APPENDIX

2 Insurance Transactions and Positions, and Pension Schemes

Insurance Transactions and Positions

Introduction

A2.1 Over the lifetime of insurance contracts, insurance companies produce services to their policyholders for which they do not charge explicitly. These services include financial protection against risk and financial intermediation services that arise when funds collected from policyholders and held as technical reserves are invested. These services are an undifferentiated component of premiums, and need to be derived from amounts accruing to the insurers and amounts accruing to the policyholders. These amounts are reflected in various accounts of the balance of payments depending on the type of the activity—that is, the primary income account, secondary income account, financial account, and, in some cases, the capital account. Service fees explicitly charged by insurance companies (e.g., for agents' commissions, salvage, claims adjustment, actuarial services) are recorded in the goods and services account as auxiliary insurance services. Compilers wishing to improve insurance data first need to understand the current situation regarding crossborder insurance transactions in order to assess their relative importance. The compiler should get acquainted with the situation and gain an understanding by means of interviewing domestic insurance companies, or, in case of resident policyholders and beneficiaries, of assessing the relevance regarding transactions with insurance companies abroad.

A2.2 Two types of insurance schemes are distinguished in the international standards—social insurance and other insurance. Social insurance schemes differ from other insurance in that they are often linked to public insurance programs that provide protection against various social risks (e.g., loss of income due to sickness, old age, or unemployment), and in which participation is often compulsory. Other insurance includes freight insurance on goods imports and exports, life insurance, other types of direct insurance (i.e., nonlife insurance), and reinsurance. Here, the policies are taken out by an institutional unit on its initiative and for its own benefit, independent of any social insurance scheme. The Insurance Transactions and Positions part of the appendix deals with estimating other insurance services.

A2.3 Within other insurance, nonlife insurance and reinsurance are treated similarly, which is a change to previous international standards. However, there are differences between life and nonlife policies leading to different types of entries in the international accounts. For life insurance, the prebenefits period generally extends throughout the entire life of the contract and there is little or no uncertainty about the payment. The payments made over the years are regarded as a financial investment (or saving), which will be returned to the policyholder in later years. Thus the recording of premiums and benefits is made in the financial account.

A2.4 The balance of payments compiler is confronted with different situations regarding the availability of data on cross border insurance activities. The data for estimating exports of insurance services will be best obtained by surveying resident insurance companies. The data collected through this survey should cover data on the nonresident policyholders' share in net premiums, claims, and reserves. This will enable the conceptual adjustments necessary for the recording of these operations in the balance of payments and international investment position (IIP) statistics.

A2.5 The same will not be possible for the imports of insurance services with the provider of the insurance services being nonresident to the compiler's economy. Thus estimates have to be either based on ratios available from the domestic insurance sector, information derived from an international transactions report-

ing system (ITRS), partner economy data, or from a survey that can be used to collect premiums paid and claims recovered from the domestic policyholder. Imports of reinsurance services could be covered by the same survey of domestic insurance companies discussed in the foregoing paragraph. Model form 12 in Appendix 8 is designed for collecting data on insurance services and other related transactions.

Overview of Insurance Accounting: Nonlife Insurance

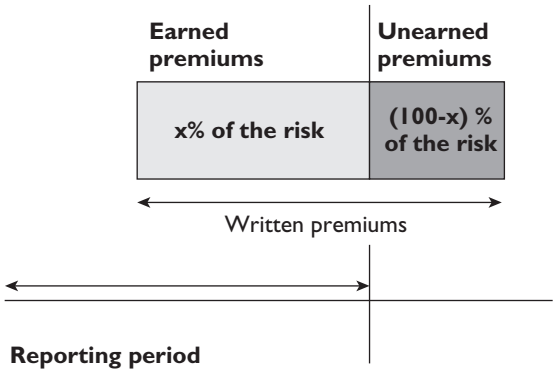
A2.6 In nonlife insurance, policyholders make regular premium payments to an insurance company. In return, the company guarantees financial protection against the occurrence of events, such as accidents, sickness, and fire. "Term-life insurance" (as opposed to "life insurance") is also treated as nonlife insurance in external accounts, because it only provides a stated benefit upon the death of the policy holder, provided that the death occurs within a specific time period. However, the policy does not provide any returns beyond the stated benefit, unlike life insurance policies, which have a savings component that can be used for wealth accumulation.

A2.7 The chief function of nonlife insurers lies in the proper redistribution of premiums earned and other income to individuals of homogeneous groups that have incurred losses. A special form of financial intermediation is also involved, in which funds at the disposal of the insurance unit, called (nonlife) insurance technical reserves, are invested in financial and other assets to generate income. Nonlife insurance technical reserves cover unearned premiums, reserves for unexpired risks, and claims outstanding at the end of the reporting period. For the purpose of financial reporting, these funds and the corresponding investment income, called premium supplements, are assets of the policyholders and liabilities of the insurance companies.

Premiums

Written, unearned, and earned premiums

A2.8 An insurance premium represents the price the insurance company charges for the policy and the service it renders to the policyholder. The concept of unearned premiums is important to the insurance business, as it deals with the recognition of revenue for the time period in which the policy is in force. In the jargon of an insurance company, at the time a policy is first written, the total of the premium may be unearned, as premiums are often fully prepaid at the inception of the policy. Direct written premiums are the amounts charged to and actually paid over the life of a contract by the policyholders for insurance coverage. Each day thereafter, the premium amount accrues to the insurance unit until the end of the policy. At the end of the reporting period, the insurance unit assesses the premium reserves representing the unexpired terms of the policy. The earned premium plus the unearned premium for a policy equals the written premium. The recognition of premiums earned versus premiums received and estimates of claims incurred but not yet reported or resolved can be seen as the application of usual accrual accounting principles.



Net written premiums and reinsurance premiums

A2.9 In most of the cases the direct written premiums constitute the basis for the compiler to determine the amounts of premiums related to direct business and to derive earned premiums at the end of the period. However, an intermediate step may be necessary in case the premium amounts in the accounts of insurers are already further adjusted for reinsurance premiums. Insurance companies purchase reinsurance to protect themselves against the risks of losses above certain thresholds. If a risk is reinsured, the insurance company will cede to a reinsurer (i.e., another insurance company) a part of the premiums in proportion to the risk assumed. The other part is used by the insurance company to finance the risk that remains.[1]

[1]There are multiple reinsurance types and, hence, methods for ceding business to a reinsurer.

A2.10 On the other hand, insurance companies themselves may act as a reinsurer and accept indirect business from another insurance company in form of assumed premiums. Thus gross written premiums in insurers' accounts could include both written premiums charged to policyholders (also called direct written premiums)[2] and assumed reinsurance premiums from insurance companies. Net written premiums then constitute gross written premiums minus ceded reinsurance premiums.[3]

Claims

Insurance claims[4] incurred and paid

A2.11 At the time the policy becomes effective, the policyholder has transferred the uncertain loss of assets to the insurance company in form of potential claims in exchange for the premium paid. Claims incurred refer to the expected financial obligations that cover the insured risks as provided by the policy. Claims may be known or unknown by the company, reported or unreported. Paid claims occur when actual payments of cash have been made to claimants for insured events of the current or previous periods. To properly match the income earned (premiums) of the insurance company with the expenses incurred in the relevant period, provisions are made in the insurers' accounts as of the accounting date for claims incurred that will be settled after the current accounting period. Claim associated expenses (also called claim/loss adjustment expenses, incurred to investigate and settle losses) are generally considered part of the claim cost for an insurance company.

A2.12 In insurance accounting, claims incurred for the accounting period are calculated as follows:

Claims/losses paid during the accounting period for nonlife insurance contracts
Minus Loss reserves outstanding (at the beginning of the accounting period)
Plus Loss reserves outstanding (at the end of the accounting period)
Equals Claims incurred

A2.13 Loss reserves are the unpaid part of claims incurred as of the accounting date, as explained ahead in Insurance technical reserves and expected income attributable to policyholders.

Insurance technical reserves and expected income attributable to policyholders

Insurance technical reserves

A2.14 An insurance company must apply sound methods to estimate potential claim liabilities on its balance sheet to cover all expected and unexpected claims and expenses, as there is always a delay between the times the insured events occur and the times the claims are reported and settled. The insurance company has incurred a potential liability at the time the policy becomes effective. Until the insured incident occurs, the potential liability is reflected in unearned premiums and the other components of insurance technical reserves.

A2.15 Unearned premiums are established as a liability becauseinsurance companies receive premiums in advance of some or all of the policy period that is covered by the policy. Following the accrual principle, these premiums cannot be recognized as revenue until they are earned. Also, insurance companies may need to refund these premiums to policyholders if the policy is cancelled before its stated ending date.

A2.16 The nonlife insurance technical reserves set aside on the balance sheet (see Example A2.2 ahead) for future commitments that arise out of insurance contracts (including any related administration expenses, taxes, etc.) consist of mainly two components:

a. *Unearned premium reserves* are that part of premiums written that apply to the unexpired part of the policy period. These reserves are to be carried forward to the following accounting period. The insurance policy period for which the premium is paid in advance and during which the insurance company bears the risk does (usually) not correspond with the reporting period. If an insurance company expects its unearned premium reserves to be insufficient to cover estimated claims and expenses in the following accounting period from contracts concluded by

[2]Direct written premiums are the premiums received from policies issued directly by the primary insurance company to its policyholders.
[3]The different meaning of "net" in the context of the *BPM6* should be noted: "Net" as applied to premiums implies that the service charge for the insurance services has been deducted from actual premiums to record the premiums in the secondary income account, whereas here net written premiums are net of ceded reinsurance premiums. See the *BPM6*, paragraph 12.42.
[4]Claims incurred are also called losses incurred in insurance accounting.

Example A2.1. Illustration of insurance company profit and loss account		
In million U.S. dollars	2012	2011
INCOME		
Gross premium written	5,488.9	5,255.7
Reinsurance premium ceded	–288.7	–272.0
Net premium written	5,200.2	4,983.7
Premium assumed	300.0	250.0
Net changes in unearned premium reserves	–35.6	–24.6
Net earned premium	5,164.6	4,959.1
Interest and dividend income	793.8	704.4
Gains and losses on investments (net)	130.2	291.4
Income on investment property	194.4	186.4
Other income	89.1	89.4
Total operating income	**6,672.1**	**6,480.7**
EXPENSES		
Claims incurred including claims handling costs (nonlife)	–1,610.9	–1,465.8
Claims and benefits paid (life)	–2,369.8	–2,226.3
Change in actuarial reserve	–591.1	–738.0
Reinsurers' share of benefits and claims	205.9	160.8
Policyholder dividends and bonuses	–173.4	–166.7
Insurance benefits and claims (net)	–4,539.3	–4,436.0
Acquisition costs	–692.4	–647.4
Operating and administrative expenses	–534.2	–509.8
Interest payable	–44.6	–41.8
Other expenses	–51.7	–29.3
Total operating expenses	**–5,862.2**	**–5,664.3**
Profit or loss from operating activities	**809.9**	**816.4**
Finance costs	–7.2	–6.0
Share of profit or loss of associates	2.8	1.8
Profit or loss before taxes	805.5	812.2
Income taxes	–103.5	–138.4
Profit or loss for the period	*702.0*	*673.8*

the end of the accounting period, it may create so-called unexpired risk provisions. Some insurance companies also separately disclose provisions to meet costs of discounts to be granted to certain policyholders.

b. *Estimated loss reserves and reserves for claims incurred but not reported* are provisions set aside to meet the estimated costs of settling claims that have occurred up to the end of the accounting period from policies currently in force and policies written in the past, after the deduction of amounts already paid. This amount includes funds for unpaid claims, claims adjustment and handling expenses known but not yet settled, and estimates for claims incurred but not yet notified (so called incurred but not reported) by the balance sheet date. Insurance companies may also set aside funds for preventing cash-flow depletion for significant unforeseen events or catastrophes, when many policyholders may be affected at about the same time. These kinds of reserves should, however, be taken into account only if there has been an event that triggered the increase of liabilities vis-à-vis the policyholders.

