information available from the sale of both new and existing buildings to assist in making balance sheet estimates of the total value of dwellings. However house prices depend to a considerable extent on location and the geographical pattern of sales in the period may not cover all areas adequately, in which case a technique such as a PIM will have to be used. This technique will probably also apply to many other buildings and structures since their characteristics are often specific to the structure concerned.

13.33. The value of land improvements is shown as the written down value of the improvements as originally carried out, suitably revalued. This will always be equal to the difference in value between the land concerned in an unimproved or natural state, and the value that it has after the improvements have been effected.

13.34. Markets for existing automobiles, aircraft, and other transportation equipment may be sufficiently representative to yield useful price observations yield valuation of these stocks or at least to use in conjunction with a set of PIM assumptions. In the case of existing industrial plant and equipment, however, observed prices on markets may not be suitable for determining values for use in the balance sheets, because many of the transactions involve assets that for some reason are not typical; they embody specialized characteristics, they are

obsolete or they are being disposed of under financial duress.

13.35. For balance sheet purposes, livestock that continue to be used in production year after year should be valued on the basis of the current purchasers' prices for animals of a given age. Such information is less likely to be available for trees (including shrubs) cultivated for products they yield year after year; they should then be recorded at the current written-down value of the cumulated capital formation.

13.36. Research and development expenditure is to be valued as cumulated costs written down and revalued as appropriate.

13.37. There are no costs of ownership transfer shown separately in the balance sheets. For non-financial assets, these costs are always included in the value of the asset to which they related. The costs of ownership transfer on financial assets are treated as intermediate consumption when the assets are acquired by corporations or government, final consumption when the assets are acquired by households or exports when the assets are acquired by non-residents.

13.38. Mineral exploration and evaluation should be valued either on the basis of the amounts paid under contracts awarded to other institutional units for the purpose or on the basis of the costs incurred for exploration undertaken on own account. These costs should include a return to the fixed capital used in the exploration activity. That part of exploration undertaken in the past that has not yet been fully written off should be revalued at the prices and costs of the current period.

13.39. Originals of intellectual property products, such as computer software and entertainment, literary or artistic originals should be entered at the written down value of their initial cost, revalued to the prices of the current period. Since these will have often been produced on own account, the initial cost may be the estimated by the sum of costs incurred including a return to capital on the fixed assets used in production. If value cannot be established in this way, it may be appropriate to estimate the preset value of future returns from the original.

13.40. Subsequent copies may appear as assets (i) if the original owner has subcontracted the duties of reproducing and providing support to users of the copies, (ii) if a copy is being used under a contract that is effectively a financial lease. In these cases, market prices should be available to use for valuation.

### Inventories

13.41. Inventories should be valued at the prices prevailing on the date to which the balance sheet relates, and not at the prices at which the products were valued when they entered inventory. In the balance sheets, figures for inventories frequently have to be estimated by adjusting figures of book values of inventories in business accounts, as described in **chapter VI**.

13.42. As is the case elsewhere in the System, inventories of materials and supplies are valued at purchasers' prices, and inventories of finished goods and work-in-progress are valued at basic prices. Inventories of goods intended for resale without further processing by wholesalers and retailers are valued at prices paid for them, excluding any transportation costs incurred by the wholesalers or retailers.

13.43. For inventories of work-in-progress, the value for the closing balance sheet should be consistent with the value of the opening balance sheet, plus any work put in place during the current period, with allowance for any necessary revaluation for changes in prices in the period. As **explained in chapter 6 and chapter 19**, the time series of the value of work in progress put in place over a period of time **should reflect the increase in value of work put in place earlier as the delivery date approaches.**

13.44. Standing single-use crops (including timber) cultivated by human activity and livestock being raised for slaughter are also counted as inventories in work-in-progress. The conventional way of valuing standing timber is to discount the future proceeds of selling the timber at current prices after deducting the expenses of bringing the timber to maturity, felling, etc. For the most part, other crops and livestock can be valued by reference to the prices of such products on markets.

