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## **Updated System of National Accounts (SNA):**

## Chapter 13: The balance sheet

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## **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 liabilities. Assets and liabilities can be aggregated across all types so as to show the total value of assets less liabilities, 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. Sometimes a stock level is referred to as a position, especially in the balance of payments context.

#### 1. Balance sheets

- 13.2 A balance sheet is a statement, drawn up in respect of 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. A similar account is drawn up showing the stock levels of assets and liabilities originating in the total economy held by non-residents and of foreign assets and liabilities held by residents. In BPM6 this account is called the international investment position (IIP) but is drawn up from the point of view of the rest of the world with the rest of the world being treated in the same way as domestic sectors.
- 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 1. 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 when 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, balance sheets for groups of households are needed in order to assess the distribution of wealth and liquidity.
- 13.7 Balance sheets allow economists to assess the financial status of a sector and permit risk analyses by a central bank, for example. For corporations, balance sheets permit the computation of widely used ratios that involve data on the level of the different items on the balance sheet. Banks and other financial institutions, for example, are required to maintain specific reserve ratios that can be monitored via a balance sheet. Non-financial corporations check 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 in studies of their investment behaviour and needs for financing. Balance sheet information on financial assets held by, and liabilities owed to, non-residents 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.

## Table 13.1: Opening and closing balance sheets with changes in assets

|                         |              |   | S11                           | S12                    | S13                | S14          | S15                 | S1             | S2                             |  |
|-------------------------|--------------|---|-------------------------------|------------------------|--------------------|--------------|---------------------|----------------|--------------------------------|--|
|                         |              | Stocks and changes in assets  | Non-financial<br>corporations | Financial Corporations | General government | Households   | SIS<br>HSIAN<br>159 | Total economy  | Rest of the world 8<br>account | Goods and services<br>account<br>Iptot |
|                         | AN<br>AN1    | Non-financial assets  | 2 351<br>1 374                |                        | 789                | 1 429        |                     | 4 821<br>2 918 |                                | 4 821<br>2 918                         |
|                         | AN1<br>AN11  | Produced assets<br>Fixed assets   | 1 374                         | 67<br>52               | 497<br>467         | 856<br>713   | 124<br>121          | 2 9 18         |                                | 2 918                                  |
|                         | AN12         | Inventories   | 43                            |                        | 22                 | 48           | 1                   | 114            |                                | 114                                    |
|                         | AN13         | Valuables   | 5                             | 15                     | 8                  | 95           | 2                   | 125            |                                | 125                                    |
| heet                    | AN2<br>AN21  | Non-produced assets<br>Natural resources  | 977<br>964                    | 26<br>23               | 292<br>286         | 573<br>573   | 35<br>35            | 1 903<br>1 881 |                                | 1 903<br>1 881                         |
| ce s                    | AN22         | Contracts, leases and licences  | 13                            | 23                     | 200                | 575          | 55                  | 22             |                                | 22                                     |
| lan                     | AN23         | Goodwill and marketing assets   | 3                             |                        |                    |              |                     |                |                                |  |
| Opening balance sheet   | AF<br>AF1    | Financial assets/liabilities  | 782                           | 3 421<br>690           | 396                | 3 260        | 172                 | 8 031<br>770   | 805                            | 8 836                                  |
| anin                    | AF1<br>AF2   | Monetary gold and SDRs<br>Currency and deposits   | 382                           | 690                    | 80<br>150          | 840          | 110                 | 1 482          | 105                            | 770<br>1 587                           |
| ð                       | AF3          | Debt securities   | 90                            | 950                    |                    | 198          | 25                  | 1 263          | 125                            | 1 388                                  |
|                         | AF4          | Loans   | 50                            | 1 187                  | 115                | 24           | 8                   | 1 384          | 70                             | 1 454                                  |
|                         | AF5<br>AF6   | Equity and investment fund shares/units<br>Insurance, pension and standardised guarantee schemes          | 80<br>25                      | 551<br>30              | 12<br>20           | 1 749<br>391 | 22<br>4             | 2 414<br>470   | 345<br>26                      | 2 759<br>496                           |
|                         | AF7          | Financial derivatives and employee stock options  | 5                             | 13                     | 0                  | 3            | 0                   | 21             | 0                              | 21                                     |
|                         | AF8          | Other accounts receivable/payable   | 150                           |                        | 19                 | 55           | 3                   | 227            | 134                            | 361                                    |
|                         | AN           | Non-financial assets  | 308                           | 1                      | 56                 | 109          | 25                  | 499            |                                | 499                                    |
|                         | AN1          | Produced assets   | 202                           | - 1                    | 28                 | 61           | 21                  | 311            |                                | 311                                    |
|                         | AN11         | Fixed assets  | 172                           | 1                      | 22                 | 47           | 21                  | 263            |                                | 263                                    |