Example A2.2. Excerpt from an insurance company balance sheet

Insurance company X: Insurance liabilities at year end

In million U.S. dollars	Life	General	Total
Participating contracts	12,383.7	–	12,383.7
Unit-linked nonparticipating contracts	9,998.4	–	9,998.4
Other nonparticipating contracts	9,359.1	–	9,359.1
Outstanding claims provisions	–	1,111.8	1,111.8
Provisions for claims handling expenses	–	78.4	78.4
Provisions for claims incurred but not reported	–	480.6	480.6
Provisions for unearned premiums	–	396.4	396.4
Provisions for unexpired risks	–	3.0	3.0
Total	**31,741.2**	**2,070.3**	**33,811.5**

Otherwise these amounts are seen as internal reserves set aside for saving purposes and should not be included in nonlife technical reserves of the balance of payments and IIP.

Expected income (attributable to policyholders)

A2.17 Insurance companies generally distinguish two sources of income, from investing shareholder (equity) capital and from investing policyholders' funds (also referred to as holdings of own assets and technical reserves, respectively). The investment of policyholders' funds is a distinct feature of insurance companies and made possible because of the time span between the collection of premiums and the eventual loss settlements.

Using the Insurance Companies' Accounting Data to Derive Balance of Payments and IIP Components

A2.18 Box A2.1 summarizes the *BPM6* methodology as described in Annex 6c of the *BPM6* regarding the balance of payments data on nonlife insurance. Although the terms used to describe transactions of the insurance sector in the *BPM6* and the *2008 SNA* are based on and in strong accordance with the accounting terminology that insurance companies use to set up their accounts (as explained in Employment-Related Pension Schemes and Social Security Schemes of this appendix), the compiler may need to make certain adjustments before data can be used to derive relevant balance of payments entries according to the *BPM6*. These adjustments are necessary, for instance, to determine and differentiate the amounts of premiums related to direct business with policyholders, and the amounts related to reinsurance (both ceded and assumed), as further explained ahead.

A2.19 The paragraphs ahead aim at identifying the terms and the necessary adjustments needed to compile balance of payments data. All entries relate to nonresident policyholders.

Secondary income account: Net premiums earned

A2.20 Net premium earned equals premiums earned *plus* premium supplement *minus* service charge. For the compilation of balance of payments purposes according to the *BPM6*, there is no netting between direct insurance and reinsurance. Therefore, the compiler should distinguish between the amounts related to direct business, and the amounts related to reinsurance (both ceded and assumed). This means that direct written premiums received from policyholders should not be netted for any premiums ceded to reinsurers, and should exclude premiums assumed from other insurance companies. The rationale is that the direct insurance company is fully liable vis-à-vis the policyholder, regardless

Box A2.1 *BPM6* Entries in the Balance of Payments Related to Nonlife Insurance Transactions

Services account

The insurance service charge is derived implicitly with the following formula (see *BPM6*, Appendix 6c):

Insurance services = gross premiums earned
plus premium supplements (investment income attributable to policyholders in insurance)
minus claims due/incurred (adjusted for claims volatility, if needed)

Primary income account

Investment income attributable to policyholders in insurance (equal to premium supplements)

Secondary income account

Net premiums earned = gross premiums earned
plus premium supplements
minus insurance services
Claims payable/due

Financial account

Changes in nonlife insurance technical reserves (e.g., for policyholders' funds invested)

Currency and deposits (for actual premiums written and claims paid)

of whether part of the risks are reinsured (see *2008 SNA*, paragraph 17.57).

A2.21 The written premiums from direct business are used to determine the earned premiums from the insurers' accounts of the reporting period.[5] From the business with nonresident policyholders:

Written premiums (for direct business only)

Plus Unearned premium reserve (at the beginning of the reporting period)
Minus Unearned premium reserve (at the end of the reporting period)
Equals Premiums earned (from direct business)

A2.22 The adjusted written premiums and derived earned premiums constitute the first two components for the compilation of the insurance accounts according to international standards. Written premiums correspond to premiums received in the *BPM6*, and are recorded in other investment—for example, as an increase in the insurance companies' deposits abroad.

A2.23 In Example A2.1 (Illustration of insurance company profit and loss account), to determine the earned premiums, the compiler would have to use the gross premiums written (not taking into account the reinsurance premiums ceded) excluding premiums assumed, and the net change in unearned premium reserves, and inquire about the share of nonresident policyholders. Benefits are payments to life insurance policyholders and would need to be separated from nonlife claims paid.

Secondary income account: Claims payable/due

A2.24 Claims incurred in insurance accounts correspond to claims payable in the *BPM6*, and are recorded in the secondary income account of the balance of payments (see *BPM6*, paragraph 12.44), while claims paid are recorded in other investment—for example, as a decrease in the insurance companies' deposits abroad. The calculation for claims incurred is set out in paragraph A2.12.

A2.25 For insurance companies to accurately estimate future loss payments, especially for claims unknown, predictions are in general based on historical data of settlement and reporting patterns of homogenous groups of policyholders, and actuarial methods that take account of uncertainties to determine the amount of reserves. Certain lines of business with expected individual large risks involved, with high frequency of losses, or with cumulative risks (such as natural disasters) are likely to be hedged by insurance companies through customized reinsurance.

A2.26 In case of a significant unforeseeable event during the accounting period, the derived insurance services rendered by the insurance company to the policyholders should not turn into a negative figure—that is, neither the volume nor the price of insurance services should be affected by the volatility of claims. The

[5]The results are measured on an accounting period basis, which could be the calendar or fiscal year, as opposed to the policy period.

2008 SNA therefore recommends the use of adjusted claims incurred when measuring the output of insurance companies. The adjustment would be negative in periods when large values of claims are incurred, thus increasing the value of the service by reducing the difference between actual claims in a particular period and a normally expected level of claims.

A2.27 There are three different accounting methods to help estimate the expected level of claims (see *BPM6*, paragraph A6c.22): (1) the expectations approach is based on expected claims using smoothed past figures of gross claims incurred or ratios of gross claims over premiums, applied to current premiums; it replicates the ex-ante model of insurance companies when pricing the premiums based on expectations of loss; (2) the accounting approach uses ex-post data of observed claims incurred and is based on changes in insurance companies' equalization reserves and changes in own funds; and (3) the sum of costs plus "normal" profit approach measures output by taking the sum of costs plus an estimate of normal profit based on smoothed past actual profits.

A2.28 According to international standards, exceptionally high claims following a natural disaster or catastrophe are recorded as secondary income or a capital transfer provided by the insurance company to the policyholders. The rationale for treating certain claims as capital transfers is that these claims do not affect the level of disposable income of the claimants. The net worth of policyholders will thus show the effects of the destruction of assets and an offsetting increase in financial assets from the capital transfers (see *2008 SNA*, paragraph 17.40, and *BPM6*, paragraph 13.24). The entries in the secondary income account recognize the intermediation effect of direct insurance by transferring a pool of relatively small premiums from many policyholders to a small number of large claims from some of these policyholders.

Primary income account: Premium supplements

A2.29 When a policy is written, insurance companies receive cash, which is at their disposal to invest until claims are later reported and settled. Distinguishing between technical reserves and own assets is relevant for deriving the insurance services according to the *BPM6.*

A2.30 In international standards, the income earned from the investment of insurance technical reserves are called premium supplements (see *BPM6*, paragraph 11.83) and are imputed as primary income receivable by policyholders, as the technical reserves are assets of the policyholders. This income is retained by the insurance companies in practice. The same amount is then shown within the equation as payable to the insurance company by the policyholder as premium supplements in the services account.

A2.31 In Example A2.1, the income retained from investing policyholders' funds is called policyholder dividends (and bonuses). Bonuses are amounts in life insurance policies that are explicitly attributed to policyholders each year. The compiler would need to inquire about the estimated (prorated) share of income payable to nonresident policyholders for nonlife business.

Financial account: Insurance technical reserves

A2.32 Reserves are increased or reduced when premiums are earned and claims are paid from outstanding loss reserves. In the accounting system of the company, the payment is matched to the loss reserve and a corresponding entry is made to reduce the reserve for the payment made to the policyholder. At the end of the accounting period, insurance technical reserves can decrease in net terms when claims paid out of reserves exceed amounts added to respective reserves.

A2.33 These reserves for unearned premiums and against outstanding insurance claims are recorded in the other investment category of the financial account under Insurance, pension, and standardized guarantee schemes (see *BPM6*, paragraphs 5.64, and 7.63–7.64). The split of these reserves between liabilities to residents and nonresidents may have to be undertaken according to a suitable indicator such as premiums earned or written.

A2.34 For the recording of insurance technical reserves in the IIP, flows that result from exposure to the effect of exchange rates will have to be taken into account (see Chapter 9 for more details on other changes in financial positions).

Goods and services account: Deriving insurance services

A2.35 All components are now available to the compiler to derive the insurance service charge according to the *BPM6*, paragraph 10.111.

A2.36 The implicit insurance service the insurance company renders is a measurement of the output of the insurance industry. The service provided to residents and nonresidents is derived by determining the output of the insurance in a way that mimics the accounting practices based on premiums earned and losses incurred pertaining to the accounting period:

Gross premiums earned (from direct business)

Plus	Net income from investments attributable to policyholders (premium supplements)
Minus	Estimated claims incurred (adjusted for claim volatility, if necessary)
Equals	Insurance service charge

Data sources

Conducting a survey of domestic insurance companies

A2.37 The compiler can obtain most comprehensive data for exports of insurance services from surveying resident insurance companies. To enable an appropriate coverage of the domestic insurance sector, a survey frame should be available, including a list of insurance companies, which may be provided by the authority issuing the licenses for insurance business. Insurance agents and brokers are usually required to register with insurance authorities; therefore, a list of these businesses should be readily available from official sources (see also Box A2.2).

A2.38 Through surveying domestic insurance companies, the compiler is able to request information on a conceptually correct basis as explained in previous paragraphs—that is, premiums earned and claims due—as well as insurance technical reserves and the income earned on those reserves.

A2.39 Resident insurance companies should report details of premiums and claims in respect of business obtained from abroad and in respect of international reinsurance flows. In addition, these companies may be asked to report details of premiums and claims in respect of insurance written by them on imports.

A2.40 Supervisory institutions may be a source for qualitative aggregate information. Although balance sheets and profit and loss account information from those institutions may have the caveat of long timeliness, they may be combined with information available from shorter-term external sector statistics (e.g., from the ITRS) or administrative data, for estimating an interim (moving) measure for the distinction between national and international business.

A2.41 Insurance terms may differ due to different accounting practices that are being applied in worldwide insurance accounting.[6]

A2.42 A model form for insurance survey is presented in Appendix 8.

Box A2.2 Insurance Sales Agents and Brokers

Insurance sales agents or brokers commonly sell one or more types of insurance, such as property and casualty, life, health, disability, and long-term care. They either work exclusively for one insurance company based on a contractual agreement, or work independently and represent several companies at the same time. As facilitators, agents help match insurance policies for their clients with the company, and help policyholders settle their insurance claims. Insurance agents and brokers are usually required to register with insurance authorities; therefore, a list of these businesses should be readily available from official sources. An exploratory survey could be undertaken to identify agents and brokers placing insurance abroad.

