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**Updated System of National Accounts (SNA):**  
**Chapter 17: Cross-cutting and other special issues**

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# Chapter 17: Cross-cutting and other special issues

## Part 1 The treatment of insurance

### A. Introduction

- 17.1 At its simplest, an insurance policy is an agreement between an insurance corporation and another institutional unit, called the policy holder. Under the agreement, the policy holder makes a payment (a premium) to the insurance corporation and, if or when a specified event occurs, the insurance corporation makes a payment (claim) to the policy holder. In this way, the policy holder protects itself against certain forms of risk; by pooling the risks the insurance corporation aims to receive more from the receipt of premiums than it has to pay out as claims. However, simply recording the actual premiums and claims paid in the accounts of the System would not reflect the links between premiums and claims. Instead, some actual transactions are decomposed and others are imputed in order to bring out the underlying economic processes actually taking place.
- 17.2 The most common form of insurance is called direct insurance whereby the policy is issued by an insurance corporation to another type of institutional unit but an important form of insurance is provided by one insurance corporation to another insurance corporation. This sort of insurance is called reinsurance.
- 17.3 This part of chapter 17 is concerned with direct insurance and reinsurance. It attempts to bring together all the entries in the accounts connected with insurance and explain their interconnection. Part 2 deals with pension and non-pension benefits under social insurance schemes.
- 17.4 Defining some of the terms peculiar to the insurance industry is a helpful preliminary to further discussion. For direct insurance, the term premiums is used for payment to the insurance corporation; payments by the insurance corporation are called claims in the case of non-life policies and benefits in the case of life policies. **The actual premium is the amount payable to the direct insurer or reinsurer to secure insurance cover for a specific event over a stated time period.** Cover is frequently provided for one year at a time with the premium due to be paid at the outset though cover may be provided for shorter (or longer) periods and the premium may be payable in instalments, for example monthly.
- 17.5 **The premium earned is the part of the actual premium that relates to cover provided in the accounting period.** For example, if an annual policy with a premium of 120 units comes into force on April 1 and accounts are being prepared

for a calendar year, the premium earned in the calendar year is 90. **The unearned premium is the amount of the actual premium received that relates to the period past the accounting point.** In the example just given, at the end of the accounting period there will be an unearned premium of 30, intended to provide cover for the first three months of the next year. **A claim (benefit) is the amount payable to the policy holder by the direct insurer or reinsurer in respect of an event covered by the policy occurring in the period for which the policy is valid.** Claims become due when the event occurs, even if the payment is made some time later. Claims that become due are described as claims incurred. In some contested cases the delay between the occurrence of the event giving rise to the claim and the settlement of the claim may be several years. **Claims outstanding cover claims that have not been reported, have been reported but are not yet settled or have been both reported and settled but not yet paid.**

#### 1. Direct insurance

- 17.6 There are two types of direct insurance, life and non-life insurance. **Life insurance is an activity whereby a policy holder makes regular payments to an insurer in return for which the insurer guarantees to provide the policy holder (or in some cases another nominated person) with an agreed sum, or an annuity, at a given date or earlier if the policy holder dies beforehand.** The sum payable under the policy (benefit) may be fixed or may vary to reflect the income earned from the investment of premiums during the period for which the policy operates. For policies with varying returns, the terms “with-profits” life insurance or endowment policy are generally used. Although the date and sum may be variable, a claim is always paid in respect of a life policy. **Non-life insurance covers all other risks, accidents, sickness, fire, etc.** A policy that provides a benefit in the case of death within a given period but in no other circumstances, usually called term insurance, is regarded as non-life insurance because, as with other non-life insurance, a claim is payable only if a specified contingency occurs and not otherwise. In practice, because of the way in which insurance corporations keep their accounts, it may not always be possible to separate term insurance from other life insurance. In these circumstances, term insurance may have to be treated in the same way as life insurance for purely practical reasons.

- 17.7 What life and non-life insurance have in common is that they both involve spreading risk. Insurers receive many (relatively) small regular payments of premiums from policy holders and pay much larger sums to claimants when the contingencies covered by the policy occur. For non-life insurance, the risks are spread over the whole population that takes out the insurance policies. For example, an insurance corporation determines the premiums charged for vehicle insurance in a year by relating them to the amount of claims it expects to pay on vehicle insurance in the same year. Typically, the number of claimants is much smaller than the number of policy holders. For an individual non-life policy holder there is no relationship between the premiums paid and the claims received, even in the long run, but the insurance corporation establishes such a relationship for every class of non-life insurance on a yearly basis. For life insurance, a relationship between premiums and claims over time is important both to the policy holders and to the insurance corporation. For someone taking out a life policy, the benefits to be received are expected to be at least as great as the premiums paid up until the benefit is due and can be seen as a form of saving. The insurance corporation must combine this aspect of a single policy with the actuarial calculations about the insured population concerning life expectancy (including the risks of fatal accidents) when determining the relationship between the levels of premiums and benefits. Further, in the interval between the receipt of premiums and the payment of benefits, the insurance corporation earns income from investing the premiums received. This income also affects the levels of premiums and benefits set by the insurance corporations.
- 17.8 Despite the similarity of the activity of life and non-life insurance, there are significant differences between them that lead to different types of entries in the accounts of the System. Non-life insurance consists of redistribution in the current period between all policy holders and a few claimants. Life insurance mainly redistributes premiums paid over a period of time as benefits paid later to the same policy holder. Essentially life insurance premiums and benefits are financial transactions and not current transactions.
- 17.9 One way in which a regular income stream can be obtained in return for an up-front payment of a lump sum is via an annuity. Annuities are usually offered by life insurance corporations and so a discussion of the recording for annuities in the System is given at the end of this part.

## **B. Output of direct insurance**

- 17.13 The way in which the System measures the output of insurance corporations aims to mimic the premium setting process of the industry. To that end, four separate items need to be defined. These are premiums earned, premiums supplements, claims incurred and reserves. Each of these discussed in turn before discussing the measurement of output for direct non-life insurance, direct life insurance and reinsurance respectively.

## **2. Reinsurance**

- 17.10 Just as an individual institutional unit protects itself against the financial consequences of loss or damage, so an insurance corporation may also protect itself against an unexpectedly large number of claims, or exceptionally heavy claims, by taking out a reinsurance policy with another insurance corporation. All insurance corporations take out some form of reinsurance but there tend to be a few large corporations that specialise in issuing reinsurance policies. Because these corporations are concentrated in a few financial centres, many of the flows associated with reinsurance involve transactions with the rest of the world. It is common for reinsurers to take out reinsurance policies with other insurance corporations to spread their risks further. This sort of reinsurance is called retrocession.
- 17.11 Reinsurance policies are most common for non-life policies but may also apply to life insurance policies. There are of two types of reinsurance, proportionate reinsurance and excess of loss reinsurance. Under a proportionate reinsurance contract, the reinsurer accepts an agreed proportion of the risks; this proportion of the premiums is "ceded" to the reinsurer who then meets the same proportion of the claims. In this case, any reinsurance commission paid by the reinsurer to the policy holder (either a direct insurer or another reinsurer) is treated as a reduction in reinsurance premiums payable. In excess of loss reinsurance, the reinsurer undertakes to pay all losses over a given threshold. If there are no or few claims above the threshold, the reinsurer may pass a share of his profits to the direct insurer. The share in the profits is treated as a current transfer from the reinsurer to the policy holder.

## **3. The units involved**

- 17.12 The institutional units involved in direct insurance and reinsurance are pre-eminently insurance corporations. In principle it is possible for another type of enterprise to carry out insurance as a non-principal activity, but usually the legal regulations surrounding the conduct of insurance mean that a separate set of accounts covering all aspects of the insurance activity must be kept and thus in the System a separate institutional unit, classified to the insurance corporations and pension funds sub-sector, is identifiable. Sometimes government may conduct other insurance activities, but again it is likely that a separate unit can be identified. Having noted that exceptionally other sectors may be involved, in what follows it is assumed that all insurance is carried out by insurance corporations, either resident or non-resident.

## **1. Premiums earned**

- 17.14 As explained in section A, an important distinction is made between actual premiums, which are payable for cover in a given period and premiums earned that are the proportion of actual premiums, relating to the accounting period in question rather than to the period covered by the insurance policy.

## 2. Premium supplements

- 17.15 For life insurance in particular but also sometimes for non-life insurance, the total amount of claims payable in a given period often exceeds the premiums receivable. The insurance corporation can accept this because the contingencies covered by the policies do not occur, even for the whole population covered, at the same time as the premiums are paid. Premiums are usually paid regularly, often at the start of an insurance period, whereas claims fall due later, in the case of life insurance often many years later. In the time between the premium being paid and the claim being payable, the sum involved is at the disposal of the insurance corporation to invest and earn income from it. These amounts are called reserves. The income earned on the reserves allows the insurance corporations to charge lower premiums than would be the case otherwise. An adequate measure of the service provided must take account of the size of this income as well as the relative size of premiums and claims.
- 17.16 The income concerned comes from the investment of the reserves of the insurance corporations, which represent liabilities towards the policy holders. For non-life insurance, even though a premium may be payable at the start of a period of cover, the premiums are only earned on a continuous basis as the period passes. At any point before the end of the cover, the insurance corporation holds an amount due to the policy holder relating to services and possible claims to be provided in the future. This is a form of credit extended by the policy holder to the insurance corporation described as unearned premiums. Similarly, although claims become due for payment by the insurance corporation when the contingency specified in the policy eventuates, they may not be actually payable until some time later, often because of negotiation about the amounts due. This is another similar form of credit, described as reserves against claims outstanding.
- 17.17 Similar reserves exist for life insurance but in addition there are two other elements of insurance reserves, actuarial reserves for life insurance and reserves for with-profit insurance. They represent amounts set aside for payments of benefits in future. Usually the reserves are invested in financial assets and the income is in the form of investment income (interest and dividends). Sometimes, however, they may be used to generate net operating surplus either in a separate establishment or as a secondary activity. The most common example is from real estate.
- 17.18 It is common with life insurance policies for amounts to be explicitly attributed by the insurance corporation to the policy holders in each year. These sums are often described as bonuses. The sums involved are not actually paid to the policy holders but the liabilities of the insurance corporation towards the policy holders increase by this amount. This amount is shown as property income attributed to the policy holders. The fact that some of it may derive from holding gains does not change this designation; as far as the policy holders are concerned it is the return for making the financial asset available to the insurance corporation. In addition, all the income from the investment of non-life reserves and any excess of income from the investment of life reserves over any amounts explicitly attributed to the policy holders, is shown as

property income attributed to policy holders, regardless of the source of the income.

- 17.19 All property income attributed to policy holders, whether explicitly by the insurance corporation or implicitly within the System, is shown as payable to the policy holders in the distribution of primary income account. For non-life insurance, the same amount is then repaid to the insurance corporation as premium supplements in the secondary distribution of income account. For life insurance, premiums and premium supplements as well as benefits are shown in the financial account.
- 17.20 For direct non-life insurance, the property income attributed to the policy holders should, in principle, be made according to the proportion of reserves attributed to the different classes of insurance and policy holders. In practice, the usual method is to distribute the property income in proportion to the actual premiums payable. For direct life insurance, all policy holders are individuals and so the property income is attributed to households (possibly including some non-resident households).

## 3. Claims and benefits

### Non-life insurance claims

- 17.21 The level of claims made on non-life insurance policies varies from year to year and there may be exceptional events that cause a particularly high level of claims. However, the concept of insurance service is the service of providing covering against risk; production occurs continuously and not simply when the risk occurs. As such, its measurement should not be affected by the volatility of the occurrence of the risk. Neither the volume nor the price of insurance services is directly affected by the volatility of claims. The insurance company sets the level of premiums on the basis of its own estimation of the likelihood of claims. For this reason, the formula used in the System for the calculation of output should use not actual claims but a figure based on past experience and future expectations. The term "adjusted claims" is used to describe the level of claims used in determining the value of output.
- 17.22 The figure for adjusted claims may be derived statistically in an expectations approach based on previous experience of the level of claims. In considering the past history of claims payable, however, allowance must be made for the share of these claims that are met by under the terms of the direct insurer's reinsurance policy (if any). Thus the time series needed to determine expected claims is actual claims less (reinsurance claims less reinsurance premiums).
- 17.23 Alternatively, an accounting approach may be adopted whereby figures from the accounts of insurance corporations including equalisation provisions may be used. The accounting allowance for equalisation provision is also an adjustment to reflect the variations in claims from one year to another. Whichever method is used, therefore, the adjusted claim figure approximates the expected level of claims.

17.24 Immediately after a disaster out of line with previous experience, the level of expected claims will be higher, consistent with the observation that after a disaster, premiums rise. There is never a reason to adjust the level of adjusted claims retrospectively in the light of the exceptional disaster; it is only future expectations that reflect the impact of the disaster.

#### Life insurance benefits

17.25 Life insurance benefits are the amounts payable under the policy in the accounting period in question. No adjustment for unexpected volatility is necessary in the case of life insurance.

### 4. Reserves

17.26 The concept of reserves used in the formula for deriving the value of insurance output corresponds to the definition of non-life insurance technical provisions and life insurance and annuities entitlements as defined in chapter 13. These cover provisions for unearned premiums, for unexpired risks, claims outstanding and reserves for bonuses and rebates, the latter applying in the main to life insurance only. The coverage of unearned premiums and claims outstanding is given in section A.

### 5. Defining insurance output

#### Non-life insurance

17.27 The output of the insurance corporation represents the service provided to the policy holders. The output of direct non-life insurance is based on the principle of adding premiums and premium supplements and deducting adjusted claims incurred.

17.28 If an expectations approach is being used, the formula to calculate output takes the following form:

Actual premiums earned;

*Plus* premium supplement,

*Less* adjusted claims incurred;

where adjusted claims are estimated from past experience. In such a case, conceptually premium supplements should also be estimated on the basis of past experience. However, since premium supplements are less volatile than claims, in practice no such adjustment may be necessary. If a statistical basis is to be used for estimating output, it is advisable to use information broken down by "line of business", that is for motor insurance, buildings insurance, etc. separately.

17.29 Alternatively, an accounting approach may be used whereby output is calculated as:

Actual premiums earned;

*Plus* premium supplements;

*Less* adjusted claims incurred;

where adjusted claims are determined by using claims due plus the changes in equalisation provisions and, if necessary, changes to own funds.

17.30 If the necessary accounting data are not available and the historical statistical data are not sufficient to allow reasonable average estimates of output to be made, the output of non-life insurance may be estimated as the sum of costs (including intermediate costs, labour and capital costs) plus an allowance for "normal profit". However, since any reasonable estimate for "normal profit" is likely to involve expected claims, this option is hardly different from the expectations approach. Not including an allowance for normal profits is clearly inappropriate because insurance corporations do make profits.

#### Life insurance

17.31 The output of direct life insurance is calculated separately as:

Actual premiums earned;

*Plus* premium supplements;

*Less* benefits due;

*Less* increases (plus decreases) in actuarial reserves and reserves for with-profits insurance.

17.32 If adequate data are not available for the calculation of life insurance according to this formula, an approach based on the sum of costs, similar to that described for non-life insurance, may be used. As for non-life insurance, an allowance for normal profits must be included.

#### Reinsurance

17.33 The formulae to calculate the output of reinsurance services is exactly analogous to those for direct insurance. However, because the primary motivation of reinsurance is to limit the direct insurer's exposure to risk, a reinsurer deals with exceptionally large claims as a matter of normal business. For this reason, and because the market for reinsurance is concentrated in relatively few large firms world-wide, it is less likely that the reinsurer will experience an unexpectedly large loss than a direct insurer does, especially in the case of excess of loss reinsurance.

17.34 The output of reinsurance is measured in a way similar to that for direct non-life insurance. However, there are some payments peculiar to reinsurance. These are commissions payable to the direct insurer under proportionate reinsurance and profit sharing in excess of loss reinsurance. Once these are taken into account the output of reinsurance can be calculated as:

Total actual premiums earned less commissions payable;

*Plus* premium supplements;

*Less* both adjusted claims incurred and profit sharing.

## C. All the transactions associated with non-life insurance

17.35 This section describes the full set of entries needed in the accounts to record all the implications of a non-life insurance policy. Policies may be taken out by corporations, government units, NPISHs, households and units in the rest of the world. However, when a policy taken out by a member of a household qualifies as social insurance, the entries required are as described in part 2 of this chapter on social insurance and not as described here.

### 1. Net premiums and consumption of insurance services

17.36 The actual premiums payable and the premium supplements or contribution supplements are shown in the System divided between two types of transactions. The first is the value of the output of insurance, which is shown as either consumption or export of insurance services. The second is net premiums earned by the insurance corporations. *Net premiums are defined as actual premiums plus premium supplements less the insurance service charge payable by the policy holders.* Because of the way in which the value of the service output is defined, net premiums for non-life insurance are equal in total to adjusted, and not actual, claims. Any variation between adjusted and actual claims represents a transfer between the policy holders and the insurance corporation. Over time, a transfer in one direction is offset by one in the other.

17.37 Insurance services are consumed by those sectors (and the rest of the world) that pay premiums. Estimates of the value of consumption by sector are usually made by allocating the total value of the service in proportion to the actual premiums payable. Estimates of net premiums are then made by deducting the consumption of services from the total actual premiums payable plus the value of the premium supplements. (Because premium supplements are also allocated in proportion to actual premiums, the net premiums are also in effect allocated in the same proportions as the actual premiums.)

### 2. Recording non-life insurance claims

17.38 The time of recording claims incurred is in the period in which the event to which the claim relates took place. This principle is applied even when, in the case of disputed claims, the settlement may take place years after the event concerned.

17.39 Because the formula for output uses adjusted claims and not actual claims, only when the actual claims happen to be the same level as expected claims will net premiums and claims be equal in a given period. They should however be approximately equal over a period of years excluding a year in which a disaster is recorded.

17.40 Claims are normally recorded as current transfers payable by the insurance corporation to the policy holder. In some circumstances, an insurance corporation may set the level of premiums so low that they are not expected to cover costs and the predicted level of claims. This may happen when the surplus from one line of business, for example home insurance, is being used to cross-subsidise another line of

business, for example, vehicle insurance. Only in some very exceptional circumstances would an insurance corporation set the level of premiums so low that across all lines of business the premiums would not cover costs and expected claims. Should this happen, the formula to calculate output in the System will yield a negative value, which is impossible as an estimate of output. In such a case, therefore, the difference between the level of claims that would return a value of zero output (indicating a negative operating surplus equal to the sum of all costs including that of labour) and the previously calculated value of expected claims should be treated as a conscious decision by the insurance corporation to run down own funds. The value of adjusted claims in the formula to calculate the value of output should be amended by this difference and the same amount of claims should be shown as a capital transfer and not a current transfer. The proportion of claims treated as capital, rather than current, transfers should be applied to all categories of claims.

### 3. Insurance services provided to and from the rest of the world

17.41 Resident insurance corporations frequently provide insurance cover to households and enterprises in the rest of the world, and resident households and enterprises may purchase cover from insurance corporations in the rest of the world. The property income attributed by resident insurance corporations to policy holders includes an allocation to policy holders in the rest of the world. These non-resident policy holders then also pay premium supplements to the resident insurance corporation. This information should be available for resident insurers and should be included in the rest of the world account.

17.42 Similar considerations also apply to the treatment of resident enterprises and households taking out policies with non-resident insurers. They receive imputed property income from abroad and pay premiums and supplements to abroad. Estimation of the size of these flows is more difficult, especially when there is no resident insurer of the same type against which to make comparisons. However, very often the country providing the service will be known and it may be possible to use counterpart data to make estimates for the national economy. The level of transactions by residents should be known and the ratio of premium supplements to actual premiums in the economy providing the services could be used to estimate the property income receivable and premium supplements payable.

### 4. The accounting entries

17.43 Altogether six pairs of transactions need to be recorded in respect of other individual non-life insurance; two pairs relating to the measurement of the production and consumption of the insurance service, three pairs relating to redistribution and one in the financial account. Under exceptional circumstances, a seventh transaction relating to redistribution may be recorded in the capital account. The value of the output of the activity, the property income to be attributed to the policy holders and the value of the service

charge are calculated specifically for other non-life insurance in the manner described above.

17.44 The production and consumption transactions are as follows:

- a. Since all such activity by resident institutional units is undertaken by insurance corporations, the output is recorded in the production account of insurance corporations;
- b. The service may be consumed by any of the sectors of the economy or by the rest of the world; the value of the service is payable to insurance corporations. Payments by non-financial corporations, financial corporations, general government or non-profit institutions constitute intermediate consumption, recorded in their production account. Insurance clearly associated with the productive activity of a household unincorporated enterprise is also recorded as intermediate consumption in the production account of households. Other insurance payments by households are part of final consumption expenditure, recorded in the use of income account. Payments by the rest of the world are recorded as exports in the external account of goods and services.

17.45 The redistributive transactions cover property income attributed to policy holders in respect of other non-life

insurance, net non-life insurance premiums, and insurance claims:

- c. Property income attributed to policy holders in respect of non-life insurance is recorded as payable by insurance corporations. It is recorded as receivable by all sectors and the rest of the world. Both payables and receivables are recorded in the allocation of primary income account.
- d. Net non-life insurance premiums are calculated as premiums earned plus premium supplements (equal to the property income attributed to policy holders) less the value of the services consumed. These net premiums are payable by all sectors of the economy or the rest of the world and receivable by insurance corporations.
- e. Insurance claims incurred are payable by insurance corporations and receivable by all sectors of the economy and the rest of the world. Both net premiums and claims are recorded in the secondary distribution of income account.
- f. If the expected level of claims is so high as to lead to negative output, then a proportion of all non-life insurance claims in that accounting period are recorded as capital transfers rather than as current transfers.

**Table 17.1: Accounts for individual non-life insurance - uses**

Uses	Insurance			
	Corporations	corporations	Households	Other sectors
<i>Production account</i>				
Intermediate consumption	1.0		3.0	
Output				
<i>Distribution of primary income</i>				
Property income attributable to non-life insurance policy holders		6.0		
<i>Secondary distribution of income account</i>				
Net non-life insurance premiums	8.0		31.0	6.0
Non-life insurance claims			45.0	
<i>Use of income</i>				
Final consumption expenditure			2.0	
<i>Financial account</i>				
Non-life insurance technical provisions			3.0	
of which unearned premiums			1.0	
claims outstanding			2.0	

- 17.46 Net non-life insurance premiums should be recorded on the basis of the amounts due to obtain cover in the period of account, not the amounts due to be paid in the period. Insurance claims should be recorded on the basis of the amounts due at the date of the event concerned occurred. An entry in the financial account records any difference between premiums payable and premiums earned and claims due and claims payable.
- 17.47 By convention, unearned premiums and reserves against outstanding claims are shown as a change in liabilities of insurance corporation (with a negative sign if necessary) and a change in assets of all sectors and the rest of the world.
- 17.48 An example of these flows is shown in table 17.1.