|                         | AN12<br>AN13 | Inventories<br>Valuables  | 27<br>3                       | 0<br>- 2               | 1<br>5             | 4<br>10      | 0<br>0              | 32<br>16       |                                | 32<br>16                               |
| sts                     | AN2          | Non-produced assets   | 106                           | 2                      | 28                 | 48           | 4                   | 188            |                                | 188                                    |
| asse                    | AN21         | Natural resources   | 101                           | 1                      | 26                 | 48           | 4                   | 180            |                                | 180                                    |
| .u.                     | AN22<br>AN23 | Contracts, leases and licences<br>Goodwill and marketing assets   | 5<br>0                        | 1<br>0                 | 2<br>0             | 0<br>0       | 0<br>0              | 8<br>0         |                                | 8                                      |
| nge                     | ANZS         | Financial assets/liabilities  | 73                            | 224                    | - 4                | 238          | 8                   | 539            | 44                             | 583                                    |
| cha                     | AF1          | Monetary gold and SDRs  | 0                             | 17                     | 1                  | 0            | 0                   | 18             | 1                              | 19                                     |
| fotal changes in assets | AF2<br>AF3   | Currency and deposits<br>Debt securities  | 19<br>10                      | 10<br>89               | - 22<br>6          | 85<br>16     | 5<br>1              | 97<br>122      | 11<br>13                       | 108<br>135                             |
| -                       | AF4          | Loans   | 19                            | 48                     | 3                  | 3            | 0                   | 73             | 4                              | 77                                     |
|                         | AF5          | Equity and investment fund shares/units   | 17                            | 44                     | 1                  | 86           | 1                   | 149            | 5                              | 154                                    |
|                         | AF6<br>AF7   | Insurance, pension and standardised guarantee schemes<br>Financial derivatives and employee stock options | 1<br>3                        | 7<br>8                 | 1<br>0             | 41<br>3      | 0<br>0              | 50<br>14       | 0<br>0                         | 50<br>14                               |
|                         | AF7<br>AF8   | Other accounts receivable/payable   | 4                             | o<br>1                 | 6                  | 3<br>4       | 1                   | 14             | 10                             | 26                                     |
|                         |              |   |                               |                        |                    |              |                     |                |                                |  |
|                         |              |   |                               |                        |                    |              |                     |                |                                |  |
|                         | AN<br>AN1    | Non-financial assets  | 2 659                         | 94<br>66               | 845<br>525         | 1 538        | 184                 | 5 320          |                                | 5 320                                  |
|                         | AN1<br>AN11  | Produced assets<br>Fixed assets   | 1 576<br>1 498                | 66<br>53               | 525<br>489         | 917<br>760   | 145<br>142          | 3 229<br>2 942 |                                | 3 229<br>2 942                         |
|                         | AN12         | Inventories   | 70                            | 0                      | 23                 | 52           | 1                   | 146            |                                | 146                                    |
|                         | AN13         | Valuables   | 8                             | 13                     | 13                 | 105          | 2                   | 141            |                                | 141                                    |
| reet                    | AN2<br>AN21  | Non-produced assets<br>Natural resources  | 1 083<br>1 065                | 28<br>24               | 320<br>312         | 621<br>621   | 39<br>39            | 2 091<br>2 061 |                                | 2 091<br>2 061                         |
| ie st                   | AN21<br>AN22 | Contracts, leases and licences  | 18                            | 4                      | 8                  | 021          | 0                   | 2 001          |                                | 30                                     |
| anc                     | AN23         | Goodwill and marketing assets   | 3                             | 0                      | 0                  | 0            | 0                   | 0              |                                | 0                                      |
| g ba                    | AF<br>AF1    | Financial assets/liabilities  | 855<br>0                      | 3 645                  | 392                | 3 498        | 180                 | 8 570          | 849<br>1                       | 9 419                                  |
| Closing balance sheet   | AF1<br>AF2   | Monetary gold and SDRs<br>Currency and deposits   | 401                           | 707<br>10              | 81<br>128          | 0<br>925     | 0<br>115            | 788<br>1 579   | 116                            | 789<br>1 695                           |
| ö                       | AF3          | Debt securities   | 100                           | 1 039                  | 6                  | 214          | 26                  | 1 385          | 138                            | 1 523                                  |
|                         | AF4          | Loans   | 69<br>07                      | 1 235                  | 118                | 27           | 8                   | 1 457          | 74                             | 1 531                                  |
|                         | AF5<br>AF6   | Equity and investment fund shares/units<br>Insurance, pension and standardised guarantee schemes          | 97<br>26                      | 595<br>37              | 13<br>21           | 1 835<br>432 | 23<br>4             | 2 563<br>520   | 350<br>26                      | 2 913<br>546                           |
|                         | AF7          | Financial derivatives and employee stock options  | 8                             | 21                     | 0                  | 6            | 0                   | 35             |                                | 35                                     |
|                         | A۲8          | Other accounts receivable/payable   | 154                           | 1                      | 25                 | 59           | 4                   | 243            | 144                            | 387                                    |
|                         |              |   |                               |                        |                    |              |                     |                |                                |  |

