The Treatment of Pension Schemes in Macroeconomic Statistics

Discussion Paper Prepared by John Pitzer
for the Statistics Department of the International Monetary Fund

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I. Introduction

1. At the request of the Intersecretariat Working Group on National Accounts (ISWGNA), the IMF Statistics Department is establishing an Electronic Discussion Group (EDG) on pension schemes. The purpose of the EDG is to explore alternatives and to identify the most appropriate treatment of pension schemes in macroeconomic statistical systems. This paper summarizes the basic features of pension schemes, including the differences between funded and unfunded schemes, and suggests some of the questions that might be discussed in the EDG. The paper deals mainly with employer pension schemes but similar issues arise with respect to other pension arrangements, such as social security and social assistance schemes.

2. The macroeconomic statistical manuals most involved with pensions are *System of National Accounts 1993* (*SNA 1993)* and the *Government Finance Statistics Manual 2001 (GFSM*). Other manuals, including *Balance of Payments Manual*, *Monetary and Financial Statistics Manual*, and *External Debt Statistics*, are also affected to some extent by the treatment of pensions, but to a much lesser degree. *SNA 1993* is a comprehensive statistical system covering all sectors and all types of transactions, other flows, and stocks of assets and liabilities. As such, it provides guidelines for the statistical measurement of all private and public employer pension schemes as well as for households that have earned the right to receive a pension in exchange for their services as an employee. This paper discusses pensions primarily in terms of the guidelines of *SNA 1993*, but results of the EDG may have an influence on all macroeconomic statistical manuals.

3. The main issue with respect to unfunded pension schemes is whether macroeconomic statistics should recognize a liability for the existing obligation of employers to pay pension benefits in the future as is done for funded schemes or whether the liability arises only when the payments are due. The issue can be phrased equivalently in terms of households. When a pension scheme is funded, assets exist against which households can establish legal claims. When the scheme is unfunded, there are no assets for households to claim if the benefits are not paid as scheduled. Thus, should an equivalent claim against the employer be recognized?

4. There is a complicated set of transactions, other changes in the volume of assets, and holding gains that must be recorded in *SNA 1993* with respect to pension schemes. The extent and nature of these flows is affected substantially by the decision to recognize or not recognize a liability on the part of employers and an asset on the part of households with respect to future pension benefits. Regardless of that decision, however, there are

additional questions about the definition and valuation of various pension flows and stocks that deserve discussion.

II. What are pension schemes?

A. The definition of a pension

5. In common usage, a pension is a series of monetary payments paid to a worker or the worker's survivors following retirement. A pension scheme is the set of financial, administrative, legal, social, and other arrangements established for the purpose of providing pensions to a designated group of workers and their survivors. The continuing development of income security schemes for the elderly has broadened the types of benefits paid to workers following retirement. Most important in financial terms is the provision of medical services, but other in-kind benefits are possible. For example, access to leisure facilities, the provision of legal and financial services, or the provision of services to aid impaired retirees with everyday chores can all be arranged through pension schemes. The legal nature of the obligations to provide in-kind post-retirement benefits is the same as for the more typical monetary payments. Thus, the term pension should be interpreted as including all types of post-employment benefits.

6. More generally, a pension scheme is simply a saving scheme with deferred compensation as the source of saving. In addition, pension is used for arrangements other than retirement schemes. For example, annuities resulting from disability insurance schemes are often referred to as pensions. The accounting for all of these arrangements is closely related to accounting for post-retirement pensions, but the scope of this paper is restricted to post-retirement pension schemes.

7. Pension schemes can be organized in many ways. The organizer of a pension scheme can be an employer, a government, a trade union, or another type of organization. Many pension schemes arranged by employers are financed and managed collectively, while others that cover large groups are financed individually. One employer can organize many different pension schemes and individual employees may receive benefits from more than one scheme. At one extreme, a pension scheme can be arranged for a single employee. At the other extreme, a government can organize a scheme for the entire population of a country. Although many pensions are paid in a series of periodic payments of roughly equal amounts, it is also possible for pensions to be paid as a lump sum or as a combination of a large initial payment followed by smaller periodic payments.