The agent's commission is generally a percentage of each premium. If the insurance company that is surveyed collects premiums directly from its policyholders, the premiums balance receivable would include the full amount of premiums due from policyholders. If agents act as intermediary between insurance company and policyholder, there are generally two possibilities. If the insurance company uses an agent but charges directly the policyholders for premiums due, the commissions payable to the agent will not reduce the amount that is received and recorded for premiums. If the agent collects premiums on behalf of the insurance company, the premium shown in the insurance accounts would normally be recorded net of commissions. The compiler should be aware of the possibility that premiums could be collected by agents but not yet transferred to the insurance company (uncollected premium balances), or that commissions have been deducted (premiums generally should be recorded gross of agent commissions, and commissions for agent services should be separately recorded). Insurance companies keep periodic statements of the sums due and owed to an agent, sometimes referred to as agents' balances.

[6]A joint International Accounting Standards Board and Financial Accounting Standards Board project on the accounting of insurance contracts currently focuses on the recognition and measurement of insurance contracts, and the presentation of income and expenses arising from those contracts; see http://www.ifrs.org/Current+Projects/IASB+Projects/Insurance+Contracts/About+Insurance.htm.

Insurance technical reserves for life and nonlife insurance policies derived from standardized reporting forms (SRFs) in monetary and financial statistics (MFS)

A2.43 The MFS can be a data source for compiling insurance technical reserves. In MFS, insurance technical reserves receive separate treatment and appear as liabilities in the accounts of insurance corporations and pension funds in the other financial corporations' subsector (see Example A2.3).[7] In many economies such reserves constitute a significant contribution to the total liabilities of the financial corporations' sector. The separate identification therefore supports the analysis of activities of this particular subsector, which is reflected in their specialized treatment in national financial reporting and international statistical standards.

A2.44 Technical reserves have three components. The first component is the liabilities account for obligations for prepaid insurance premiums received from all resident and nonresident policyholders. Included are prepayments for both life insurance and nonlife insurance policies, as well as premium prepayments for reinsurance (see *Monetary and Financial Statistics Manual and Compilation Guide (MFSM-CG)*). The second component of insurance technical reserves comprises changes in reserves for claims outstanding, which insurance companies hold in order to cover the amounts for (valid) claims that are not yet settled or claims that may be disputed. The third component covers the obligation from net equity of households in life insurance corporations and pension funds reserves, which reflect the present value of the insurance corporation's estimated (actuarial value of) liabilities for future claims by life insurance policyholders.

Example A2.3 Excerpt from the sectoral balance sheet for the financial corporations subsector (liability side)

Insurance technical reserves
Net equity of households in life insurance reserves
Residents
Nonresidents
Net equity of households in pension funds
Residents
Nonresidents
Prepayment of premiums and reserves against outstanding claims

A2.45 The assets account in the sectoral balance sheet is used to record the amount of financial corporations' prepayments of premiums to insurance corporations. It also includes prepayments that insurance corporations have made to other insurance corporations (i.e., to reinsurance companies abroad). In general, the asset category is relatively minor compared to the liability account. Prepayment of insurance premiums is the only category of insurance technical reserves for which there are both asset and liability accounts in the sectoral balance sheet. Report 4SR of the monetary statistics is the report form used to compile the data on all resident insurance corporations and pension funds.

A2.46 MFS do not contain income statements (see *MFSM-CG*). Data on the investment income from insurance reserve assets could be estimated by applying an appropriate return rate calculated as a specified percentage of the amount of the outstanding balances.

Nonlife insurance services—Deriving insurance services payable from incomplete information

A2.47 The compiler may not always be able to compile a comprehensive set of accounts in order to approximate insurances services exports in a given reporting period, especially for shorter time periods (e.g., quarterly data). Therefore, in conjunction with the national accounts compiler, the insurances services provided to the rest of the world could be estimated from the total estimated output[8] of the insurance sector and the average ratio of total premiums earned from abroad to total premiums earned (see Example A2.4). Premiums are a better indicator than claims for determining the share of insurance services attributable to the rest of the world. The reason is that claims are contingent on events incurred to trigger payments, and there may be periods without claims or with irregularly large claims. From the ITRS, there may be data available on a cash basis of premiums received from abroad, and claims paid.

[7]Other financial corporations are part of other sectors in the *BPM6* classification of institutional sectors (see *BPM6*, Table 4.2).

[8]See *2008 SNA*, paragraph 6.185, on the calculation of output for the insurance industry (total premiums earned *plus* premium supplements *less* adjusted claims incurred).

Example A2.4 Estimation of insurance services provided to nonresidents

Estimated domestic insurance output in period x (could also be based on period x–1)	50
Total premiums written	200
of which premiums received/written from abroad	70
Estimated insurance service provided to nonresidents	17.5 = 50*70/200

Import of insurance services with and without an insurance company resident in the reporting economy

A2.48 Insurance services receivable (imported) are much more difficult to capture, as the compiler is not able to request information directly from insurance corporations. Data from an ITRS will be on a cash basis and capture premiums paid and claims received. An appropriate ratio derived from the domestic insurance industry can be applied to premiums paid. If this ratio cannot be obtained, the compiler should estimate the ratio by using the long-term relationship between premiums and claims. The ITRS provides information on economies to which premiums are paid and from where claims are received. The compiler could contact the balance of payments compilers in those economies to obtain appropriate ratios for their services estimates.

Overview of insurance accounting: Reinsurance

A2.49 Reinsurance is the primary vehicle used by insurance companies to diversify, mitigate, and manage their risk. Reinsurance is the acceptance by the reinsurance company of all or part of the risk of loss of the primary insurance company (also called the ceding company). There are different types of reinsurers—those whose basic business is reinsurance, and those that conduct reinsurance business in addition to their primary business. Reinsurance companies either use direct negotiation channels, or contact primary insurance companies through brokers or intermediaries to whom they pay commissions as a percentage of the reinsurance premium.

A2.50 There are two principal forms of reinsurance, pro rata and excess of loss reinsurance, which increase the primary insurance company's capacity to accept larger exposures than normal. In a pro rata reinsurance contract, the reinsurers and reinsured company share a proportional part of the premiums

Example A2.5 Deriving transactions related to nonlife insurance

This example presents how to calculate/estimate balance of payments entries related to nonlife insurance. It is assumed that the balance of payment compilers received the following information on nonlife insurance from resident insurance companies:

Total premiums received from abroad	170
Total claims paid to abroad	160
Net increase in technical reserves due to prepayments	30
Net increase in technical reserves due to claims not yet paid until end of year	20
Adjustment for volatility for claims payable during the year	–50
Total investment income earned from investment of assets	40
of which ratio of attributable to nonresident policyholders	30 %

Based on the foregoing information:

(1) The following calculation should be executed:

Gross premiums receivable from abroad = Total premiums received from abroad—Net increase in technical reserves due to prepayments = 170 – 30 = 140

Claims payable to abroad = Total claims paid to abroad + Net increase in technical reserves due to claims not yet paid = 160 + 20 = 180

Expected long-term level of claims = Claims payable + Adjustment for volatility in claims payable = 180 + (–50) = 130

Premium supplements (investment attributable to policyholders) (debits) = Ratio of attributable to nonresident policyholders*Total investment income = 30%*40 = 12

Example A2.5 Deriving transactions related to nonlife insurance (*concluded*)

(2) The following balance of payments transactions should be derived:

Current Account:

Goods and services—Insurance services (credits)

Gross premiums receivable from abroad + premium supplements—expected long-term level of claims = 140 + 12 – 130 = 22

Primary income – Other investment—Investment income attributable to policyholders in insurance (nonlife insurance—premium supplements) (debits) = 12

Secondary income—Other current transfers—Net nonlife insurance premiums (credits)

Gross premiums receivable + premium supplements—insurance services = 140 + 12 – 22 = 130

Secondary income—Other current transfers—Nonlife insurance claims (debits)

Claims payable to abroad = 180

Financial Account:

Other investment—Insurance, pension, and standardized guarantee schemes—Nonlife insurance technical reserves (increase in liabilities to policyholders)

Net increases in technical reserves due to prepayments of premiums + net increase in technical reserves due claims not yet paid (incurred claims not yet paid) = 30 + 20 = 50

Other investment—Currency and deposits (increase in assets)

Premiums received from abroad—claims paid to abroad = 170 – 160 = 10

Recording of transactions for nonlife insurance in the balance of payments statistics (economy of insurance companies)

Year	Credit	Debit
Current account		
Services		
Insurance and pension services	22	
Primary income		
Other investment		
Investment income attributable to policyholders in insurance, pension schemes, and standardized guarantee schemes		12
Secondary income		
Financial corporations, nonfinancial corporations, households, and NPISHs		
Other current transfers		
Net nonlife insurance premiums[1]	130	
Nonlife insurance claims[1]		180
	Net acquisition of financial assets	**Net incurrence of liabilities**
Financial account		
Other investment		
Deposit-taking corporations, except the central bank		
Currency and deposits	+10	
Insurance, pension, and standardized guarantee schemes		
Nonlife insurance technical reserves[1]		+50

[1]Supplementary item

and losses of the primary insurance company's pro rata reinsured business. In an excess of loss contract, the primary insurance company pays the amount of each claim up to a limit determined in advance, and the reinsurer pays the amount of the claim above that limit either per risk, per occurrence, or if reinsured losses incurred in aggregate exceed an agreed amount. A reinsurer can cede all or part of the reinsurance it has previously assumed to another reinsurance company. This transaction is called retrocession.

A2.51 International standards measure transactions of reinsurance companies in a way similar to transactions of direct nonlife insurance companies (see Overview of insurance accounting: Nonlife insurance). However, there are some peculiar payments in reinsurance. The primary insurance company remits to the reinsurer the net premium after deducting the so-called agreed upon ceding commission. This commission is paid by the reinsurer to reimburse the ceding company for its acquisition expenses and other costs incurred to place the business with the reinsurer.

A2.52 Another commission often found in reinsurance agreements provides for profit sharing. The reinsurer and the ceding company generally agree to a predetermined percentage of the profit realized by the reinsurer on the contracts ceded by the primary insurance companies and the cedants' share of such profits, called profit commission.

A2.53 As is the case for the primary insurance company, the premiums for the reinsurer are generally not fully earned when received, so provisions are made for the unearned part of the written premiums. Earned premiums are calculated by the sum of premiums written plus the unearned premium reserve at the beginning of the reporting period, less the unearned premium reserve at the end of the reporting period. The amount of the unearned premium reserve less the ceding commission is the amount the reinsurer would have to pay back, in case the contract was canceled.

A2.54 Reinsurers are also required to establish reserves for claims outstanding and for expenses associated with settling and adjusting these claims. Claims or losses incurred are calculated as claims incurred and paid during the current period, plus claims incurred during the current period that are unpaid at the end of the period.

A2.55 The management of the reserves may differ from those of primary insurance companies due to the longer duration of contracts and the magnitude of losses. Conceptually, the income reinsurers earn from investing the reserves is treated similar to that of primary insurers, as investment income payable to the primary insurance company and returned as premium supplement. A primary insurance company thus pays investment income to its policyholders based on the whole of the premiums earned, and receives investment income from the reinsurer corresponding to the amount of the premiums it has ceded to the reinsurer.

A2.56 The value of output of the reinsurer can be expressed with the following formula:

Gross premiums earned less commission payable

Plus	Net income from investments (premium supplements)
Minus	Claims due (adjusted for claim volatility, if necessary) and profit commission payable
Equals	(Re-) insurance services

A2.57 International accounting standards prohibit the offsetting of reinsurance assets against related liabilities and require transactions between the direct insurer and its clients on the one hand and the holder of a policy and reinsurer on the other to be recorded as entirely separate sets of transactions. In insurance companies' accounts of ceding companies net premiums written (received) generally refer to gross premiums written (including direct and reinsurance assumed) *less* the premiums ceded proportionally to reinsurers. Indirect business accepted from another insurance company is included in gross premiums written as reinsurance assumed.