|              |   | S11                           | S12                       | S13                | S14       | S15    | S1           | S2                        |                               | —         |
|--------------|---|-------------------------------|---------------------------|--------------------|-----------|--------|--------------|---------------------------|-------------------------------|-----------|
|              |   | 211                           | 512                       |                    | 514       | 515    | 51           | 52                        | (0                            |           |
|              |   |                               |                           | General government |           |        |              | 73                        | services                      |           |
|              |   | _                             |                           | arnr               |           |        | ≥            | orlo                      | erv                           |           |
|              |   | cia                           | suc                       | 0                  | с<br>р    |        | Б            | ≥<br>e                    | ds                            |           |
|              |   | atic                          | atic                      | <u>a</u>           | Pd<br>Pd  | s      | 00           | r f                       | i an                          |           |
|              |   | Von-financial<br>corporations | Financial<br>corporations | ner                | ouseholds | IPISHs | otal economy | st o<br>cour              | Goods and<br>account<br>Istot |           |
|              | Stocks and changes in liabilities                     | No<br>No                      | Ein                       | පී                 | 운         | ٩      | Toi          | Rest of the world account | ලි දි Total                   |           |
| AN           | Non-financial assets                                  |                               |                           |                    |           |        |              |                           |                               |           |
| AN1          | Produced assets                                       |                               |                           |                    |           |        |              |                           |                               |           |
| AN11         | Fixed assets  |                               |                           |                    |           |        |              |                           |                               |           |
| AN12         | Inventories   |                               |                           |                    |           |        |              |                           |                               |           |
| AN13         | Valuables   |                               |                           |                    |           |        |              |                           |                               |           |
| AN2          | Non-produced assets                                   |                               |                           |                    |           |        |              |                           |                               |           |
| AN21         | Natural resources                                     |                               |                           |                    |           |        |              |                           |                               |           |
| AN22         | Contracts, leases and licences                        |                               |                           |                    |           |        |              |                           |                               |           |
| AN23         | Goodwill and marketing assets                         |                               |                           |                    |           |        |              |                           |                               |           |
| AF           | Financial assets/liabilities                          | 3 221                         | 3 544                     | 687                | 189       | 121    | 7 762        | 1 074                     |                               | 836       |
| AF1          | Monetary gold and SDRs                                |                               |                           |                    |           |        | 0            | 770                       |                               | 770       |
| AF2          | Currency and deposits                                 | 40                            | 1 281                     | 102                | 10        | 38     | 1 471        | 116                       |                               | 587       |
| AF3          | Debt securities                                       | 44                            | 1 053                     | 212                | 2         |        | 1 311        | 77                        |                               | 388       |
| AF4          | Loans   | 897                           |                           | 328                | 169       | 43     | 1 437        | 17                        |                               | 454       |
| AF5          | Equity and investment fund shares/units               | 1 987                         | 765                       | 4                  |           |        | 2 756        | 3                         |                               | 759       |
| AF6          | Insurance, pension and standardised guarantee schemes | 12                            | 435                       | 19                 |           | 5      | 471          | 25                        |                               | 496       |
| AF7          | Financial derivatives and employee stock options      | 4                             | 10                        |                    |           |        | 14           | 7                         |                               | 21        |
| AF8          | Other accounts receivable/payable                     | 237                           |                           | 22                 | 8         | 35     | 302          | 59                        |                               | 361       |
|              |   | - 88                          | - 30                      | 498                | 4 500     | 210    | 5 090        | - 269                     | 4                             | 821       |
| AN           | Non-financial assets                                  |                               |                           |                    |           |        |              |                           |                               |           |
| AN1          | Produced assets                                       |                               |                           |                    |           |        |              |                           |                               |           |
| AN11<br>AN12 | Fixed assets  |                               |                           |                    |           |        |              |                           |                               |           |
|              | Inventories   |                               |                           |                    |           |        |              |                           |                               |           |
| AN13         | Valuables   |                               |                           |                    |           |        |              |                           |                               |           |
| AN2          | Non-produced assets                                   |                               |                           |                    |           |        |              |                           |                               |           |
| AN21         | Natural resources                                     |                               |                           |                    |           |        |              |                           |                               |           |
| AN22         | Contracts, leases and licences                        |                               |                           |                    |           |        |              |                           |                               |           |
| AN23         | Goodwill and marketing assets                         | 450                           | 00-                       | 00                 |           | •      | 10-          | 00                        |                               |           |
| AF           | Financial assets/liabilities                          | 150                           | 235                       | 93                 | 14        | 3      | 495          | 69                        |                               | 564       |
| AF1          | Monetary gold and SDRs                                | •                             | 70                        | 07                 | •         | •      | 110          | 0                         |                               | 0         |
| AF2          | Currency and deposits                                 | 0                             | 73                        | 37                 | 0         | 0      | 110          | - 2                       |                               | 108       |
| AF3          | Debt securities                                       | 7                             | 65                        | 41                 | 0         | 0      | 113          | 22                        |                               | 135       |
| AF4          | Loans   | 14                            | 0                         | 5                  | 10        | 3      | 32           | 45                        |                               | 77        |
| AF5          | Equity and investment fund shares/units               | 100                           | 39                        | 0                  | 0         | 0      | 139          | 15                        |                               | 154       |
| AF6          | Insurance, pension and standardised guarantee schemes | 0                             | 50                        | 0                  | 0         | 0      | 50           | 0                         |                               | 50        |
| AF7<br>AF8   | Financial derivatives and employee stock options      | 3                             | 8                         | 0                  | 0         | 0      | 11           | 3                         |                               | 14        |
| AFO          | Other accounts receivable/payable                     | 26<br>231                     | - 10                      | - 41               | 4<br>333  | 0      | 40<br>535    | - 14                      |                               | 26<br>539 |
|              | Changes in net worth, total                           | 231                           | - 10                      | - 41               | 333       | 30     | 535          | 4                         |                               | 238       |