## D. All the transactions associated with life insurance

- 17.49 This section describes the way in which recording of the entries for life insurance differ from non-life insurance. As for non-life insurance, but more significant in practice, a life policy that qualifies as social insurance is recorded not as described here but as described in part 2 of the chapter. The major difference between a normal life insurance policy and one qualifying as social insurance is that under the former, the benefits from the policy are treated as mainly rundowns of wealth, recorded in the financial account. For a policy qualifying as social insurance, the benefits (pensions) are recorded as income in the secondary distribution of income account. The reason for the different treatment is that an individual policy other than social insurance is entered into entirely on the initiative of the policy holder. Policies that qualify as social insurance reflect the intervention of a third party, usually the government or the employer, to encourage or oblige the policy holder to make provision for income in retirement. Distinguishing all payments made under social insurance schemes, including those coming from qualifying individual policies, shows how far social policies to ensure income in retirement are successful.
- 17.50 The holder of a life insurance policy is always an individual. (If a company takes out an insurance policy on the life of an employee, this should be treated as term insurance and therefore as non-life insurance in the System.) Life insurance transactions therefore take place only between insurance corporations and households, resident and non-resident. The production of the insurance services is matched by the value of the services consumed by households as part of final consumption expenditure and exports. The property income attributed to insurance policy holders is treated as premium supplements. However, premiums and claims are not shown separately in the case of other life insurance and are not treated as current transfers. Rather they constitute components of a net transaction recorded in the financial account, the financial asset involved being life insurance and annuities entitlements.
- 17.51 Four sets of transactions are recorded in the accounts; one each relating to production and consumption of the insurance service, one showing the attribution of property income to the property holders and one showing the change in life insurance and annuities entitlements:
- The output of the life insurance activity is recorded in the production account for the insurance corporations.
  - The value of the services consumed is recorded as final consumption expenditure payable by households in the use of disposable income account or as payable by the rest of the world (exports to non-resident households). Households may also make payments to non-resident insurers. Such payments are treated as imports of insurance services.

**Table 17.1: Accounts for individual non-life insurance - resources**

	Insurance			
	Corporations	corporations	Households	Other sectors
<i>Production account</i>				
Intermediate consumption				
Output		6.0		
<i>Distribution of primary income</i>				
Property income attributable to non-life insurance policy holders	5.0		1.0	
<i>Secondary distribution of income account</i>				
Net non-life insurance premiums		45.0		
Non-life insurance claims	6.0		35.0	4.0
<i>Use of income</i>				
Final consumption expenditure				
<i>Financial account</i>				
Non-life insurance technical provisions		3.0		
of which unearned premiums		1.0		
claims outstanding		2.0		

- c. Property income attributed to insurance policy holders in respect of life insurance is recorded in the allocation of primary income account. Bonuses declared in connection with life policies are treated as property income even if they exceed the property income earned by the institution declaring the bonus. The property income is recorded as payable by insurance corporations and receivable by resident households or non-resident households in the rest of the world. No deduction of holding gains and losses is made from the amounts shown as property income attributed to the policyholders; for the policyholder, the actual source of the funding of the amounts payable is irrelevant.
- d. In the financial account, the item change in life insurance and annuities entitlements is shown as a change in assets

of households and the rest of the world and a change in liabilities of insurance corporations. It is equal to actual premiums plus premium supplements (equal to the property income attributed to policy holders) less the value of the services consumed and less benefits due.

17.52 An example of these flows is shown in table 17.2.

### 1. Annuities

17.53 Some life insurance policies yield a lump sum at a given date rather than a stream of payments. The lump sum may be used to purchase an annuity that itself converts a lump sum into a stream of payments. The recording of annuities is described in section F.

## E. All transactions associated with reinsurance

- 17.54 Before discussing how the various elements contributing to the measurement of output of reinsurance are recorded in the System, it is necessary to describe how reinsurance is measured and recorded.
- 17.55 The transactions between the direct insurer and the policy holder are measured as described in the previous section without any reference to the transactions between the direct insurer and the reinsurer. The transactions between the direct insurer and the reinsurer are recorded as an entirely separate set of transactions and no consolidation takes place between the transactions of the direct insurer as issuer of policies to its clients on the one hand and the holder of a policy with the reinsurer on the other.
- 17.56 The direct policy holder does not know, or need to know, whether the direct insurer involves a reinsurer to protect it against loss on the policy. The direct insurer receives actual premiums from its policy holders. Some of these are ceded to a reinsurer. The premiums are shown as being first payable to

the direct insurer and then a lesser premium is payable to the reinsurer. This non-consolidation is sometimes referred to as gross recording on the part of the direct insurer. The alternative (net recording) would be to show part of the direct policy holders premiums being paid to the direct insurer and part to the reinsurer but this option is not recommended either in commercial accounting or in the System.

17.57 The actual premium payable by the direct insurer to the reinsurer is used by the reinsurer to earn investment income. This is treated as property income payable to the direct insurer and returned to the reinsurer as a premium supplement. Thus a direct insurer pays property income to its policy holders based on the whole of the premiums earned (or by approximation payable) but also receives property income from the reinsurer corresponding to the amount of the premiums it has ceded to the reinsurer. The property income receivable by the direct insurer from the reinsurer may be used to offset some of the property income payable by the direct insurer to its policy holders.

**Table 17.2: Accounts for individual life insurance - resources**

	Insurance			
	Corporations	corporations	Households	Other sectors
<i>Production account</i>				
Output		4.0		
<i>Distribution of primary income</i>				
Property income attributable to life insurance policy holders			7.0	
<i>Use of income</i>				
Final consumption expenditure				
<i>Financial account</i>				
Life insurance and annuity entitlements		22.0		
of which net premiums		113.0		
benefits		91.0		

- 17.58 The whole of the output of the reinsurer represents intermediate consumption of the direct insurer holding the reinsurance policy. As noted above, many reinsurance policies are between insurance corporations resident in different economies. Thus the value of the output in these cases represent imports by the insurance corporation taking out the reinsurance policy and exports by the reinsurance corporation.
- 17.59 The recording of flows associated with reinsurance resembles the recording for non-life insurance except that the policy holder of a reinsurance policy is always another insurance corporation.
- 17.60 The production and consumption transactions are as follows:
- Since all such activity by resident institutional units is undertaken by insurance corporations, the output is recorded in the production account of insurance corporations and is recorded as exports if the policy holder is non-resident;
  - The service may only be consumed by another insurance corporation, though this may be a non-resident unit, and is intermediate consumption of that unit. If there is no resident production of the service, it is an import.
- 17.61 The redistributive transactions cover property income attributed to policy holders in respect of reinsurance, net reinsurance premiums and reinsurance claims:
- Property income receivable by reinsurance policy holders is payable by insurance corporations, resident or non-resident, and receivable by similar institutions either resident or non-resident.
  - Net non-life insurance premiums are calculated as premiums earned plus premium supplements (equal to the property income attributed to policy holders) less the value of the services consumed. These net premiums are payable by insurance corporations and receivable by insurance corporations. (Either of the unit due to make the payment or to receive it may be non-resident.)
  - Reinsurance claims are payable by insurance corporations and receivable by insurance corporations, either resident or non-resident. Both net premiums and claims are recorded in the secondary distribution of income account.
  - Commissions payable and profit sharing are recorded as current transfers payable by the reinsurers and receivable by the direct insurers.
  - The chances of needing to treat some claims under a reinsurance policy as a capital transfer, as described for non-life insurance, is remote.
- 17.62 An entry in the financial account records any difference between premiums payable and premiums earned and claims incurred and claims payable.

## F. Annuities

- 17.63 The simplest case of a life insurance policy is one where a stream of payments is made by the policy holder to the insurance corporation over time in return for a single payment received as a claim at some point in the future. With the simplest form of annuity, the equivalent to the policy holder, called the annuitant, pays a single lump sum to the insurance corporation and in return receives a stream of payments either for a nominated period or for the rest of the annuitant's life (or possibly for the rest of the life of both the annuitant and a nominated other person).

**Table 17.2: Accounts for individual life insurance - uses**

Uses	Insurance		
	Corporations	corporations	Households Other sectors
<i>Production account</i>			
Output			
<i>Distribution of primary income</i>			
Property income attributable to life insurance policy holders		7.0	
<i>Use of income</i>			
Final consumption expenditure			4.0
<i>Financial account</i>			
Life insurance and annuity entitlements			22.0
of which net premiums			113.0
benefits			91.0

17.64 Annuities are organised by insurance corporations and are a means of risk management. The annuitant avoids risk by agreeing to accept a known payment stream (known either in absolute terms or subject to a formula, such as being index-linked) in return for parting with a considerable sum. The insurance corporation takes the risk of making more from investing the sum than is due to the annuitant. The rates of annuities are determined taking life expectancy into account. The insurance corporation has to pay more than originally planned to long-lived annuitants who may receive more than their original payment and the income earned on it. Those who die early receive less, possibly considerably less, and the insurance corporation receives more than expected.

## 2. How an annuity works

17.65 It is simplest to explain the working of an annuity by means of an example. Suppose an insurance corporation offers an individual payments of 600 for life in return for a lump sum payment of 10 000 and further suppose that the insurance corporation expects the individual concerned to live for 25 years and that the discount rate being used is five per cent. As shown in figure 17.1, the net present value of 600 for 25 years is only 8 700. Thus the remaining 1 300 represents the net present value of the service charges of about 90 per year the insurance corporation expects to make. Thus, whether the annuitant recognises it or not, the insurance corporation offer of 600 a year is a net figure. The annuitant will actually be entitled to 690 a year but 90 is retained by the insurance corporation as a fee for its services.

17.66 Each year there is property income payable to the annuitant equal to the unwinding of the discount factor of five percent on the remaining amount held by the insurance corporation. The proportion of the property income relating to the pre-paid premium (1 300) is 65 and the remaining 25 of the service charge is met from a drawdown of the value of 1 300 to 1 275. The remaining property income (435) adds to the value of the net annuity reserve of 8 700. At the end of the first year, therefore, the annuity reserve is 8 535; the original sum of 8 700 plus the interest of 435 and less the payment of 600. The drawdown on the start of year amount of the net annuity reserve is thus 165 and the drawdown on the prepaid premiums is 25.

17.67 This process continues year by year. As time progresses, the drawdown of the remaining reserves is an increasingly larger part of the payments due and the property income payable a smaller part. In principle, every year the insurance corporation can review its assumptions about the remaining life expectancy of the annuitant and recalculate the amount available as a service charge. (In practice this is likely to be done at intervals and by cohort of annuitants.)

17.68 The detailed numerical example is intended to demonstrate the way an annuity functions but in fact it is not necessary to undertake all these calculations to determine the output of the insurance corporation. The value of output can be determined more simply as the total property income due to the annuitant (500) less the amount payable to him (600) less the change in the value of the reserves ( a reduction of 190), or 90 (500-600-(-190)). This result can be seen to be parallel to the

measurement of life insurance except that there is no actual premium element.

## 3. The output associated with an annuity

17.69 The output of an insurance corporation associated with administering annuities is calculated as:

The property income attributable to the annuitants. The amount is equal to the discount factor times the start of year reserves and is independent of actual property income earned by the insurance corporation. The item is parallel to the concept of premium supplement in the life insurance context.

*Less* the amount payable to the annuitants (or surviving beneficiaries) under the terms of the annuity;

*Less* the change in the annuity reserves but excluding the initial payments for new annuities.

## 4. All the transactions associated with annuities

17.70 There are three sets of transaction recorded for an existing annuity and further entries required for the initiation and termination of an annuity.

a. A service charge associated with the annuity is payable every year. It is recorded as output of the insurance corporation and final consumption expenditure of the household to which the beneficiary belongs. This might be a non-resident household.

b. Property income equal to the discount factor times the level of annuity reserves at the beginning of the period is recorded in the primary distribution of income account as payable by the insurance corporation and receivable by the household.

c. The change in the value of the reserves for annuities is recorded in the financial account as payable by the household to the insurance corporation.

17.71 When an annuity is initiated, there is a transfer of funds from the household to the insurance corporation. In many cases, however, this may simply be a “roll-over” from a lump sum payable by that or another insurance corporation from the maturing of a normal life insurance policy immediately into an annuity. In such a case there is no need to record the payment of the lump sum and the acquisition of the annuity; there will simply be a change from life insurance reserves to annuity reserves in the insurance corporation and pension fund sub-sector. If an annuity is purchased independently of the maturing of a life insurance policy, this is recorded as a pair of financial transactions between the household and the insurance corporation. The household makes a payment to the insurance corporation and receives in return an asset arising from the terms of the annuity. The insurance corporation receives a financial asset from the household and incurs a liability towards it.

17.72 Annuities are normally terminated by death, at which point any remaining reserves for that annuitant are transferred to the

insurance corporation. However, assuming the insurance corporations has predicted life expectancy accurately, for the group of annuitants as a whole, the average funds remaining at death will be zero. If life expectancies change, revisions to the reserves must be made. For annuities in operation, an extension of life expectancies will reduce the amount available to the insurance corporation as a service charge, possibly making this negative. In such a case, the insurance corporation will have to draw on its own funds and hope to build these up again in future by associating higher service charges with new annuities.

**Figure 17.1: Example of an annuity**

<b>Starting position</b>	
Purchase price of annuity (A)	10 000
NPV of 600 a year for 25 years at 5% (B)	8 700
NPV of service charges (C)	1 300
Annualised rate (600*1300/8700)	90
<b>First year</b>	
Property income (interest) in respect of:	
A	500
B	435
C	65
Payments due	
A	690
B	600
C	90
Decline in value of stocks	
A	- 190
B	- 165
C	- 25
End year stocks	
A	9 810
B	8 535
C	1 275
<b>Second year</b>	
Property income (interest) in respect of:	
A	491
B	427
C	64
Payments due	
A	690
B	600
C	90
Decline in value of stocks	
A	- 200
B	- 173
C	- 26
End year stocks	
A	9 611
B	8 362
C	1 249
Etc.	



## Part 2: Social insurance schemes

### G. Introduction

- 17.73 Social insurance schemes are an important way in which individuals are provided with benefits because of participation in a scheme that ensures that benefits, described as social benefits, are paid when certain conditions exist that would adversely affect their welfare. Some social benefits, however, are payable independently of participation in a social insurance scheme. It is the conditions under which the benefits are payable that identify a social insurance scheme, not the nature of the benefits in themselves.
- 17.74 A social insurance scheme is a form of contract and always involves at least one unit other than the beneficiary. The other

unit may be an employer, general government or a financial institution (often an insurance corporation) or sometimes a non-profit institution (NPI).

- 17.75 The objective of this part of the chapter is to describe how the various sorts of social benefits provided under social insurance schemes are recorded in the System. In order to do this, it is necessary to clarify the identifying characteristics of a social insurance scheme, the nature of the other unit involved, the types of benefits payable and the ways in which these are funded.

### H. Basic definitions

#### 1. Social benefits

- 17.76 *Social benefits become payable when certain events occur, or certain conditions exist, that may adversely affect the welfare of the households concerned either by imposing additional demands on their resources or reducing their incomes.* They may be provided in cash or in kind. There are a number of circumstances in which social benefits may be payable:

- a. The beneficiaries, or their dependants, require medical, dental or other treatment, or hospital, convalescent or long-term care, as a result of sickness, injuries, maternity, chronic invalidity, old age, etc. The social benefits are usually provided in kind in the form of treatments or care provided free or at prices that are not economically significant, or by reimbursing expenditures made by households. Social benefits in cash may also be payable to beneficiaries needing health care;
- b. The beneficiaries have to support dependants of various kinds: spouses, children, elderly relatives, invalids, etc. The social benefits are usually paid in cash in the form of regular dependants' or family allowances;
- c. The beneficiaries suffer a reduction in income as a result of not being able to work, or to work full-time. The social benefits are usually paid in cash regularly for the duration of the condition. In some instances a lump sum may be provided additionally or instead of the regular payment. People may be prevented from working because of

- voluntary or compulsory retirement;
- involuntary unemployment, including temporary layoffs and short-time working;

- sickness, accidental injury, the birth of a child, etc., that prevents a person from working, or working full time;

- d. The beneficiaries receive payments to compensate for suffering a reduction in income because of the death of the main income earner.
- e. The beneficiaries are provided with housing either free or at prices that are not economically significant or by reimbursing expenditure made by households. These are social benefits in kind.
- f. The beneficiaries are provided with allowances to cover education expenses incurred on behalf of themselves or their dependants. Occasionally education services may be provided in kind.

- 17.77 The above are typical circumstances in which social benefits are payable. However, the list is illustrative rather than exhaustive. It is possible, for example, that under some social insurance schemes other benefits may be payable. Conversely, by no means all schemes provide benefits in all the circumstances listed above. In practice, the scope of social insurance schemes is liable to vary significantly from country to country, or from scheme to scheme within the same country.

#### 2. Social benefits provided by general government

- 17.78 Many social benefits are provided by general government. They may appear in the accounts as payments under social security, social assistance or social transfers in kind.

17.79 Social security is the name given to the social insurance scheme operated by general government. As will be explained below, in order to receive social security benefits, an individual must participate in social security scheme.

17.80 Social assistance is not a scheme and thus does not require participation. However, social assistance is frequently restricted to individuals with low incomes, disabilities or other particular characteristics. In some countries, though, a universal pension may be paid without any need for participation in which case it is part of social assistance also. There is a section discussing the difference between social insurance and social assistance at greater length in [chapter 8](#).

17.81 The definition of social benefits includes the possible provision of health and education services. Typically general government makes such services available to all members of the community without requiring participation in a scheme or qualifying requirements. These services are treated as social transfers in kind and not as part of social security or social assistance. Social transfers in kind are also discussed in chapter 8.

17.82 In addition to health and education services provided by general government, such services may also be provided to individuals by NPISHs. These also are treated as social transfers in kind and not as part of social insurance schemes.

### 3. Social benefits provided by other institutional units

17.83 Social benefits may also be provided by employers to the employees and their dependents or may be provided by other units such as a trades union. All social benefits made by units other than general government are made under a social insurance scheme.

### 4. Social insurance schemes

17.84 A social insurance scheme is a form of contractual insurance scheme where the policyholder is obliged or encouraged to insure against certain contingencies by the intervention of a third party. For example, government may oblige all employees to participate in a social security scheme; employers may make it a condition of employment that employees participate in an insurance scheme specified by the employer; an employer may encourage employees to join a scheme by making contributions on behalf of the employee; or a trade union may arrange advantageous insurance cover available only to the members of the trade union. Contributions to social insurance schemes are usually paid by, or on behalf of employees, though under certain conditions non-employed or self-employed persons may also be covered.

17.85 *A social insurance scheme is an insurance scheme where the following two conditions are satisfied:*

*a. the benefits received are conditional on participation in the scheme and constitute social benefits as this term is used in the SNA; and*

*b. at least one of the three conditions following is met:*

- *Participation in the scheme is obligatory either by law or under the terms and conditions of employment of an employee, or group of employees;*

- *The scheme is a collective one operated for the benefit of a designated group of workers, whether employed or non-employed, participation being restricted to members of that group;*

- *An employer makes a contribution (actual or imputed) to the scheme on behalf of an employee, whether or not the employee also makes a contribution.*

17.86 Those participating in social insurance schemes make contributions to the schemes (or have contributions made on their behalf) and receive benefits. Contributions and benefits are defined in similar ways to insurance premiums and claims. *A social insurance contribution is the amount payable to a social insurance scheme in order for a designated beneficiary to be entitled to receive the social benefits covered by the scheme. A social insurance benefit is a social benefit payable because the beneficiary participates in a social insurance scheme and the social risk insured against has occurred.*

17.87 Social security is a form of social insurance scheme. The relative importance of social security relative to other social insurance schemes varies considerably from one country to another depending on institutional arrangements. In some countries, social security may be restricted to basic pension provision of the social safety net variety. In such cases even the pension provision of general government employees may be dealt with other than via social security. At the other extreme, almost all pension provision, including that accruing to employees in private enterprises, may be routed through social security.

17.88 The two classes of social insurance schemes are:

- a. Social security,
- b. Employment-related social insurance schemes other than social security.

The schemes other than social security may be arranged with an insurance corporation as a group policy or series of policies or they may be managed by an insurance corporation in return for a fee. Alternatively, the schemes may be managed by an employer directly on his own behalf.

#### Multi-employer schemes

17.89 An insurance corporation may, for a fee, agree not only to manage a pension scheme but to take on the risks associated with it. This is done in the context of performing this service for a number of schemes collectively under what is called a multi-employer scheme. Under many such schemes, the insurance corporation takes over the responsibility of

managing the funds at its disposal so as to make sufficient funds available to meet pension liabilities and to make a surplus it can retain. If it fails to make sufficient funds available for the pension entitlements, it is then the responsibility of this firm and not the original employers, to make good the difference from its own resources.

- 17.90 When government takes over the responsibility for providing pensions to large sections of the community, the social security function is in effect filling the role of a multi-employer scheme. Like the insurance corporation, the government then takes on the responsibility for any shortfall in funds to meet the pension liabilities or may be entitled to retain any surplus generated. It is often the case, though, that social security is funded on a pay-as-you-go basis so there is no question of a surplus arising and, if there is a short-fall in resources, government may have powers to change the entitlements not just relating to future employment but for the past also.

## **5. Individual insurance policies qualifying as social insurance**

- 17.91 Many social insurance schemes are organized collectively for groups of workers so that those participating do not have to take out individual insurance policies in their own names. In such cases, there is no difficulty distinguishing social insurance from insurance taken out on a personal basis. However, some social insurance schemes may permit, or even require, participants to take out policies in their own names. The determinants for the insurance to count as a social insurance policy are that the benefits must be of the social benefit type and an employer makes an actual or imputed contribution to the scheme on behalf of an employee.
- 17.92 The premiums payable, and claims receivable, under individual policies taken out under a social insurance scheme are recorded as social contributions and social insurance

## **I. Accounting for non-pension contributions and benefits**

- 17.97 Non-pension benefits may be payable under social security and under employment-related schemes other than social security. Although in many countries there may in fact be no non-pension benefits, a description is given of how these should be recorded if they exist. For other social insurance schemes, the way of recording varies depending on whether reserves for provision of future benefits are set aside or not. Although in many cases there may be no such reserves and the benefits are paid on a pay-as-you-go basis, a description of the appropriate recording in each case is given.

### **1. Non-pension benefits payable under social security**

- 17.98 As is typical of social security schemes, there may be contributions payable by both the employer and the employee. The costs of operating social security schemes are treated as part of the normal expenditure of general government and so

benefits. Contributions to social insurance schemes are frequently paid on a monthly or even more frequent basis as they are often made directly when wages and salaries are payable.

- 17.93 Most individual policies that qualify as social insurance schemes are likely to be for pension provision but it is possible that they may cover other eventualities, for example to provide income if the policy holder is unable to work for a prolonged period because of ill-health.

- 17.94 Individual insurance policies that do not qualify as social insurance are described as individual insurance not qualifying as social insurance, or in short as other insurance.

## **6. Benefits payable under social insurance schemes**

- 17.95 In the System, social insurance benefits and the corresponding contributions are divided between those relating to pensions and those relating to all other forms of benefit. The most important pension benefit covered by social insurance schemes is income in retirement but a number of other contingencies may be covered also. For example, pensions may be payable to widows and widowers or to people who suffer an industrial injury and are no longer able to work. All of these sorts of contingencies that give rise to payments because the main income earner is no longer able, through death or incapacity, to provide an income for themselves and dependents are treated as pensions.

- 17.96 All other benefits are grouped together as non-pension benefits. The distinction between the two is important because the System recognises liabilities for some pensions whether there are actually assets set aside to meet the entitlements or not but recognises reserves for non-pension benefits only when these actually exist.

the accounting for social security operations does not include measures of output.