A2.58 As with direct insurance, in exceptional cases, some part of reinsurance claims may be recorded as capital transfers rather than as current transfers. All other entries in the international accounts are derived and recorded similarly to nonlife insurances (see Example A2.6).

A2.59 Services receivable from reinsurance companies abroad[9] can be best captured through surveying the domestic recipient insurance company, as described in paragraphs A2.37–A2.42.

Example A2.6 Estimation of insurance services in indirect insurance

Premiums residents pay to nonresident insurance companies	80
Claims received from nonresident insurance companies	50
Average long-term ratio between insurance service charge and premiums paid	15 %
Estimated insurance services	12 (= 80*15%)
Net premiums	68 (= 80–12)
Claims received	50

[9]Reinsurance is often placed with reinsurance companies abroad and therefore is often cross border.

Overview of insurance accounting: Life insurance

A2.60 There are three distinguishing features for life insurance contracts: the relationship between premiums and claims/benefits over time, the length of time for which the contract is written, and the certainty that a claim/benefit will occur. Practically, the insurance company determines the relationship between premium and benefit by combining the saving element of a single policy with actuarial calculations of an insured population.

A2.61 Actuarial calculations are based on valuation assumptions with regard to mortality, disablement, and morbidity, taking into account the premiums to be received in the future, the investment earnings potential, and all the future liabilities under the conditions of each current insurance contract. A policyholder who cancels the policy before the agreed expiration date is generally entitled to partial benefits from the insurer. Benefits are thus always paid to the policyholder or to his or her beneficiary. For these reasons, part of the premiums paid by the policyholders may be regarded as savings and part of the benefits received by the beneficiaries as withdrawals from savings. The recording, therefore, of premiums and payments of benefits takes place in the financial account rather than in the secondary income account (see *BPM6*, paragraph 5.65).

A2.62 The actuarial reserves represent the present value of the future cash flows payable at the end of the insurance policy, rather than claims in the current period. Actuarial reserves accrue to particular policyholders depending on amounts guaranteed in their policies. Thus the total liability of the insurer is the sum of the actuarial reserves for every individual policy (see Example A2.1).

A2.63 Premium supplements are more significant for life insurance than for nonlife insurance (see *2008 SNA*, paragraphs 6.193 and 6.197). Part of the total income earned on the reserves for policyholders—that is, the income allocated to actuarial reserves—is allocated to the (individual) policyholder and added to the insurance technical reserves.

A2.64 Changes in life insurance actuarial reserves are derived as follows:

	Gross premiums earned
Plus	Part of premium supplements allocated to actuarial reserves
Minus	Benefits due
Equals	Changes in life insurance actuarial reserves

A2.65 Policyholders with life insurance policies may be eligible for additional bonuses in each year distributed to the policyholders by means of increasing the future insurance benefits in addition to a minimum guaranteed amount. Generally, life insurance products mentioning "with profit policy" or "participating policy" means the policy and thereby the policyholder is eligible to receive these bonuses. They are included in investment income attributable to life insurance policyholders and recorded as premium supplements in the income account (see *BPM6*, paragraph 11.81).

A2.66 The value of output of life insurance can be expressed with the following formula:

	Gross premiums earned
Plus	Bonuses (premium supplements)
Minus	Benefits due
Minus	Net increases in life insurance actuarial reserves
Equals	Life insurance services[10]

A2.67 Similar to nonlife insurance, reserves for unearned premiums and against outstanding insurance claims are recorded in the other investment category of the financial account under *Insurance, pension and standardized guarantee schemes*; but in addition there are the actuarial reserves for life insurance and with-profit insurance that represent amounts set aside for payments of benefits in future:[11]

	Unearned premiums in accounting period
Plus	Increase in reserves for benefits outstanding
Plus	Changes in life insurance reserves (actuarial reserves and reserves for with-profit insurance)

A2.68 Box A2.3 summarizes the *BPM6* methodology as described in Annex 6c of the *BPM6* manual, regarding the balance of payments data on life insurance.

[10]Alternatively, the service can be calculated as follows: total investment income earned on the life insurance technical reserves less the part of this investment income actually allocated to the policyholders and added to the insurance reserves (see *2008 SNA*, paragraph 6.199).

[11]In the commercial accounts of insurance corporations, some of them may be described as provisions for bonuses (and rebates). These comprise amounts intended for policyholders but not yet credited to policyholders, because these are often used by the insurer for smoothing benefits over time (see also *2008 SNA*, paragraph 13.77).

Box A2.3 *BPM6* Entries in the Balance of Payments Related to Life Insurance Transactions

Services account

The insurance service charge is derived implicitly with the following formula (see *BPM6*, Appendix 6c):

Insurance services = gross premiums earned
plus bonuses (investment income attributable to life insurance policyholders)
minus benefits due/incurred
minus net increases (*plus* net decreases) in life insurance actuarial reserves

Primary income account

Investment income attributable to policyholders in insurance (equal to premium supplements)

Financial account

Changes in life insurance reserves
Currency and deposits (for actual premiums written and benefits paid)

Example A2.7 Excerpt from an insurance company profit and loss accounts

Insurance company X: Gross premiums by life insurance business line and region (in million U.S. dollars)

	Economy A	Economy B	Economy C	Economy D	Other	Total
2012						
Individual insurance	545.4	123.0	81.8	72.5	133.0	955.7
Group insurance	1,586.4	78.8	36.0	40.4	–	1,741.6
Unit-linked life insurance	74.9	96.1	–	14.1	4.6	189.7
Reinsurance	–	–	–	–	6.9	6.9
Gross premiums life insurance	**2,206.7**	**297.9**	**117.8**	**127.0**	**144.5**	**2,893.9**
2011						
Individual insurance	577.1	118.6	137.4	65.3	133.5	1,031.9
Group insurance	1,555.3	28.6	20.4	34.6	–	1,638.9
Unit-linked life insurance	84.6	64.1	–	8.4	–	157.1
Reinsurance	–	–	–	–	4.5	4.5
Gross premiums life insurance	**2,217.0**	**211.3**	**157.8**	**108.3**	**138.0**	**2,832.4**

A2.69 Insurance companies offer different types of life insurance products. Insurance companies may offer group insurance contracts concluded for companies' employees, or insurance contracts for individuals (see Example A2.7). Group insurance has the distinctive feature that the premium is determined by the group of people eligible to purchase insurances as a whole for reasons such as working for a particular employer, rather than related to cover a specific (high-) risk factor. Claims, however, are due individually. With regard to the type of investment, so-called unit-linked life insurance policies are fund-linked products where policyholders can determine the type of investment by choosing a particular fund and thus carrying the investment risk. A life insurance benefit may be paid as a lump sum or as an annuity. The

claim may be fixed or may vary to reflect the income earned from the investment of premiums during the period for which the policy operates (with-profit policies). The unit-linked policy is a special kind of with-profit policies, because the claim varies according to the value of the chosen fund. Accruing profits may be paid out in part to the policyholder in the form of dividends. Other policies offer a guaranteed return not dependent on the company's underlying investment performance.

Insurance on imports

A2.70 The point of uniform valuation is the free-on-board (f.o.b.) statistical value of exports at the customs frontier of the exporting economy (see *BPM6*, paragraph 10.30). Imports are normally valued at cost, insurance, freight (c.i.f.), at the domestic custom frontier by customs. To convert imports of goods to the f.o.b. valuation, the value of freight and insurance premiums incurred from the frontier of the exporting economy to the border of the importing economy should be deducted (*BPM6*, paragraph 10.34), and included in balance of payments transport and insurance transactions in case a nonresident transporter or insurer is involved.

A2.71 Insurance premiums are often estimated by the compiler together with freight services on imports by sampling importers and agents of foreign transport operators, or extracting data from customs import documentation.[12] In order to avoid overstating insurance services, a ratio can be used to estimate services from the reported insurance premiums recorded in the secondary income account. The ratio may be derived from the domestic nonlife insurance industry and applied to premiums paid.

A2.72 It is often the case that freight insurance costs are based on single events (the shipment of a good) and are of short-term nature. They may be determined by the insurance company based on the value of the specific good being shipped (e.g., replacement cost value, or invoice value), and the category of good that is being shipped (e.g., fragile goods, hazardous materials). In those cases, advance payments for insurance coverage can be recorded as current expense by the policyholder and as current revenue by the insurance company, rather than spreading the payments over time. The claims are recorded when paid in the secondary income account. In cases where traders take out insurance policies to cover their freight on a lump-sum and long-term basis, insurance on imports is treated the same way as other nonlife insurance policies.

[12]See in Chapter 11 more details on c.i.f.-f.o.b. conversion of good's value.

Box A2.4 Implementation of the *BPM6:* Insurance, Pension Schemes, and Standardized Guarantee Schemes in the Case of Austria

Background

This example covers the implementation of insurances, pension schemes, and standardized guarantee schemes in accordance with the *BPM6* in the case of Austria. Since the calculation of insurance transactions under the *BPM6* has become more sophisticated compared to the *BPM5* (see *BPM6*, Appendix 6C), the Oesterreichische Nationalbank (OeNB) adapted the collection and compilation of insurance data for the balance of payments and IIP statistics. Prior to the implementation of this new data collection system, the OeNB used less detailed administrative data from the Financial Market Authority (FMA) for insurance exports and mirror data from other economies of the European Union (EU) for imports. For the compilation of the insurance data, information from the national accounts was used—for example, the ratio of the long-term relationship between net premiums and claims. Life/nonlife insurances position information was compiled from flows only; there were no data on claims, and the database differed between balance of payments statistics and national accounts. For the coverage of reinsurance, primarily highly aggregated balance sheet data were available and the cross border / domestic distinction was based on the assumption that active reinsurance is predominantly a domestic business in Austria.

New data collection

In 2015, the EU will introduce the new *Solvency II* regulation for insurances to enhance consumer protection. The new regulation allows the FMA to collect more detailed data. The new quarterly reports include data on cross border premiums and claims on a gross basis for direct insurance and reinsurance (best estimates) on an accrual and cash basis, broken down by insurance division and by economy, including domestic business in Austria. The new annual report includes cross

Box A2.4 Implementation of the *BPM6:* Insurance, Pension Schemes, and Standardized Guarantee Schemes in the Case of Austria *(continued)*

border premiums and claims for reinsurance on an accrual and cash basis, broken down by economy. Additionally, the annual report includes financial assets and liabilities from reinsurance by economy, and insurance technical reserves for index linked and other life insurance. These data were used by the OeNB to adapt the compilation of insurance and pension schemes data to the *BPM6* requirements.

New data compilation

Some adjustments were necessary to compile insurance, pension schemes, and standardized guarantee schemes for balance of payments and IIP statistics. Therefore, the OeNB implemented several calculations and derivations, which are described ahead, to meet all needs for the compilation.

In order to receive more accurate results, the OeNB decided to adjust the general formula for the calculation of the insurance service charge for all types of insurances asdescribed in the *BPM6.* The adjustment—which is referred to in the *BPM6* as the volatility of claims adjustments—was necessary as high claims could have led to a negative value for the service charge. Therefore, the OeNB used the long-term spread ratio for the calculation:

BPM6 approach		***OeNB approach***	
Insurance services = gross premiums earned		Insurance services = gross premiums earned	
Plus	premium supplements	*multiplied* by	long-term "spread" between premiums and claims ("ratio")
Minus	claims due/incurred	*Plus*	premium supplements

The next step was the recording of net premiums and claims.Thenet premiumswere calculated as described in the *BPM6*:

Net premiums = gross premiums earned
plus premium supplement
minus service charge

For nonlife insurances, net premiums and claims were recorded in the secondary income, on different sides: if the insurance taker was a nonresident, premiums were recorded as credits and claims as debits, and vice versa if the insurance taker was a resident.