### Table 13.1: Opening and closing balance sheets with changes in liabilities and net worth

|                              | AN1          | Produced assets                                       |       |       |      |       |     |       |       |       |
|------------------------------|--------------|---|-------|-------|------|-------|-----|-------|-------|-------|
| and net worth                | AN11         | Fixed assets  |       |       |      |       |     |       |       |       |
|                              | AN12         | Inventories   |       |       |      |       |     |       |       |       |
| Š                            | AN12<br>AN13 | Valuables   |       |       |      |       |     |       |       |       |
| het                          | AN13<br>AN2  | Non-produced assets                                   |       |       |      |       |     |       |       |       |
| P                            | ANZ<br>AN21  | Non-produced assets<br>Natural resources              |       |       |      |       |     |       |       |       |
| sal                          |              |   |       |       |      |       |     |       |       |       |
| tië                          | AN22         | Contracts, leases and licences                        |       |       |      |       |     |       |       |       |
| pili                         | AN23         | Goodwill and marketing assets                         |       |       |      |       | •   |       |       |       |
| lia                          | AF           | Financial assets/liabilities                          | 150   | 235   | 93   | 14    | 3   | 495   | 69    | 564   |
| <u>,</u>                     | AF1          | Monetary gold and SDRs                                |       |       |      | _     | _   |       | _     | 0     |
| je                           | AF2          | Currency and deposits                                 | 0     | 73    | 37   | 0     | 0   | 110   | - 2   | 108   |
| aŭ                           | AF3          | Debt securities                                       | 7     | 65    | 41   | 0     | 0   | 113   | 22    | 135   |
| -5                           | AF4          | Loans   | 14    | 0     | 5    | 10    | 3   | 32    | 45    | 77    |
| Total changes in liabilities | AF5          | Equity and investment fund shares/units               | 100   | 39    | 0    | 0     | 0   | 139   | 15    | 154   |
| 4                            | AF6          | Insurance, pension and standardised guarantee schemes | 0     | 50    | 0    | 0     | 0   | 50    | 0     | 50    |
|                              | AF7          | Financial derivatives and employee stock options      | 3     | 8     | 0    | 0     | 0   | 11    | 3     | 14    |
|                              | AF8          | Other accounts receivable/payable                     | 26    | 0     | 10   | 4     | 0   | 40    | - 14  | 26    |
|                              |              | Changes in net worth, total                           | 231   | - 10  | - 41 | 333   | 30  | 535   | 4     | 539   |
|                              |              | Saving and capital transfers                          | 62    | - 16  | - 81 | 236   | 20  | 230   | 0     | 230   |
|                              |              | Other changes in volume of assets                     | 17    | - 4   | 2    | 2     | 0   | 17    |       | 17    |
|                              |              | Nominal holding gains/losses                          | 134   | 10    | 38   | 96    | 10  | 288   | 4     | 292   |
|                              |              | Neutral holding gains/losses                          | 82    | 6     | 27   | 87    | 6   | 208   | 6     | 214   |
|                              |              | Real holding gains/losses                             | 52    | 4     | 11   | 9     | 4   | 80    | - 2   | 78    |
|                              | AN<br>AN1    | Non-financial assets                                  |       |       |      |       |     |       |       |       |
|                              |              | Produced assets                                       |       |       |      |       |     |       |       |       |
|                              | AN11         | Fixed assets  |       |       |      |       |     |       |       |       |
|                              | AN12         | Inventories   |       |       |      |       |     |       |       |       |
|                              | AN13         | Valuables   |       |       |      |       |     |       |       |       |
| et                           | AN2          | Non-produced assets                                   |       |       |      |       |     |       |       |       |
| sheet                        | AN21         | Natural resources                                     |       |       |      |       |     |       |       |       |
| 8                            | AN22         | Contracts, leases and licences                        |       |       |      |       |     |       |       |       |
| an                           | AN23         | Goodwill and marketing assets                         |       |       |      |       |     |       |       |       |
| ba                           | AF           | Financial assets/liabilities                          | 3 371 | 3 779 | 780  | 203   | 124 | 8 257 | 1 143 | 9 400 |
| bu                           | AF1          | Monetary gold and SDRs                                |       |       |      |       |     |       |       |       |
| Closing balance              | AF2          | Currency and deposits                                 | 40    | 1 354 | 139  | 10    | 38  | 1 581 | 114   | 1 695 |
| 5                            | AF3          | Debt securities                                       | 51    | 1 118 | 253  | 2     | 0   | 1 424 | 99    | 1 523 |
|                              | AF4          | Loans   | 911   | 0     | 333  | 179   | 46  | 1 469 | 62    | 1 531 |
|                              | AF5          | Equity and investment fund shares/units               | 2 087 | 804   | 4    | 0     | 0   | 2 895 | 18    | 2 913 |
|                              | AF6          | Insurance, pension and standardised guarantee schemes | 12    | 485   | 19   | 0     | 5   | 521   | 25    | 546   |
|                              | AF7          | Financial derivatives and employee stock options      | 7     | 18    | 0    | 0     | 0   | 25    |       | 35    |
|                              | AF8          | Other accounts receivable/payable                     | 263   | 0     | 32   | 12    | 35  | 342   | 45    | 387   |
|                              |              | Net worth   | 143   | - 40  | 457  | 4 833 | 240 | 5 625 | - 265 | 5 360 |