## Valuables

13.45. Given their primary role as stores of value, it is especially important to value works of art, antiques, jewellery, precious stones and metals at current prices. To the extent that well-organized markets exist for these items, they should be valued at the actual or estimated prices that would be paid for them to the owner were they sold on the market, excluding any agents' fees or commissions payable by the seller, on the date to which the balance sheet relates. On acquisition they are valued at the price paid by the purchaser including any agents' fees or commissions.

13.46. An approach in the absence of organized markets is to value these items using data on the values at which they are insured against fire, theft, etc., to the extent information is available.

## 2. Non-produced assets

### Natural resources

#### *Land*

13.47. In principle, the value of land to be shown under natural resources in the balance sheet is the value of land excluding the value of improvements, which are shown separately under fixed assets, and excluding the value of buildings on the land which are also to be shown separately under fixed assets. Land is valued at its current price paid by a new owner, including written-down costs of ownership transfer.

13.48. Because the current market value of land can vary considerably according to its location and the uses for which it is suitable or sanctioned, it is essential to identify the location and use of a specific piece or tract of land and to price it accordingly.

13.49. For land underlying buildings, the market will, in some instances, furnish data directly on the value of the land. More typically, however, such data are not available and a more usual method is to calculate ratios of the value of the site to the value of the structure from valuation appraisals and to deduce the value of land from the replacement cost of the buildings or from the value on the market of the combined land and buildings. When the

value of land cannot be separated from the building, structure, or plantation, vineyard, etc. above it, the composite asset should be classified in the category representing the greater part of its value. Similarly, if the value of the land improvements (which include site clearance and preparation for the erection of buildings or planting of crops) cannot be separated from the value of land in its natural state, the value of the land may be allocated to one category or the other depending on which is assumed to represent the greater part of the value.

13.50. It is usually much easier to make a division between land and buildings for the total economy than for individual sectors or sub-sectors. Separate figures are needed for studies of national wealth and environmental problems. Fortunately, combined figures are often suitable for purposes of analysing the behaviour of institutional units and sectors.

13.51. Land appears on the balance sheet of the legal owner except when it is subject to a financial lease. This may most often occur in connection with a financial lease over a building or plantation on the land. By convention, an exception is made for cases where the legal owner of a building is not the legal owner of the land on which the building stands but the purchase price of the building includes an upfront payment of rent on the land beneath without any prospect of further payments being due in future.

#### *Mineral and energy reserves*

13.52. The value of sub-mineral and energy reserves is usually determined by the present value of the expected net returns resulting from the commercial exploitation of those reserves, although such valuations are subject to uncertainty and revision. As the ownership of mineral and energy reserves does not change frequently on markets, it may be difficult to obtain appropriate prices that can be used for valuation purposes. In practice, it may be necessary to use the valuations which the owners of the assets place on them in their own accounts.

13.53. It is frequently the case that the enterprise extracting a reserve is different from the owner of the resource. In many countries, for example, oil reserves are the property of the state. However, it is the extractor

who determines how fast the resource will be depleted and since the resource is not renewable on a human time-scale, it appears as if there has been a change of economic ownership to the extractor even if this is not the legal position. In such cases, in principle, a financial lease from the owner to the extractor should be imputed equal to the proportion of the net returns that the extractor may keep for the duration of the extraction agreement with the owner. Part of the reserve would then appear on the owner's balance sheet and part on the extractor's. However, this procedure may be problematical if the size of the deposit is subject to significant revisions, the rate of depletion changes or the availability of new technology changes the practicality of extracting a greater proportion of the reserve. When these circumstances (all of which would change the amount of the loan and repayment arrangements of the financial lease) are deemed to be so variable as to be unhelpful analytically, the whole of the reserve may be shown on the balance sheet of the legal owner and the payments by the extractor to the owner shown as rent. (This is therefore an extension of the concept of a resource rent applied in this case to a depletable asset.)

*Non-cultivated biological resources, water resources and other natural resources*


- 13.54. Non-cultivated biological resources, water and other natural resources are included in the balance sheet to the extent that they have been recognized as having economic value that is not included in the value of the associated land. As observed prices are not likely to be available, they are usually valued by the present value of the future returns expected from them.

#### Contracts, leases and licences

- 13.55. The conditions under which an operating lease may itself be regarded as an asset are described in **chapter 17**. The value of the lease is the net present value of it, that is, the amount the lessee could obtain from sub-contracting the lease less what he is due to pay the original lessor. As also explained in **chapter 17**, it is suggested such leases should be recorded as assets only when they are significant and are actually realised.