8. Pension schemes arranged by government for the entire labor force or a large segment of it are referred to as social security schemes. They are created by government legislation and the contributions and benefits are set by government based on the government's overall fiscal policy as well as actuarial considerations. Schemes arranged by employers or other organizations are referred to as employer pension schemes. These schemes are agreements between employees and employer, with the terms usually in the form of a

legal contract that can be modified only by a new agreement between the employees and employer. Governments may arrange schemes for their own employees just as any other employer in addition to or in place of any social security schemes they may organize. This paper deals only with employer pension schemes, but raises the issue of whether the treatment of other pension arrangements may need revision. For simplicity, the terms employer pension scheme, employer, and employee will be used even though trade unions and other nonemployers may organize and manage pension schemes and nonemployees can be covered by such schemes.

9. Participation in employer pension schemes is obtained through employment. Typically an employee's right to a pension begins to accumulate immediately but the right becomes vested, or irrevocable, only after several years of employment. When an employee reaches a stipulated age and/or years of employment, the employee is entitled to begin receiving pension benefits.

10. Many pensions are a type of insurance because they are provided as annuities in the form of periodic payments for life, perhaps with the amount adjusted occasionally on the basis of inflation or other factors. As with any annuity, the total amount received by an individual depends on the person's survival and the size of the payments. Not all pensions, however, are annuities. An individual scheme may give the individual a claim to a specific amount that can be withdrawn at a rate within a specified range as long as funds remain. If undrawn funds remain at the time of death, they can be inherited.

B. The units involved

11. As described in *SNA 1993*, there are four basic types of pension organizations. First, the employer can arrange with an insurance enterprise to oversee the financial and administrative management. The insurance enterprise will establish a set of accounts in some type of trust format so that they are separate from the enterprise's own funds. The enterprise will then receive contributions to the scheme, invest the collected funds, and pay benefits to the retired employees and survivors as directed by the employer. Generally an insurance enterprise does not assume any liability for the pensions themselves, only the administrative arrangements. That is, if the enterprise does not have sufficient funds in the segregated accounts to pay the pension benefits, the employer must contribute additional funds, not the insurance enterprise.

12. The other three types of organization are managed by the employer itself. If the employer establishes a set of accounts separate from its own funds similar to the accounts of an insurance enterprise, perhaps appointing a trustee to manage them, so that the pension scheme can undertake transactions in its own name, the set of funds is an autonomous pension fund and is considered to be a separate institutional unit in *SNA 1993*. If the employer creates a set of special accounts to manage the scheme but control of the accounts is not separated from the employer's other operating accounts, then the scheme and set of accounts is a nonautonomous pension fund and its accounts are combined with the employer's other accounts in *SNA 1993*. Finally, the employer might manage the

scheme without any special accounts or other arrangements; it simply pays the benefits when due. Such a scheme is an unfunded pension scheme, the subject of this paper.

C. Defined-benefit and defined-contribution pension schemes

13. All pension schemes are either defined-contribution or defined-benefit schemes. These terms are not always adequately descriptive because both types of schemes define both the benefits and the contributions. Nevertheless, the terms are used nearly universally and will be used in this paper. A defined-contribution scheme is one in which an employer is obligated by contractual agreement or by law to contribute a specific amount to the scheme on behalf of its employees. Typically the amount is a percentage of the employee's wages and salaries, but it can be a fixed sum or a variable sum defined by a different formula. The contributions are deposited in individual accounts for each employee and are invested in some manner, usually by purchasing long-term financial assets. Upon retirement, the employee and/or survivors receive benefits equal to balance of the account. By definition, defined-contribution pension schemes are always fully funded.

14. A defined-benefit scheme is one in which the employer is obligated to provide a specific level of benefits. The level is usually defined by a formula based on the years of employment and the wages and salaries earned. The employer and/or the employees may make contributions to the scheme or there may not be any contributions. If there are contributions, the risk that the amounts contributed to the scheme plus the returns on their investment are insufficient to provide the defined benefits is borne by the employer. That is, if the funds are insufficient, the employer must make additional contributions.