**Opening balance sheet** 

#### 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 (or liability) held by all institutional units in the economy. This is called an asset account. A basic accounting identity links the opening balance sheet and the closing balance sheet for a given asset:
  - The value of the stock of a specific type of asset in the opening balance sheet;
  - *Plus* the total value of the same type of asset acquired, less the total value of the same type of asset disposed of, in transactions that take place within the accounting period: transactions in non-financial assets are recorded in the capital account (including consumption of fixed capital) and transactions in financial assets are recorded in the financial account;
  - *Plus* 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* 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* the value of the stock of the asset in the closing balance sheet.
- 13.9 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 connection with the development of capital stock series for fixed assets. Many financial statistics describe the evolution an individual financial asset, for example showing how the level of lending has changed over the period.

#### 3. Structure of the balance sheet

13.10 The balance sheet records assets on the left-hand side and liabilities and net worth on the right-hand side, 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 point in time. The System provides for balance sheets to be compiled at the beginning of the accounting period (with the same values as at 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.

- 13.11 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.
- 13.12 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 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.
- 13.13 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

- 13.14 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 the volume of assets account and the revaluation account.
- 13.15 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.

|   |                       | Revaluation account           |  |                                    |                                    |                              |                       |  |  |  |
|---|-----------------------|-------------------------------|--|------------------------------------|------------------------------------|------------------------------|-----------------------|--|--|--|
|   | Opening balance sheet | Capital and financial account | Other changes in the<br>volume of assets account | Vominal holding gains and<br>osses | Veutral holding gains and<br>osses | Real holding gains and osses | Closing balance sheet |  |  |  |
| Non-financial assets                                  | 4 821                 | 209                           | 10   | 280                                | 198                                | 82                           | 5 320                 |  |  |  |
| Produced assets                                       | 2 918                 | 192                           | - 7  | 126                                | 121                                | 5                            | 3 229                 |  |  |  |
| Fixed assets  | 2 679                 | 154                           | - 2  | 111                                | 111                                | 0                            | 2 942                 |  |  |  |
| Dwellings   |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Other buildings and structures                        |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Machinery and equipment                               |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Weapons systems                                       |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Cultivated biological resources                       |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Intellectual property products                        |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Inventories   | 114                   | 28                            | - 3  | 7                                  | 4                                  | 3                            | 146                   |  |  |  |
| Valuables   | 125                   | 10                            | - 2  | 8                                  | 6                                  | 2                            | 141                   |  |  |  |
| Non-produced assets                                   | 1 903                 | 17                            | 17   | 154                                | 77                                 | 77                           | 2 091                 |  |  |  |
| Natural resources                                     | 1 881                 | 17                            | 11   | 152                                | 76                                 | 76                           | 2 061                 |  |  |  |
| Land  |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Mineral and energy reserves                           |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Non-cultivated biological resources                   |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Water resources                                       |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Other natural resources                               |                       |                               |  |                                    |                                    |                              |                       |  |  |  |
| Contracts, leases and licences                        | 22                    | 0                             | 6  | 2                                  | 1                                  | 1                            | 30                    |  |  |  |
| Goodwill and marketing assets                         | 0                     | 0                             | 0  | 0                                  | 0                                  | 0                            | 0                     |  |  |  |
| Financial assets                                      | 8 031                 | 450                           | 5  | 84                                 | 136                                | - 52                         | 8 570                 |  |  |  |
| Monetary gold and SDRs                                | 770                   | - 1                           | 7  | 12                                 | 16                                 | - 4                          | 788                   |  |  |  |
| Currency and deposits                                 | 1 482                 | 97                            | 0  | 0                                  | 30                                 | - 30                         | 1 579                 |  |  |  |
| Debt securities                                       | 1 263                 | 82                            | 0  | 40                                 | 25                                 | 15                           | 1 385                 |  |  |  |
| Loans   | 1 384                 | 77                            | - 4  | 0                                  | 28                                 | - 28                         | 1 457                 |  |  |  |
| Equity and investment fund shares/units               | 2 414                 | 117                           | 0  | 32                                 | 26                                 | 6                            | 2 563                 |  |  |  |
| Insurance, pension and standardised guarantee schemes | 470<br>21             | 48                            | 2<br>0   | 0<br>0                             | 7<br>0                             | - 7                          | 520                   |  |  |  |
| Financial derivatives and employee stock options      | 21                    | 14<br>16                      | 0  | 0                                  | 4                                  | 0<br>- 4                     | 35<br>243             |  |  |  |
| Other accounts receivable/payable                     | 7 762                 | 421                           | - 2  | 76                                 | 126                                | - 4                          | 8 257                 |  |  |  |
| Monetary gold and SDRs                                | 0                     | 421                           | - 2  | 0                                  | 0                                  | - 50                         | 0 237                 |  |  |  |
| Currency and deposits                                 | 1 471                 | 110                           | 0  | 0                                  | 30                                 | - 30                         | 1 581                 |  |  |  |
| Debt securities                                       | 1 311                 | 71                            | 0  | 42                                 | 26                                 | - 30                         | 1 424                 |  |  |  |
| Loans   | 1 437                 | 36                            | - 4  | 42                                 | 20                                 | - 29                         | 1 469                 |  |  |  |
| Equity and investment fund shares/units               | 2 756                 | 105                           | 0  | 34                                 | 28                                 | 6                            | 2 895                 |  |  |  |
| Insurance, pension and standardised guarantee schemes | 471                   | 48                            | 2  | 0                                  | 7                                  | - 7                          | 521                   |  |  |  |
| Financial derivatives and employee stock options      | 14                    | 11                            | 0  | 0                                  | 0                                  | 0                            | 25                    |  |  |  |
| Other accounts receivable/payable                     | 302                   | 40                            | 0  | ů<br>0                             | 6                                  | - 6                          | 342                   |  |  |  |
| Net worth   | 5 090                 | 238                           | 17   | 288                                | 208                                | 80                           | 5 633                 |  |  |  |