- 13.56. Other transferable leases relate to the provision of services by named individuals (for example, footballers). In this case the value of the lease is the value for which the contract could be sold less the payments due under the lease. In some cases this may be negative.

#### Goodwill and marketing assets

- 13.57. The balance sheet entry for goodwill  marketing assets is the written down value of the entry which appears in the financial account when an enterprise is taken over or when a marketing asset is sold. These entries are not revalued.

### 3. Financial assets/liabilities

- 13.58. In line with the general valuation principles described above, whenever financial assets and liabilities are regularly traded on organized financial markets, they should be valued at current prices. Financial claims that are not traded on organized financial markets should be valued by the amount that a debtor must pay to the creditor to extinguish the claim. Financial claims should be assigned the same value in the balance sheets whether they appear as assets or liabilities. The prices should exclude service charges, fees, commissions and similar payments for services provided in carrying out the transactions.

#### Monetary gold and SDRs

- 13.59. Monetary gold is to be valued at the price established in organized markets or in bilateral arrangements between central banks.
- 13.60. The value of the SDR is determined daily by the IMF on the basis of a basket of currencies, and rates against domestic currencies are obtainable from the prices in foreign exchange markets; both basket and weights are revised from time to time.

#### Currency and deposits

- 13.61. For currency, the valuation is the nominal or face value of the currency. For deposits, the values to be recorded in the balance sheets of both creditors and debtors are the amounts of principal that the debtors are contractually obliged to repay the creditors under the terms of the deposits when the deposits are liquidated.

Repayable margin payments in cash related to financial derivatives contracts are included in other deposits.

### Debt securities

13.62. In principle, short-term securities, and the corresponding liabilities, are to be valued at their current market values. Such a valuation is particularly important under conditions of high inflation or high nominal interest rates. If market values are not available, short-term bonds issued at par should be valued at the face value plus accrued interest not due for payment or not paid, and discounted bonds should be valued at the issue price plus accrued interest. The longer the original maturity of a security issued at a discount, however, the less acceptable it becomes to value such a security at its face or par value. It is recommended, therefore, that the use of par values should be restricted to bills issued at a discount whose original maturities do not exceed three months and to short-term bills or bonds issued at par that carry a stated rate of interest.

13.63. As a general principle, long-term securities, and the corresponding liabilities, are to be valued at the current prices of the securities on financial markets when they are regularly traded.

13.64. Long-term securities should always be valued at their current prices on markets, whether they are bonds on which regular payments of interest are paid or deep-discounted or zero-coupon bonds on which little or no interest is paid. Although the nominal liability of the issuer of a long-term security may be fixed in money terms, the market prices at which fixed interest securities are traded may vary considerably in response to variations in general market rates of interest. As the issuer of a long-term security usually has the opportunity to refinance the debt by repurchasing the security on the market, valuation at market prices is generally appropriate for both issuers and holders of long-term securities, especially financial transactors who actively manage their assets or liabilities.

13.65. When the par value of a debt security is index-linked, the index will generally be used to determine the value of the security at each point in its life. However, in the case of a security linked to a



index, the value of the security should be calculated by reference to the expected redemption value of the instrument. This value will change from one year to the next as the expected redemption value, and the degree of discounting needed, changes but the values used in the balance sheets for earlier years should not be revised.

13.66. If both the principal and coupons of a debt instrument are indexed to a foreign currency, the security should be treated as if it is denominated in that foreign currency with conversion to domestic currency at the rate prevailing on the date of the balance sheet. This does not imply that the security is part of foreign debt. Only the currency of account is foreign, not the currency of settlement.

### Loans

13.67. The values to be recorded in the balance sheets of both creditors and debtors are the amounts of principal that the debtors are contractually obliged to repay the creditors when the loans mature. This amount includes any interest that has accrued but not been paid. It also includes any amount of indirectly measured service charge (the difference between the amount demanded by the lender as interest and the amount recorded in the SNA accounts as interest payable) due on the loan that has accrued and not been paid.