- 17.99 In the System flows are recorded as follows.

- a. Employers' social security contributions are shown as payable by the sector in which the employer is located and receivable by households. The sector of the employer may be any of non-financial corporations, financial corporations, general government (as an employer), employer households, NPISHs or the rest of the world (when a resident works for a non-resident institutional unit). For resident employers the payables are shown in the generation of income account; payables by non-resident employers are shown in the primary distribution of income account for the rest of the world. Receivables by resident households are shown in the allocation of primary income account and by non-resident households in

the primary distribution of income account for the rest of the world.

- b. In the secondary distribution of income account, the sum of employers' social security contributions and social security contributions by households in their capacities as employees is shown as payable by households and receivable by government. Further, social security benefits in cash payable to households are shown as payable by government (or the rest of the world if from a foreign government) and receivable by households.

17.100 An example of these flows is shown in table 17.3.

## 2. Unfunded non-pension benefits other than from social security

17.101 In the System, an employer operating an unfunded scheme is regarded as making an imputed social contribution to the scheme on behalf of the employees. In practice, the value of the employers' and employees' contributions is usually set equal in value to the benefits payable in the period under consideration (plus the cost of operating the scheme described in the following paragraph). The imputed contribution forms part of the compensation of employees and is also shown as being payable by the employees to the scheme together with any actual payments by the employees. Even though the scheme is unfunded, the employee may still make a contribution; however, it is not uncommon for unfunded schemes to be non-contributory for the employees.

17.102 Even if a scheme is unfunded, there are costs involved in administering it. In principle, output equal to the sum of these costs should be treated as being paid for by the beneficiaries from an imputed element of contributions. The imputed contribution to employees should include these costs as well as the value of the benefits received by employees. A value equal to the amount of the costs of operating the scheme is then recorded in the use of income account as a purchase of a service by the employees from the employer.

17.103 There are two transactions recorded for the production and consumption of the services provided by the employer. Because the scheme is unfunded, there are no property income flows and no contribution supplements to be recorded. There are two sets of redistributive transactions recorded.

17.104 The production and consumption transactions are as follows.

- c. Output of services is imputed in the production account of the employer and the value of the output forms part of the imputed employers' contributions to social insurance incorporated in compensation of employees.
- d. Consumption of the service is recorded in the use of income account for resident households or as exports for non-resident households.

17.105 The redistributive transactions are as follows.

- e. Employers' imputed contributions to unfunded social insurance schemes are shown as a payable by the sector in

which the employer is located in the generation of income account and a receivable by households in the allocation of primary income account.

- f. In the secondary distribution of income account, employers' imputed contributions and actual contributions by employees are shown as payable by households and receivable by the employer. Further, benefits payable to households by the employer are shown as payable by the employer and receivable by households.

17.106 An example of these flows is shown in table 17.4.

## 3. Funded social insurance other than pensions

17.107 As noted above, funded schemes for benefits other than pensions are not very common. They may, however, exist in two circumstances. The first is when an employer has a fund for such benefits and accumulates any underspend in one year to pay for possible overspends in future years. Alternatively, an employer may realise that the commitments to make payments in future are such that it is prudent to build reserves to be able to make such payments. An example of such a scheme might be one that provides health cover to present and past employees. Unlike in the case of pensions, no estimates are included in the System of possible future claims on social insurance benefits other than pensions. Liabilities are recorded only when and to the extent that they exist in the employer's accounts.

17.108 Funded social insurance covering benefits other than pensions may be carried out by insurance corporations or by employers on behalf of their employees. The output of this activity is measured in the same way as the output of non-life insurance but the matching consumption of the services is payable only by the households of the beneficiaries. These will be resident households except where a resident producer is liable to pay benefits to a present or former employee who is a non-resident or who has a non-resident family member entitled to the benefits. The property income attributed to the beneficiaries of the social insurance schemes can only be receivable by the same households.

All contributions to the schemes are recorded as payable by the employee. These contributions include that part paid by the employer as part of compensation of employees in the generation of income account as well as contributions paid directly by the employee funded from wages and salaries. Further, the employee receives property income attributed to policyholders in respect of these contributions and this is treated, in total, as contribution supplements. Two items of contributions appear in the secondary distribution of income account. The first, the employers' actual social contributions is exactly equal in value to the amount receivable by households from the employer in the generation of income account. The second item, called employees' social contributions includes the direct payment by the employees plus the contribution supplements less the service charge payable to the social insurance schemes.

17.109 Seven types of transactions must be recorded, one each relating to production and consumption of the insurance service, three relating to contributions and benefits, one to the

property income attributable to policyholders and one to an adjustment in the financial account:

- a. The activity by resident units is undertaken by insurance corporations or by an employer; the output is recorded in the production account of the insurance corporations or in the sector of the employer as appropriate;
- b. Employers' actual social contributions to employment-related social insurance schemes are shown as payable by the sector in which the employer is located in the generation of income account and receivable by households in the allocation of primary income account;
- c. Property income attributed to policyholders (beneficiaries) in respect of these schemes is payable by insurance corporations and employers, and receivable by employee households. Both payables and receivables are recorded in the allocation of primary income account;
- d. Net social contributions are shown in the secondary distribution of income account as payable by households

and receivable by insurance corporations or the sector of the employer as appropriate;

- e. Employment-related social benefits other than pensions are also shown in the secondary distribution of income account as payable by insurance corporations or the sector of the employer and receivable by households;
- f. The value of the service is payable by households as part of final consumption expenditure, and is recorded in the use of income account, except for non-resident employee households where it is payable by the rest of the world;
- g. The entry in the financial account, entitlements to non-pension benefits, records any difference between contributions payable and contributions earned and benefits due and benefits payable. This item is shown as a change (with a negative sign if necessary) in entitlements to non-pension benefits of insurance corporations (or employer sector) and a change in assets of employee households.

17.110 An example of these flows is shown in table 17.5.

## J. Accounting for pension contributions and pensions

17.111 Pensions are provided to individuals in an economy under one of three mechanisms, via social security, via employment-related schemes other than social security or via social assistance. Together, social security and employment-related pension schemes other than social security constitute social insurance schemes. Although the benefits provided under social assistance and some social insurance schemes may be very similar, the key distinction is that social insurance benefits are only paid if the beneficiary participates in the social insurance scheme, participation being normally evidenced by the beneficiary or another on his behalf having made qualifying contributions. Social assistance is paid without qualifying contributions having been made though means-testing may be applied to applicants.

17.112 The means by which pensions are provided to persons in retirement varies considerable from one country to another. This part of chapter 17 describes the most common forms of pension provision made under social insurance schemes though not all aspects may apply to all countries. Pensions provided under social assistance are not discussed in this chapter but in [chapters 8 and 9](#).

17.113 Social insurance pensions in all countries are provided, if at all, in part by general government and in part by employers. The part provided by general government is called social security and the part by employers is called employment-related schemes other than social security. The division between which pensions are provided by social security and which by other employment-related schemes varies considerable from country to country with the consequence

that the coverage and therefore national perceptions of what the term "social security" designates also vary considerably. In order to make clear the recommendations in the System, it is necessary to consider the types of coverage provided in different countries.

17.114 The narrowest form of social security pension is very basic. The level may be fixed independently of the size of contributions (though not of the fact that contributions have been made for a given period of time). An employee's right to a pension under social security is often transferable ("portable") from one employee to another, which is an advantage not always applying to other pension provisions, but for many people in low paid jobs, working temporarily or intermittently, it may be the only form of pension provision they can expect to receive.

17.115 By contrast, in some countries most or all pension provision may be made via social security. In this case government acts as an intermediary relative to the employer so that once the employer has handed over the contributions to the scheme paid by himself and the employees, government then takes on the risk of making the eventual payment. Government relieves the employer of the risk that the cost of pensions may be too great for his enterprise to meet and assures the population that pensions will be paid, though it may do so with the qualification that it may alter the amount of pensions payable, even retrospectively, if economic conditions so dictate.

17.116 Pension schemes run by private employers are usually not subject to retrospective adjustments of the amounts payable,

**Table 17.3: Accounts for non-pension benefits paid through social security -resources**

	Social security			Resources
	Employer	fund	Households	Other sectors Total economy
<i>Generation of income account</i>				
Employers' actual social security contributions (non-pension)				
<i>Distribution of primary income</i>				
Employers' actual social security contributions (non-pensions)			15.0	15.0
<i>Secondary distribution of income account</i>				
Social security contributions (non-pensions)		25.0		25.0
Employers' actual social security contributions (non-pensions)		15.0		15.0
Household actual social security contributions (non-pensions)		10.0		10.0
Social security non-pension benefits			22.0	22.0

**Table 17.4: Accounts for non-pension social insurance benefits from unfunded other employment-related schemes - resources**

	Social			Resources
	Employer	insurance fund	Households	Other sectors Total economy
<i>Generation of income account</i>				
Employers' imputed non-pension contributions				
<i>Distribution of primary income</i>				
Employers' imputed non-pension contributions			9.0	9.0
<i>Secondary distribution of income account</i>				
Household total non-pension contributions		9.0		9.0
Employers' imputed non-pension contributions		9.0		9.0
Unfunded non-pension benefits			9.0	9.0

**Table 17.5: Accounts for non-pension social insurance benefits from unfunded other employment-related schemes - resources**

	Social			Resources
	Employer	insurance fund	Households	Other sectors Total economy
<i>Production account</i>				
Output		1.0		1.0
<i>Generation of income account</i>				
Employers' actual non-pension contributions				
<i>Distribution of primary income</i>				
Employers' actual non-pension contributions			6.0	6.0
Property income		4.0		4.0
Property income payable on non-pension entitlements			4.0	4.0
<i>Secondary distribution of income account</i>				
Household total non-pension contributions		14.0		14.0
Employers' actual non-pension contributions		6.0		6.0
Household actual non-pension contributions		5.0		5.0
Household non-pension contribution supplements		4.0		4.0
Social insurance scheme service charges		-1.0		-1.0
Funded non-pension benefits			7.0	7.0
<i>Use of income</i>				
Final consumption expenditure				
Change in non-pension entitlements			-2.0	-2.0
Saving				

**Table 17.3: Accounts for non-pension benefits paid through social security -resources**

	Resources				
	Employer	Social security fund	Households	Other sectors	Total economy
<i>Generation of income account</i>					
Employers' actual social security contributions (non-pension)					
<i>Distribution of primary income</i>					
Employers' actual social security contributions (non-pensions)			15.0		15.0
<i>Secondary distribution of income account</i>					
Social security contributions (non-pensions)		25.0			25.0
Employers' actual social security contributions (non-pensions)		15.0			15.0
Household actual social security contributions (non-pensions)		10.0			10.0
Social security non-pension benefits			22.0		22.0

**Table 17.4: Accounts for non-pension social insurance benefits from unfunded other employment-related schemes - resources**

	Resources				
	Employer	Social insurance fund	Households	Other sectors	Total economy
<i>Generation of income account</i>					
Employers' imputed non-pension contributions					
<i>Distribution of primary income</i>					
Employers' imputed non-pension contributions			9.0		9.0
<i>Secondary distribution of income account</i>					
Household total non-pension contributions		9.0			9.0
Employers' imputed non-pension contributions		9.0			9.0
Unfunded non-pension benefits			9.0		9.0

**Table 17.5: Accounts for non-pension social insurance benefits from unfunded other employment-related schemes - resources**

	Resources				
	Employer	Social insurance fund	Households	Other sectors	Total economy
<i>Production account</i>					
Output		1.0			1.0
<i>Generation of income account</i>					
Employers' actual non-pension contributions					
<i>Distribution of primary income</i>					
Employers' actual non-pension contributions			6.0		6.0
Property income		4.0			4.0
Property income payable on non-pension entitlements			4.0		4.0
<i>Secondary distribution of income account</i>					
Household total non-pension contributions		14.0			14.0
Employers' actual non-pension contributions		6.0			6.0
Household actual non-pension contributions		5.0			5.0
Household non-pension contribution supplements		4.0			4.0
Social insurance scheme service charges		-1.0			-1.0
Funded non-pension benefits			7.0		7.0
<i>Use of income</i>					
Final consumption expenditure					
Change in non-pension entitlements			-2.0		-2.0
Saving					

but there is a risk that the employer may be unable to pay because he has gone out of business. Increasingly, though, protection for the pension entitlements of individuals is becoming more common. Equally, the pension built up with one employer may not be transferable to a new employer though this too is undergoing change. While social security may be, and very often is, financed on a pay-as-you-go basis, without building up reserves for future liabilities, other employer schemes are increasingly likely to have reserves set aside and even if not accounting conventions may require them to recognise pension entitlements of present and past employees in their accounts.

17.117 Employment-related pensions, other than the most basic form of social security, are seen as part of the compensation package and negotiations between employees and employers may focus on pension entitlements as much as on current conditions of service and pay scales. Often pensions are provided by private employers from funds that the employers control or contract to a third party such as an insurance corporation. These funds may also provide social benefits other than pensions, for example private medical coverage. In certain jurisdictions it is possible for a specialised unit to agree to assume responsibility for providing pensions for a number of employers in return for assuming the risk of ensuring adequate funding is available to make the promised pensions. Such an arrangement is called a multi-employer pension scheme.

## 1. Social security pensions

17.118 It is common but not essential for both employers and employees to make contributions towards a social security pension. It is also common for the contributions to be compulsory. Social security pensions are frequently funded on a pay-as-you-go basis. The normal assumption in the main accounts of the System is that this is how social security pensions are funded. That is the contributions receivable in a period are used to fund the benefits payable in the same period. There is no saving element involved, either for the government operating the scheme or for the individuals participating in it. No liabilities for the scheme are recognised in the main accounts of the System although concern is often expressed that benefits may exceed contributions and this situation is likely to worsen in an ageing population. For this reason, estimates of the liabilities of social security as well as any other pension schemes not included in the main accounts are included in a supplementary table described below in section J.

17.119 The recording of the flows for social security pension schemes is simple. Any contribution made by the employer is treated as part of compensation of employees. It is recorded as payable by the employer in the generation of income account and receivable by the employee in the distribution of primary income account. The employee then pays an amount equal to what he receives from the employer together with any contribution he is liable to make on his own behalf to the social security fund. This amount is recorded as payable by households in the secondary distribution of income account and receivable by the government in the same account. Any contributions made by self-employed or non-employed people are also included with the contributions payable by households to government. Social security benefits are also recorded as

payable by government and receivable by households in the secondary distribution of income account.

17.120 An example of these flows is shown in table 17.6. It is similar in content to table 17.1 except that table 17.1 relates to non-pension benefits and table 17.6 to pension benefits

## 2. Employment-related pension schemes other than social security

17.121 There are two forms of employment-related pension schemes other than social security. One is called a defined contribution scheme, sometimes referred to as a money purchase scheme. (The expression "defined contribution pension scheme" is not intuitive but is widely used in the pension industry.) The other is a defined benefit scheme, sometimes referred to as a final salary scheme, though this term does not accurately describe all defined benefit schemes. Typically both schemes are contributory, often by both the employer and the employee.

17.122 *A defined contribution scheme is one where the benefits are defined exclusively in terms of the level of the fund built up from the contributions made over the employee's working life and the increases in value that result from the investment of these funds by the manager of the pension scheme.* The entire risk of the scheme to provide an adequate income in retirement is thus borne by the employee.

17.123 *A defined benefit scheme is one where the benefits payable to the employee on retirement are determined by the use of a formula, either alone or as a minimum amount payable.* In this case the risk of the scheme to provide an adequate income in retirement is borne either by the employer or is shared between the employer and employee. In certain cases, the employer's risk may be borne by the multi-employer scheme that operates the defined benefit pension scheme on behalf of the employer. A scheme that may be defined in terms similar to a defined contribution scheme but with a guaranteed minimum, say, or other such hybrid schemes are grouped with defined benefit pension schemes in the System.

17.124 For both types of schemes, pension entitlements of the participants are recorded as they build up. In both cases, there is investment income earned on existing entitlements and this is recorded as being distributed to the beneficiaries and re-invested by them in the pension scheme. There are, though, a number of different features of the two schemes, so the transactions relating to each are described in detail separately before turning to other changes in the levels of pension entitlements. The recording of transactions for a defined contribution scheme is less complicated than the defined benefit scheme and is described first.

17.125 For both types of schemes, a pension fund is assumed to exist. For a defined contribution pension scheme, a fund must exist. For a defined benefit pension scheme a fund may exist in reality or it may be a notional fund. If it exists, it may be part of the same institutional unit as the employer, it may be a separate institutional unit (an autonomous pension scheme) or it may be part of another financial institution, either an insurance corporation or a multi-employer pension scheme. In describing the recording of transactions, transactions with the

pension fund must be attributed to the sector where the fund is located.

### Defined contribution pension schemes

- 17.126 Recording the transactions related to a defined contribution pension scheme presents no conceptual problems. There are no associated imputations either for the flows concerned or for the values appearing in balance sheets for the pension entitlements of the beneficiaries nor any doubt as to which unit has a liability and which an asset.

#### *Transactions recorded for a defined contribution pension scheme*

- 17.127 The contribution made by an employer to a defined contribution pension scheme on behalf of his employee is treated as part of compensation of employees. It is recorded as payable by the employer in the generation of income account and receivable by the employee in the distribution of primary income account.
- 17.128 The investment income on the cumulated pension entitlements is also recorded as being distributed to (receivable by) the employee in the distribution of primary income account and is shown as payable by the pension fund. The investment income includes interest and dividends payable plus the distributed income of collective investment schemes if the pension fund holds shares in them. It is possible that the pension fund may own property and generate net operating surplus on this which is also included along with the investment income as being distributed to the pension beneficiaries. In this case, the term investment income is to be interpreted as being elastic enough to include this source of income if it exists. Holding gains and losses generated by the investment of the cumulated pension entitlements are not included in investment income.
- 17.129 Part of the income distributed to the pension beneficiaries is used to meet the costs of operating the pension fund. This cost is shown as the output of the pension fund in the production account and as an element of consumption expenditure by households in the use of income account. The remaining part of the distributed income is treated as pension contribution supplements paid back by households to the pension funds.
- 17.130 In the secondary distribution of income account, social contributions are shown as payable by households and receivable by the pension fund. The total amount of the social contributions payable is made up of the actual contributions payable by the employers as part of compensation of employees, actual contributions by employees and possibly by other individuals plus the contribution supplements just specified. For clarity, and to enhance the comparison with defined benefit schemes, the supplements are shown at full value in both the distribution of primary income account where they appear as property income and in the secondary distribution of income account where they appear as contribution supplements. However, the service charge is shown as an off-setting negative element to total household contributions in the secondary distribution of income account. The total contributions made by households to the pensions scheme are net in the same way that insurance premiums are

net, that is to say they are the total of all contributions made less the service charge appearing in the use of income account.

- 17.131 Those other than employees who contribute to a defined contribution pension scheme may be self-employed persons participating in a defined contribution pension scheme or may be persons not employed who participate in a defined contribution pension scheme by virtue of their profession or former employment status, for example.
- 17.132 Also in the secondary distribution of income account, the pension benefits payable to households by the pension fund are shown. However, the benefits payable under a defined contribution pension scheme take the form of a lump sum payable at the moment of retirement. It may be a requirement of the scheme that these sums are to be immediately converted to an annuity with the same or another financial institution but this is not a universal requirement. The appropriate recording of the benefits is not to show the benefit as payable immediately on retirement and then, where appropriate, reinvested in terms of an annuity or other forms of financial assets but notionally as a reclassification from life insurance entitlements to annuities entitlements. However, since no distinction is normally made between these two sets of entitlements, no actual classification change will show in the accounts.
- 17.133 For an individual, it is clear that the payment in full of pension entitlements is more in the nature of a withdrawal of saving than a current transfer. However, for a whole set of beneficiaries, the number reaching retirement in a single year and withdrawing all their entitlements can be seen as an approximation to all retirees withdrawing a year's worth of entitlements. Because of the collective nature of social insurance, therefore, the amount of benefits payable in a year are recorded as current transfers. The consequential financial transactions, such as the purchase of an annuity, are recorded as an event not connected with pension provision. The recording of annuities is discussed in part 1 of this chapter.
- 17.134 In the use of income account, there is an entry for the payment of the service provided by the pension fund (equal to the value of the pension fund's output) payable by households to the pension fund.
- 17.135 In the same account there is an entry showing the increase (or decrease) in pension entitlements caused by the excess (or deficit) of contributions payable less benefits receivable in the secondary distribution of income account. This amount is shown as payable to households by the pension fund. The rationale for this is that since this increase (or decrease) in pension entitlements directly affects the net worth of households, it should be included in the saving of the household sector. Because much of the increase in the pension entitlement of participants in a defined contribution pension scheme, and thus ultimately the funding for the benefits, come from holding gains that are not included in the contribution supplements of participants in defined contribution pension schemes, the adjustment for the change in pension entitlements for these individuals will frequently be negative.
- 17.136 The adjustment for the change in pension entitlements that is included in the use of income account as payable by the

pension fund to households is shown in the financial account as payable by households to the pension fund. The other factors affecting the change in the balance sheet entry for the change in pension entitlements are shown in the other changes in assets accounts and are discussed below.

17.137 Table 17.7 illustrates the entries necessary to record the transaction related to a defined contribution scheme. It is simpler than the corresponding table for a defined benefit scheme which is described in the following section because of the absence of any imputed transactions.

### Defined benefit pension schemes

#### *Differences between a defined benefit and a defined contribution pension scheme*

17.138 The fundamental difference in accounting for a defined benefit pension scheme as compared with a defined contribution pension scheme is that for the defined benefit pension scheme, the benefit to the employee in the current period is determined in terms of the undertakings made by the employer about the

level of pension ultimately receivable, whereas for the defined contribution pension scheme the benefit to the employee in the current period is determined entirely by the contributions made to the scheme and the investment income earned on these and previous contributions. Thus while there is (in principle) exact information available on the benefits for the participant in the defined contribution pension scheme, the benefits for the participants in a defined benefit pension scheme must be estimated. The source of these estimates is the actuarial estimates the employer is faced with in drawing up his own accounts.

17.139 There are four sources of changes in pension entitlements in a defined benefit pension scheme. The first of these, the current service increase, is the increase in entitlement associated with the wages and salaries earned in the current period. The second source, the past service increase, is the increase in the value of the entitlement due to the fact that for all participants in the scheme, retirement (and death) are one year nearer. The third change in the level of entitlement is a decrease due to the payment of benefits to retirees of the scheme. The fourth source of change comes from other factors, factors that are reflected in the other changes in assets account.