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

## B. General principles of valuation

13.16 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 nonfinancial assets, the value includes any associated costs of ownership transfer.

13.17 The 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, there is a clear relationship between the price paid by the purchaser and received by the seller. For non-financial assets, the price paid by the purchaser exceeds that received by the seller by the costs of ownership transfer. In the case of financial assets, the value is the same for creditor and debtor.

- 13.18 Ideally, observable market prices should be used to value all assets and liabilities in a balance sheet. However, 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. 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.
- 13.19 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 type of asset in question over its lifetime and adjusted for changes such as consumption of fixed capital; 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

13.20 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.

- 13.21 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.
- 13.22 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 shares by analogy with similar, listed shares, making some allowance for the inferior marketability of the unlisted shares. 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 chapters 21 and 26.

# 2. Values obtained by accumulating and revaluing transactions

13.23 Most non-financial assets change in value year by year reflecting changes in market prices. At the same time, initial acquisition costs are reduced by consumption of fixed capital (in the case of fixed assets) or other forms of depreciation over the asset's expected life. The value of such an asset at a given point in its life is given by current acquisition price of an equivalent new asset less the accumulated depreciation. This valuation is sometimes referred to as the "written-down replacement cost". When reliable, directly observed prices for used assets are not available, this procedure gives a reasonable approximation of what the market price would be were the asset to be offered for sale.

#### 3. Present value of future returns

13.24 In the case of assets for which the returns either are delayed (as with forests) or are spread over a lengthy period (as with subsoil assets), although market 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

13.25 Assets and liabilities denominated in foreign currencies should be converted into the domestic 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 an electronic annex to chapter 26,

### C. The entries in the balance sheet

13.26 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

- 13.27 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, partial information should be used to check that the assumptions made are consistent with this.
- 13.28 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).
- 13.29 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.

- 13.30 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.
- 13.31 Markets for existing automobiles, aircraft, and other transportation equipment may be sufficiently representative to yield useful price observations for 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, either because many of the transactions involve assets that for some reason are not typical; or because they are obsolete or because they are being disposed of under financial duress.
- 13.32 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; in this case they should then be recorded at the current writtendown value of the cumulated capital formation.
- 13.33 Research and development expenditure carried out on contract is valued at the contract price. If it carried out on own account, it is valued as cumulated costs. Both valuations need to be increased for changes in prices and reduced because of consumption of fixed capital over the life of the asset.
- 13.34 Even though costs of ownership transfer on non-produced assets (other than land) are shown separately in the capital account, and treated as gross fixed capital formation, in the balance sheets these costs are incorporated in the value of the asset to which they relate even though the asset is non-produced. Thus there are no costs of ownership transfer shown separately in the balance sheets. 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 of services when the assets are acquired by non-residents.
- 13.35 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.
- 13.36 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 present value of future returns from the original.

13.37 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, or (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

- 13.38 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 6.
- 13.39 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 that have been separately invoiced to the wholesalers or retailers and included in their intermediate consumption.
- 13.40 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.
- 13.41 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

13.42 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 wellorganized 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.