For life insurances, the net premiums and claims were recorded as a transaction in other investment insurance technical reserves,which covers net premiums increase (assets or liabilities) and claims decrease (assets or liabilities). The following adjustments needed to be done for the compilation:

Transactions (+):

Financial transaction (increase) in insurance technical reserves by economy = gross premiums (accrual basis) for index linked and other life insurance exports and imports by economy
plus premium supplements (income)
minus service charge

Transactions (–):

Claims (accrual basis) vs. insurance companies per economy = financial transaction (decrease) in insurance technical reserves

Annual position reports on technical reserves were distinguished between *index linked* and *other life insurances.* However, there was no geographical breakdown. Therefore the geographical information received for the premiums was used to derive a geographical breakdown of the positions. The differences between the annual positions and the sum of the quarterly transactions were recorded as other valuation adjustments, which were evenly distributed over the year.

Positions (annually including breakdown indexed linked and other)—recorded in the IIP:
Share by economy = premiums earned per economy
divided by total premiums

Box A2.4 Implementation of the *BPM6:* Insurance, Pension Schemes, and Standardized Guarantee Schemes in the Case of Austria *(continued)*

Position in insurance service technical reserves per economy = total position in insurance technical reserves
multiplied by share per economy

Other valuation adjustments = difference between opening position, transactions, and closing position

Financial assets and liabilities from reinsurance:

For financial assets and liabilities from reinsurance the transactions by economy were derived from new quarterly (estimates by insurance companies) and annual balance sheet data (revisions were evenly distributed over quarters). The positions by economy were reported annually together with the revised annual flows. Quarterly (intra-annual) positions were estimated based on provisional quarterly transactions by economy. The annual difference between opening position, transaction, and closing position were recorded as other valuation adjustments and evenly distributed over the quarters.

Active reinsurance = insurer	premiums paid *minus* premiums earned	if + = increase in liabilities if – = decrease in liabilities
Passive reinsurance = insurance taker	claims incurred *minus* claims paid	if + = increase in liabilities if – = decrease in liabilities
	premiums paid *minus* premiums earned	if + = increase in assets if – = decrease in assets
	claims incurred minus claims paid	if + = increase in assets if – = decrease in assets

Investment income attributable to policy holders (= premium supplements):

The premium supplements were recorded in the primary income receivable by policyholders. The same amount was also shown as payable to the insurance company by the policyholder as premium supplements in the secondary income account.

Debits (liabilities vis-à-vis nonresident insurance takers):

Income ratio for rest of the world by economy = position in insurance technical reserves vis-à-vis rest of the world by economy
divided by total position in insurance technical reserves

Income from insurance technical reserves per economy = income ratio by economy
multiplied by income from financial assets held by insurance sector (from direct and other investment according to balance of payments, from portfolio investment total)

Plausibility check = total income
divided by position in insurance technical reserves vis-à-vis rest of the world

Credits (assets vis-à-vis nonresident insurance companies):
The average rate from debits/liabilities was applied on the position of technical reserves. The rate was still based on cumulated flows and mirror data, however, including benefits.

Pension schemes and standardized guarantees:

The principal logic of the *BPM6* for pension schemes and standardized guarantees is similar to life insurance claims and liabilities.

Service charge = gross contributions
plus supplements
minus benefits payable
plus/minus adjustments

Box A2.4 Implementation of the *BPM6:* Insurance, Pension Schemes, and Standardized Guarantee Schemes in the Case of Austria *(concluded)*

The market valuation of positions depends on the nature of the pension scheme. The defined contribution schemes (function like mutual funds) are assets of the "fund"; the defined benefit schemes, which were based on "promised" benefits, both funded and unfunded, are equal to the present value of the "promised" benefits.

Standardized guarantees are recorded as equal to the present value of expected calls under outstanding guarantees, net of any recoveries the guarantor expects to receive from the default parties.

Position-taking with Austrian insurance companies and Austrian pension funds resulted in the conclusion that cross border pension entitlements and cross border provisions of standardized guarantees are not existing or rather insignificant. There were no immediate actions taken for balance of payments compilation in these areas for the changeover to the *BPM6*. A new stock-taking exercise will be carried out within the next years.

Difficulties encountered

- Insurance companies are not able to deliver data for technical reserves positions by economy. Because these data are necessary for the compilation of balance of payments and IIP statistics, the OeNB decided to estimate the distribution by economy.
- The differentiation between accrual and cash data can be difficult.
- Concerning data delivery, the OeNB relies on the supervisory data as well as the infrastructure and resources of the supervisory authority. This additional link between the insurance and pension fund companies and the OeNB can add complexity and make communication more challenging. In addition, the OeNB depends to a large extent on the developments in supervision regarding quality and details available.

Tables A2.2–A2.4 in the annex to this appendix show the collection and compilation of the insurance transactions in detail.

Employment-Related Pension Schemes and Social Security Schemes

Introduction

A2.73 The availability, coverage, and mechanisms of pension systems benefitting individuals vary widely from economy to economy. In the *2008 SNA* the distinction of so-called social insurance schemes is made between social security and employment-related schemes, based on the provider of these social insurance pensions. The part provided by general government is called social security if it meets certain criteria, and the part by employers is called employment-related schemes other than social security (see *2008 SNA*, paragraph 17.118).

A2.74 The estimation of pension services in the international accounts may be important in economies with high percentages of border workers, guest workers, and international organizations that hire staff from the host economy.

A2.75 There are two forms of employment-related pension schemes, the *defined benefit scheme* and the *defined contribution scheme*. Both schemes are financed by contributions normally shared between the employer and the employee, which accumulate in special funds, and from which benefits are paid and surplus funds are invested to earn further income. The difference between these schemes lies in the determination of the benefits payable to an employee on retirement, which in turn is determined by who is bearing the risk of the scheme to provide an adequate income in retirement.

A2.76 Conceptually, these two schemes trigger transactions in accounts similar to the ones in insurance accounting (see Insurance Transactions and Positions); namely, the derivation of an output of the pension fund is recorded in the services account, the net contributions made to the pension fund are recorded in the secondary income account, the change in pension entitlements due to transactions is recorded in the financial account as well as an adjustment item in the secondary income account, and the investment income earned on existing entitlements is recorded in the primary income account. However, the different features with regard to the benefits payable upon retirement result in differences in the accounting concepts of these pension schemes and, consequently, in how

the compiler will design the reporting forms to obtain the relevant information. This is further explained ahead.

A2.77 In general, the data for exports of cross border pension services are best captured by obtaining information from resident pension funds. This enables the compiler to undertake conceptual adjustments that are necessary for the recording of these operations in the balance of payments statistics.

A2.78 The same comprehensive approach will not be feasible for obtaining imports of pension services because the pension funds are nonresident of the compiler's economy. Thus when estimating pension services the compiler should take into account data on compensation of employees derived from the ITRS and ratios available from domestic pension funds, or from a combination of estimates and assumptions, such as estimates of the portion of the population receiving pension services combined with estimates of rates of pension compensation.

A2.79 Some social insurance is provided by the government under a social security scheme. Accounting for social security funds is less complex, because there are no funds invested on behalf of the beneficiaries, and instead, current workers' contributions are used by the government entity operating the scheme to pay out current benefits (the system is also known as "pay-as-you-go").

A2.80 In the absence of detailed international standards for accounting for cross border positions and transactions of defined benefit and defined contribution pension funds, the compilation guidance contained in the following paragraphs is one acceptable way of accounting for these pension plans in balance of payments statistics.

Defined benefit scheme

Overview of defined benefit accounting

A2.81 In a defined benefit scheme the amount of pension benefits accrues usually according to a function of one or more factors, such as age and length of service within the company, and will take into account the final salary, or the average of the last few years of earnings. The distinctive difference to the defined contribution scheme is that the risk of the defined benefit scheme lies with the employer in its commitment to deliver a pension at retirement, regardless of the return on investment. Making contributions to the pension plan alone usually does not satisfy the employer's obligation; rather, the employer remains obligated to pay the defined retirement benefit, and has to decide on how much and where to invest, as well as monitor the progress of the investments.[13] Thus 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 (see *2008 SNA*, paragraph 17.144).

A2.82 Under the accrual approach, the employer's contribution to the employee's compensation is no longer confined to the employer's actual contributions to the plan. Instead, it is the present value of the benefits to which employees become entitled as a result of their service to the employer, and thus additional contributions need to be imputed.

How do pension funds account under a defined benefit scheme?

A2.83 The pension benefit is part of the compensation paid to an employee in future years after the employee retires or terminates service. Generally, the amount of benefit to be paid depends on estimates of relevant future events. Many of such events the employer cannot control, and thus the benefit can be estimated using only a pension plan's benefit formula. In order to properly account for the liability, many assumptions need to be made: (1) how many more years the employee will work; (2) what the employee's ending salary will be; (3) how many years the employee will collect a pension in retirement; and (4) what the appropriate rate is to discount the liability to present value. A simplified example of a formula that determines the employee's retirement benefits is as follows:

	Employee's retirement benefits =
	Contract percentage
multiplied by	Number of years of service
multiplied by	Average salary on which benefits are based

[13] An employer may contract another unit to administer the pension fund and arrange disbursement to the beneficiaries. The operator may simply act as the employer's agent. A second option is for a single unit to contract with several employers to manage their pension funds as a multiemployer pension fund and assume responsibility for meeting the pension obligations (see *2008 SNA*, paragraphs 17.163–17.166).

A2.84 The accounting for a defined benefit plan is complex. The pension accounting rules in a defined benefit scheme require recognizing the cost of benefits before the benefits are paid to retirees—that is, the costs are recognized over the employees' working period. Actuaries of pension funds have to build in their estimation methods assumptions about economic developments (interest rates, salary increases, inflation) and demography (retirement age, life expectancy) in order to determine the amount and timing of the future benefit payments and their attribution to each year of employment according to the pension benefit formula.

A2.85 The application of this accrual accounting method implies that recording of the actual cash flows in the employer's financial statement does not suffice; instead, the employer needs to compute the periodic (mostly calculated annually) pension cost incurred, which comprises components that reflect different aspects of the employer's financial arrangements as well as the cost of benefits earned by employees (see Example A2.8). Pension costs are recognized in the company's income statement and reduce reported earnings.[14] The cash payments are referred to as pension contributions a company makes to fund its designated pension plan (also called plan assets), which comprises investments in positions, bonds, and other investments to provide solely for pension benefits. The assets in the pension plan and the earnings on those assets are available only for paying pension benefits. These assets do not belong to shareholders, and earnings are not included in the company's net income.

A2.86 Several components are relevant to calculate the employer's periodic pension costs. The starting point is the so-called projected benefit obligation (PBO), the pension liability or the employee's pension entitlement, which determines the actuarial present value of benefits attributed to an employee by the plan's benefit formula. It takes into account the employee's service to-date (assuming that the plan continues), and assumptions on future compensation levels.[15]

A2.87 The PBO is affected by so-called service costs,[16] interest costs, actuarial gains/losses, contributions, and payment of benefits in the current period. These are relevant terms for the compiler in order to derive from the pension funds' books the entries for the macroeconomic accounts:

a. *Service cost* is the additional liability created because another year has elapsed, for which all current employees get another year's credit for their service; it is estimated as the actuarial present value of the benefits attributed by the pension benefit formula to services rendered by the employees during the current period. In other words, it constitutes the value of benefits earned by employees during the period.[17]
b. *Interest cost* is the additional liability created because these employees are one year nearer to

[14]Based on prevailing accounting rules, companies may be required to record certain accounts of pension plans directly in their financial statements and make notes of other accounts in memo records attached to the main financial statements.