15. Defined-benefit pension schemes can be funded or unfunded. As these terms are used in *SNA 1993*, an unfunded scheme is one with no identifiable reserves that are assigned for the payment of benefits and against which the employees can lay claim. Identifiable reserves consist of asset accounts dedicated to the payment of pension benefits. Pension schemes operated by insurance enterprises, autonomous pension funds, and nonautonomous pension funds are all funded pension schemes. This meaning of funded does not refer to the adequacy of the reserves established for the payment of benefits. That is, a funded scheme can be under- or overfunded depending on the value of the assets held for the payment of benefits relative to the value of the scheme's liabilities. All unfunded pension schemes are by definition defined-benefit schemes because there are no contributions by the employer, no individual accounts, and only the definition of the benefits is meaningful. The remainder of this paper deals only with defined-benefit schemes.

D. Pension assets and liabilities

16. With funded pension schemes, there may be some question about who owns the pension reserves, which consist of the net assets designated for the payment of benefits, and who has the liability to make the payments. The pension reserves are legally owned by the

insurance enterprise, autonomous pension fund, or the employer operating a nonautonomous pension fund. These reserves are invested in various kinds of assets, including shares, bonds, other financial assets, land, buildings, and valuables. They are held in trust, however, for the benefit of the employees and their survivors. Thus, the question arises as to whether the assets should be attributed to the household sector, the employers, or the pension funds. In *SNA 1993*, the assets are attributed to the pension funds, presumably because the schemes actually own them. Additional reasons may be that the household sector cannot own the assets because the employees and their survivors have only a claim against the pension fund as a whole rather than specific assets, and the employers cannot own them because they have surrendered substantial control over their investment and management. With unfunded schemes, there are, of course, no assets.

17. The pension funds clearly have a liability to provide the promised pension benefits. The counterpart of that liability is a financial asset owned by the employees. This asset and its counterpart liability are classified as insurance technical reserves. The primary issue of this paper is whether similar assets and liabilities should be recognized for unfunded pension schemes even though they do not have any actual assets.

III. The Current Treatment of Pension Schemes in *SNA 1993*

A. What flows are involved and how are they estimated?

18. The operations of pension schemes are in concept quite simple. Pension schemes are saving schemes: Money is saved; the saving is invested to earn additional money; employees earn the right to withdraw the saving after retirement; and, finally, the money is withdrawn and either consumed or otherwise invested. The requirement that the funds can be withdrawn only upon retirement means that restrictions are necessary, such as having a trustee manage the funds in segregated accounts. Despite the simplicity of the concept, the flows necessary to account for each of the steps in the process can be complex because they involve estimates based on complicated actuarial calculations and assumptions. The flows required for unfunded schemes are less extensive than the flows for funded schemes because the step of investing the contributions to earn additional money is not present.

19. In *SNA 1993*, all contributions to employer pension schemes are deemed to be made by employees. Frequently, however, the contributions are received directly from the employer for administrative convenience. Any such contributions are part of the employees' compensation and are recorded first in the Generation of Income Account as if they were actually paid to the employees and then as a payment by the employees to the pension scheme.

20. The total contributions required to provide future pension benefits are difficult to estimate. As described in *SNA 1993*, "These amounts depend not only on the levels of the benefits currently payable but also on the ways in which employers' liabilities under such

schemes are likely to evolve in the future as a result of factors such as expected changes in the numbers, age distribution and life expectancies of their present and previous employees." [Paragraph 7.45] In the case of a funded scheme, employees and/or employers make actual contributions, and those contributions are presumed to be equal to the actuarial estimates. If so and if the actual investment returns are close to the expected returns, then the pension fund should not be greatly over- or underfunded. It is possible, however, for an employer deliberately to contribute less than the actuarial estimate, which most likely would lead to the fund being substantially underfunded. Alternatively, if a pension fund is overfunded, the employer may choose or be required to slow or temporarily cease contributing to the fund. Regardless, the actual contributions made by employers are deemed in *SNA 1993* to represent fairly the employers' expense for compensation of employees.