13.68. If there is evidence of a market for a loan, and market quotations are available, the loan is re-classified to be a security. A loan that is traded once only and for which there is no evidence of a continuing market is not reclassified but continues to be treated as a loan.

13.69. Loans where the principal is index-linked, or both principal and interest are indexed to a foreign currency, should be treated in the manner described above for debt securities with these characteristics.

### *Non-performing loans*

13.70. Despite the fact that loans are to be recorded in the balance sheets at nominal values, certain loans that have not been serviced for some time should be identified and memorandum items concerning them should be included in the balance sheet of the creditor. These loans

are termed non-performing loans. A common definition of such a loan is as follows. *A loan is nonperforming when payments of interest and/or principal are past due by 90 days or more, or interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons (such as a debtor filing for bankruptcy) to doubt that payments will be made in full.* This definition of a non-performing loan is to be interpreted flexibly, taking into account national conventions on when a loan is deemed to be non-performing. Once a loan is classified as non-performing, it (or any replacement loans) should remain classified as such until payments are received and/or the principle is written off on this or subsequent loans that replace the original.

13.71. Two memorandum items are recommended relating to non-performing loans. The first is the nominal value of the loans so designated, including any accrued interest and service charge. The second is the market equivalent value of these loans. The closest approximation to market equivalent value is fair value, which is “the value that approximates the value that would arise from a market transaction between two parties”. Fair value can be established using transactions in comparable instruments, or using the discounted present value of cash flows. In the absence of fair value data, the memorandum item will have to use a second-best approach and show nominal value less expected loan losses.

13.72. These memorandum items should be standard for both the government sector and the financial sector. If they are significant for other sectors, or for loans with the rest of the world, they should be shown as supplementary items.

#### Equity and investment funds


##### Equity

13.73. *Listed shares* are regularly traded on stock exchanges or other organized financial markets. They should be valued in the balance sheets at their current prices.

13.74. *Unlisted shares*, which are neither quoted on stock exchanges nor otherwise traded

regularly, should be estimated using one of the following methods:

- (a) market capitalisation method;
- (b) net asset value;
- (c) present value.

If none of these is practicable, then the amount of own funds at  value can be used.

13.75. Under the market capitalisation method, unlisted shares are valued as own funds at book value times a “capitalisation ratio”, calculated as the market value of listed shares divided by the own funds at book value for the companies with the listed shares. The capitalisation ratio could be discounted for differences in liquidity between listed and unlisted companies.

13.76. The net asset value of unlisted shares is derived as the value of total assets of the enterprise valued as in the balance sheet less total liabilities other than equity at market value.

13.77. The present value of unlisted equity can be estimated by discounting the expected future stream of profits by an appropriate discount rate. Such a discount factor could be inferred from the implicit discount rate obtained for listed corporations.

13.78. Own funds at book value is a standard concept used widely in both balance sheet accounts and International Investment Positions.

13.79. Further detail on these options, together with a statement of the various advantages and disadvantages of each can be found in (an updated version of the AEG paper; or MFS compilation guide or???) The concept of own funds is discussed below in [section xxxx](#).

13.80. *Other equity* covers equity in any corporation or quasi-corporation that does not issue shares This applies to public enterprises, the central bank and some other special government units. Partnerships, unlimited liability companies and quasi-corporations are other institutional units without shares.. Other equity should be valued as equal to the

value of the quasi-corporations' assets less the value of their liabilities.

#### *Investment fund shares/units*

- 13.81. Shares (or units) in money market funds or in other investment funds should be valued in a manner similar to the proposals under equity. Listed shares should be valued using the market price of the share. Unlisted shares should be valued according to one of the methods described above for unlisted equity.

#### **Insurance, annuities, pension and standardised guarantee schemes**

##### *Non-life insurance technical provisions*

- 13.82. The amount of the provisions for non-life insurance to be recorded in the balance sheet consists of the amount of net premiums received but not yet used to meet claims. It thus covers premiums paid but not earned at the date for which the balance sheet is drawn up plus the amount set aside to meet outstanding claims. This latter amount represents the present value of the amounts expected to be paid out in settlement of claims, including disputed claims, as well as allowances for claims for incidents which it is supposed have taken place but not yet been reported.. Within commercial account for insurance corporations, technical reserves may be described as provisions for unearned premiums and equalisation provisions.