[15]Another actuarial measure is the accrued benefit obligation (ABO), which is the present value of the future benefits to which the employee has actually become entitled. The ABO is often used to estimate the present value of an employee's pension assuming that the employee ceases to work for the company at the time the estimation is made. The PBO is the ABO increased to reflect expected future compensation and increases in the number of years of service.

[16]The term "service" is a synonym for labor, work, employment, and should not be confused with the term "services" in balance of payments/IIP statistics.

[17]Companies might also incur so-called prior service costs, which are amortized changes in benefits resulting from a change in the pension contract.

Example A2.8 Excerpt of notes to a company's financial statement on plan asset allocation

Plan Asset Allocation			
Principal pension plans			
December 31	Target allocation (%)	2010 Actual allocation (%)	2011 Actual allocation (%)
Equity securities	51–63	69	60
Debt securities	21–27	19	20
Real estate	4–8	6	7
Private equities	5–11	6	7
Other	3–7	6	6
Total		100	100

Example A2.9 Excerpt of notes to a company's financial statement, projected benefit obligation		
Projected benefit obligation (in million dollars)		
	2012	2011
Balance at January 1	37,827	33,266
Service cost for benefits earned	1,178	1,213
Interest cost on benefits obligations	2,199	2,180
Participant contributions	163	169
Plan amendments	–	654
Actual loss[1]	969	2,754
Benefits paid	–2,367	–2,409
Acquired plans	–	–
Exchange rate and other adjustments	–	–
Balance at December 31	39,969	37,827

[1]Principally associated with discount rate changes for principal pension plans.

their benefit payouts; the interest/discount rate is used to adjust for the time value of money.

c. *Actuarial gains and losses* arise from the difference between expected values (estimates) and actual values in a company's pension plan. They can result from changes in actuarial estimates when assumptions are adjusted concerning the future rate of salary increases, the length of employee service, the discount rate for the plan obligations, and the expected rate of return on plan assets.

A2.88 The periodic cost of the pension plan, which is recognized as part of the employer's income statement under most widely followed financial accounting rules, takes into account the difference between the expected return on plan assets and the service cost, interest cost, amortization of prior service cost, and net actuarial losses or gains.

Example A2.10 Excerpt of notes to a company's financial statement, cost of pension plan		
Cost of Pension Plan (in million dollars)		
	2012	2011
Expected return on plan assets	–4,258	–4,245
Service cost for benefits earned	1,438	1,375
Interest cost on benefit obligation	2,516	2,390
Prior service cost	317	252
Net actuarial loss (gain) recognized	242	–544
Total cost	255	–772

A2.89 The measure of the pension entitlement of a defined benefit plan participant is the present value of the benefits to which they are expected to become entitled, and not the actual assets of the plan. If the assets of a defined benefit plan are insufficient to pay the promised benefits, the plan sponsor must cover the funding gap.

Accounting for a defined benefit scheme in balance of payments statistics[18]

A2.90 The following paragraphs explain step-by-step which components are needed for capturing the cross border pension fund activities comprehensively in the balance of payments statistics according to international standards, and how the compiler should derive these from the information provided by pension funds. Although the entries are similar to the ones in insurance accounting, the approach to manipulate the data in order to derive the balance of payments and IIP components are somewhat different.

Employer's total contribution (actual and imputed contributions) and pension services

A2.91 In the defined benefit scheme, the costs associated with operating the scheme are borne by the employer, and regarded as "a form of income in kind" included with the employer's contributions (see *2008 SNA*, paragraph 17.149) to the employee's compen-

[18]The proposed approach to measure pension fund activities largely reflects existing accounting practices in both private and public sectors. In many of the accounting standards, actuarial amounts are used to measure the "current service cost" to business (i.e., labor cost). Information should therefore be observable in the books of the employers, and/or in pension funds' own accounts.

sation. Based on this, the total contribution of the employer in one period is calculated in a way that, together with any actual contribution by the employee and excluding the administrative cost, it matches the increase in the PBO due to the service costs (see paragraph A2.88a)—that is, the pension earned by the employee during the year.[19]

A2.92 In Examples A2.11a–11c, the following assumptions are imputed for calculations:

Increase in pension entitlement, due to current year's employment[20]	15
Actual payments made by the employer	10
Actual payments made by the employee	1.5
Costs incurred in the current period to run the pension fund	0.6

It is assumed also that actual payments made by the employer and employee are not sufficient to meet the estimated increase in the benefits accruing from the pension earned during the year.

A2.93 The costs incurred to run the pension fund are initially borne by the employer,[21] and so they should be included in the calculation of the employer's contribution (conceptually, they should also be regarded as compensation in kind provided to the employee). These administrative costs need to be imputed by the compiler—for instance, as a percentage of the employer's and employee's actual contributions in the current period (assumed equal to around 5 percent). They constitute the pension service that the balance of payments compiler needs to record in the services account. An additional contribution from the employer of 4.1 is imputed to level the contributions with the increase in current service costs.

A2.94 Thus, under the accrual approach, the measure of (cross border) compensation of employees for participants in the defined benefit plan includes the employer's actual and imputed contributions to the plans as payable by the employer and receivable by the employee (see *BPM6*, paragraph 11.22). It is the present value of the benefits to which employees become entitled as a result of their service to the employer, and adequately reflects the true cost to the employer.

Example A2.11a Calculation of data for a defined benefit scheme[1]

Actuarial calculations determining the increase of the PBO due to service costs		15.0
Employer's actual contribution	(–)	10.0
Employee's actual contribution	(–)	1.5
Administrative costs of operating the scheme—estimated	(+)	0.6
Employer's imputed contribution—residual		4.1
In the example, the employer must overall contribute 14.1 (= 10 + 4.1).		

[1] See *2008 SNA*, paragraph 17.167.

Investment income attributable to beneficiaries in pension schemes

A2.95 As a next step, the investment income attributable to the employee is derived using the so-called interest costs of pension funds,[22]—that is, the increase in pension entitlements because the employee is one year nearer to its benefit payouts. Conceptually, this means that the beneficiary earns imputed interest on his or her actuarial entitlements, rather than the actual interest and dividends earned by the pension fund on its pension fund plan assets. Because the discount period becomes shorter, the net present value of defined pension benefits grows the closer the employee is to retirement age.

A2.96 In pension accounting, the interest costs are usually calculated by pension fund actuaries as interest rate multiplied by the PBO at the beginning of the financial year. Prevailing accounting standards advise on the interest rates that are supposed to be used by pension funds. The interest rate could be an estimated discount rate reflecting the market rate currently used to settle benefits due, or a rate based on the expected return on high-quality fixed income securities (e.g., long-term

[19] Contributions to defined contribution schemes (explained ahead) are recorded as the amounts actually paid in, because these do not determine the net equity of households on an actuarial basis.

[20] These actuarial estimates are carried out by the pension fund's actuary; they constitute the increase in the PBO due to service cost.

[21] The pension manager could be either the employer itself or a unit that has assumed the risk of meeting the pension obligations (see also *2008 SNA*, paragraphs 17.149 and 17.151).

[22] In the *2008 SNA* also called past service.

Example A2.11b Transactions for a defined benefit scheme		
For recording the *investment income attributable to beneficiaries in pension schemes in the primary income account:*		
Current year pension fund's interest cost		4
For recording *net contributions receivable by the resident pension fund from the nonresident employee as well as the benefits payable/paid to retirees in the accounting period* in the secondary income account:		
Net contributions receivable by the resident pension fund from the employee calculated as:		19 nonresident
Contributions actually paid by employer		10
Contributions actually paid by employee	(+)	1.5
Pension fund administrative costs	(–)	0.6
Employer's imputed contribution (see Example A2.11a)	(+)	4.1
Investment income attributable to policyholders in pension schemes[1] (interest costs)	(+)	4
Benefits payable/paid to retirees in accounting period		16

[1] The term "policyholders" is used for convenience to assure consistency with the balance of payments standard component.

government bonds). Different plans will have different valuation interest rates. The compiler needs to inquire about the pension plans' breakdown into its cross border components (data collection is discussed in Section Data Collection ahead in this appendix).

A2.97 In Example A2.11b, in addition to the assumptions presented in paragraphs A2.94–2.95, the increase in the entitlements associated with the passage of time during the year is calculated to be 4. The remaining transactions for the defined benefit scheme can be derived as follows.

A2.98 In cases when employers organize pension schemes for their employees,[23] the employers will deduct the pension contributions from the employees' compensation and pay them directly to the pension scheme; only the net compensation is paid to the employees. The actual contributions received by the retirement scheme from the employer (10) might initially appear to constitute domestic transactions in cases where the employer and the pension fund are resident in the same economy. In the international accounts, however, rerouting records a transaction as taking place in channels different from those observed (see *BPM6*, paragraph 3.16).[24] In the current account, therefore, the gross compensation of the nonresident employee should include the actual and the imputed contribution by the employer to the defined benefit pension scheme, which is then deemed to be paid in full (including the contribution supplement and net of the administrative costs) to the retirement scheme by the employee together with his own contribution (see *BPM6*, paragraph 11.22). In the financial account, other investment (currency and deposits), the actual contributions payable by the employer and the actual contributions receivable by the pension fund from the nonresident employee are recorded in this example as increasing external liabilities of the employer and increasing external assets of the pension fund.

Changes to pension entitlements

A2.99 In the continuation of the Example A2.11b, the financial account transactions that are the change in the pension fund entitlement (i.e., the change in the PBO) are estimated by the increase of the liability due to the service cost and the increase of the liability due to the interest cost, less the benefits paid in the current period. This change in the pension fund's liabilities is recorded in the financial account under insurance, pension, and standardized guarantee schemes as a supplementary item.[25]

[23] These are also called "occupational pension schemes"—that is, schemes that are established and financed voluntarily by individual employers/companies.

[24] Similarly, employer pension contributions are rerouted to employee compensation for national accounts compilation purposes.

[25] The 2008 SNA adopted the approach of treating unfunded employers' pension schemes identically to funded employers' pension schemes.

Example A2.11c Transactions for a defined benefit scheme

For recording the *insurance, pension, and standardized guarantee schemes* in the financial account, other investment:

Changes to pension entitlements calculated as:	3
Net contributions receivable by the resident pension fund from the nonresident employee	19[1]
Benefits payable	–16
Introducing an adjustment item: Adjustment for change in pension entitlements	

[1] Net contributions receivable in this example, comprise of an increase in PBO due to service cost of 15, and an increase in PBO due to interest cost of 4.

Introducing an adjustment item: adjustment for change in pension entitlements

A2.100 In the balance of payments/IIP accounts, pension contributions and benefits are recorded as current transfers in the secondary income account, and as pension entitlements in the financial account. In this respect the treatment is different from life insurance accounting, where premiums and benefits are recorded only in the financial account, because part of the premiums paid by the policyholders are regarded as savings and part of the benefits received by the beneficiaries as withdrawals from savings (see *BPM6*, paragraph 5.65).[26] Policies that qualify as social insurance differ from insurance policies because beneficiaries usually enter into the initiative by intervention of a third party, the government or the employer, who encourages or obliges the policyholder to make provision for income in retirement (*2008 SNA*, paragraph 17.51).

A2.101 When cross border transactions of pension contributions and benefits are significant in an economy, in balance of payments/IIP statistics, an adjustment item must be recorded in order to "add back" social contributions to and "subtract" pension receipts from the secondary income account. As a result, the current account is the same as if no current transfers for contributions and receipts were recorded, and the financial and current accounts are reconciled (see *BPM6*, paragraph12.39).

A2.102 From the viewpoint of compiling data from a resident pension fund, the reconciling adjustment item would be recorded in the balance of payments statistics of the compiler on the debit side as a deduction from the balance of the secondary income, and as a counter entry to the increase in pension entitlements (a credit entry) (see Example A2.11d).