**Table 17.6: Accounts for pension benefits paid through social security - uses**

Uses	Social security				Total economy
	Employer	fund	Households	Other sectors	
<i>Generation of income account</i>					
Employers' actual social security contributions (pension)	139.0				139.0
<i>Distribution of primary income</i>					
Employers' actual social security contributions (pensions)					
<i>Secondary distribution of income account</i>					
Social security contributions (pensions)			226.0		226.0
Employers' actual social security contributions (pensions)			139.0		139.0
Household actual social security contributions (pensions)			87.0		87.0
Social security pension benefits		210.0			210.0

**Table 17.7: Accounts for pension payable under a defined contribution scheme - uses**

Uses	Employer	Pension fund	Households	Other sectors	Total economy
<i>Production account</i>					
<i>Output</i>					
<i>Generation of income account</i>					
Employers' actual pension contributions	11.0				11.0
<i>Distribution of primary income</i>					
Employers' actual pension contributions					0.0
Property income				3.0	3.0
Property income payable on pension entitlements		16.2			16.2
<i>Secondary distribution of income account</i>					
Household total pension contributions			37.3		37.3
Employers' actual pension contributions			11.0		11.0
Household actual pension contributions			11.5		11.5
Household pension contribution supplements			16.2		16.2
Pension scheme service charges			-1.4		-1.4
Defined contribution pension benefits		26.0			26.0
<i>Use of income</i>					
Final consumption expenditure			1.4		1.4
Change in pension entitlements		11.3	0.0		11.3
Saving	-11.0	-11.8	56.8	-3.0	0.0
<i>Changes in assets</i>					
<i>Financial account</i>					
Net borrowing/lending					
Change in pension entitlements			11.3		11.3
Other financial assets	-11.0	-0.5	45.5		0.0

17.140 As with a defined contribution pension scheme, both employer and employee may make actual contributions to the scheme in the current period. However, these payments may not be sufficient to meet the increase in the benefits accruing from the current year's employment. Therefore an additional contribution from the employer is imputed to bring equality between the contributions and the increase in current service entitlements. These imputed contributions are usually positive but it is possible for them to be negative if the sum of the contributions received exceeds the increase in current service entitlements. The implications of this case are discussed below when examining the relationship between the employer and the fund.

17.141 At the end of an accounting period, the level of the pension entitlements due to past and present employees can be calculated by estimating the present value of the amounts due to be paid in retirement using actuarial estimates of the expected life length of the beneficiaries. This is the amount that appears in the balance sheet as the liability towards the employees. One element in the increase of this amount year

by year is the fact that the present value of the entitlements existing at the beginning of the year and still due at the end of the year have increased because the future is one year nearer and so one fewer discount factor must be used to calculate the present value. It is this unwinding of the discount that accounts for the past service increase in entitlements.

17.142 A further basic difference between a defined benefit pension scheme and a defined contribution pension scheme concerns the payment for the cost of operating the pension scheme. As already noted, under a defined contribution pension scheme all the risk is borne by the beneficiaries. The pension scheme is operated on their behalf and they pay for the cost of it. Since the fund may be operated by a unit other than the employer, it is appropriate to treat the operating cost as part of the investment income that is retained by the fund to meet its costs (and generate a profit). In keeping with accounting for insurance, the investment income is treated as being attributed in full to the beneficiaries, part being used to meet the cost and the remainder being reinvested with the fund.

**Table 17.6: Accounts for pension benefits paid through social security -resources**

	Resources				
	Employer	Social security fund	Households	Other sectors	Total economy
<i>Generation of income account</i>					
Employers' actual social security contributions (pension)					
<i>Distribution of primary income</i>					
Employers' actual social security contributions (pensions)			139.0		139.0
<i>Secondary distribution of income account</i>					
Social security contributions (pensions)		226.0			226.0
Employers' actual social security contributions (pensions)		139.0			139.0
Household actual social security contributions (pensions)		87.0			87.0
Social security pension benefits			210.0		210.0

**Table 17.7: Accounts for pension payable under a defined contribution scheme - resources**

	Resources				
	Employer	Pension fund	Households	Other sectors	Total economy
<i>Production account</i>					
Output		1.4			1.4
<i>Generation of income account</i>					
Employers' actual pension contributions					
<i>Distribution of primary income</i>					
Employers' actual pension contributions			11.0		11.0
Property income		3.0			3.0
Property income payable on pension entitlements			16.2		16.2
<i>Secondary distribution of income account</i>					
Household total pension contributions		37.3			37.3
Employers' actual pension contributions		11.0			11.0
Household actual pension contributions		11.5			11.5
Household pension contribution supplements		16.2			16.2
Pension scheme service charges		-1.4			-1.4
Pension benefits			26.0		26.0
<i>Use of income</i>					
Final consumption expenditure					
Change in pension entitlements			11.3		11.3
Saving					
<b>Changes in liabilities</b>					
<i>Financial account</i>					
Net borrowing/lending	-11.0	-11.8	56.8	-3.0	0.0
Change in pension entitlements		11.3			11.3
Other financial assets					0.0

17.143 For a defined benefit pension scheme, the situation is somewhat different. The risk that the fund may be insufficient to meet the promises of entitlement is met in part or in whole by the employer (or a unit acting on his behalf) and not by the beneficiaries alone. The fund may be directly controlled by the employer and be part of the same institutional unit or may be purely notional. Even in this case, there are costs associated with operating the scheme. Although there are initially borne by the employer, it is appropriate to regard this as a form of income in kind provided to the employees and for convenience it may be included with the employers' contributions. (There is an element of pragmatism in this since this assumes all the costs are borne by current employees and none by retirees. It also assumes that the attribution that must be made in the case of notional schemes can be applied in other circumstances also.)

*Transactions recorded for a defined benefit pension scheme*

17.144 The initial discussion assumes that the employer retains the whole responsibility for meeting the pension payments. Alternatives involving the use of a multi-employer scheme or where government assume responsibility on behalf of the employer are discussed subsequently.

17.145 The total contribution made by an employer to a defined benefit pension scheme on behalf of his employee must be sufficient that, together with any actual contribution by the employee and excluding the cost of operating the scheme, it exactly matches the current service increase in the employee's pension entitlements. The contribution by the employer is divided into an actual and an imputed part, the latter being calculated so as to meet the need of an exact match between all contributions to the fund adding to the entitlements of the employee and the current service cost of these entitlements.

17.146 The contribution by the employer should be calculated in relation to the pension entitlement earned in the period regardless of any investment income earned by the scheme in the same period or any over-funding of the scheme. The current period entitlement is part of compensation of employees and not to include the full value of the employer's contribution understates compensation of employees and therefore overstates operating surplus. An extreme case has occurred in the past when the investment of the pension entitlements has done so well that the employer has taken a "contribution holiday", that is he has not made an actual contribution towards new entitlements. It is important that contributions continue to be recorded even in the event of a contributions holiday, the benefit to the employer being regarded as a change in liabilities between the pension fund and the employer. This leaves the net worth of both the same as when contributions are not recorded under a contributions holiday without reducing compensation of employees artificially.

17.147 Under many defined benefit schemes, there is a qualifying period before an employee does in fact become eligible to receive a pension in retirement. Despite this qualifying period, both contributions and entitlements should be recorded from the start of employment adjusted by a factor reflecting the

probability that the employee will in fact satisfy the qualifying period.

17.148 The sum of employers' actual and imputed pension contributions are treated as part of compensation of employees. It is recorded as payable by the employer in the generation of income account and receivable by the employee in the distribution of primary income account.

17.149 The increase in the present value of the entitlements of continuing employees (the past service increase) represents the investment income distributed to the employees. No deduction is made for any amount that may be funded from holding gains or that is not actually matched by existing funds. It matches the amount that is unequivocally due to the employee under the prevailing agreements; the means by which the employer may ultimately match this obligation is not relevant for the recording of this as investment income any more than the means by which interest or dividend are actually financed affects their recording as investment income. The investment income is recorded as payable by the pension fund and receivable by households. It is immediately reinvested by the households in the fund and in this guise is described as pension contribution supplements.

17.150 In the secondary distribution of income account, social contributions are shown as payable by households and receivable by the pension fund. The total amount of the social contributions payable is made up of the actual and imputed contributions payable by the employers as part of compensation of employees (excluding the amount of the costs of running the pension scheme), plus actual contributions by employees plus the contribution supplements just specified. As explained in the discussion under defined contribution schemes, the accounts show the full value of the contributions and contribution supplements with an offsetting item representing the service charge payable. The amount actually payable is thus a net contributions figure.

17.151 Also in the secondary distribution of income account, the pension benefits payable to households by the pension fund are shown. When the benefits are taken in terms of an annuity, it is the annuity payments that are shown here, not the lump sums payable at the time of retirement. (Unless the demographics of the retirees changes dramatically, the two figures will be very similar in any case.)

17.152 In the use of income account, there is an entry for the payment of the service provided by the pension fund (equal to the value of the pension fund's output) payable by households to the pension fund.

17.153 Also in the use of income account, there is an entry showing the increase (or decrease) in pension entitlements caused by the excess of contributions payable less benefits receivable in the secondary distribution of income account. This amount is shown as payable to households by the pension fund. The rationale for this is that since this increase (or decrease) in pension entitlements directly affects the net worth of households, it should be included in the saving of the household sector. In the case of a defined benefit pension scheme, the amount is unlikely to be negative unless it is

scheme for a defunct employer and it is only paying benefits and not receiving new contributions.

- 17.154 The same amount that is included in the use of income account as payable by the pension fund to households is shown in the financial account as payable by households to the pension fund. The other factors affecting the change in the balance sheet entry for the change in pension entitlements are shown in the other changes in assets accounts and are discussed below in section 4.

#### *Defined benefit pension schemes operated by other than employers*

- 17.155 It is possible that some other organisation, such as a trades union, may operate a defined benefit pension scheme for its members that is in all respects parallel to an employer's defined benefit pension scheme. Exactly the same recording is followed as immediately described except that references to the employer should be understood to refer to the scheme organiser and references to the employee should be understood to refer to the participant in the scheme.

#### *The relationship between the employer and the pension fund*

- 17.156 As noted above, an employer may contract with another unit to manage the pension fund and arrange disbursements to the beneficiaries. There are two ways in which this may happen. The operator of the pension fund may simply act as the employer's agent and the responsibility for any short-fall in the fund (or the benefit of any excess) remains with the employer. However, it is not uncommon for a single unit to contract with several employers to manage their pension funds as a multi-employer pension fund. The arrangements are such that the multi-employer pension fund accepts the responsibility for any short-fall in the funds to meet the liabilities in return for the right to keep any excess funds. By pooling the risks over a number of employers the multi-employer fund expects to balance under and over funding so as to emerge with an excess over all the funds taken as whole in a similar way that an insurance corporation pools risk for many clients.
- 17.157 In the case where the employer retains the liability for any under-funding or the benefit of any over-funding, a claim on (or liability towards) the employer by the pension fund should be recorded for any deficit or surplus. This is where the impact of a contribution holiday is recorded as a flow from the pension fund to the employer. The change in the claim or liability between the pension fund and the employer is recorded period by period as the difference between the investment income due to the beneficiaries and the investment income earned by the fund. Also any holding gains and losses on the assets managed by the fund are attributed to the employer so that the net worth of the pension fund remains exactly zero at all times.

#### **A numerical example**

- 17.158 In order to illustrate the recording of transactions connected with a defined benefit pension scheme, Table 17.8 shows a

numerical example. Figures that are imputed are shown in bold; those that result from re-routing are shown in italics.

- 17.159 Actuarial calculations show that the increase in pension entitlement coming from current service, that is the pension "earned" in the year in question is 15. Households (the employees) contribute 1.5. The employer therefore is obliged to provide 13.5. In addition the cost of operating the scheme is estimated at 0.6. In total therefore the employer must provide 14.1. He actually contributes 10 so the remaining 4.1 is an imputed contribution. The output of 0.6 is shown in the production account; the contributions by the employer are shown as payable by the employer in the generation of income account and receivable by the households in the distribution of primary income account.
- 17.160 In the distribution of primary income accounts, property income is also shown. The increase in pension entitlement coming from past service, due to the unwinding of the discount factor because retirement is one year nearer, is 4. This is shown as an imputed flow of property income from the pension fund to households. At the same time, the pension fund actually earns 2.2 from investment income of the funds they manage. At this point, therefore, there is a shortfall of 1.8 in the pension fund resources but it is not shown in the current accounts.
- 17.161 In the secondary distribution of income accounts, the payments from households to the pension fund are shown. This can be viewed in one of two ways. The sum of the contributions paid by households should be equal to the increase in entitlements coming from current service (15) plus that coming from income on past entitlements (4) or 19 in total. The amounts actually paid are 10 received as the employers' actual contributions, 4.1 as the imputed contributions, 1.5 of the households own contributions, contribution supplements of 4 less that service charge of 0.6; again 19 in total.
- 17.162 In the use of income account, as well as the purchase of the service charge as part of household consumption expenditure, the change in pension entitlement is shown as payable by the pension fund to households. In this example, the amount of household contributions of 19 is set against pension benefits of 16. There is thus an increase in pension entitlements owing to households.
- 17.163 Households have saving of 17.5 of which 3 is the increase in their pension entitlements. This means that they have acquired other financial assets (or reduced liabilities) by 14.5. This figure is the difference between the benefits received (16) and households' actual contributions of 1.5.
- 17.164 For pension funds, saving is -1.2 but this can be seen as the composite of the actual and imputed elements. In terms of actual flows, pension funds receive contributions of 10 from employers routed via households, 1.5 from households and pay out benefits of 16. In addition, they receive property income of 2.2. Their disposable income is thus -2.3. When the change in pension entitlements of 3 is taken into account, saving is -5.3. In addition, employers make an imputed contribution of 4.1. This is routed via households but adds 4.1 to the saving of the pension fund and reduces saving of the employer by the same amount.

17.165 In the financial account of the pension fund, the figure of 4.1 which was the imputed contribution, is shown as the claim of the pension fund on the employer. There is a claim by households on the pension fund of the change in pension entitlements of 3. In addition the pension fund either runs down financial assets or increases liabilities by 2.3, the figure corresponding to disposable income excluding the imputed contribution element from the employer.

*Defined contribution pension scheme*

17.166 The investment of the entitlements of defined contribution pension schemes lead to holding gains (and possibly losses). These come about through the management of the assets held by the fund but an amount exactly equal to the holding gains and losses should be attributed as an increase in the pension entitlement of the beneficiaries. This should appear under entries in the revaluation account.

*Defined benefit pension scheme*

17.167 At first sight it would seem that there are no entries to be made in the other changes in assets accounts for a defined benefit

pension scheme since the two components recorded as the pension contributions and investment income are matched exactly to the increase in entitlements. However, because the nature of a defined benefit pension scheme is that the amounts due are determined by a formula, there are other factors that may intervene to change the level of entitlements. These factors include a price escalation clause, changes in the formula used to determine benefits and demographic assumptions about life length. The special case of the impact of promotions on entitlements is discussed separately below.

17.168 A pension fund invests the funds at its disposal. If they work on a fully funded basis, the investment income should be more than enough to cover any price escalation clause in the pension agreement. The excess may also be sufficient to cover some other adjustments to entitlements. However, a major source of revenue comes from holding gains on investments. These were assumed to be sufficient to cover most or all changes in entitlements. It has become clear that many schemes were under-funded in the expectation that holding gains would also make up this shortfall also.

**Table 17.8: Accounts for pension payable under a defined benefit scheme - uses**

Uses	Employer	Pension fund	Households	Other sectors	Total economy
<i>Production account</i>					
Output					
<i>Generation of income account</i>					
Employers' actual pension contributions	10.0				10.0
Employers' imputed pension contributions	4.1				4.1
<i>Distribution of primary income</i>					
Employers' actual pension contributions					
Employers' imputed pension contributions					
Property income				2.2	2.2
Property income payable on pension entitlements		4.0			4.0
<i>Secondary distribution of income account</i>					
Household total pension contributions			19.0		19.0
Employers' actual pension contributions			10.0		10.0
Employers' imputed pension contributions			4.1		4.1
Household actual pension contributions			1.5		1.5
Household pension contribution supplements			4.0		4.0
Pension scheme service charges			-0.6		-0.6
Pension benefits		16.0			16.0
<i>Use of income</i>					
Final consumption expenditure			0.6		0.6
Change in pension entitlements		3.0			3.0
Saving (actual)	-10.0	-5.3	17.5	-2.2	0.0
Saving (imputed)	-4.1	4.1			0.0
<i>Changes in assets</i>					
<i>Financial account</i>					
Net borrowing/lending (actual)					
Net borrowing/lending (imputed)					
Change in pension entitlements			3.0		3.0
Pension fund claim on employer (current service)		4.1			4.1
Other financial assets	-10.0	-2.3	14.5	-2.2	0.0

17.169 Given these adjustments are funded in large part by holding gains which appear in the revaluation account, it seems reasonable to record the contingencies that they are assumed to cover in the other changes in the volume of assets account except for the price escalation factor which should appear in the revaluation account.

*The issue of promotions*

17.170 Many defined benefit pension scheme use a formula to set benefits that involves either the final salary or average salary as a key determinant. This implies that any promotion means that the total pension entitlements accrued to date are increased to take account of the new salary level. This is a significant benefit for the individual being promoted but what are the consequences for the employer's pension liabilities?

17.171 The accounting profession uses two actuarial terms that bear on this discussion. The accrued benefit obligation (ABO) records, as it name implies, only the benefits actually accrued to date. It represents the amount the employee could walk away with if he left the firm tomorrow and may be the basis of assessing a person's net worth in the case of a divorce settlement, for example. A projected benefit obligation (PBO) is a more prudent measure of what the eventual level of entitlement is likely to be. For an individual, the PBO makes assumptions about how many future promotions the person is likely to receive and calculates his final salary accordingly. Then, if he has in fact only worked 20 out of an expected 40

years, it halves the final salary and calculates pension entitlement for the individual as if this were his current salary. Where an individual's ABO increases in steps as he is promoted, the PBO increases steadily over time. For the individual, PBO is always higher than ABO until the moment of retirement when the ABO catches up with the PBO.

17.172 It would seem at first sight that the level of pension entitlements for a corporation should be the level of sum of all the pension entitlements of each of the employees and that therefore the sum of the PBO estimates would be considerably higher than that of the sum of the ABO and would evolve more smoothly over time. However, what is true for the individual is not necessarily true for the cohort of employees. Suppose the employer has five classes of people for whose pensions he is responsible, four grades of employees and one set of retirees, and for simplicity there are the same number of each. Consider the situation where in a year the retirees die; the most senior set of employees retire, the next three sets of employees are all promoted and a new set of employees is recruited at the lowest level. Every current employee is better off after promotion but the overall liability of the employer has not changed. This is analogous to the fact that every previous employee, still working for the employer, has been promoted but there are still the same number of people in the firm and still the same number at every grade. The effect of aggregating ABOs is to smooth the total entitlement and while it will still be lower than the aggregate PBOs, it will not necessarily be more volatile. Indeed it may be more stable.

**Table 17.8: Accounts for pension payable under a defined benefit scheme - resources**

	Resources				
	Employer	Pension fund	Households	Other sectors	Total economy
<i>Production account</i>					
Output		0.6			0.6
<i>Generation of income account</i>					
Employers' actual pension contributions					
Employers' imputed pension contributions					
<i>Distribution of primary income</i>					
Employers' actual pension contributions			10.0		10.0
Employers' imputed pension contributions			4.1		4.1
Property income		2.2			2.2
Property income payable on pension entitlements			4.0		4.0
<i>Secondary distribution of income account</i>					
Household total pension contributions		19.0			19.0
Employers' actual pension contributions		10.0			10.0
Employers' imputed pension contributions		4.1			4.1
Household actual pension contributions		1.5			1.5
Household pension contribution supplements		4.0			4.0
Pension scheme service charges		-0.6			-0.6
Pension benefits			16.0		16.0
<i>Use of income</i>					
Final consumption expenditure					
Change in pension entitlements			3.0		3.0
Saving (actual)					
Saving (imputed)					
<i>Changes in liabilities</i>					
<i>Financial account</i>					
Net borrowing/lending (actual)	-10.0	-5.3	17.5	-2.2	0.0
Net borrowing/lending (imputed)	-4.1	4.1			0.0
Change in pension entitlements		3.0			3.0
Pension fund claim on employer (current service)	4.1				4.1
Other financial assets					

17.173 While the profile of the ABO of an individual will show step changes when promotions occur, for a cohort of employees, the effect is much smoother. For a cohort of the same age remaining with the corporation for the whole of their working lives, the ABO estimates will be considerably lower than PBO estimates in the early years but the rate of increase of the ABOs will be faster than that of the PBOs so that at the point immediately before retirement, the two sets of estimates will be equal. Merging cohorts of employees with different periods of service with the corporation will bring the ABO estimates for all employees closer to the PBO one also.

17.174 As long as the grade structure of the corporation stays the same, ABO and PBO will move roughly in step. If the firm expands and takes on many new employees at the lower grades, the PBO will increase noticeably faster than the ABOs because the PBOs make estimates of how long the new employees will stay and how far they will be promoted while the ABOs record simply the pension accrued in their first year. If the firm decides to down size and reduces the number of their managerial staff, this will reduce the promotion prospects of the employees and a downward revision in PBO will be necessary. Because ABOs reflect simply the “locked-in” pension, this estimate is not affected.

17.175 The question arises, though, of how to record the impact of promotion on the employee if an ABO recording is used. Any version of treating the increase as a form of compensation of employees or investment income falls back into the assumption that the aggregate of entitlements is the sum of the individual entitlements but without looking at other individual impacts on the aggregates such as when someone leaves and loses pension entitlement because not enough time has been served or when someone dies before retirement age. A simpler and adequate solution is to treat the rise in salary as a price change and record the change in the revaluation account.

17.176 If the PBO method of recording entitlements is chosen as the preferred valuation, an adjustment in the other changes in volume of assets account is needed only if the structure of the enterprise changes so the chances of promotion change. On the other hand, the regular estimates of the employer’s contributions to social insurance schemes included in compensation of employees will be systematically higher than those made under an ABO regime because the increase in pension entitlement that determines the size of the

contributions will be based on a notional salary calculated on a PBO basis rather than the actual one.

### **3. Transferring pension entitlements**

17.177 One characteristic of the changing environment of pensions is the increasing possibility of having “portable pensions”. Until recently it was often the case that a person leaving one employer had his pension frozen at that point and had to start a new pension with the new employer. It is becoming more common now for a person moving jobs to be able to convert the pension entitlement with the former employer to one with the new employer. When this happens, the pension entitlement of the household concerned is unaffected but there is a transaction between the two pension funds as the new one assumes the liability of the former. In addition there will be a counterpart transactions in some assets to match these liabilities. If the new employer is running a fund that is actually unfunded, he may receive cash from the former employer. If this cash is then used by the employer for purposes other than the pension fund, his liability to the fund increases and his use of the cash appears as net borrowing.

17.178 If government assumes the responsibility for pension provision for the employees of a non-government unit through an explicit transaction, a pension liability should be recorded in the balance sheet of government. If the government does not receive matching assets in return, the difference between the increase in the government’s liability and the assets received is shown as a capital transfer to the non-government employer. There is further discussion of this type of arrangement in chapter 22.

17.179 Another way in which pension entitlements may be transferred between funds is when one corporation takes over another. In this case, assuming the take-over does not change the terms of the pension plan for existing participants the transactions to be recorded for a group of employees (and retirees) is simply the aggregate of the position for each of the individuals.

### **4. A note on the tables**

17.180 For cross-reference with tables in other chapters, table 17.9 shows the itemised components of transactions pertaining to social and other insurance in tables 17.1 to 17.8 inclusive.