##### *Life insurance and annuities entitlements*

- 13.83. The amount to be recorded under the stock values for life insurance and annuity entitlement is similar to that for non-life insurance technical reserves; it is the excess of net premiums received less claims paid. but the premiums are cumulated over much longer periods before payout. In addition to the equalisation provisions, there may be entries in the balance sheets of insurance corporations for provisions for bonuses and rebates.

##### *Pension entitlements*

- 13.84. The entitlements due under pension schemes comprise two elements; one when the formula determining the amount of the pension is agreed in advance (as under a defined benefit scheme) and one

where the amount of the pension depends on the performance of specified financial assets (a defined contribution scheme). For the former, an actuarial estimation of the liabilities of the pension provider is used; for the latter the value is the market value of the financial assets held by the pension fund on behalf of the future beneficiaries.. The basis on which pension entitlement is calculated and the alternative means of representing these in the accounts of the System is described in detail in [chapter 17](#)

##### *Provisions for calls under standardised guarantees*

- 13.85. The value to be entered in the balance sheet for calls under standardised guarantees is the expected level of claims under current guarantees. Strictly speaking, these amounts will represent a degree of double counting in the assets of the units benefiting from the guarantees. For example if financial institutions make 1,000 loans of 20 that are covered by guarantees, and 10 are expected to default, the value of the loans made is still shown as 20,000 and in addition the lenders have an asset of 200 in respect of the expected calls under the guarantee. However, the unit offering the guarantee has a liability of 200 with no matching asset so the net worth for the whole economy is not overstated.

##### **Financial derivatives**

- 13.86. The treatment of derivatives is discussed in [chapter XI](#). Financial derivatives should be included in the balance sheets at market value. If market value data are unavailable, other fair value methods to value derivatives, such as options models or discounted present values, may be used. Depending on how margin systems operate, it may be appropriate to enter zero for the value of the option, as any profits (losses) will have been received (paid) daily by the holder. The counterpart of these asset entries should be entered as a liability.

##### *Options*

- 13.87. Options should be valued in the balance sheets as either the current value of the option, if this is available, or the amount of the premium payable. A liability should be entered in the sector of the writer of the



option to represent either the current cost of buying out the rights of the option holder or the accrual of a holding gain.

#### *Forwards*

13.88. A forward is recorded at market value. When payments are effected, the value of the asset and associated liability is amortized and subsequently reflected in the balance sheet value on the appropriate accounting date. The market value of a forward contract can switch between an asset position and a liability position between accounting dates depending on price movements in the underlying item(s). All price changes, including those that result in such switches, are treated as revaluations.

#### *Employee stock options*

13.89. Employee stock options (ESOs) may form part of compensation of employees or be used by the employer as a contribution to the employees' pension schemes. An ESO is not an immediate payment but a possibility for an employee to receive stocks (shares) at future date. There are a number of key dates relative to ESOs. The date at which the employer announces an ESO will be payable is the grant date. The first date at which the ESO may be acquired is the vesting date. The date when it is actually acquired is the exercise date. ESOs will appear on the balance sheet between grant date and exercise date. The value to be recorded in compensation of employees, and as an increment to the balance sheet recorded in the financial account, should build up from grant date to vesting date. Any change in value after the vesting date but before the exercise date is regarded as a holding gain or loss. When an ESO is exercised, the entry in the balance sheet disappears to be replaced by the value of the stocks (shares) received.

13.90. ESOs should be valued by reference to the fair value of the equity instruments granted. The fair value of equity instruments should be measured at grant date using a market value of equivalent traded options (if available) or using an option pricing model (binomial or Black-Scholes) with suitable allowance for particular features of the options. The IASB(ref) gives detailed recommendations on how ESOs may be valued and their

recommendations are likely to be followed by corporations using ESOs as a form of compensation for their employees.

#### *Other accounts receivable/payable*

13.91. Trade credit and advances and other items due to be received or paid (such as taxes, dividends, rent, wages and salaries, and social contributions) should be valued for both creditors and debtors at the amount of principal the debtors are contractually obliged to pay the creditors when the obligation is extinguished. Interest accrued on securities other than shares is recorded as increasing the value of the underlying asset, but interest accruing on deposits and loans may have to follow national practices and be classified here if it is not capitalized in the underlying asset. As discussed in chapter XI, no separate entry is needed for interest in arrears because it is already recorded under the appropriate asset or under this category.