13.43 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

- 13.44 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 is shown separately under fixed assets, and excluding the value of buildings on the land which is also to be shown separately under fixed assets. Land is valued at its current price paid by a new owner, excluding the written-down costs of ownership transfer which are treated, by convention, as gross fixed capital formation and are subject to consumption of fixed capital.
- 13.45 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.
- 13.46 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, vinevard, 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.
- 13.47 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.
- 13.48 Land appears on the balance sheet of the legal owner except when it is subject to a financial lease as 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

- 13.49 The value of sub-soil 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 that the owners of the assets place on them in their own accounts.
- 13.50 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. Nor is it necessarily the case that the extractor will have the right to extract until the reserve is exhausted. Because there is no wholly satisfactory way in which to show the value of the asset split between the legal owner and the extractor, the whole of the reserve is 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

13.51 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

13.52 Contracts, leases and licences may be marketable operating leases, licences to use natural resources, permits to undertake specific activities and entitlement to future goods and services on an exclusive basis. As explained in part 5 of chapter 17, these sorts of contracts are regarded as assets only if the existence of the legal agreement confers benefits on the holder in excess of the price paid to the lessor, owner of the natural resource or permit issuer and the holder can realise these benefits legally and practically. It is recommended that such assets be recorded only when the value of the asset is significant and is realised, in which case a suitable market price necessarily exists. The asset does not exist beyond the length of the contract agreement and its value must be reduced accordingly as the remaining contract period shortens.

#### Goodwill and marketing assets

13.53 The balance sheet entry for goodwill and marketing assets is the written-down value of the entry that 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 and liabilities

13.54 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. There is more detailed discussion on the definition of financial assets and their recording in chapter 11 and part 4 of chapter 17.

#### Monetary gold and SDRs

- 13.55 Monetary gold is to be valued at the price established in organized markets or in bilateral arrangements between central banks.
- 13.56 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 the basket and the weights are revised from time to time.

#### Currency and deposits

13.57 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. The amount of principal outstanding includes any interest and service charge due but not paid. Currency and deposits in foreign currency are converted to domestic currency at the mid-point of the balance sheet. Repayable margin payments in cash related to financial derivatives contracts are included in other deposits.

#### Debt securities

- 13.58 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.
- 13.59 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.

- 13.60 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 volatile 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.
- 13.61 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 mid-point of the rates 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

- 13.62 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 should include any interest that has accrued but not been paid. It should also include any amount of indirectly measured service charge (the difference between bank interest and SNA interest) due on the loan that has accrued and not been paid. In some instances, accrued interest may be shown under accounts receivable/payable but inclusion in loans is to be preferred if possible.
- 13.63 If there is evidence of a secondary 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.
- 13.64 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

13.65 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 non-performing 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 capitalised, 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 or the principal is written off on this or subsequent loans that replace the original.

- 13.66 Two memorandum items are recommended relating to nonperforming 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, or may sometimes be available from the balance sheets of the creditor. 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.
- 13.67 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

- 13.68 *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.
- 13.69 For *unlisted shares*, there may be no observable market prices for positions in equity not listed on a stock exchange This situation often arises for direct investment enterprises, private equity, equity in unlisted and delisted companies, listed but illiquid companies, joint ventures, and unincorporated enterprises.
- 13.70 When actual market values are not available, an estimate is required. Alternative methods of approximating market value of shareholders' equity in a direct investment enterprise follow. These are not ranked according to preference, and each would need to be assessed according to the circumstances and the plausibility of results.
  - a. Recent transaction price. Unlisted instruments may trade from time to time, and recent prices, within the past year, at which they were traded may be used. Recent prices are a good indicator of current market values to the extent that conditions are unchanged. This method can be used as long as there has been no material change in the corporation's position since the transaction date. Recent transaction prices become increasingly misleading as time passes and conditions change.

- b. Net asset value. Appraisals of untraded equity may be conducted by knowledgeable management or directors of the enterprise, and/or provided by independent auditors to obtain total assets at current value less total liabilities (excluding equity) at market value. Valuations should be recent (within the past year).
- c. Present value / price to earnings ratios. The present value of unlisted equity can be estimated by discounting the forecast future profits. At its simplest, this method can be approximated by applying a market or industry price-to-earnings ratio to the (smoothed) recent past earnings of the unlisted enterprise to calculate a price. This method is most appropriate where there is a paucity of balance sheet information but earnings data are more readily available.
- d. Book values reported by enterprises with macro-level adjustments by the statistical compiler. For untraded equity, information on "own funds at book value" can be collected from enterprises, then adjusted with ratios based on suitable price indicators, such as prices of listed shares to book value in the same economy with similar operations. Alternately, assets that enterprises carry at cost (such as land, plant, equipment, and inventories) can be revalued to current period prices using suitable asset price indices.
- e. Own funds at book value. This method for valuing equity uses the value of the enterprise recorded in the books of the direct investment enterprise, as the sum of (i) paid-up capital (excluding any shares on issue that the enterprise holds in itself and including share premium accounts); (ii) all types of reserves identified as equity in the enterprise's balance sheet (including investment grants when accounting guidelines consider them company reserves); (iii) cumulated reinvested earnings; and (iv) holding gains or losses included in own funds in the accounts, whether as revaluation reserves or profits/losses. The more frequent the revaluation of assets and liabilities, the closer the approximation to market values. Data that are not revalued for several years may be a poor reflection of market values.
- f. Apportioning global value. The current market value of the global enterprise group can be based on the market price of its shares on the exchange on which its equity is traded, if it is a listed company. Where an appropriate indicator may be identified (e.g., sales, net income, assets, or employment), the global value may be apportioned to each economy in which it has direct investment enterprises, on the basis of that indicator, by making the assumption that the ratio of net market value to sales, net income, assets, or employment is a constant throughout the transnational enterprise group. (Each indicator could yield significantly different results from the others.)
- 13.71 In cases where none of the above methods are feasible, less suitable data may need to be used as data inputs. For example, cumulated flows or a previous balance sheet adjusted by subsequent flows may be the only sources available. Since these sources use the prices of previous periods, they should be adjusted for subsequent price developments, for example by using aggregate share price or asset price indexes, and taking