**Table 17.9: Detailed transactions concerning social insurance**

	Table number		Employer	Social insurance fund	Households	Other sectors	Total economy
<b>Intermediate consumption</b>							
	17.1	Non-life insurance	1		3		4
			1		3		4
<b>Output</b>							
	17.1	Non-life insurance					
	17.2	Life insurance					
	17.5	Other employment-related schemes - funded non-pension benefits					
	17.7	Other employment-related schemes - DC pension benefits					
	17.8	Other employment-related schemes - DB pension benefits					
<b>Employers' actual social insurance contributions</b>							
	17.3	Socail security non-pension benefits	15				15
	17.5	Other employment-related schemes - funded non-pension benefits	6				6
	17.6	Socail security pension benefits	139				139
	17.7	Other employment-related schemes - DC pension benefits	11				11
	17.8	Other employment-related schemes - DB pension benefits	10				10
<b>Employers' imputed social contributions</b>							
	17.4	Other employment-related schemes - unfunded non-pension benefits	9				9
	17.8	Other employment-related schemes - DB pension benefits	4.1				4.1
<b>Household actual contributions</b>							
	17.3	Socail security non-pension benefits			10		10
	17.4	Other employment-related schemes - unfunded non-pension benefits					
	17.5	Other employment-related schemes - funded non-pension benefits			5		5
	17.6	Socail security pension benefits			87		87
	17.7	Other employment-related schemes - DC pension benefits			11.5		11.5
	17.8	Other employment-related schemes - DB pension benefits			1.5		1.5
<b>Property income</b>							
	17.1	Non-life insurance		37.2			37.2
	17.2	Life insurance		6			6
	17.5	Other employment-related schemes - funded non-pension benefits		7			7
	17.7	Other employment-related schemes - DC pension benefits		4			4
	17.7	Other employment-related schemes - DC pension benefits		16.2			16.2
	17.8	Other employment-related schemes - DB pension benefits		4			4
<b>Insurance service charges paid by households</b>							
	17.1	Non-life insurance			6		6
	17.2	Life insurance			2		2
					4		4
<b>Social insurance scheme service charge</b>							
	17.5	Other employment-related schemes - funded non-pension benefits			1		1
	17.6	Socail security pension benefits					
	17.7	Other employment-related schemes - DC pension benefits			-1.4		-1.4
	17.8	Other employment-related schemes - DB pension benefits			-0.6		-0.6
<b>Social insurance benefits</b>							
	17.3	Socail security non-pension benefits		290			290
	17.4	Other employment-related schemes - unfunded non-pension benefits		22			22
	17.4	Other employment-related schemes - unfunded non-pension benefits		9			9
	17.5	Other employment-related schemes - funded non-pension benefits		7			7
	17.6	Socail security pension benefits		210			210
	17.7	Other employment-related schemes - DC pension benefits		26			26
	17.8	Other employment-related schemes - DB pension benefits		16			16
<b>Change in pension entitlements</b>							
	17.5	Other employment-related schemes - funded non-pension benefits		-2	14.3		12.3
	17.7	Other employment-related schemes - DC pension benefits			11.3		11.3
	17.8	Other employment-related schemes - DB pension benefits			3		3
<b>Claim on employer by pension fund</b>							
	17.8	Other employment-related schemes - DB pension benefits		4.1			4.1
				4.1			4.1

## K. The special case of government providing pensions via social security

- 17.181 In recognition of the fact that social security is normally financed on a pay-as-you-go basis, entitlements accruing under social security (both pensions and other social benefits) are not normally shown in the System. If all countries had similar benefits provided under social security and under private schemes, international comparisons would be relatively straightforward. However, as pointed out at the beginning of this part, this is far from being the case and national perceptions of exactly what is covered by social security vary considerably.
- 17.182 There are two problems with simply suggesting that entitlements from social security should be shown in the System. The first is that reliable estimates of the entitlements may not be readily available whereas it is increasingly the case that such estimates exist for private schemes. Secondly, there is an argument that such estimates are of limited usefulness where government has the possibility of changing the basis on which entitlements are determined in order to keep the entitlements within the bounds of what is budgetarily feasible. However, the consequence of simply accepting that entitlements for private schemes are shown and for social security are not is that some countries would include the greater part of pension entitlements in the accounts and some would show almost none.
- 17.183 In recognition of this dilemma, some flexibility regarding the recording of pension entitlements of unfunded pension schemes sponsored by government for all employees (whether private sector employees or government's own employees) is provided. Given the different institutional arrangements in countries, only some of these pension entitlements may be recorded within the main sequence of accounts (here referred to as the "core accounts"). In addition, however, a further table is to be presented that provides information disclosing the proportion of pension provision covered in the core accounts with some approximate estimates for the remaining schemes. It is a requirement, though, that a set of criteria be provided to explain the distinction between those schemes carried forward to the core accounts, possibly where the pension promise is of sufficient strength, and those recorded only in the supplementary table. By making this supplementary table and annotation a standard requirement for international reporting, analysts have the possibility of ensuring that cross-country comparisons are not unduly clouded by the institutional variations from country to country. Providing a single set of internationally recognized criteria for the distinction between the pension schemes fully recorded in the core accounts and those where the entitlements are shown only in the supplementary table is to be part of the SNA research agenda.
- 17.184 The supplementary table is shown in table 17.???. As well as the possibility of including less robust estimates for countries with large social security sectors, the possibility will also exist of working back to a narrower coverage of private pensions for all countries being analysed.
- 17.185 As noted above, providing detail on defined contribution schemes is relatively straightforward since full accounts must be available and no actuarial estimation is involved. Most of these are in the corporations sectors (column A) but it is possible that some government employees may be covered by them (column D). All defined contribution pension schemes should be included in the core accounts. Estimates for all defined benefit pension schemes outside social security should also be included (column B).
- 17.186 Government schemes for their own employees where separate accounting information, distinct from social security, is shown in the main accounts appear in columns E and F. Column E shows schemes managed by an insurance corporation and column F those managed by government itself. Any government schemes for their own employees distinct from social security that do not appear in the main accounts, are shown in column G. The sum of columns E, F and G therefore show the total responsibility of government for pension provision for their own employees. (Column F shows that part of all defined benefit schemes of government that are retained within the government accounts as distinct from being separated into separate units or managed for government by another institutional unit. Column H relates to social security schemes. Column C shows the total of all non-government schemes and column I the total of all schemes including social security.
- 17.187 For the most part, the beneficiaries of pension scheme are likely to be resident households. In some countries, though, the number of non-resident households receiving pension benefits may be significant. In this case, column J should be added indicating the amount of the total that concerns non-resident households.
- 17.188 Some of the entries in the rows of columns G and H appear in the core accounts, even though the entitlements and change in entitlements do not, specifically the actual contributions made by both employers and employees. Other entries in the columns for G and H shown only in the supplementary table are shaded in the table and explained below.
- 17.189 The imputed contribution by employers for those government schemes for which entitlements appear in column G but not in the core accounts requires special consideration. In the core accounts, this item is calculated, by convention, as equal to the difference between current benefits payable and actual contributions payable (by both employees and employers) In the supplementary table, this is replaced by the amount needed to ensure the total contributions, actual and imputed by employers and employees covers both the increase in pension entitlements from current service and the costs of operating the scheme.
- 17.190 . An item calculated on the same basis in respect of social security is shown in Row 3 as "other (actuarial) accumulation of pension entitlements in social security funds". The distinction from employers' imputed social contributions is deliberate and is intended to emphasise the probable fragility of these estimates.

17.191 Items for household social contribution supplements, and the other changes in entitlements are shown on the same

bases as for private schemes.

**Table 17.10 A supplementary table showing the extent of pension schemes included and excluded from the SNA sequence of accounts**

Row number	Position / transaction / other flow	Liabilities appear in the core national accounts							Liabilities do not appear in the core national accounts	
		Non-general government			General government				Total pension schemes	Of which: Non-resident households
		Defined contribution schemes	Defined benefit schemes	Total	Defined contribution schemes	General government employee defined benefit schemes				
						In the financial corporations sector	In the general government sector	In the general government sector		
Column number	A	B	C	D	E	F	G	H	I	J
	<b>Opening balance sheet</b>									
1	Pension entitlements									
	<b>Transactions</b>									
2	Social contributions relating to pension schemes									
2.1	Employer actual social contributions									
2.2	Employer imputed social contributions									
2.3	Household actual social contributions									
2.4	Household social contribution supplements									
3	Other (actuarial) accumulation of pension entitlements in social security funds									
4	Pension benefits									
5	Change in pension entitlements									
6	Change in pension entitlements due to transfers of entitlements									
	<b>Other economic flows</b>									
7	Changes in entitlements due to negotiated changes in scheme structure									
7	Revaluations									
8	Other changes in volume									
	<b>Closing balance sheet</b>									
9	Pension entitlements									
	<b>Related indicators</b>									
	<i>Output</i>									
	<i>Assets held by pension schemes at end-year</i>									
	<i>Changes in pension entitlements related to revaluation of assets held by pension schemes</i>									

Empty cells show where entries appear in the main ("core") accounts. Black cells show where no entry is appropriate. Grey cells show where information is provided in the supplementary table only.

Row 2 is the sum of rows 2.1 to 2.4

Row 3 is the analogue of employer's imputed contributions in the case where government has assumed the ultimate responsibility for any shortfall in pension provision

Row 5 is the sum of rows 2 and 3 less 4

More information on the components underlying rows 7 and 8 to be shown in a further supplementary table to allow an assessment of the degree of uncertainty in these estimates.



## **Part 3 The treatment of loan guarantees in the System**

### **L. Types of guarantees**

- 17.192 A loan guarantee is normally an arrangement whereby one party, the guarantor, undertakes to a lender that if a borrower defaults, the guarantor will make good the loss the lender would otherwise suffer. Often a fee is payable for the provision of a guarantee though the form of this varies. Sometimes the guarantor will acquire some rights over the defaulting borrower.
- 17.193 Guarantees have a significant impact on the behaviour of economic agents, both by influencing their decisions on production, income, investment or saving and by modifying the lending and borrowing conditions on financial markets. Some borrowers might have no access to loans in the absence of guarantees, while others might not benefit from comparatively low interest rates. Guarantees are particularly significant for the general government sector and for the public sector as government activities are often linked to the issuance or activation of guarantees.
- 17.194 Three classes of guarantees are recognized. These apply only to guarantees provided in the case of loans. No special treatment is proposed for guarantees in the form of manufacturers' warranties or other form of guarantee. (The cost of replacing defective merchandise is an intermediate cost of the manufacturer.)
- 17.195 The first class of guarantees is composed of those guarantees provided by means of a financial derivative, such as a credit default swap. These derivatives are actively traded on financial markets. The derivative is based on the risk of default of a reference instrument and so is not actually linked to an individual loan or bond. Incorporating the transactions connected with establishing this sort of financial derivative is discussed in [chapter 11](#).
- 17.196 The second class of guarantees, standardised loan guarantees, is composed of the sorts of guarantees that are issued in large numbers, usually for fairly small amounts, along identical lines. There are three parties involved in these arrangements, the borrower (debtor), the lender (creditor) and the guarantor. Either the borrower or lender may contract with the guarantor to repay the lender if the borrower defaults. The classic examples are export credit guarantees and student loan guarantees. Here, although it is not possible to establish the likelihood of any one loan defaulting, it is not only possible but standard practice to estimate how many out of a batch of similar loans will default. If the guarantor is working on purely commercial lines, he will expect all the fees paid, plus the property income earned on the fees and any reserves, to cover the expected defaults along with the costs and leave a profit. This is exactly the same paradigm as operates for non-life insurance and a similar treatment is adopted for these guarantees, described as "standardised loan guarantees". This involves including transactions and balance sheet items parallel to those for non-life insurance, including the generation of output and payments of a fee supplement and a service fee by those taking out the guarantees.
- 17.197 The third class of guarantees, described as one-off guarantees, consists of those where the loan or the security is so particular that it is not possible for the degree of risk associated with the loan to be calculated with any degree of accuracy. In most cases, the granting of a one-off guarantee is considered a contingency and is not recorded as a financial asset/liability. (As an exception, one-off guarantees granted by governments to corporations in certain well-defined financially distressed situations and with a very high likelihood to be called are treated as if these guarantees are called when the financial distress is recognised.) If a fee is charged, this is recorded as a payment for a service at the time of payment. If a call is made under a guarantee, a capital transfer is recorded from the guarantor to the guarantee holder at the time of default or, in cases where the guarantor obtains an effective claim on the guarantee holder, a financial transaction (including increases in equity participation) is recorded.
- 17.198 Standardised guarantees are to be distinguished from one-off guarantees based on two criteria:
- a. They are characterised by often repeated transactions with similar features and pooling of risks;
  - b. Guarantors are able to estimate the average loss based on available statistics by using a probability-weighted concept.
- One-off guarantees are, on the contrary, individual, and guarantors are not able to make a reliable estimate of the risk of calls.
- 17.199 Financial derivatives are described in [chapter 11](#). The treatment of standardised loan guarantees follows.

#### **1. Standardised loan guarantee schemes**

- 17.200 Standardised loan guarantees may be provided by a financial institution, including but not confined to insurance corporations. They may also be provided by government units. It is possible but unlikely that non-financial corporations may provide these sorts of guarantees; it is most unlikely that they would be provided by any unit to a non-

resident unit. As indicated above, standardised loan guarantee schemes have much in common with non-life insurance. In the general case, similar recording is recommended as described below.

17.201 When a unit offers standardised loan guarantees, it accepts fees and incurs liabilities to meet the call on the guarantee. The value of the liabilities in the accounts of the guarantor is equal to the present value of the expected calls under the guarantee, net of any recoveries the guarantor expects to receive from the defaulting borrowers. The liability is entitled provisions for calls under standardised guarantees.

17.202 A guarantee may cover a multi-year period. A fee may be payable annually or up-front. In principle the fee should represent charges earned in each year the guarantee holds with the liability decreasing as the period gets shorter and so the same sort of recording should be followed here as for annuities with the fee paid earned as the future liability decreases. In practice, some units operating loan guarantees may have data only on a cash basis. This is inaccurate for an individual guarantee but the nature of the standardised guarantee scheme is that there are many guarantees of the same type, though not all for exactly the same time period nor all starting and finishing on the same dates. Unless there is reason to suppose that there is a major change in the nature of the guarantee holders over time, using cash based data should not introduce significant error.

17.203 Altogether six sets of transactions need to be recorded in respect of standardised loan guarantee schemes; two relating to the measurement of the production and consumption of the guarantee service, three relating to redistribution and one in the financial account. The value of the output of the activity, the property income to be attributed to the guarantee holder (whether creditor or debtor) and the value of the service charge are calculated in the manner described above for non-life insurance with the concepts of fees replacing premiums and calls under a standardised guarantee scheme replacing claims.

17.204 The production and consumption transactions are as follows:

- a. The output is recorded in the production account of the sector or sub-sector to which the guarantor belongs.
- b. The service may be paid for by either the borrower or the lender of the loan being guaranteed. When non-financial corporations, financial corporations, general government or non-profit institutions pay fees to obtain this sort of guarantee, the fees constitute intermediate consumption, recorded in their production account. Any fees for such guarantees payable by households are part of final consumption expenditure, recorded in the use of income accounts.

17.205 The redistributive transactions cover property income attributed to guarantee holders in respect of standardised loan guarantee schemes, net fees, and calls under standardised loan guarantee schemes.

- a. Property income attributed to guarantee holders in respect of standardised loan guarantee schemes is recorded as payable by the guarantor. It is recorded as receivable by

the unit paying the fee. Both payable and receivables are recorded in the allocation of primary income account.

- b. Net fees are calculated as fees receivable plus fee supplements (equal to the property income attributed to the unit paying the fee for the guarantee) less the value of the services consumed. These net fees are payable by all sectors of the economy and receivable by the sector of the guarantor.
- c. Calls under standardised guarantee schemes are payable by the guarantor and receivable by the lender of the loan under guarantee, regardless of whether the fee was paid by the lender or the borrower. Both net fees and calls are recorded in the secondary distribution of income account.

17.206 In the financial account, an entry shows the difference between payment of fees for new guarantees and calls made under existing guarantees.

## 2. Loan guarantees provided by government

17.207 Governments often offer loan guarantees for specific policy purposes. Export credit guarantees are one example. The guarantees may be issued by a government unit that can be treated as a separate institutional unit. When this is so, the normal rules for the allocation of government units to either publicly controlled corporations or as part of general government apply. If a guarantee unit charges fees that are economically significant (in this case this may be equivalent to saying that most of the calls plus the administrative costs are covered by the fees charged), then this is a market activity. It should be treated as a financial corporation and transactions should be recorded as described above. If the fees cover most but not all the costs, the recording is still as above. The loss made by the agency offering the guarantees may be covered by government on a regular or intermittent basis but this is not passed on to those seeking the guarantees as a subsidy. Regular payments are recorded as a subsidy to the agency and intermittent payments, covering cumulated losses, are recorded as capital transfers only when such payments are made.

17.208 In general, when a government unit provides standardised loan guarantees without fees or at such low rates that the fees are significantly less than the calls and administrative costs, the unit should be treated as a non-market producer within general government. However, if government recognises the probability of having to finance some of the calls under the loan guarantee scheme to the extent of including a provision in its accounts, a transfer of this size from government to the units concerned and a liability of this amount (under provisions for calls under standardised guarantees) should be recorded.

## 3. Balance sheet implications

17.209 Conceptually the total value of loans on the balance sheet should be reduced by the extent of provisions for standardised loans guarantees which are estimates of the amount of loans that will be in default. In practice, this amount is not likely to be significant compared with the total value of loans.

## **Part 4 The recording of flows associated with financial assets and liabilities**

### **M. Introduction**

17.210 The objective of this part of chapter 17 is to show, for each category of financial assets and liabilities, how and where changes in their values are recorded in the System, and to show when some part of the transaction relating to a financial instrument is treated not as changing the value of the instrument itself but as a measure of the output of financial institutions. Before describing these flows in detail in the next section, it is helpful first to recall the characteristics of financial institutions, the type of flows that are associated with providing financial services as well as the sort of income and holding gains and losses associated with holding financial assets and liabilities.

#### **1. The characteristics of financial institutions**

17.211 Within the System, the term corporations is used to describe institutional units providing both financial and non-financial services. These are divided into two institutional sectors; non-financial corporations and financial corporations. Financial corporations are distinguished from non-financial corporations because they play a particular role in the economy. Some facilitate means of payments between other units thus avoiding the need for barter. Some also provide the means whereby units seeking additional funds to finance capital formation, acquire financial assets or even for consumption can utilise the funding set aside by other units as saving. The equation that investment in capital formation must be equal to saving plus net borrowing from the rest of the world is fundamental to the functioning of the economy, the way financial markets work and so to the accounting system itself.

17.212 When considering the financial sector alone or in connection with other statistics such as monetary and financial statistics, it is usual to speak of financial institutions rather than financial corporations. No change in definition or coverage is implied by this change in terminology. When sub-sectoring the financial sector, as explained in chapter 4, a distinction is made between those financial corporations that are primarily involved in financial intermediation, which are called financial intermediaries, and other financial institutions.

17.213 Financial intermediation is the activity of matching the needs of borrowers with the desires of lenders. It is carried out by financial institutions preparing alternative sets of conditions under which clients can borrow and lend. These conditions allow for variations in the rate of return that may be expected from an investment with, often, higher returns being less certain than lower returns or involving forgoing access to the funds for a longer period. There are now very many, very

diverse ways in which money can be borrowed and lent. The act of financial intermediation is thus one of devising financial instruments that encourage those with savings to commit to lend to the financial institutions on the conditions inherent in the instruments so that the financial institutions can then lend the same funds to others as another set of instruments with different conditions. This activity encompasses financial risk management and liquidity transformation.

17.214 All financial intermediation in the System is carried out by financial institutions. However, some corporations in the financial sector are not themselves intermediaries but simply provide services auxiliary to financial intermediation. For example, they may provide advice to clients about the terms available for specific types of borrowing and lending, such as a mortgage broker or provide certain sorts of financial resources such as a foreign exchange bureau that exchanges one currency for another. These are the units described as other financial institutions.

17.215 Financial institutions provide services and charge for them. The ways in which they charge, however, are not always obvious. When a bank offers “free banking” it only signifies that there are no explicit fees, not that there are no implicit fees. Fees may be charged indirectly by means of charging those purchasing a financial asset more than the seller of the same asset receives. For example, dealers in foreign exchange typically buy and sell at different rates; the differences between those rates and the mid-point represents a service charge paid by the customers.

17.216 Nor is it only the service charge that may have to be measured indirectly. Bills are an offer of a fixed sum at some time in the future and the promise of this payment is sold at a discount. The increase in value between the buying price and the redemption price is treated as interest in the system.

17.217 Nor are the terms in use in the financial markets exactly the terms used in the System. For example, the money paid by a bank on a deposit is described as interest by the bank but is not the amount recorded as interest in the System because the amount paid by the bank is assumed to be a compound payment representing interest as understood in the System less the service charges levied on the depositor for the costs of operating the account.

## 2. Charging for financial services

- 17.218 As noted above, the way in which financial institutions charge for the services they provide is not always as evident as the way in which charges are made for most goods and services. Several kinds of financial institutions do make explicit fees for the services they render. Other financial institutions may make implicit charges, either alone or in conjunction with explicit fees.
- 17.219 Explicit fees should always be recorded as payable by the unit to whom the services are rendered to the institution performing the service. If the services are rendered to a corporation or to government, the costs will form part of intermediate consumption. If they are rendered to households they will be treated as final consumption unless the financial service is performed in relation to an unincorporated enterprise, including the owning and occupying of a dwelling. Within the System, financial services are never incorporated into the value of any financial asset even if their incurrence is necessary for the acquisition of the asset. (This is in contrast with the treatment on non-financial assets where the costs of acquiring the asset are included in the value of the asset appearing on the balance sheet.) Nor do explicit fees affect the value at which transactions in financial assets actually take place in the market.
- 17.220 Implicit charges for financial services have to be measured indirectly. The charges may be simply the difference between the buying and mid-price and between the mid-price and selling price as in the example of foreign exchange quoted above. (Each service should be calculated at the time of the transaction concerned so that holding gains and losses occurring between the time of the purchase and sale are not treated as services.) Other implicit charges may be combined with other transactions (or other flows) on a particular financial instrument. The service charge associated with borrowing and lending is one such example where it is combined with interest. As noted in chapter 6 when the output of financial services was discussed, ignoring the implicit charges for financial services may lead to understating the output of the industry and sector.

## N. Recording flows in financial instruments

- 17.224 As explained above, both service charges and property income flows may be combined with the costs of acquiring and disposing of financial assets and liabilities. This section of the chapter, therefore, examines each class of instrument in turn to identify what flows should be recorded in each case. Explicit fees are not covered in this section since even if they apply, their value is additional to the value at which financial assets change hands. There are thus three types of flows of relevance in this section; the implicit fees made by financial institutions, different income flows and holding gains and losses. A summary of the types of flows that relate to each instrument is given in table 17.11. Implicit fees are subdivided between those that appear as a margin between the buying and selling price and those that represent a margin on interest paid and received (FISIM). All income flows are property income and

## 3. Investment income associated with financial instruments

- 17.221 Most financial instruments give rise to investment income. Debt instruments such as Special Drawing Rights on the IMF (SDRs), loans, most debt securities, deposits and some unallocated gold accounts where the amount is repaid according to a fixed formula give rise to interest. Equity and investment fund shares give rise to dividends or other distributions from corporate income. As far as possible, there should be no interest arising on other accounts receivable/payable since the amounts outstanding that give rise to interest payments should be classified as loans. In practice this might not always be possible in which case there will be some amounts of interest shown under this instrument also. Except for other accounts receivable/payable, only gold bullion, currency, non-interest bearing deposits, financial derivatives and employee stock options never give rise to investment income.