#### **4. Net worth**

13.92. Net worth is the difference between the value of all financial and non-financial assets and all financial liabilities at a particular moment in time. For this calculation, each asset and each liability is to be identified and valued separately. As the balancing item, net worth is calculated for institutional units and sectors and for the total economy.

13.93. For government, households and NPISHs, the value of net worth is clearly the worth of the unit to its owners. In the case of quasi-corporations, net worth is zero, because the value of the owners' equity is assumed to be equal to its assets less its liabilities. For other corporations, the situation is less clear-cut.

13.94. One view of the net worth of corporations is exactly analogous with the situation for other sectors, that is, the net worth is estimated as the sum of all assets less the sum of all liabilities. In doing so, the value of shares and other equities, which are liabilities of corporations, are included in the value of liabilities. Thus, even though a corporation is wholly owned by its shareholders collectively, it is seen to have a net worth (which could be positive or negative) in addition to the value of the shareholders' equity.

13.95. An alternative view is that the value of the shareholders' equity represents the value of the corporation to its owners. The difference between the net worth of a corporation defined as the sum of its assets less the sum of its liabilities and the value of the share-holders' equities may be referred to as "own funds". Own funds come about through a number of factors. The first is the accumulation over time of retained earnings. Once current transfers receivable are added to entrepreneurial income and current transfers payable (and the pension entitlement adjustment) are deducted, what remains is available for distribution in the form of dividends. **Retained earnings are the amount of a corporation's income available for distribution as dividends that is not so distributed.** This amount may be negative on occasion, representing a withdrawal from own funds. In the case of a direct investment enterprise a proportion of retained earnings is treated as reinvested earnings, the proportion depending on the extent of the direct investor's control of the corporation. These earnings are recorded in the financial account as being reinvested in the corporation and form part of own funds at that time.

13.96. From time to time, some of own funds may be assigned to (or withdrawn from) either general or special reserves. They may be augmented by an injection of capital by the owners or by the receipt of investment grants. Goodwill is excluded from the value of own funds. In addition a valuation adjustment may be made for the fact that some securities, notably bonds, may have a difference between their nominal value and their market value.

13.97. Some or all of these items may be available from the balance sheet of the corporation and it may be useful to compare the sum of these with the amount derived as the difference between net worth and the value of owner's equity. (For unlisted shares, indeed, this may be one way to value these shares.)

## 5. Memorandum items

13.98. In addition to the memorandum items on non-performing loans, the System allows

for two memorandum items to the balance sheets in order to show items not separately identified as assets in the central framework that are of more specialized analytic interest for particular institutional sectors. These two are consumer durables and direct foreign investment.

### Consumer durables

13.99. Households acquire durable goods such as cars and electrical goods. However, these are not treated as being used in a production process giving rise to household services. They therefore do not constitute fixed assets and are not shown as such in the balance sheet. Nevertheless, it is useful to have data on these goods and so consumer durables are included in the balance sheets as a memorandum item. The stocks of consumer durables held by households are to be valued at current prices, both gross and net of accumulated depreciation equivalent to consumption of fixed capital. The figures shown as memorandum items in the balance sheet should be net of these accumulated charges

13.100. Durable goods owned by owners of unincorporated enterprises may be used partly by the enterprise for production and partly by members of the household for final consumption. The values shown in the balance sheet for the enterprise should reflect the proportion of the use that is attributable to the enterprise, but this may not always be known in practice.

### Foreign direct investment

13.101. Just as flows of foreign direct investment are shown in the financial account, so it is interesting to have similar items in the balance sheets showing the stock of assets and liabilities invested in the country by non-residents and invested abroad by residents. All sectors may have investment abroad; only financial and non-financial corporations (excluding non-profit institutions within them) may receive investment from abroad.

External references;

*OECD Measuring Capital*

*IMF: MFSM Compilation Guide*

*IASB*

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<sup>i</sup> Check out how net acquisition of contracts etc by the ROW fits in here.