into account exchange rate movements, where relevant. The use of unadjusted summing of past transactions is not a recommended practice. Equity represents owners' funds. The means through which equity can be generated may take various forms, such as share issues, equity injections without any commensurate issue of shares (sometimes called "contributed surplus" or "capital contributions"), share premiums, accumulated reinvested earnings, or revaluation. While these should be taken into account when cumulated flows need to be used as a starting point to measure the value of equity, the different categories are all components of equity and need not be identified separately in other cases.

- 13.72 If the current market price is not directly observable, the decision about the methods to adopt should take into account the availability of information as well as judgments as to which available method best approximates market values. Different methods may be suitable for different circumstances and a standard ranking of the alternative methods is not proposed for valuing instruments when current market prices are not directly observable. Compilers should be transparent and should state clearly the method(s) used. Methods for valuation of direct investment equity positions are discussed in more detail in the OECD Benchmark Definition.
- 13.73 *Other equity* covers equity in any corporation or quasicorporation that does not issue shares. Such corporations include public enterprises, the central bank, some other special government units, partnerships, unlimited liability companies and quasi-corporations whenever they are institutional units without shares. Other equity should be valued as equal to the value of the unit's assets less the value of their liabilities.

#### Investment fund shares/units

13.74 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 reserves

13.75 The amount of the reserves for non-life insurance to be recorded in the balance sheet 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 have not yet been reported.

#### *Life insurance and annuities entitlements*

13.76 The amount to be recorded under the stock values for life insurance and annuities entitlement is similar to that for nonlife insurance technical reserves in that it represents reserves sufficient to meet all future claims. However, in the case of life insurance, the level of the reserves is considerable and represents the present value of all expected future claims. In the commercial accounts of insurance corporations, some of these will be described as provisions for bonuses and rebates. These are the result of the insurance industry's practice of smoothing benefits over time and possibly retaining some benefits until the policy matures.

#### Pension entitlements

13.77 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 financial assets acquired with the future pensioner's contributions (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

13.78 The value to be entered in the balance sheet for calls under standardised guarantees is the expected level of claims under current guarantees less any expected recoveries. 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**

13.79 The treatment of derivatives is discussed in chapter 11. 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 present values, may be used.

#### **Options**

13.80 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. Depending on how margin systems operate, it may be appropriate to enter zero for the value of an option, as any profits (losses) will have been received (paid) daily by the holder. The counterpart of these asset entries should be entered as liabilities.

#### Forwards

13.81 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

13.82 Employee stock options (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. The value of the ESO alters between grant date and vesting date and then up to exercise date as the value of the shares covered change. Part 6 of chapter 17 covers ESOs in more detail.

#### Other accounts receivable/payable

13.83 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 due on other accounts receivable/payable may be included here but in general interest due on debt securities is recorded as increasing the value of the asset concerned. Interest accruing on deposits and loans may have to follow national practices and be classified here if it is not incorporated into the principal of the relevant loan or deposit.

#### 4. Net worth

- 13.84 Net worth is the difference between the value of all financial and non-financial assets and all liabilities at a particular point 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.
- 13.85 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 clearcut.
- 13.86 In the System, net worth of corporations is calculated in exactly the same way as for other sectors, as the sum of all assets less the sum of all liabilities. In doing so, the value of

shares and other equity, which are liabilities of corporations, are included in the value of liabilities. Shares are included at their market price on the balance sheet date. 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.

- 13.87 An alternative calculation is similar to the treatment of quasicorporations. This calculates the value of the shareholders' equity in such a way that net worth is zero. This calculation of shareholders' equity is called own funds and is calculated as the sum of its assets less the sum of its liabilities other than shares.
- 13.88 A non-zero value of own funds comes about through a number of factors. One reason is the existence of "assets" that are not recognised as such in the System such as goodwill and marketing assets. Another is that the System's view of the value of some financial assets, such as bonds and nonperforming loans, may not coincide with a fair value approach. 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.) Further, the market value of shares reflects market sentiment about future income streams which may fluctuate with much more volatility than the underlying value of the corporation.
- 13.89 Own funds include accumulation over time of retained and reinvested 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.

13.90 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.

#### 5. Memorandum items

13.91 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 foreign direct investment.

#### Consumer durables

- 13.92 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
- 13.93 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

13.94 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.