## 4. Holding gains and losses on financial instruments

- 17.222 In the normal course of events, loans and deposits denominated in domestic currency do not give rise to nominal holding gains though there will always be real holding losses for the asset holder in the presence of inflation. Securities denominated in domestic currency where the income is in the form of coupons only may be subject to holding gains and losses. These occur because when the interest rate varies, the present value of the future coupon payments and redemption values change and this is reflected in the market price.
- 17.223 For equity and investment fund shares other than money market fund shares, nominal holding gains are common and may be substantial. Indeed, the most frequent reason for acquiring these instruments is in order to benefit from the holding gains that arise from holding them.

these flows are divided between interest, dividends, withdrawals from quasi-corporations and investment income attributed to investment fund shareholders. Only the instruments relating to insurance, pension and standardised guarantee schemes are excluded as the treatment of these schemes is described in detail in other parts of this chapter.

### 1. Monetary gold

- 17.225 Monetary gold consists of two sub-categories, gold bullion and unallocated gold accounts, both of which are held by the monetary authorities or other units authorised by them as part of reserves. Although it may not be possible to publish these two sub-categories separately for reasons of confidentiality, it

is important to understand the different considerations that apply to each of them.

- 17.226 Gold bullion takes the form of coins, ingots, or bars with a purity of at least 995 parts per thousand. Gold held as a valuable by commercial banks or as inventories by some specialised industries, for example jewellers, may be indistinguishable from gold bullion or may be of a lower quality. Physical gold, excluding gold bullion included in monetary gold, whether gold bullion or not, can be referred to as commodity gold (since it is traded on commodity markets).
- 17.227 Gold bullion may be sold by one monetary authority to another in another country. In such a case the exchange is recorded as an exchange of financial assets only. In all other cases, the gold is reclassified as commodity gold and thus a valuable held by the monetary authority (and is no longer part of reserves) and is then sold as commodity gold. The reclassification is recorded in the other changes in the volume of assets account as demonetisation of gold. If the gold is sold abroad it will feature in exports and imports of the countries concerned. When commodity gold is sold, there may be a trade margin attached to it. When a monetary authority acquires monetary gold a reverse path is followed. The gold is acquired initially as commodity gold either from a domestic unit or from abroad and is subsequently reclassified to monetary gold as monetisation in the other changes in the volume of assets account.
- 17.228 There is no interest earned on gold bullion held as a valuable but it is subject to nominal and real holding gains and losses as the gold price changes. Interest can be payable when one monetary authority lends gold bullion held as reserves to another monetary authority.
- 17.229 Unallocated gold accounts are treated as foreign currency deposits unless they are held by the monetary authorities as part of foreign reserves. Unlike gold bullion, unallocated gold accounts have counterpart liabilities. Because the unallocated gold accounts classified as monetary gold must be held as part of foreign reserves, the counterpart liability is necessarily held abroad. The counterpart liability will not be treated as part of monetary gold in the counterpart country. (Assets held abroad as part of foreign reserves are generally not identified as such within the liabilities of the partner country.) If a monetary authority acquires an unallocated gold account to be treated as reserves, it is recorded first as an acquisition of a foreign currency deposit and then reclassified to monetary gold as a change of classification in the other changes in the volume of assets account. Removing an unallocated gold account from reserves is recorded as, first, a change in classification from monetary gold to a foreign currency deposit and then as a disposal of the deposit.
- 17.230 Unallocated gold accounts attract interest and a service charge and are also subject to nominal and real holding gains and losses as the gold price alters.

## 2. SDRs

- 17.231 SDRs are allocated to the countries and authorities participating in the SDR Department of the IMF. Countries must be members of the IMF; other participants include a

number of central banks, intergovernmental monetary institutions and development institutions. Participants may hold more or fewer SDRs than their allocation as a result of transactions in SDRs between participants. SDRs attract interest but no service charge as interest paid by participants holding more than their allocation exactly matches the interest owing to participants holding less than their allocation. Data on the interest rates payable are available regularly from the IMF. Since the value of the SDR is based on a basket of four key currencies, the value of SDRs is always subject to nominal and real holding gains and losses. From time to time, new allocations of SDRs may be made; when this occurs the allocation is recorded as a transaction.

## 3. Currency

- 17.232 Notes and coins are the simplest financial asset to record since for domestic currency, no service charges, property income or nominal holding gains and losses are recorded. Under inflation, though, the holder of notes and coins suffers real holding losses. The cost of producing the physical notes and coins is recorded as government expenditure and not netted against the receipts from issuing the currency.
- 17.233 Foreign currency should be recorded in the national balance sheets converted to a value in domestic currency using the exchange rate relevant for the date of the balance sheet. This value is subject to nominal and real holding gains and losses as the exchange rate of the foreign currency relative to domestic currency alters. As noted above, there is usually a service charge associated with acquiring or disposing of foreign currency.

## 4. Deposits and loans

- 17.234 In the 1993 SNA, financial intermediation other than that implicit in insurance activity was assumed to be restricted to deposits and loans and the only indirectly measured service charge was associated with interest flows on these instruments. The acronym used for the service flows became known as FISIM, Financial Intermediation Services Indirectly Measured. Although the update recognises other indirectly measured service charges associated with financial intermediation, it is convenient to continue to use the familiar expression, FISIM, for its traditional meaning, that is, for financial intermediation associated with loans and deposits held with financial intermediaries.
- 17.235 Paragraphs 6.160 to 6.166 describe the basic principle of FISIM and explain the need to make the distinction, referred to above, between interest as understood by the banks holding deposits and issuing loans and the investment income flows recorded in the System. One (or possibly more) reference rate(s) should be applied to the level of loans and deposits to determine the SNA interest flows to be recorded. The difference between these flows and bank interest are recorded as service charges payable to the banks by the units holding the deposits or loans. This applies to both resident and non-resident units and to deposits and loans held with resident and non-resident units. For clarity, the term bank interest is used to indicate the apparent interest as quoted by a financial intermediary to their customer; the term SNA interest is used for the amount recorded in the System as interest, that is the

level of loans and deposits multiplied by the reference rate chosen. For deposits with banks, the service charge is equal to SNA interest less bank interest; for loans the service charge is equal to bank interest less SNA interest. At a minimum, it is probable that different reference rates should be used for every currency in which non-resident loans and deposits are denominated.

- 17.236 No exclusion is made for lending of own funds. Although the act of lending, and the charging of SNA interest is not a productive activity, there is a service charge associated with lending. A person borrowing from a bank is unaware of whether the amounts borrowed are of intermediated funds or come from the bank's own funds and no difference in the service charges applied should be made. Similarly, if a person borrows from a money lender, there is a service charge payable. (Often in fact service charge is very large reflecting the much higher risk of default faced by the money lender. A noteworthy feature of some micro-finance schemes is that, because defaults are uncommon, the charges are modest.)
- 17.237 It is not always simple to determine whether positions between banks should be classified as deposits or loans. In a complete flow of funds presentation, this should be resolved but in the absence of a flow of funds analysis, inter-bank positions may be shown under currency and deposits. By convention they are shown as deposits less loans with a negative sign if necessary. It is assumed that the inter-bank rate at which banks borrow and lend to one another is usually such as to meet the criteria for a reference rate, that is, it is a risk-free rate. (In some cases it may be appropriate to use the inter-bank rate as the reference rate.) For this reason, it may often be appropriate to assume that there is no FISIM associated with inter-bank lending and borrowing within the national economy.
- 17.238 The outstanding balance on a credit card or on an account with a retailer is often subject to interest. These outstanding balances should be classified as loans, not other accounts receivable/payable. FISIM is calculated on them if the unit providing the loan is classified as a financial institution.
- 17.239 Repurchase agreements are classified as giving rise to deposits or loans depending on whether they are or are not included in the national measure of broad money. They give rise to interest that may have a FISIM component but, even if this is so, it may be very difficult to isolate it. They do, though, have fees associated with their initiation and thus for pragmatic reasons the measurement of associated flows may be treated in the same way as for debt securities.
- 17.240 There are no nominal holding gains and losses on deposits and loans expressed in domestic currency (whether these are held by residents or non-residents). With any inflation at all, there will be real holding losses on assets denominated in domestic currency. There may be nominal and real holding gains and losses on deposits and loans denominated in other currencies or held as unallocated metal accounts.
- 17.241 Any charges made by a financial institution for operating a bank account, a fee for cashing a cheque or for withdrawing money from an automatic teller machine are all treated as explicit fees.

17.242 The special case of non-performing loans and how they should be treated in the System is discussed in chapter 13.

## 5. Debt securities

- 17.243 In terms of recording the associated flows, there are three types of debt securities. The first is where the amount payable at the end of the period for which the security exists is the same as the initial amount paid for the security but there are associated "coupons" that entitle the holder to payments of interest, at fixed or variable rates, at intervals during the life of the instrument. The second type of security is one where no intermediate payments are made but the issue price is lower than the redemption price. The issue price is equal to the redemption price discounted to the date of issue at the appropriate rate of interest that could be earned on a deposit of similar characteristics. The increase in value of the security during its life is treated as interest accruing to the holder of the security that is "reinvested" in the security to increase its value. The third type of security is a hybrid of the two other forms; the initial value is less than the redemption value but there are also attached coupons. In certain circumstances, if the coupons represent a rate of interest higher than that prevailing in the market for similar securities at time of issue, the security may be offered at a price higher than the redemption price.

### Service charges associated with securities

- 17.244 For securities, the interest calculated according to the coupon or as the increase in value of the security is recorded in the System as such without adjustment for a service charge. However, there is a service charge associated with the acquisition of a security on initiation and with the disposal and acquisition of a security at any point during its life. These service charges are identified as being the difference between the buying (bid) and selling (ask or offer) price quoted for each security and the mid-price. The bid and offer prices should be those applicable to the individual buyer and seller since these may vary according to the quantity being transacted or other factors.
- 17.245 Suppose an instrument is bought for 102 and subsequently sold for 118 even though there has been no change in the rate of interest (and hence of the value of the instrument due to holding gains and losses). At first sight, it seems that interest of 16 should be recorded. However, suppose the mid-price on purchase was 100 and on sale was 120. The correct recording would be to show interest of 20 payable by the issuer of the security to the holder with a purchase of services of 4 payable by the holder to the dealer in securities. Ignoring the bid-ask spread understates interest and ignores the services provided by the financial intermediaries that buy and sell securities.

### Interest on discounted securities

- 17.246 There are two ways in which the value of a discounted security can be determined during its life when the prevailing interest rate is different from the rate prevailing when the security was initiated. The debtor approach is the perspective of the unit issuing the security and the creditor approach is the perspective of the unit holding the security. The first option, called the debtor approach, is to continue to use the rate

prevailing on initiation throughout the instrument's life. The alternative, the creditor approach, is to use the current rate to estimate the value of interest between any two points in the instrument's life.

17.247 Suppose an instrument is offered at 90 with a redemption value of 100. If the discount (interest) rate does not change during its life, interest will accrue steadily throughout. Suppose, though, that the interest rate falls when the instrument has reached a value of 95. Because the redemption value is now discounted by a smaller factor, the value of the security increases, say to 97. Both the creditor and debtor approach would record interest of 5 in the period before the interest rate fall. Under the creditor approach, this increase of 2 is treated as a holding gain and only the subsequent rise to the redemption value of 100 is treated as interest. Thus over the whole life of the instrument it has given rise to interest of 8 and a holding gain of 2.

17.248 In the System, the debtor approach is used. Under this approach, the interest accruing in the period before the interest rise is still 5 but so is the interest in the period after the interest rate rise. Adding this level of interest to the value of 97 when the rise occurred would give a value of 102 at the redemption date. Since this value is too high, a holding loss of 2 has to be recorded. Thus over the whole life of the instrument there is interest of 10 with an initial holding gain of 2 (when the interest rate changed) offset by the later holding loss of 2. The holding loss occurs steadily over the period between when the holding gain was recorded and the redemption period. The rationale for using the debtor approach is that the debtor, the issuer of the security, is not liable to make the payment until the security matures and from his perspective it is appropriate to treat the total amount of interest as accruing steadily over the life of the security.

## Determining interest flows on bills and bonds

### *Interest on bills and similar instruments*

17.249 Bills are short-term securities that give the holder (creditor) the unconditional right to receive a stated fixed sum on a specified date. They are issued and traded in organized markets at a discount that depends on current market short-term interest rates and the time to maturity. Most bills mature after a period ranging from one month to one year.

17.250 As the bill approaches maturity, its market value increases because there is less discounting applied to it. This increase in value, in common with the increase in the value of any asset due to the unwinding of a discount factor, is treated as income in the System. For financial assets, the income is recorded as interest.

17.251 Let the price paid for a bill at its time of issue be  $L$ : this represents the amount of funds that the purchaser (creditor) provides to the issuer (debtor) and measures the value of the initial liability incurred by the issuer. Let the face value of the bill be  $F$ : this represents the sum paid to the holder of the bill (the creditor) when it matures. The difference,  $F-L$ , or discount on the bill, measures the interest payable over the life of the bill.

17.252 Bills are traded on money markets at values that gradually rise to reflect the interest accruing on the bills as they approach maturity. The increase in the value of a bill due to the accumulation of accrued interest does not constitute a holding gain because it is due to an increase in the principal outstanding and not to a change in the price of the asset.

### *Interest on bonds and debentures*

17.253 Bonds and debentures are long-term securities that give the holder the unconditional right to:

- A fixed or contractually determined variable money income in the form of coupon payments; or
- A stated fixed sum on a specified date or dates when the security is redeemed; or
- Both (a) and (b). Most bonds fall into this category.

17.254 When a bond is issued at a discount, the difference between the face value, or redemption price, and the issue price constitutes interest that accrues over the life of the bond, in the same way as for a bill. However, as accounts are compiled for time periods that are typically much shorter than the life of the bond, the interest must be distributed over those periods. The way in which this may be done is explained below.

### *Zero-coupon bonds*

17.255 Zero-coupon bonds are long-term securities that are similar to bills. They do not entitle their holders to any fixed or variable money income but only to receive a stated fixed sum as repayment of principal and accrued interest on a specified date or dates. When they are issued they are usually sold at a price that is substantially lower than the price at which they are redeemed on maturity. Let  $L$  equal the issue price and  $F$  the redemption price, so  $F-L$  is the value of the interest receivable and payable over the life of the bond. This interest has to be distributed over the years to its maturity. One possible method is to assume that interest at a rate of  $r$  is credited at the end of each year at an annual rate that is constant over the life of the bond, so that the final value  $F = L(1+r)^n$

17.256 The interest rate,  $r$ , is given by the following expression:

$$r = \left( \frac{F}{L} \right)^{\frac{1}{n}} - 1$$

where  $n$  is the number of years from the time of issue to maturity. The interest accruing during the course of year  $t$  is then given by

$$rL(1+r)^{t-1} \quad \text{where } t = 1 \text{ at the end of the first year.}$$

The interest accruing each year is effectively reinvested in the bond by its holder. Thus, counterpart entries equal to the value of the accrued interest must be recorded in the financial

account as the acquisition of more bond by the holder (creditor) and as a further issue of more bond by the issuer (debtor).

#### *Other bonds, including deep-discounted bonds*

17.257 Most bonds pay a fixed or variable money income and may also be issued at a discount or, possibly, a premium. In such cases, the interest receivable by the holders of the bonds has two components:

- a. The amount of the money income receivable from coupon payments each period; plus
- b. The amount of interest accruing each period attributable to the difference between the redemption price and the issue price.

The second component is calculated in the same way as for zero-coupon bonds, as described above. In the case of deep-discounted bonds, most of the interest accruing is attributable to the difference between the redemption price and the issue price. At the other extreme, some bonds offer an income stream in perpetuity and are never redeemed.

#### Index-linked securities

17.258 Index-linked securities are financial instruments for which the amounts of the coupon payments (interest) or the principal outstanding or both are linked to a general price index, a specific price index, the price of a commodity or an exchange rate index. Different treatments are recommended for the recording of transactions depending on the type of index used to uprate the level of principal to which the interest is linked and on the currency in which the interest and principal are denominated.

17.259 The indexation mechanism links the amount to be paid at maturity and/or coupon payments to indicators agreed by the parties. The values of the indicators are not known in advance. For debt securities with indexation of the amount to be paid at maturity, they may be known only at the time of redemption. As a result, interest flows before redemption are uncertain and cannot be determined with certainty. For estimating interest accruals before the values of the reference indicators are known, some proxy measures will have to be used. In this regard, it is useful to distinguish the following three arrangements:

- a. indexation of coupon payments only with no indexation of amount to be paid at maturity,
- b. indexation of the amount to be paid at maturity with no indexation of coupon payments, and
- c. indexation of both the amount to be paid at maturity and coupon payments.

The principles described below for index-linked debt securities apply to all index-linked debt instruments.

17.260 When only coupon payments are index-linked, the full amount resulting from indexation is treated as interest accruing during the period covered by the coupon. It is most likely that by the time data are compiled for a reporting period, the date for the coupon payment would have been passed and hence the value of index is known. When the date for the coupon payment has not been passed, the movement in the index during that part of the reporting period covered by the coupon can be used to calculate the interest accrual.

17.261 When the amount to be paid at maturity is index-linked, the calculation of interest accruals become uncertain because the redemption value is unknown; in some cases the maturity time may be several years in the future. Two approaches can be followed to determine the interest accrual in each accounting period.

- a. Interest accruing in an accounting period due to the indexation of the amount to be paid at maturity may be calculated as the change in the value of this amount outstanding between the end and beginning of the accounting period due to the movement in the relevant index.
- b. Interest accruals may be determined by fixing the rate of accrual at the time of issue. Accordingly, interest is the difference between the issue price and the market expectation, at inception, of all payments that the debtor will have to make; this amount is recorded as interest accruing over the life of the instrument. This approach records as income the yield-to-maturity at issuance, which incorporates the results of the indexation that are foreseen at the moment the instrument was created. Any deviation of the underlying index from the originally expected path leads to holding gains or losses which will not normally cancel out over the life of the instrument.

17.262 While the first approach (using the movement in the index) has the advantage of simplicity, interest includes all changes and fluctuations in the value of the amount to be paid at maturity in each accounting period due to the movement in the relevant index. If there is a large fluctuation in the index, this approach may yield negative interest in some periods even though market interest rates at the time of issue and current period may be positive. Also, fluctuations behave like holding gains and losses. The second approach (fixing the rate at the time of issue) avoids such problems, but the actual future cash flows may differ from the initially expected cash flows unless ex-ante market expectations are exactly met. This means that interest for the life of the instrument may not be equal to the difference between the issue price and redemption value.

17.263 The first approach works well when a broad-based indexation of the amount to be paid at maturity is used (for example a consumer price index) as such indexation is expected to change relatively smoothly over time. However, the first approach may give counter-intuitive results when the indexation of the amount to be paid at maturity combines motives for both interest income and holding gains (for example, a commodity price, stock prices, or gold prices). Therefore, when indexation includes a holding gain motive, typically indexation based on a single, narrowly defined item,

the second approach is preferred, otherwise the first approach should be used for the measurement of interest accrual.

- 17.264 As debt instruments with both the amount to be paid at maturity and coupon payments indexed to foreign currency are treated as though they are denominated in that foreign currency; interest, other economic flows and stock levels for these instruments should be calculated using the same principles that apply to foreign currency denominated instruments. Interest should accrue throughout the period using the foreign currency as the currency of denomination and converted into the domestic currency using mid-point market exchange rates. Similarly, the amount outstanding should be valued using the foreign currency as the unit of account with the end of period exchange rate used to determine the domestic currency value of the entire debt instrument (including any accrued interest) in the international investment position. Changes in market values of debt securities due to exchange rate movements and/or interest rate changes are treated as revaluations.
- 17.265 When both the amount to be paid at maturity and coupon payments are indexed to a broad-based reference item, interest accruals during an accounting period can be calculated by summing two elements: the amount resulting from the indexation of the coupon payment (as described in paragraph 17.48), that is attributable to the accounting period, and the change in the value of the amount outstanding between the end and beginning of the accounting period due to the movement in the relevant index (as described in paragraph 17.49(a)). When both the amount to be paid at maturity and coupon payments are indexed to a narrow index that includes a holding gain motive, interest accruals for any accounting period can be determined by fixing the yield-to-maturity at issuance as explained in paragraph 17.49(b).
- 17.266 If the principal but not the coupon is indexed to a foreign currency, changes in the principal due to variations in the exchange rate are treated as holding gains and losses and not as interest. If both the principal and coupons are indexed to a foreign currency, the transactions relating to both the principal and coupons should be calculated by reference to the foreign currency even if the currency of settlement is different. In this case, variations in the market value of the security due to currency fluctuations are treated as interest.
- 17.267 As with other securities, the interest accruing as a result of indexation is effectively reinvested in the security and these additions to the value of the security must be recorded in the financial accounts of the holder and issuer.

## 6. Equity and investment fund shares

- 17.268 The financial service charges levied on transactions in equity and investment fund shares are calculated in the same way as for debt securities, that is, as explicit fees and the difference between the financial intermediary's selling price and the mid-price and the mid-price and the intermediary's buying price.
- 17.269 The investment income from corporate equity takes the form of distributed income of corporations. For corporations, the distributed income is in the form of dividends. For quasi-corporations, the investment income is withdrawals from

income of quasi-corporations. As noted in chapter 7, dividends or other withdrawals from corporate income are recorded as investment income at the time they are declared payable and not when earned. A different recording is made for extraordinarily large dividends that are out of line with recent experience on the amount of income available for distribution to the owners of the corporation. Any excess distribution is to be recorded as a withdrawal of equity (recorded in the financial account) and not as part of investment income. Chapter 22 discussed the case of exceptional dividends of public corporations.

- 17.270 For investment funds, the income element comes in the form of investment income disbursements to collective investment fund shareholders. In the System, the full value of the investment income earned is shown as being distributed to the shareholder in the distribution of primary income account with reinvestment recorded in the financial account
- 17.271 For foreign direct investment enterprises, there will also be investment income in the form of reinvested earnings.
- 17.272 As noted earlier, there may be considerable holding gains and losses, both nominal and real on equity and investment fund shares.
- 17.273 The entries in the financial accounts relating to acquisitions of equity conceptually contain two distinct types of transactions. One is the exchange of equity and investment fund shares between institutional units. Because the transactions are valued at mid-price, total acquisitions must be equal to total disposals. The net effect, therefore, is to show the change in composition of the holders of shares by institutional sector and with the rest of the world. The second type of transactions included in the financial account is the receipt of any reinvestment of earnings, the counterpart of the outflow recorded under investment income payable by corporations. In calculating the revaluation element between opening and closing balance sheet, care must be taken to exclude the reinvestment of earnings term.

## 7. Financial derivatives

- 17.274 Arranging a financial derivative may involve a set-up fee which should be shown as an explicit fee charged by the financial institution concerned and payable by the holder of the financial derivative. For some financial derivatives, especially options based products, a financial institution may act as a market maker and sell the products with a margin between the bid and offer price. This margin is treated as a service charge as with other financial instruments.
- 17.275 The initial value of a forward-type financial derivative is zero but as soon as a change in circumstances, that the financial derivative is designed to provide financial protection against, occurs, the financial derivative will acquire a value. At this point, a financial asset and matching liability are recognised and recorded as a transaction in financial derivatives in the financial account. Subsequent changes in value are recorded in the revaluation account. If the value becomes negative, it becomes a liability for the holder rather than an asset and an asset rather than a liability for the seller.