21. Employers with unfunded schemes promise the same pension benefits to their employees as employers with funded schemes, and, therefore, contributions must be imputed as a type of compensation of employees to reflect the cost of providing those benefits. Estimating the total contributions required for an unfunded scheme has the same level of difficulty as for a funded scheme, but there are no actual employer contributions that together with actual employee contributions can be presumed to be equal to the actuarial estimates. As a result, compilers must make their own actuarial estimates, subtract any employees' contributions, and impute employer contributions equal to the remainder as part of compensation of employees. *SNA 1993* provides the following guidance: "In practice, however, it may be difficult to decide how large such imputed contributions should be. The enterprise may make estimates itself, perhaps on the basis of the contributions paid into similar funded schemes, in order to calculate its likely liabilities in the future, and such estimates may be used when available. Otherwise, the only practical alternative may be to use the unfunded social benefits payable by the enterprise during the same accounting period as an estimate of the imputed remuneration that would be needed to cover the imputed contributions. While there are obviously many reasons why the value of the imputed contributions that would be needed may diverge from the unfunded social benefits actually paid in the same period, such as the changing composition and age structure of the enterprise's labour force, the benefits actually paid in the current period may nevertheless provide the best available estimates of the contributions and associated imputed remuneration." [Paragraph 7.46] This implicit advice to estimate the imputed contributions on the basis of current payments of benefits has been controversial.

22. Once compensation of employees, including any employers' actual or imputed contributions has been determined, contributions by employees to the pension schemes can be recorded. There are several variations depending on the type of scheme. First, operating a pension fund is a productive activity. The financial services produced by a pension fund are deemed to be consumed by the households that have a claim to the future pension benefits. Generally, there is not an explicit charge for the services. Instead, a management fee may be subtracted from the value of the pension fund assets or the employer may absorb the operating expenses with its other operating expenses. In *SNA*

1993, the measure of output depends on other flows and is explained in a later paragraph. Of importance here is that the estimated output of insurance enterprises and autonomous pension funds is included in household final consumption and subtracted from the total contributions of employees to pension funds. The remaining contributions are recorded as employee contributions to pension funds. The output of nonautonomous pension funds and unfunded pension schemes is not estimated in *SNA 1993*, and no adjustment is made to employee's contributions.

23. Contributions to funded pension schemes other than the amount deemed to be the purchase of services are viewed in two quite different ways in *SNA 1993*. On one hand, they represent increases in financial claims of employees for future pension benefits and are recorded in the Financial Account as the acquisition of financial assets by households and incurrence of liabilities by the pension funds. It is also recognized in *SNA 1993* that households often behave as if the contributions to the schemes are transfer payments that reduce their current disposable income. To reflect this view, all contributions to funded pension schemes are recorded in the Secondary Distribution of Income Account as transfer payments. Actual and imputed contributions to unfunded pension schemes are also recorded as transfer payments, but because no liability is recognized for unfunded pension schemes, the contributions are not recorded in the Financial Account.

24. When pension schemes receive the contributions, they invest them in various ways to increase the amounts available to provide future benefits. The investments selected depend on the acceptable degree of risk and the opportunities available, but are likely to be a diverse mixture of shares and other equities, securities other than shares, and nonfinancial assets. These transactions are recorded according to the type of asset acquired in either the Capital or Financial Account. There are no such transactions with respect to unfunded pension schemes because there are no identifiable funds to invest. To the extent that employees make contributions to unfunded schemes, the funds are intermingled with the employer's other resources and are used in the employer's normal operations. An employer may be sufficiently prudential to acquire assets in amounts and types similar to investments by funded pension schemes, but those investments are indistinguishable from the employer's other investments and cannot be attributed to the unfunded scheme.

25. The returns received from the investment of pension fund assets depend on the type of assets held and the actual turnout of events. Nonfinancial assets will return a net operating surplus and/or rent as well as holding gains and possibly other changes in the volume of assets. A net operating surplus will require a number of other entries in the Production Account and the Generation of Income Account on the part of the pension fund. Financial assets can be expected to generate interest, dividends, holding gains, and possibly other changes in the volume of assets. The interest and dividends will be recorded in the Primary Distribution of Income Account. Any holding gains and other changes in the volume of assets will be recorded in the Revaluation Account and the Other Changes in Volume of Assets Account respectively.