Data collection

A2.103 Estimations regarding the pension fund interest and service costs attributable to nonresidents can best be taken from the accounts of resident pension funds. Through surveying domestic pension funds, the compiler should be able to request information on a conceptually correct basis as explained in Section B.2—that is, actual and imputed contributions—as well as pension entitlements and the interest earned on actuarial entitlements.[27]

A2.104 Pension funds should likely be able to provide either aggregate information on actual contributions received from the respective companies on behalf of their nonresident employees, or on average contribution rates relative to gross wages; information should also be available on the benefits that are being paid to retirees abroad. The percentage points for the administrative costs (pension services) need to be imputed by the compiler—for instance, as a small percentage of the employer's and employee's combined estimated contributions in the current period. In general, the compiler needs to inquire about the pension plans' breakdown into its cross border components. Appendix 8 provides a model survey form for collecting data from pension funds.

A2.105 Due to the increasing attention in the last few decades to pension schemes and their role in the overall system of retirement provision, in some economies surveys or central registrars have been established, which collect data on the domestic pension industry. National accountants, government finance statisticians, or financial account statisticians might already use these available sources for their own

[26] The rationale for treating pension contributions and benefits as current transfers is that, when looked at for the economy as a whole, the effect of pension provision can be seen as if it were a redistributive process among households (see *2008 SNA*, paragraph 9.23), and so it is important that disposable income of households reflects these transactions (see *BPM6*, paragraph 12.37).

[27] The compiler can best assess the justification for the introduction of a new survey measured by the impact on cross border employment on the balance of payments/IIP accounts.

Example A2.11d Recording of transactions for a defined benefit scheme in the balance of payments statistics (economy of pension funds)

	Credit	Debit
Services	0.6	
Insurance and pension services		
Pension and standardized guarantees		
Primary income		
Compensation of employees		61.1 [47+10+4.1][1]
Investment income attributable to policyholders in insurance, pension schemes, and standardized guarantee schemes		4
Secondary income		
Financial corporations, nonfinancial corporations, households, and NPISHs		
Other current transfers	19 [10+1.5–0.6+4.1+4]	
Social contributions		16
Social benefits		
Adjustment for change in pension entitlements		3
	Net acquisition of financial assets	**Net incurrence of liabilities**
Financial account		
Other investment		
Currency and deposits		
Deposit-taking corporations, except the central bank	–57	
[accounts of employers][2]	–4.5 [+10;+1.5;–16]	
[accounts of pension schemes][2]		
Insurance, pension, and standardized guarantee schemes		
Other sectors		
Pension entitlements		+3

[1] Compensation of employees in this example consists of gross salary (47) including the actual contribution by the employees (1.5), plus actual and imputed contribution of employers (10+4.1).
[2] Entries are presented only for the purpose of showing the balancing entries; no balance of payments transactions are registered because they are resident-to-resident transactions.

estimations. Pension funds may also be obliged to send their monthly or annual reports on their assets, income, and expenses together with actuarial information on their liabilities to government agencies for auditing purposes or tax calculations. The compiler may want to focus on the actuarial information found in the financial reports of the largest pension plans and make estimations for smaller ones.

A2.106 Supervisory institutions may be a source for qualitative aggregate information. Although balance sheets and profit and loss account information from those institutions may have the caveat of long timeliness, they may be combined with information available from timelier external sector statistics (e.g., ITRS) or administrative data on cross border employment, for estimating an interim (moving) measure for the distinction between national and international business.

A2.107 Furthermore, in certain unionized sectors, multiple domestic employers may agree with their pension fund on so-called collective bargaining agreements, which may provide useful aggregate information or average shares for estimating employers' contributions credited to nonresident beneficiaries.

A2.108 Estimations for pension transactions are relevant for economies with high percentages of border workers, and guest workers in the domestic economy or abroad[28], for economies with international organizations whose staff return to retire in a different (e.g., home) economy, and for economies that are preferred by retired people as "sunnier" locations. Information on cross border workers or "resident aliens" can be sought from government agencies issuing work permits and visas, or from tax authorities. The latter one may also be relevant for pension benefits paid to or received for current retirees as they may be subject to domestic taxation or double tax treaties.

A2.109 Data from an ITRS will be on a cash basis and capture only the compensation of employees net of contributions and benefits paid. For residents paying contributions to defined benefit pension funds abroad, the net salary received on the domestic bank account would need to be augmented by both employee and employer contributions; information on average contribution rates for employees and for employers could be used as starting point. Secondly, a small percentage thereof should be derived as pension service payable to pension funds abroad. The ITRS provides information on economies to which salaries and wages are paid and from which they are received. The compiler could contact the balance of payments compilers in those economies respectively, to obtain appropriate ratios for their contribution rates and services estimates. Alternatively, household surveys may include or could be complemented to provide information on socioeconomic detail with reference to current or past cross border employment. In case there is a pension fund in the domestic economy, information could be available to build useful ratios on actual and imputed contributions, and service costs.

Defined contribution scheme

Overview

A2.110 Due to increasing demographic and financial pressures during the last few decades, there is a shift from defined benefit schemes to defined contribution schemes, which means that the risk is borne by the employee, because the pension solely depends on the value of total contributions and investment returns. Defined contribution plans have become the dominant form of plan in the private sector of many economies.

A2.111 The *defined contribution scheme* defines the benefits exclusively based on the level of the funds built up from contributions over the employee's working life and on the performance of the financial assets acquired with the future pensioner's contributions. The pension scheme secures only a certain level of pensions, with the possibility that the returns on money invested could be poor; the entire risk of receiving an adequate pension income in retirement lies therefore with the employee, and not with the employer. The employer's contribution may be established at the beginning of the contract, and the employee's contributions are in addition to the employer's rate of contribution. The pension scheme invests these contributions and provides the employee with the accumulated sum on retirement—for instance, in form of a lump sum or an annuity, with which the employee can secure a pension income. Defined contribution schemes, unlike defined benefit schemes, are always funded.

How do pension funds account under a defined contribution scheme?

A2.112 The accounting for a defined contribution plan is less complex than for a defined benefit plan. There are no actuarial estimations applied by the fund, and there are no associated imputations. The employer's contributions can be a fixed amount, or a percentage of the salary. The actual contributions are paid into individual accounts and invested in financial markets; thus the employer contributions to the account are guaranteed, but not the success of the investments, and thus not the future entitlements.[29]

Accounting for a defined contribution scheme in balance of payments/IIP statistics

Changes in pension entitlements

A2.113 Pension entitlements represent liabilities of the pension fund vis-à-vis its beneficiaries (see *BPM6*, paragraph 7.65). The factors that trigger the change in pension entitlements in the current period, and thus require recording in the international accounts, are

[28]When guest workers return to the home economy, an entry in other changes in financial assets and liabilities account should be recorded for the reclassification of pension entitlements as incurrence of liability of pension schemes to nonresident returning workers and an acquisition of the same asset by the economy of returning workers.

[29]Unlike in the defined benefit scheme, where the benefits are guaranteed, but the scheme itself may be funded or unfunded.

Table A2.1 International Investment Position Entries

IIP item	Opening position	Transactions in current period	Other changes in volume	Closing position
Insurance, pension, and standardized guarantee schemes	1,000	–20	+70	1,050
[liabilities in pension entitlements of resident pension schemes to nonresidents]		[120 – 140]		

the difference between contributions receivable from abroad less benefits payable to retirees abroad, and any holding gains and losses earned from the investment of the cumulated pension entitlements that contribute to the current market value of the assets of the fund (see *BPM6*, paragraph 7.65). The transaction for pension entitlements recorded in the financial account under insurance, pension, and standardized guarantee schemes is the difference between net contributions receivable and benefits payable. Holding gains or losses appear, however, in the revaluation account[30] of the IIP.

A2.114 The change in net entitlements recorded in the financial account can be negative, when benefits payable exceed net contributions receivable. For example, under the assumptions ahead, the entries in the IIP will be as presented in Table A2.1.

Liabilities in pension entitlements of resident pension schemes vis-à-vis nonresident beneficiaries:

position at the beginning of the period	1,000
position at the end of the period	1,050
Contribution receivable during the period	120
Benefits payable during the period	140
Holdings gains and losses during the period	70

Income earned on cumulated entitlements and the implicit service charge for running the defined contribution pension scheme

A2.115 Instead of attributing to beneficiaries the imputed investment income on their actuarial entitlements as is the case in defined benefit pension schemes described in Insurance Transactions and Positions of this appendix, in the defined contribution scheme, the actual value of the interest and dividends earned on the plan assets are attributed to the participants.

[30]The exact delineation between which changes in pension entitlements are treated as transactions and which changes are treated as other changes in the volume of assets is still being researched. The "Changes in pension entitlements" describes the present situation (see *2008 SNA*, paragraph 12.61).

A2.116 Part of the income earned by the pension scheme by investing the assets is used to meet the administrative costs of operating the pension fund on behalf of the beneficiary. In macroeconomic accounting, these costs constitute the service charge payable by the beneficiary and receivable by the pension fund for this purpose. The remaining part of the income is attributable to and reinvested by the beneficiaries with the pension fund as contribution supplements (see *2008 SNA*, paragraph 17.135).

Employers' and employees' contributions and benefits in the defined contribution scheme

A2.117 The contributions and benefits are based on actual payments and receipts during the specific period, of which the employer contributions are rerouted through the compensation of the employees. Social contributions payable by nonresidents to resident pension funds should be available from the pension fund, the official budget records, or from the responsible agency (such as the ministry of social security). Pension benefits payable to nonresidents should be available from the pension fund, from official budget records, from the responsible agency (such as the ministry of social security), or from an ITRS (see also Chapter 12).

A2.118 Information on the earnings on employees' cumulated pension entitlements and the percentage of these earnings pension fund operators use to meet the costs of operating the pension fund needs to be estimated from the accounts of pension schemes. The compiler should consult the funds administrators in splitting between liabilities to residents and nonresidents by using a suitable indicator, such as contributions receivable and/or benefits payable.

A2.119 With this information at hand from the resident pension fund, the compiler can derive the pension service charge due in the current period and the corresponding net contributions as follows. In

Examples A2.12a–2.12c, the following assumptions are imputed for calculations:

Employers' actual contributions (on behalf of nonresident employees)	11
Employees' actual contributions	11.5
Estimated investment income attributable to nonresident beneficiaries	17.6
of which: estimated percentage of income attributable to beneficiaries to meet the costs of operating the fund	8.5%
Benefits paid to nonresident retirees	26

Example A2.12a Transactions for a defined contribution scheme[1]

For recording the pension services in the goods and services account:	
Pension services	1.5
calculated as:	8.5% of 17.6
The pension contribution supplements are calculated based on the income distributed to households minus the part used to meet the cost of operating the pension fund (that represent pension services) (see 2008 SNA, paragraph 17.135).	
For recording the *investment income* in the primary income account:	
Pension contribution supplements	16.1
calculated as:	
Estimated investment income attributable to nonresident beneficiaries	17.6
Pension services	(–) 1.5

[1]See *2008 SNA*, Table 17.7.

A2.120 For defined contribution schemes, the net total amount of contributions payable can be derived as presented in Example A2.12b (see also *BPM6*, paragraph 12.35).

A2.121 As mentioned earlier, employers often make pension contributions directly to the pension scheme on an employee's behalf; only the net compensation is transferred to the nonresident employees' domestic bank account. The actual contributions received by the retirement scheme from the employers (11 in Examples A2.12a and A2.12b) might initially appear as a domestic transaction, in cases where the employer and the pension fund are resident in the same economy. Through the rerouting of these transactions (see *BPM6*, paragraph 3.16 for an explanation of rerouting), the contribution by the employer to the defined contribution pension scheme is deemed to be paid in full (including the contribution supplement net of the administrative costs) to the retirement scheme by the employee together with his own contribution, and they are recorded in the example as increasing external liabilities of the pension scheme.