- 17.276 At inception, options have a positive value normally equal to the premium paid to establish them. This is recorded as a transaction in financial derivatives in the financial account. Thereafter, any change in value is recorded in the revaluation account. Options are always an asset for the purchaser and a liability for the seller.
- 17.277 There is no investment income accruing on a financial derivative.

## 8. Employee stock options

- 17.278 As explained in chapter 7, the granting of a stock option may form a part of compensation of employees.
- 17.279 The costs of administering stock options are borne by the employer and are treated as part of intermediate consumption just as other administrative functions associated with compensation to employees.
- 17.280 Three dates are important in measuring the income from stock options. The grant date is when the employee is informed that a stock option will be available for him to exercise at some time in the future. The vesting date is the earliest date at which the option can be exercised and the exercise date is when the option is actually exercised.
- 17.281 If possible, the value of the option at grant date is treated as part of the compensation of employees at that date and increases in the value between the grant date and vesting date are treated as further elements of compensation of employees. If it is not possible to spread the earnings between grant date and vesting date, the whole of the value may have to be recorded at vesting date. If there is a gap between vesting date and exercise date, and the value of the option changes in this period, it is recorded as a holding gain or loss of the employee.
- 17.282 Although the value of the stock option is treated as income, there is no investment income associated with the stock option.
- 17.283 In certain circumstances a stock option can also be used as a form of payment for goods and services or as a contribution by the employer to the pension fund of his employees. In the former case, the stock options are included with employee stock options by convention even though they are not strictly related to employment.

## 9. Other accounts receivable/payable

- 17.284 Other accounts receivable/ payable are essentially accrual adjustments typified by trade credit and advances. Trade credit refers to the case where goods and services have been delivered but payment has not yet been received. Advances refer to payment for work-in-progress for which pre-payment has been made but the products are not yet delivered. The means of financing payment, such as the use of credit cards, is not included here; the balance on the cards is treated as a loan and payments such as interest or overdue fees are recorded as for loans.
- 17.285 Other accounts payable/receivable denominated in domestic currency can have no nominal holding gains and losses but may have real ones. Any items denominated in foreign currency may have both nominal and real holding gains and losses.

**Table 17.11 Indications of the flows associated with different financial instruments**

Financial instrument	Services appearing in the production account		Property income appearing in the distribution of primary income account				Revaluation account
	Buy/sell margin	Margin on interest	Interest	Dividends	Withdrawals from incomes of quasi-corporations	Investment income attributed to collective investment fund share holders	Holding gains and losses
<b>Monetary gold and SDRs</b>							
Gold bullion							x
Unallocated gold accounts			x				x
SDRs		x	x				x
<b>Currency and deposits</b>							
<i>Currency</i>							
Domestic							
Foreign							x
<i>Transferable deposits</i>							
In domestic currency		x	x				
In foreign currency		x	x				x
<i>Inter-bank deposits</i>		(x)	x				
<i>Other deposits</i>							
In domestic currency		x	x				
In foreign currency		x	x				x
<b>Debt securities</b>	x		x				(x)
<b>Loans</b>							
In domestic currency		x	x				
In foreign currency		x	x				x
<b>Equity and investment funds</b>							
<i>Equity</i>							
Listed shares	x			x			x
Unlisted shares	x			x			x
Other equity					x		x
<i>Investment fund shares</i>							
Money market fund shares	x					x	x
Other investment fund shares	x					x	x
<b>Financial derivatives and employee stock options</b>							
Financial derivatives	x						x
Employee stock options							x
<b>Other accounts receivable/payable</b>			(x)				



## Part 5 Contracts, leases and licences

### O. Introduction

- 17.286 Many transactions that take place in the economy and are recorded in the System are specified in terms of a contract between two institutional units. The majority of contracts are such that one unit provides a good, service or asset to the other unit for an agreed payment at an agreed time (possibly immediately after agreeing on the price). Such contracts may be written and legally binding or may be informal or even only implicit. If a unit accepts the estimate provided by a builder for the cost of specified work, the contract is written and may well be legally binding. If a book is ordered from a bookshop but there is a delay in delivery, there is an informal contract between the book shop and the customer but it is unlikely to be enforceable by either side. Whenever a customer asks how much a given service will cost, whether it is a haircut, the delivery of a heavy product or entry to a cinema, accepting the service at the quoted price is in effect an implicit contract. However, all these contracts are simply agreements about the terms under which goods, services and assets are provided to the customer along with the legal ownership of the item. The only extent to which these contracts feature in the System is that they determine the point at which the transaction is to be recorded in the accounts. This is the time at which the ownership of the good, service or asset changes. For services, this is always when the service is delivered and for goods it may coincide with the time of delivery. However, the time of recording is never determined by the time when payment is made. Any difference between the time of payment and time of change of ownership gives rise to an entry in the financial account under other accounts receivable/payable.
- 17.287 However, there are other contracts and legal agreements variously described as leases and licences (or permits) where the terms of the agreement may affect the time of recording of transactions made under the agreement as well as the classification of payments and the ownership of the item subject to the agreement. The purpose of this part of the chapter is to provide guidance on how transactions made under these more complex arrangements are to be recorded in the System.
- 17.288 The first item for discussion concerns the different sorts of leases recognised in the System. The next topic for discussion is the treatment of permits to use natural resources. This is of particular importance when it is government that claims ownership of the resource on behalf of the community at large but can apply to privately owned resources also. This leads naturally into a discussion of the treatment of assets where more than one unit has a claim to ownership, or the benefits of ownership accrue to more than one unit.
- 17.289 Some contracts are not connected with the use of assets. The first for discussion are licences (or permits) given to undertake particular activities independently of any assets that may be used in the activity. Here there are different treatments when the permits are issued by government and when they are given by other institutional units. The next point for consideration is when a contract itself can constitute an asset in itself, independently of the subject of the contract. Finally, a number of clarifications are made concerning the timing and nature of payments made under a contract.

### P. Leases

- 17.290 Three types of leases are recognised in the System; operating leases, financial leases and resource leases. Each of these leases relates to the use of a non-financial asset. Fundamental to the distinction between the different sorts of leases is the difference between legal and economic ownership. This distinction is elaborated in chapter 3. The legal owner of an asset is the institutional unit entitled in law and sustainable under the law to claim the benefits associated with the asset. By contrast, the economic owner of an asset is entitled to claim the benefits associated with the use of the asset in the course of an economic activity by virtue of accepting the associated risks. The legal owner is often the economic owner also. When they are different, the legal owner has divested itself of the risks in return for agreed payments from the economic owner.
- #### 1. Operating leases
- 17.291 *An operating lease is one where the legal owner is also the economic owner and accepts the operating risks and receives the economic benefits from the asset by using it in a productive activity.* One indicator of an operating lease is that it is the responsibility of the legal owner to provide any necessary repair and maintenance of the asset. Under an operating lease the asset remains on the balance sheet of the lessor.
- 17.292 The payments made under an operating lease are referred to as rentals and are recorded as payments for a service. The character of operating leases may most easily be described in relation to equipment since operating leases often concern

vehicles, cranes, drills etc. In general, though, any sort of non-financial asset may be subject to an operating lease. The service provided by the lessor goes beyond the mere provision of the asset. It includes other elements such as convenience and security, which can be important from the user's point of view. In the case of equipment, the lessor, or owner of the equipment, normally maintains a stock of equipment in good working order that can be hired on demand or at short notice. The lessor must normally be a specialist in the operation of the equipment, a factor that may be important in the case of highly complicated equipment, such as computers, where the lessee and his employees may not have the necessary expertise or facilities to service the equipment properly themselves. The lessor may also undertake to replace the equipment in the event of a serious or prolonged breakdown. In the case of a building, the lessor is responsible for the structural integrity of the building, so would be responsible in the case of damage due to a natural disaster, for example, and is usually responsible for ensuring that elevators, heating and ventilation systems function adequately.

17.293 Operating leasing developed originally to meet the needs of users who require certain types of equipment only intermittently. Many operating leases are still for short periods though the lessee may renew the rental when the period expires and the same user may hire the same piece of equipment on several occasions. However, with the evolution of increasingly complicated types of machinery, especially in the electronics field, the servicing and back-up facilities provided by a lessor are important factors that may influence a user to rent. Other factors that may persuade users to rent over long periods rather than purchase are the consequences for the enterprise's balance sheet, cash flow or tax liability.

## 2. Financial leases

17.294 *A financial lease is one where the lessor as legal owner of an asset passes the economic ownership to the lessee who then accepts the operating risks and receives the economic benefits from using the asset in a productive activity.* One indicator of a financial lease is that it is the responsibility of the economic owner to provide any necessary repair and maintenance of the asset. Under a financial lease, the legal owner is shown as issuing a loan to the lessee with which the lessee acquires the asset. Thereafter the asset is shown on the balance sheet of the lessee and not the lessor; the corresponding loan is shown as an asset of the lessor and a liability of the lessee. Payments under the financial lease are treated not as rentals but as the payment of interest and repayment of principal. If the lessor is a financial institution, part of the payment is also treated as a service charge (FISIM).

17.295 Very often the nature of the asset subject to a financial lease may be quite distinct from the assets used by the lessor in his productive activity, for example a commercial airliner legally owned by a bank but leased to an airline. It would make no economic sense to show either the aircraft or its consumption of fixed capital in the accounts of the bank or to omit them from the accounts of the airline. The device of a financial lease avoids this undesirable form of recording the ownership of the aircraft and the decline in its value while keeping the net worth of both parties correct throughout the length of the lease.

17.296 It is common for a financial lease to be for the whole of the life of the asset, but this need not necessarily be so. When the lease is for the whole of the life of the asset, the value of the imputed loan will correspond to the present value of the payments to be made under the lease agreement. This value will cover the cost of the asset and include a fee charged by the lessor. Payments made regularly to the lessor should be shown as a payment of interest, possibly a payment for a service and a repayment of capital. If the terms of the agreement do not specify how these three items are to be identified, the repayment of principal should correspond to the decline in the value of the asset (the consumption of fixed capital), the interest payment to the return to capital on the asset and the service charge to the difference between the total amount payable and these two elements.

17.297 When the lease is for less than the whole life of the asset, the value of the loan should still be estimated as the value of the asset plus the value of the service charges to be made under the terms of the lease. At the end of the lease, the asset will appear on the balance sheet of the lessee and its value will be equal to the value of the loan owed to the lessor at that time. At that point the asset could be returned to the lessor to cancel the loan or a new arrangement, including the outright purchase of the asset, may be reached between the lessor and lessee.

17.298 Although a financial lease will typically be for several years, the duration of the lease does not determine whether the lease is to be regarded as an operating or financial lease. In some cases a large complex such as an airport or even a building may be leased for short periods, perhaps only one year at a time, but on condition that the lessee takes all responsibility for the asset, including all maintenance and cover for exceptional damage, for example. Even though the lease period is short, and even though the lessor may not be a financial institution, if the lessee must accept all the risks associated with the use of the asset in production as well as the rewards, the lease is treated as a financial and not an operating lease and the asset appears on the balance sheet of the lessee with a corresponding loan extended from the lessor to the lessee.

17.299 As a consequence, any corporation that specialises in this sort of leasing, even though it may be called a property company or aircraft leasing company, should be treated as a financial corporation offering loans to the units leasing assets from them. If the lessor is not a financial corporation, the payments are split into repayments of principal and interest only; if the lessor is a financial corporation, the interest is split into bank interest and a service charge (FISIM).

## 3. Resource leases

17.300 A resource lease is one where the legal owner of a natural resource that has an infinite life makes it available to a lessee in return for a regular payment recorded as property income and described as rent. The resource continues to be recorded on the balance sheet of the lessor even though it is used by the lessee. By convention, no decline in value of a natural resource is recorded in the System as a transaction similar to consumption of fixed capital.

17.301 The classic case of an asset subject to a resource lease is land but natural resources are also generally treated in this way. Payments due under a resource lease, and only such payments,

are recorded as rent in the System. There is further discussion of leases on natural resources in the following section.

## Q. Licences and permits to use a natural resource

17.302 As noted above, in many countries permits to use natural resources are generally issued by government since government claims ownership of the resources on behalf of the community at large. However, the same treatments apply if the resources are privately owned.

17.303 There are basically three different sets of conditions that may apply to the use of a natural resource. The owner may permit the resource to be used to extinction. The owner may allow the resource to be used for an extended period of time in such a way that in effect the user controls the use of the resource during this time with little if any intervention from the legal owner. The third option is that the owner can extend or withhold permission to continued use of the asset from one year to the next.

17.304 The first option results in the sale (or possibly an expropriation) of the asset. The second option leads to the creation of an asset for the user, distinct from the resource itself but where the value of the resource and the asset allowing use of it are linked. The third option comes back to the treatment of the use as a resource lease. The difference in treatment between the second and third options was articulated in the context of the case of a mobile phone licence and that recommendation (see SNA News and Notes...) is recapitulated before seeing how each of the three options relate to different types of natural resources.

### 1. The "mobile phone" treatment of licences or permits to use a natural resource

17.305 The case arose in 2000 when the sale of licences to use radio spectra for third generation mobile phones brought a flurry of interest from companies wanting to have exclusive access to the spectra and who in consequence were prepared to bid (often by auction) extremely large sums for the access rights to the spectra.

17.306 Eight conclusions were agreed in respect of the mobile phone licences. Allowing for updated terminology, these were:

- a. The spectrum constitutes a natural resource.
- b. The licence to use the spectrum constitutes an asset described as a permission to use a natural resource which is a sub-set of the general asset class of contracts, leases and licences.
- c. Typically licence payments are neither taxes nor purchases of the spectrum itself.

d. Land, mineral deposits and the spectrum are similar types of assets and so are leases and licences based on the use of those assets.

e. There is no single, universal and clear-cut criterion to distinguish between rent and asset sale; a range of criteria needs considering.

f. Most cases examined point to treating licence payments as the purchase of an asset, not rent.

g. The value of the licence and the value of the spectrum move symmetrically.

h. Further elaboration will be useful in future.

17.307 The considerations referred to under conclusion 5 were six in number and are reproduced below.

a. **Costs and benefits assumed by licensee:** the more of the risks and benefits associated with the right to use an asset are incurred by the licensee, the more likely the classification of a transaction as the sale of an asset as opposed to rent. Thus, pre-agreement on the value of payments (whether by lump sum or by instalments) effectively transfers all economic risks and benefits to the licensee and so point to the sale of an asset. If, on the other hand, the value of payment is made contingent on the results from using the licence, risks and benefits are only partially transferred to the licensee and the situation is more readily characterised as payment of rent. In the case of mobile phone licences, the total amount payable has often been pre-agreed. An additional indication of the degree to which commercial risks have been passed to the licensee is to examine the hypothetical case where a licensee goes bankrupt. If, in such a case, the licensor reimburses none of the up-front payment made by the licensee, this would constitute a strong case against a characterisation of the transaction as rent, as apparently the licensee has incurred all the commercial risks involved.

b. **Up-front payment or instalment:** as with other indicators, the mode of payment is in itself not conclusive for a characterisation as asset or rent payment. Generally, the means of paying for a licence is a financial issue and as such not a relevant factor in determining whether or not it is an asset. However, business practice shows that up-front payments of rent for long periods (15-25 years in the case of mobile phone licences) are highly unusual and this favours an interpretation as sale of an asset.

- c. **Length of the licence:** licences granted for long periods suggest a treatment as the sale of an asset, for shorter periods a treatment as payments for rent. The time frame involved in mobile phone licensing (15-25 years) is considered rather unusual as a period for which to conclude a fixed payment of rent and therefore a further indication favouring an interpretation as sale of an asset.
- d. **Actual or de-facto transferability:** the possibility to sell the licence is a strong indication of ownership and if transferability exists, this is considered a strong condition to characterise the licensing act as the sale of third-party property rights. In practice, mobile phone licences are often transferable either directly (by the business selling the licence to another business) or indirectly (through the business being acquired through a take-over).
- e. **Cancellation possibility:** the stronger the restrictions on the issuer's capacity to cancel the licence at its discretion, the stronger the case for treatment as a sale of an asset. Conversely, when licences can easily be cancelled at the discretion of the issuer, ownership over benefits and risks has not been fully transferred to the licensee and the transaction qualifies more readily as rent.
- f. **Conception in the business world and international accounting standards:** businesses, in accordance with international accounting standards, often treat a licence to use the spectrum as an asset. Again, in itself this does not lead to treatment as an asset in the national accounts, and there are other areas where companies choose to present figures in their accounts in ways that are not consistent with the national accounts. But the treatment of the acquisition of mobile phone licences as capital investment in company accounts provides an added incentive to treat them in a similar way in the national accounts.

17.308 Not all these considerations have to be satisfied to characterise the licence as a sale of an asset nor does a simple majority of them being satisfied do so. However, in order to qualify as a rental agreement, at least some of the following sorts of conditions should hold.

The contract is of **short-term duration**, or renegotiable at short-term intervals. Such contracts do not provide the lessee with a benefit when market prices for the leased asset go up in the way that a fixed, long-term contract would. Such benefits are holding gains that typically accrue to owners of assets.

The contract is **non-transferable**. Non-transferability is a strong but not a sufficient criterion for the treatment of licence payments as rent, because, although it precludes the lessee from cashing in on holding gains, it does not preclude the lessee from reaping comparable economic benefits (e.g., using the licence in their business).

The contract contains **detailed stipulations** on how the lessee should make use of the asset. Such stipulations are often seen in cases of rent of land, in which the owner wishes to retain a control over the usage of the land. In the case of licences, examples of such stipulations would be that the contract states what regions or types of customers should be served, or that it sets limits on the prices that the lessee may charge.

The contract includes conditions that give the lessor the **unilateral right to terminate** the lease without compensation, for instance for under-use of the underlying asset by the lessee.

The contract requires **payments over the duration of the contract, rather than a large up-front payment**. Although this condition is essentially financial in character and thus cannot be decisive on the type of the lease, it may indicate a degree of control for the lessor to direct the use of the spectrum. The case for a treatment as rent is further supported if the payments are related to the revenue the lessee derives from the licence.

17.309 These two sets of considerations can be seen as a more specific parallel to the distinction of economic ownership from legal ownership used in distinguishing between an operating and financial lease as described above. The conditions for treatment of the payment as the acquisition of an asset and for treatment as payment of rent are indicative rather than prescriptive. A decision on the appropriate treatment when some of the conditions are not met will necessitate consideration of how to record those conditions not met. For example, if on balance the decision is to treat the payment as rent but a large up-front payment was made, this should be treated as a pre-payment to be recorded on an accrual basis. However, if the recipient is not willing to consider a refund if the contract is suspended, accrual recording is difficult. This is one reason why up-front payments are often indicative of the sale of an asset rather than the payment of rent.

17.310 The application of these principles to the main forms of natural resources is described below, beginning with radio spectra.

## 2. Radio spectra

17.311 Payment for a mobile phone licence constitutes the sale of an asset, not payment for rent, when the licensee acquires effective economic ownership rights over the use of the spectrum. To decide whether ownership is effectively transferred or not, the six criteria quoted above are to be considered.

17.312 When sale of an asset applies and when the life span of the licence and of the spectrum coincide, the payment for a licence is treated as the sale of the spectrum itself. The latter situation applies always when licences are granted indefinitely.

17.313 When sale of an asset applies, and when the life span of the licence is different from the life span of the spectrum, the payment for a licence is treated as the sale of a permit to use a natural resource by the legal owner (licensor) to the economic owner (licensee).

17.314 When the licence agreement is treated as the sale of an asset in its own right, its value is established at the time of its sale. It declines with the expiration of the period of validity to fall to a value of zero at the point of the expiry of the licence. Symmetrically, the value of the spectrum falls when the licence acquires a value and is progressively re-established as the licence expires. This is consistent with a potential further sale of the right to use the spectrum for another period. This procedure also ensures a neutral effect on the net worth of the overall economy during the life of the licence.

### 3. Land

- 17.315 Land may be sold outright when the legal ownership is transferred from one institutional unit to another. (Land may not be recorded as being sold to a non-resident unit. In such cases a notional resident unit is created that holds title to the land; the non-resident unit then owns the equity of the notional resident unit.)
- 17.316 The type of asset most frequently subject to a resource lease is land. Tenant farmers usually pay regular rent to their landlord. A resource lease on land may be considered as a sale of the land if the lease satisfies most or all of the same criteria as those listed for payments for a mobile phone licence to be considered a sale of an asset. When the land is leased in other circumstances, the payments are recorded as rent under a resource lease agreement.
- 17.317 In some jurisdictions, the land under buildings remains in the legal ownership of a landlord other than the owner of the buildings. If regular payments are made to the landlord, these are recorded as rent. However, it is sometimes the case that, even though the land legally belongs to another unit, the right to occupy it for an extended period is paid for in a single up-front payment often when the building is acquired. As explained in the previous section, this suggests recording the payment as the acquisition of the asset. In such a case, when the building changes ownership, the purchase price includes an element representing the present value of future rent payments. In such a case, the land is recorded in the System as if the ownership is transferred along with the building above the land. If, at the end of the land lease, a further payment is liable for extension of the lease for another long-term period, this should be recorded as capital formation and an acquisition of an asset in a manner similar to costs of ownership transfer on purchase and sale of an asset.

### 4. Timber

- 17.318 If a unit is given permission to clear fell an area of natural forest, or to fell at its discretion without any restriction in perpetuity, the payments made to the owner constitute the sale of an asset. (The sale of forested land may be recorded as the sale of the timber and the land separately, depending on the intended use of each.)
- 17.319 The option to have a lease permitting felling at the lessee's discretion but subject to the restoration of the land, in an acceptable forested state, at some time in the future is improbable. It is more common for timber felling to be allowed under strict limits with a fee payable per tree felled (stumpage). The limits are usually such that the harvest of timber is sustainable and so the payments are recorded as rent in the case of a natural forest.
- 17.320 Forests may also be produced assets, in which case the extraction of timber is treated as the sale of a product.
- 17.321 Illegal logging across national borders is prevalent in some countries. In such cases the quantity of timber extracted should be recorded as uncompensated seizure of a natural resource or cultivated asset, as the case may be.

### 5. Fish

- 17.322 Natural stocks of fish with an economic value are an asset and the same considerations apply to them as to other natural resources. It is not realistic to consider that permission would be given to exhaust fish stocks but illegal fishing may either reduce the stock below the point of sustainability or exhaust them altogether. In these cases, uncompensated seizure of the stock should be recorded.
- 17.323 Fishing quota may be allocated in perpetuity or for extended periods to particular institutional units, for example, where fishing is an established way of life and there may be little alternative economic employment. In such circumstances the quota may be transferable and if so, there may be a well developed market in them. Fishing quota may therefore be considered as permits to use a natural resource that are transferable. They are thus assets in the System.
- 17.324 An alternative regime is to issue a permit for a strictly limited period of time, less than a year, to a nominated institutional unit, often a non-resident. This is a common practice in some islands in the South Pacific, for example. In these cases the revenue from the licences should be recorded as rent as under a resource lease.
- 17.325 A licence for recreational fishing has long been considered, by convention, as payment of a tax. This treatment is not changed by the wider considerations for commercial fishing.