26. In *SNA 1993*, households do not have financial assets representing their claims against unfunded schemes and, therefore, there are no flows reflecting the change in those claims. With funded schemes, however, the receipt of income from the investment of the pension funds assets increases their net assets, an increase that parallels the increasing value of the households' financial asset, insurance technical reserves. This increase in the value of the financial asset is exactly like the increase when interest is received from the ownership of a financial asset and reinvested in an additional quantity of the asset. In *SNA 1993*, therefore, an amount equal to the income earned from the investment of the pension fund assets is imputed to be paid by the pension funds to the households as "property income attributed to insurance policyholders" in the Primary Distribution of Income Account. In this way, the pension funds are not shown as earning a disposable income that is, in fact, income of households. Because the pension funds rather than the households actually retain this income, the same amount must be imputed as contributions by households to the pension funds. As with other contributions to employer pension funds, these imputed contributions are recorded in *SNA 1993* both as transfer payments in the Secondary Distribution of Income Account and as acquisitions of financial assets in the Financial Account.

27. Eventually the employees retire or otherwise meet the requirements to receive pension benefits and begin to receive payments from the pension schemes. As with the contributions to the pension schemes, there are two views of the economic nature of these payments, as a transfer payment increasing disposable income of households and as the drawing down of a household financial asset. The transfer payment aspect is recorded in *SNA 1993* as the receipt of a social benefit by households in the Secondary Distribution of Income Account, and the financial asset aspect is recorded in the Financial Account as an increase in cash and a decrease of insurance technical reserves by households and a decrease in both cash and insurance technical reserves by the pension funds. These benefit payments apply equally to unfunded schemes, but are recorded only as transfer payments because the liability of unfunded schemes for insurance technical reserves is not recognized. If the liability were to be recognized, then the dual recording of benefits would also apply to unfunded schemes.

28. At this point, the output of pension funds managed by insurance enterprises and autonomous pension funds can be determined as: (a) total actual contributions (b) plus the income received from the investment of the fund's assets (c) less benefits payable (d) less the increase or plus the decrease in pension reserves. For nonautonomous pension funds and unfunded pension schemes, the output is not measured. Instead the costs of managing the schemes are combined with the other elements of cost in the employer's production account.

29. To reconcile the dual treatments of contributions and benefits, it is necessary to introduce an adjustment item to ensure that the balance of contributions over benefits does not enter into household saving. To achieve this, contributions to pension funds are added to the disposable income of households and receipts from the pension funds are subtracted. As a result, household saving is the same as it would have been if pension contributions and

pension benefits had not been recorded as current transfers. This "adjustment for the change in the net equity of households on pension funds" is recorded in the Use of Income Account and equals the total value of actual social contributions payable to funded employer pension schemes plus the imputed property income attributed to insurance policyholders less the value of final consumption expenditures for the output of pension fund services less the total value of the benefits paid. An opposite adjustment is recorded for the pension funds. This adjustment does not apply to unfunded pension schemes, but would have to be created if the liability of the schemes were to be recognized.

B. Stocks of pension schemes

30. Households have claims to the future payments of pension benefits. *SNA 1993* is not entirely clear on the valuation of those claims. In some places it refers to the household claims to the net assets of the pension fund and elsewhere to the pension funds' counterpart liability for the present value of promised benefits. In paragraphs 13.78 and 13.83, it appears to settle on the valuation as the part of the present value of future benefits that have been earned as a result of past employment. Determining the present value requires first that the undiscounted flows be estimated. The amount of those flows usually depends on the length of the employee's total service and the wages and salaries earned during that service, but current employees have not yet performed all of that service or earned all of those wages and salaries. Thus, the current household claims arise because of the service already performed and the wages and salaries already earned, but the value of those claims also depends on the years of service and wages and salaries yet to be performed and earned. As a result, estimating the value of current household claims requires assumptions, projections, and approximations. Nevertheless, acceptable actuarial procedures have been worked out to estimate the present value of future benefits that have already been earned.