Example A2.12b Transactions for a defined contribution scheme (based on assumptions and calculations presented in Example A2.12a)

Net contributions payable	37.1
calculated as:	
Employers' actual contributions (on behalf of nonresident employees)	11
Employees' actual contributions	(+) 11.5
Investment income attributable to policyholders in pension schemes[1]	(+) 16.1
Pension service charge	(–) 1.5
For recording the *insurance, pension, and standardized guarantee schemes* in the financial account, other investment:	
Change in pension entitlements	11.1
calculated as:	
Net contributions receivable	(+) 37.1
Benefits payable	(–) 26

[1]See footnote 23.

Adjustment for change in pension entitlements

A2.122 Similar to the defined benefit scheme, the pension contributions and benefits are recorded as current transfers in the secondary income account, and as pension entitlements in the financial account (see Defined benefit scheme). Therefore, when cross border transactions of pension contributions and benefits are significant in an economy, an adjustment item must be recorded in order to "add back" social contributions to and "subtract" pension receipts from the secondary income account. As a result, the current account balance is the same as if no current transfers for contributions and receipts were recorded, and the financial and current account are reconciled (see *BPM6*, paragraph 12.39) (see Example A2.12c).

A2.123 Example A2.12c shows balance of payments entries related to pension schemes. It is constructed based on assumptions and calculations presented in Examples 12a and 12b.

Example A2.12c Recording of transactions for a defined contribution scheme in the balance of payments statistics (economy of pension funds)

	Credit	Debit
Services		
Insurance and pension services		
Pension and standardized guarantees	1.4	
Primary income		
Compensation of employees		61 [38.5+11.5+11][1]
Investment income attributable to policyholders in insurance, pension schemes, and standardized guarantee schemes		16.11
Secondary income		
Financial corporations, nonfinancial corporations, households, and NPISHs		
Other current transfers		
Social contributions	37.1 [11.1+11+16.1–1.5]	
Social benefits		26
Adjustment for change in pension entitlements		11.1
	Net acquisition of financial assets	Net incurrence of liabilities
Financial account		
Other investment		
Currency and deposits		
Deposit-taking corporations, except the central bank		
[accounts of employers][2]	–61	
[accounts of pension schemes][2]	+3.5 [+11;+11.5;–26]	
Insurance, pension, and standardized guarantee schemes		
Other sectors		
Pension entitlements		+11.1

[1]Compensation of employees in this example consists of net salary (38.5) plus actual contribution by the employees (11.5) *plus* actual contribution of employers (11).
[2] Entries are presented only for the purpose of showing the balancing entries; no balance of payments transactions are registered because they are resident-to-resident transactions.

Data collection

A2.124 Pension funds managing defined contribution schemes should likely be able to provide to the compiler either aggregate information on actual contributions received from the respective companies on behalf of their nonresident employees, or on average contribution rates relative to gross wages; information should also be available on the benefits that are being paid to current retirees abroad, as well as on an estimated average of interest and dividends earned on the beneficiaries' plan assets and the administrative costs of operating the pension fund as explained earlier. The compiler can also estimate it by taking a few percentage points of the employer's and employee's combined estimated contributions in the current period. In general, the compiler should inquire about the pension plans' breakdown into its cross border components. Model form 13 in Appendix 8 presents a model survey form of pension funds.

A2.125 Data from an ITRS are on a cash basis and therefore capture only the compensation of employees net of contributions and benefits payable. For residents paying contributions to defined contribution pension funds abroad, the net salary received on the domestic bank account would need to be augmented by both employee and employer contributions; information on average contribution rates for employees and for employers could be used as starting point. Secondly, a small percentage thereof should be derived as pension service payable to pension funds abroad. The ITRS provides information on economies to which salaries and wages are paid and from which they are received. The compiler could contact the balance of payments compilers in those economies to obtain appropriate ratios for their contribution rates and services estimates.

A2.126 Household surveys may be a source of information or could be complemented to provide information on socioeconomic detail with reference to current or past cross border employment. If there are pension funds in the compiling economy, information from them could be used to build useful ratios for estimating imports of cross border pension services and related transactions.

Social security schemes

A2.127 Compared to the two employment-related schemes discussed earlier, the statistical treatment of social security schemes is rather simple (see *2008 SNA*, paragraph 17.124). Social security funds are not invested on behalf of the beneficiaries, and instead, current workers' contributions and taxes are used by the government operating the scheme to pay current benefits (the system is also known as "pay-as-you-go"). There are no assets set aside and thus no financial account entries need to be made. There is also no need to calculate pension services.

A2.128 Any contribution made by the employer on behalf of nonresident employees directly to the social security pension scheme is rerouted through compensation of employees, and is included together with the nonresident employees' part in the secondary income account as transferred to the social security fund (see *BPM6*, paragraph 11.17).

A2.129 The social security benefits are recorded in the secondary income account as payable in the economy of the social security fund, and as receivable in the economy of the employee.

Table A2.2 Data Collection and Compilation of the Insurance Transactions for the Current Account

		Balance of payments			
Report		**Calculations**		**Current Account**	
	Funds and Index Linked Life Insurance	Funds and Index Linked Life Insurance	Gross premiums earned * Ratio (domestic) + Premium supplements = Service charge Calculation of premium supplements: - Use once a year the foreign share in general provisions - Use of quarterly ratios on revenues from financial assets of the insurance (equity investment and security investment in foreign countries, portfolio investment in total) - Plausibility: Use the proportion of revenues calculated from the quarterly provisions' stock - Breakdown by country of the revenues from the distribution of the reported gross premiums		Life (service charge)
	Other Life Insurance	Other Life Insurance			
Premiums earned (accrual)	Sea, Air, and Other Transport Insurance	Freight	premiums earned * Ratio (domestic) = Service charge	Services (credit)	Freight (service charge)
	Life Insurance or Decease Insurance	Other Direct Insurance			Other direct (service charge)
	Accident and Sickness Insurance				
	Fire and Other Property Insurance				
	Damaged Property Insurance				
	General Liability Insurance				
	Travel Insurance				
	Credit and Credit Cards Insurance				
	Active Reinsurance				
	Passive Reinsurance	Reinsurance			Reinsurance (service charge)
	Freight	Gross premiums earned * + Premium supplements - Service charge = Net premiums			
	Other Direct Insurance			Current transfers (credit)	Net premiums nonlife
Accrued benefits (actual)	Sea, Air, and Other Transport Insurance			Current transfers (debit)	Insurance benefits
	Life Insurance or Decease Insurance				
	Accident and Sickness Insurance				
	Fire and Other Property Insurance				
	Damaged Property Insurance				
	General Liability Insurance				
	Travel Insurance				
	Active Reinsurance				
	Passive Reinsurance				
Estimation	Earnings (debit)	Estimation based on stocks of life-insurance and average performance of insurance companies portfolio investment assets		Fictive distribution of earnings from technical provisions (premium settlements)	

Source: Oesterreichische Nationalbank

Table A2.3 Data Collection and Compilation of the Insurance Transactions for the Financial Account

Report		Balance of Payments			
			Calculations	Other Investment - Insurance Technical Reserves	Counterpart: Other Investment - Currency and Deposit
Premiums earned (accrual)	Funds and Index Linked Life Insurance	Funds and Index Linked Life Insurance	Premiums earned * Ratio (domestic) + Premium supplements = Service charge Calculation of Premium supplements: - Use once a year the foreign share in general provisions - Use of quarterly ratios on revenues from financial assets of the insurance (equity investment and security investmnet in foreign countries, portfolio investment in total) - Plausibility: Use the proportion of revenues calculated from the quarterly provisions' stock - Breakdown by country of the revenues from the distribution of the reported gross premiums		Earned premiums reported in total (debit)+ or (credit)–
	Other Life Insurance	Other Life Insurance			
	Sea, Air, and Other Transport Insurance Life Insurance or Decease Insurance Accident and Sickness Insurance Fire and Other Property Insurance Damaged Property Insurance General Liability Insurance Travel Insurance Credit and Credit Cards Insurance	Freight Other Direct Insurance	Premiums earned * Ratio (STAT domestic) = Service Charge		
	Active Reinsurance Passive Reinsurance	Reinsurance			

Table A2.3 Data Collection and Compilation of the Insurance Transactions for the Financial Account (*concluded*)

Report		Balance of Payments				
			Calculations	Other Investment - Insurance Technical Reserves		Counterpart: Other Investment - Currency and Deposit
	Funds and Index Linked Life Insurance	Premiums earned - Service Charge = Net premiums		Technical provisions from Funds and Index-Linked Life Insurance (debit) –	Increase in liabilities	
	Other Life Insurance			Technical provisions from other Life insurance (debit) +	Increase in liabilities	
Accrued benefits (accrual)	Funds and Index Linked Life Insurance			Technical provisions from funds and index-linked Life insurance (debit) +	Decrease in liabilities	Accrued benefits reported in total (credit)+ or (debit)–
	Other Life Insurance			Technical provisions from other Life Insurance (debit) –	Decrease in liabilities	
	Sea, Air, and Other Transport Insurance					
	Life Insurance or Decease Insurance					
	Accident and Sickness Insurance					
	Fire and Other Property Insurance					
	Damaged Property Insurance					
	General Liability Insurance					
	Travel Insurance					
	Credit and Credit Cards Insurance					
	Active Reinsurance					
	Passive Reinsurance					
Premiums paid	Active Reinsurance	Accrued benefits - Paid benefits = + = Incresase in liabilities = – = Decrease benefits		Liabilities from Active Direct/ Reinsurance (debit)+ or (debit) –	Increase in liabilities/ Decrease in liabilities	Calculated increase/decrease in claims (debit)+ or (debit)–
	Passive Reinsurance	Premiums paid - Premiums earned = + = Increase in claims = – = Decrease in claims				
Services paid	Active Reinsurance	Accrued benefits - Paid benefits = + = Incresase in liabilities = – = Decrease benefits		Claims from Passive Direct/ Reinsurance (credit)+ or (credit)–	Increase in claims/ Decrease in claims	Calculated increase/decrease in liabilities (credit)+ or (credit)–
	Passive Reinsurance	Accrued benefits - Paid benefits = + = Increase in claims = – = Decrease in claims				

Source: Oesterreichische Nationalbank

Table A2.4 Data Collection and Compilation of the Insurance Positions for the IIP

Report		IIP				
		Position	Position at the beginning of the period	Transaction	Other	Position at the end of the period
Premiums earned (accrual)		Liabilities from technical provisions from funds and indexlinked life insurance	Updated cumulative transactions during the year once a year compared with the reports	Increase in liabilities = Net premiums Decrease in liabilities = accrued benefits	Position at the end of the period - Position at the beginnig of the period - Transaction	Position at the beginning of the period + Transaction
Accrued benefits (accrual)		Liabilities from technical provisions from other life insurance	Updated cumulative transactions during the year once a year compared with the reports	Increase in liabilities = Net premiums Decrease in liabilities = accrued benefits	Position at the end of the period - Position at the beginnig of the period - Transaction	Position at the beginning of the period + Transaction
Premiums paid	Active Reinsurance Passive Reinsurance	Liabilities from active direct/ reinsurance	Updated cumulative transactions during the year once a year compared with the reports	Calculated increase/decrease in liabilities	Position at the end of the period - Position at the beginnig of the period - Transaction	Position at the beginning of the period + Transaction
Services paid	Active Reinsurance Passive Reinsurance	Claims from passive direct/reinsurance	Updated cumulative transactions during the year once a year compared with the reports	Calculated increase/decrease in claims	Position at the end of the period - Position at the beginnig of the period - Transaction	Position at the beginning of the period + Transaction

Source: Oesterreichische Nationalbank