### 6. Water

- 17.326 A body of water with an economic value can be sold in its entirety either as part of the land that surrounds it or as a separate entity.
- 17.327 As is the case for fish, it is unlikely that economic ownership would be ceded under a long lease with no preconditions on the quantity and state in which a similar amount of water should be returned to the owner. However, it is possible that surface water could be leased under a long lease for recreational purposes, say. The treatment of such leases should be as for land.
- 17.328 Of increasing concern is the extraction of water from water bodies. Regular payments for the extraction of water (as opposed to the delivery of it) should be treated as rent.

### 7. Mineral deposits

- 17.329 Mineral deposits differ from land, timber and fish in that although they also constitute a natural resource, there is no way of using them sustainably. All extraction necessarily reduces the amount of the resource available for the future. This consideration necessitates a slightly different set of recommendations for how transactions relating to their use should be recorded.
- 17.330 When a unit owning a mineral deposit cedes all rights over it to another unit, this constitutes the sale of the deposit. Like land, mineral deposits can only be owned by resident units; if

necessary a notional resident unit must be established to preserve this convention.

- 17.331 When a unit extracts from a mineral deposit under an agreement where the payments are made each year dependent on the amount extracted, the payments (sometimes described as royalties) are recorded as rent.
- 17.332 The owner (in many but not all circumstances government) does not have a productive activity associated with the extraction and yet the wealth represented by the deposit declines as extraction takes place. In effect, the wealth is being liquidated with the rent payments covering both a return

## R. Sharing assets

- 17.333 There are two ways in which assets may be shared. The asset may be wholly owned by two or more units, each at different points in time. Alternatively, the risks of and benefits from the asset may be shared by two or more units at a single point in time. The two cases require different treatments.
- 17.334 Within the System, even though the asset may be owned by different units at different times, when a balance sheet is drawn up, the whole of the value of the asset is attributed to one unit. For an asset subject to an operating lease, there is no ambiguity. The legal owner is also the economic owner and is the unit that shows the asset on its balance sheet. For an asset subject to a financial lease, the unit showing the asset on its balance sheet is the economic owner. This is consistent with the views that the value of the asset represents the stream of future benefits coming from the asset and the economic owner is the unit entitled to receive these benefits in return for accepting the risks associated with using the asset in production. For an asset subject to a resource lease, the value is shown on the balance sheet of the legal owner.
- 17.335 When licences to use natural resources such as radio spectra, land, timber and fish satisfy the "mobile phone" criteria, a separate asset, described as a permit to use a natural resource,

## S. Permits to undertake a specific activity

- 17.338 In addition to licences and leases to use an asset as described in the previous sections, permission may be granted to engage in a particular activity, quite independently of any assets involved in the activity. Thus permission to extract minerals in return for the payment of rent, for example, is not covered by this type of permit. The permits are not dependent on a qualifying criteria (such as passing an examination to qualify for permission to drive a car) but are designed to limit the number of individual units entitled to engage in the activity. Such permits may be issued by government or by private institutional units and different treatments apply to the two cases.

to the asset and compensation for the decline in wealth. Although the decline in wealth is caused by the extractor, even if the deposit were shown on the balance sheet of the extractor, the rundown in wealth would not be reflected in the extractor's production account because it is a non-produced asset and thus not subject to consumption of fixed capital. (The SEEA 2003 describes a form of satellite account where such a deduction from national income can be made for minerals as well as for other natural resources used unsustainably.) For these reasons, simple recording of payments each year from the extractor to the owner as rent and changes in the size and value of the deposit as other changes in the asset accounts of the legal owner is recommended.

is established. These assets are part of the sub-class of contracts, leases and licences. They are then shown on the balance sheet of the licensee.

- 17.336 Sharing the risks and rewards of an asset between different units at a point in time is unusual. The most common occurrence is that a single unit undertakes the activity in which the asset is used and that unit shares the returns among the owners in the form of distributed property income. However, occasionally it is possible such a single unit does not exist and it is not meaningful to try to create it statistically. This is most common when the participating units are resident in different economies, as may be the case with an airline, or in the case of some unincorporated joint ventures (UJVs). The terms under which UJVs are established are diverse but one form allows that all members share the assets equally. In such cases, the System records the assets shared between the owners in proportion to their ownership shares.
- 17.337 In some joint ventures, one party may contribute an asset as its share of the costs. If this happens, an injection of capital equal to the value of the asset should be recorded followed by the purchase of the asset in question with the ownership of the asset then shared by all parties to the arrangement.

### 1. Permits issued by government

- 17.339 When governments restrict the number of cars entitled to operate as taxis or limit the number of casinos permitted by issuing licences, they are in effect creating monopoly profits for the approved operators and recovering some of the profits as the fee. In the System these fees are recorded as taxes, specifically as other taxes on production. This principle applies to all cases where government issues licences to limit the number of units operating in a particular field where the limit is fixed arbitrarily and is not dependent only on qualifying criteria.

17.340 In principle, if the licence is valid for several years, the payment should be recorded on an accrual basis with an other account receivable/payable entry for the amount of the licence fee covering future years. However, if government does not recognise a liability to repay the licensee in the case of a cancellation, the whole of the fee payable is recorded at the time it is paid.

17.341 The incentive to acquire such a licence is that the licensee believes that he will thereby acquire the right to make monopoly profits at least equal to the amount he paid for the licence. This stream of future income is treated as an asset if the licensee can realise this by on-selling the asset. The type of asset is described as a permit to undertake a specific activity. The value of the asset is determined by the value at which it can be sold or, if no such figure is available, is estimated as the present value of the future stream of monopoly profits. If the payment for the licence is being recorded by government on an accrual basis, the licensee has an asset in his balance sheet under accounts receivable/payable equal to the value of the future payments and so the value of the licence itself should cover simply the excess of the monopoly profits over the cost. If the licence is on-sold, the new owner assumes the right to receive a refund from the government if the licence is cancelled as well as the right to earn the monopoly profits. If the licence was recorded as a single tax payment, the value of the asset is determined by the value at which it can be sold or, if no such figure is available, is estimated as the value of all the future monopoly profits without deduction. The asset first appears in the other changes in the volume of assets account and changes in value, both up and down, are recorded in the revaluation account.

17.342 Governments are increasingly turning to the issuing of emission permits as a means of controlling total emissions. These permits do not involve the use of a natural asset (there is no value placed on the atmosphere so it cannot be counted as an asset) and are therefore classified as taxes even though the permitted “activity” is one of creating an externality. It is inherent in the concept that the permits will be tradeable and that there will be an active market in them. The permits therefore constitute assets and should be valued at the market price for which they can be sold.

### An example

17.343 Suppose a unit, A, contracts with government to buy a permit to operate a casino for 3 years at a total cost of 12. He expects to make monopoly profits of 7 per year because the permit excludes many other casinos from operating. The government may or may not be prepared to make a refund if A relinquished the permit. A may utilise the permit for the whole of the 3 years for which it is valid or he may sell it to unit B at the end of year 1. The recordings under these four possibilities are examined below.

*Case 1: Government does not offer a refund and A keeps the permit for 3 years*

17.344 At the start of year 1, A pays tax of 12 and has an asset worth 21 initially. By the end of the year, the value of the asset has reduced by 7 as an other volume change, because one of the three years for which the permit was initially valid has expired.

At this point the asset is contributing 14 to his net worth. By the end of the second year he writes off another 7 as an other volume change, leaving a contribution to net worth of 7. By the end of the third year the asset is worth zero.

*Case 2: Government does not offer a refund and A sells the permit to B after one year*

17.345 At the start of year 1, A pays tax of 12 and has an asset worth 21 initially. By the end of the year the value of the asset has reduced by 7 as an other volume change, because one of the three years for which the permit was initially valid has expired. At this point he values the asset at 14. However, B is only prepared to pay 13 for the asset and A accepts this. A therefore reduces the value of the asset by 1 as a revaluation change. B then acquires the asset and reduces its value by 6.5 in the other change in volume of assets account in each of the two following years.

*Case 3: Government does offer a refund and A keeps the permit for 3 years*

17.346 At the start of year 1, A makes a payment of 12 to government but this is recorded as a payment of tax of 4 during the year and at the end of the year government has an account payable to A of 8. The value of the permit to A is only the excess of the monopoly profit over the total amount that A will have to pay to government. This starts at 9 (the difference between 7 and 4 for three years) but by the end of year 1 is worth only 6. At the end of the year A's net worth includes an account receivable from government of 8 and 6 as the remaining value of the permit. The total is 14 as in case 1. During the second year, A's account receivable from government is reduced by 4 which is used to pay the tax due in year 2. In that year the value of the permit also reduced by 3 from 6 to 3. At the end of the year, A's net worth includes an account payable from government of 4 and a permit worth 3, total 7 as in case 1. At the end of year 3, both the account payable and the value of the permit are reduced to zero.

*Case 4: Government does offer a refund and A sells the permit to B after one year*

17.347 At the start of year 1, A makes a payment of 12 to government but this is recorded as a payment of tax of 4 during the year and at the end of the year government has an account payable to A of 8. The value of the permit to A is only the excess of the monopoly profit over the account payable. This starts at 9 (the difference between 7 and 4 for three years) but by the end of the year is worth only 6. At the end of the year A's net worth includes an account receivable from government of 8 and 6 as the remaining value of the permit. The total is 14 as in case 1. As in case 2, A has to reduce the value of his permit (in this case from 6 to 5) when he appears to sell the asset to B for 13. In fact, the account payable from government of 8 is transferred to B and the asset is sold for 5. B's net worth is unchanged. He has paid A 13 but received the account payable of 8 and an asset values at 5 in return. In year 2, the account payable is reduced by 4 and a tax payment of 4 is recorded and the permit declines in value from 5 to 2.5.

## Government permits as assets

17.348 A permit issued by government to undertake a specific activity, may be treated as an asset only when all the following conditions are satisfied:

- a. The activity concerned does not utilise an asset belonging to government; if it does the permission to use the asset is treated as an operating lease, a financial lease, a resource lease or possibly the acquisition of an asset representing permission to use the asset at the discretion of the licensee over an extended period.;
- b. The permit is not issued subject to a qualifying criterion; such permits are treated as either taxes or payments for services;
- c. The number of permits is limited and so allows the holder to make monopoly profits when undertaking the activity concerned;
- d. The permit holder must be legally and practically able to sell the permit to a third party.

17.349 Even if all these conditions are satisfied, if in practice the permits are not on-sold, it is not relevant to record the permits as assets. If any of the conditions is not satisfied, the payments are treated as taxes without the creation of an asset in the category of contracts, leases and licences. (There may be an account payable as shown in cases 3 and 4 of the example.)

## 2. Permits issued by other units

17.350 It is less common for units other than government to be able to limit the participation in a given activity. One instance may be when it is either compulsory or desirable to belong to a

## T. Contracts for future production

17.353 Although human capital is not recognised as an asset in the System, there are cases where a contract that entitles the holder to limit the ability of a named individual to work for others may be regarded as an asset. The most prolific and lucrative contracts may be for sports players where, for example, a football club can “sell” a player to another. In fact they are not selling the person, they are selling the exclusive right to have that person work for them. Similar contracts exist for the rights to publish literary works or musical performances. All such contracts are treated as assets of the type entitlement to goods and services on an exclusive basis within the asset class of contracts, leases and licences.

## U. Leases as assets

17.355 As stated at the beginning of this section, contracts underlie many transactions recorded in the System and it is important to

professional association but in this case there is seldom a limit on numbers participating. Another example could be where the owner of property limits the numbers of units allowed to operate on his property for example a hotel with a policy of only allowing one taxi firm to pick up guests. In these sorts of cases, the permits are treated as payments for services. In principle the payment should be recorded on an accrual basis throughout the period for which the permit is valid. There is no reason in principle why such permits could not be treated as assets if they were marketable though this may not be a common situation.

## Non-government permits as assets

17.351 A permit issued by a unit other than government to undertake a specific activity, may be treated as an asset only when all the following conditions are satisfied:

- a. The activity concerned does not utilise an asset belonging to the permit-issuer; if it does the permission to use the asset is treated as an operating lease, a financial lease or a resource lease;
- b. The number of permits is limited and so allows the holder to make monopoly profits when undertaking the activity concerned;
- c. The permit holder must be legally and practically able to sell the permit to a third party.

17.352 Even if all these conditions are satisfied, if in practice the permits are not on-sold, it is not relevant to record the permits as assets. If any of the conditions are not satisfied, the payments are recorded as payments for a service.

17.354 It is possible to imagine that similar contracts may exist for the production of goods in future. An examination of the practice of purchasing the options of future aircraft production revealed, however, that in this case there is no transferable asset and a change of mind on the part of the potential purchaser or failure to deliver on the part of the supplier is settled by a change in the arrangements between the two parties and does not lead to the sale of the option to a third party. If an instance arises where the option to purchase goods is treated in the same way as a contract for a named individual's performance, the same classification would apply.

understand what the implications are for the time of recording and classification of transactions arising from a contract. It

has been noted that permits or licences to use natural resources may constitute an asset as may permits to undertake specific activities and contracts for future production. There is one other condition that may lead to a contract being considered as an asset, which is another circumstance when the contract is transferable to a third party (that is a unit other than the two specified in the original contract).

17.356 Suppose a lease on an apartment agreed some time ago specifies the rental at 100 per month but if the same apartment were to be leased currently it would fetch 120 per month. From the lessor's point of view, the apartment is "encumbered" by the existing lease, that is, it carries a penalty (in this case of 20 per month) because of the existence of the lease. The encumbered value of the apartment is based on the present value of future rental payments taking the existence of the lease into account, that is, the future income stream is 100 for as long as the lease lasts and 120 thereafter (ignoring any allowance for inflation). The unencumbered value of the apartment is a present value based on an income stream of 120 per month from the current period forward. The value to be entered in the landlord's balance sheet is the encumbered value. If he wishes to sell the apartment and the existing tenant had the right to remain at the agreed rental, the encumbered value is all the landlord (lessor) could hope to realise. If he wished to realise the unencumbered value he would have to pay the tenant the difference between the unencumbered value and the encumbered value to be free of the lease. This amount, the encumbrance, can in some circumstances be treated as an asset of the tenant. The circumstances are that it is both legally possible and is practicable for the tenant to sublet the apartment to a third party. Because of the difficulty of identifying when such assets may exist, it is recommended that in practice these assets be recorded only when there is evidence that they have been realised.

17.357 It is possible that the encumbered value of the apartment may be higher than the unencumbered value if rentals have fallen since the lease was agreed. In this case it is the landlord that has a potential asset. The value of the apartment in his balance sheet is still the encumbered value. If the tenant wishes to cancel the lease, he may have to pay the landlord the difference between the encumbered value and the unencumbered value. Once the lease expires or is cancelled, the value of the apartment returns to its unencumbered value.

## V. Other considerations

### 1. Time share arrangements

17.363 One way of sharing an asset offering accommodation is by means of a "time share" arrangement. The same expression, though, may be used for a number of different arrangements.

17.364 One arrangement is similar to purchasing a house except that "ownership" is restricted to a particular period each year but in perpetuity. Exactly the same physical space is available to the owner each year. Another arrangement guarantees

17.358 Assets reflecting such third-party property rights are always transitory. They exist only for the length of the lease and where there is a difference between the encumbered and unencumbered values. As each year passes, they reduce in value because the period during which the difference exists is reduced but may increase if the new rental price increases.

17.359 The market price of the rental of an apartment is the price actually paid by the existing tenant. If, in this example, the original tenant remains in situ and pays 100 per month, this is the market price despite the fact that a new lease would fetch a rental of 120. Only if the original tenant sublets the apartment for 120 would the market price be recorded as 120. Of this, 100 will be paid to the landlord and 20 to the original tenant.

17.360 The example above shows when a marketable operating lease may acquire a value as an asset. Permits to use natural resources and contracts for future production may also give rise to these sorts of third-party property rights assets. So may permits to undertake specific activities even though the original payment was treated as a tax if payable to government. Financial leases do not give rise to these sorts of assets. If the value of the asset being leased increases by more than the payments due under the financial lease, the lessee always has the option of selling the asset, repaying the loan and keeping the difference.

### Marketable operating leases as assets

17.361 A marketable operating lease may be treated as an asset only when the two following conditions are satisfied:

a. The lease specifies a pre-determined price for the use of an asset that differs from the price the asset could be leased for at the current time, and

b. The lessee is able legally and practically to realise this price difference.

17.362 In practice, it is recommended that such assets should be recorded only when the lessee does actually exercise his right to realise the price difference.

accommodation at a given time each year but not necessarily in the same physical space. Other arrangements consist of buying "points" in a scheme that the owner can use to purchase accommodation at different locations and times subject to availability.

17.365 All time-share arrangements have a unit that is responsible for upkeep, maintenance, insurance and so on but there are variations in whether this unit is the ultimate owner of the complex and the subscribers are lessees or whether the unit acts as agent for the group of owners/subscribers. Similarly

there are variations in whether the owner/subscriber may sell or bequeath his ownership to another unit permanently and whether they can sublet occasionally.

- 17.366 The issue of whether participation in the time-share scheme gives rise to an asset will depend on the answers to these sorts of questions. If the owner has a nominated space, available in perpetuity, is eligible to act as part of the management committee for the scheme, can sell or bequeath the allocation at will, then the holding is most likely to be an asset of the same type as a house. If the owner has a fixed agreement to have some form of accommodation available at a given period for a fixed length of time, it is likely that this represents a pre-paid lease but one that could be sub-let occasionally or sold for the rest of the period of the lease as a transferable operating lease. A participant in a point based schemes may have only an account receivable by way of an asset.
- 17.367 Where time-share arrangements are significant, the conditions pertaining to them should be examined in the light of the

general principles described in this section to determine how to record the transactions involved and classify the assets.

## **2. Lost deposits**

- 17.368 Under any form of contract, it is possible that one party makes a payment and the other does not deliver the goods, services or assets promised in the contract. In many cases this gives rise to an account payable/receivable that the first party may reclaim from the second. In some circumstances this may not be possible. For example, cheap airline tickets are often offered on a non-refundable basis. The fact that pre-payments are non-refundable is part of the business plan of the company concerned. Their output should be measured as the value of sales without reduction for the payments by clients who did not avail themselves of the services to which they were entitled. Volume measures of output will depend on the services actually delivered and the impact of the non-refundable deposits will show up as a price effect. It will also be reflected in the consumption expenditure figures of those paying for services they did not in the end take delivery of.

## Part 6 Employee stock options

### W. Introduction

17.369 Stock options are used by some employers as a form of income in kind. On occasion, stock options may also be offered as a means of payment for goods and services. In this case they are usually referred to as share (or stock) appreciation rights. For simplicity within the System, the term employee stock options (ESOs) is used to refer to both.

17.370 A particular form of income in kind is the practice of an employer giving an employee the option to buy stocks (shares) at some future date. The ESO is similar to a financial derivative and the employee may not exercise the option, either because the share price is now lower than the price at which he can exercise the option or because he has left the employ of that employer and so forfeits his option. The following is a description of how stock options are valued, taking into account the probability that not all the options are exercised.

#### 1. Terminology

17.371 Typically an employer informs his employees of the decision to make a stock option available at a given price (the strike price or exercise price) after a certain time under certain conditions (for example, that the employee is still in the enterprise's employ, or conditional on the performance of the enterprise). The time of recording of the employee stock option in the national accounts has to be carefully specified. The "grant date" is when the option is provided to the employee, the "vesting date" is the earliest date when the option can be exercised, the "exercise date" is when the option is actually exercised (or lapses). In some countries the permissible length of time between vesting and exercise date is quite long; in others it is very short.

#### 2. Valuation

17.372 IASB accounting recommendations are that the enterprise derives a fair value for the options at grant date by taking the strike price of the shares at that time multiplied by the number of options expected to be exercisable at vesting date divided by the number of service years expected to be provided until the vesting date. This fair value is applied to the number of service years provided in each year to derive the cost to the firm in the year. The fair value per service year is adjusted if the assumptions about the number of options to be exercised alters.

17.373 In the System, if there is neither an observable market price nor an estimate made by the corporation in line with the recommendations just given, the valuation of the options may be estimated using a stock options pricing model. These

models aim to capture two effects in the value of the option. The first effect is a projection of the amount by which the market price of the shares in question will exceed the strike price at the vesting date. The second effect allows for the expectation that the price will rise further between the vesting date and exercise date.

#### 3. ESOs as a financial asset

17.374 Before the option is exercised, the arrangement between the employer and employee has the nature of a financial derivative and is shown as such in the financial accounts of both parties. It is sometimes possible for these options to be traded or the employer may buy back the options for cash instead of issuing shares. It is possible that multi-national corporations may offer employees in one economy options on shares of their parent company in another country.

#### 4. Recording ESOs in the account of the System

17.375 An estimate of the value of the ESO should be made at grant date. This amount should be included as part of compensation of employees spread over the period between the grant date and vesting date, if possible. If this is not possible, the value of the option should be recorded at vesting date.

17.376 The costs of administering ESOs are borne by the employer and are treated as part of intermediate consumption just as any other administrative functions associated with compensation of employees.

17.377 Although the value of the stock option is treated as income, there is no investment income associated with ESOs.

17.378 In the financial account, the acquisition of ESOs by households matches the corresponding part of compensation of employees with a matching liability of the employer.

17.379 Any change in value between the vesting date and exercise date is not treated as compensation of employees but as a holding gain or loss. During this period, an increase in value of the share price above the strike price is a holding gain for the employee and a holding loss for the employer and vice versa.

17.380 When an ESO is exercised, the entry in the balance sheet disappears to be replaced by the value of the stocks (shares) acquired. This change in classification takes place via transactions in the financial account and not via the other changes in the volume of assets account.

## 5. Variations in the use of ESOs

17.381 There are two consequences of the treatment of employee stock options to be incorporated into the accounts on the grounds of consistency. One relates to other means of rewarding employees that are related to shares in the company. The other relates to the use of stock options to meet expenses other than compensation of employees.

17.382 The first consequence is for variations on the basic employee stock option model. A firm may contribute its own shares to the pension fund. This variation is usually called an employee share plan or a stock ownership plan. Under the 1993 SNA, these shares would not have been recognised as claims by households because such funding was not “arm’s length”. With the change to recording pension entitlements rather than the existing assets to meet them, this objection to recording in the same manner as the IASB recommends disappears and should be followed.

17.383 Another variation on the use of stock options to reward employees is the offer to employees to purchase shares at

advantageous rates under an employee share (stock) purchase plan. Employees are not obliged to accept the offer, but if they do the discount in the share value should be treated as part of compensation of employment. Similarly, if employees receive a benefit relating to the change in a company’s shares but not shares themselves, this payment should be treated as part of compensation of employees.

17.384 The second consequence is the possibility that the enterprise pays for goods and services by means of stock options as well as offering these as part of the compensation package to employees. When this happens, the value of the stock option should be estimated if at all possible by the value of goods and services received in exchange. If this is not possible, then similar valuation methods should be used as in the case of employee stock options. The options should be recorded as a form of trade credit between the issuers and the supplier of the goods and services in the financial account. Such arrangements are usually referred to as share (stock) appreciation rights.