31. The estimate of the present value of the promised benefits normally will differ from the total value of a pension fund's net assets, which is the amount available to pay pension benefits and the amount against which the employees can directly assert a claim. Thus, if the value of the household claims is the present value of the promised benefits, then the pension fund will appear to have a net worth, positive or negative. In *SNA 1993* it is stated that there cannot be a general rule about who owns the excess assets or has a liability for the shortfall of assets because national law varies. In addition, the mismatch of assets and liabilities is expected to be temporary. Therefore, the recommendation of *SNA 1993* is that the pension funds be allowed to have a net worth. With a nonautonomous fund, the assets and liabilities of the pension fund are combined with the other assets and liabilities of the employer so that any net worth of the pension fund is automatically combined with the net worth of the employer. If the liability of an unfunded pension scheme were to be recognized, the only feasible valuation would be the present value of promised pension benefits.

C. Changes in assumptions or the structure of benefits

32. As already described, estimating the present value of the expected pension benefits involves a number of assumptions. Periodically these assumptions need to be reviewed, and a change in the present value of the future benefits may result. Such a change is recorded in the Other Changes in the Volume of Assets Account.

33. Employee pension schemes are contractual agreements between employers and employees. From time to time, those agreements may be modified, perhaps changing the eligibility conditions or the level of benefits provided. For example, if benefits are not automatically adjusted for inflation, there may be a single adjustment made every five years at the option of the employer. Changes in the present value of expected benefits resulting from changes in the structure of benefits are recorded in the Other Changes in the Volume of Assets Account.

34. In countries where there are both social security pension schemes and employer pension schemes, the benefits may be linked. For example, the benefits of the employer schemes may be defined as a supplement to the social security benefits to reach a specific level of total benefits. Thus, an increase in social security benefits would be matched by a decrease in employer benefits. An entry in the Other Changes in the Volume of Assets Account would be used to reduce the value of insurance technical reserves of households as assets and of the employers as liabilities.

D. Comparison of funded and unfunded schemes

35. The following table provides a brief summary of the treatments of funded and unfunded employer pension schemes in *SNA 1993*.

Type of Stock or Flow	Autonomous Pension Funds and Insurance Enterprises	Nonautonomous Pension Funds	Unfunded Employer Scheme
Employer contributions to be included in compensation of employees	Actual contributions	Actual contributions	Imputed contributions
Output of financial services produced by pension funds	Estimated	Not estimated	Not estimated
Contributions to pension schemes	Actual contributions less the estimated output of autonomous pension funds and pension funds managed by insurance enterprises. Recorded both as a transfer payment and a transaction in financial assets.	Actual contributions. Recorded both as a transfer payment and a transaction in financial assets.	Actual plus imputed contributions. Recorded only as a transfer payment.
Property income attributable to insurance policyholders	Income actually earned	Income actually earned	None
Pension benefits	Actual amounts paid. Recorded as a transfer payment and a transaction in financial assets.	Actual amounts paid. Recorded as a transfer payment and a transaction in financial assets.	Actual amounts paid. Recorded only as a transfer payment.
Adjustment for the change in the net equity of households on pension funds	Added to the disposable income of households and deducted from the disposable income of pension funds.	Added to the disposable income of households and deducted from the disposable income of pension funds.	Not applicable
Insurance technical reserves (other than prepaid contributions and benefits due for payment)	Present value of expected future pension benefits already earned.	Present value of expected future pension benefits already earned.	None

IV. THE TREATMENT OF UNFUNDED EMPLOYER PENSION SCHEMES IN *GOVERNMENT FINANCE STATISTICS MANUAL 2001*

36. In contrast to *SNA 1993*, the *Government Finance Statistics Manual 2001* (*GFSM*) recognizes a liability for unfunded employer pension schemes. Its treatment of both funded and unfunded schemes is not, however, the same as the treatment of funded pension schemes in *SNA 1993*. The dual treatment of contributions to pension schemes and the payment of pension benefits that is included in *SNA 1993* is not included in *GFSM* because the manual is intended to provide statistics for the analysis of government

economic activity. From the viewpoint of a government employer, the character of the contributions and benefits is that of the incurrence and liquidation of a liability and not that of income earned and expense incurred. Thus, all contributions to pension schemes, funded and unfunded, received by government are treated only as increases in cash offset by increases in liabilities. The reverse is true for payments of pension benefits. The elimination of the dual recording of contributions and benefits also eliminates the need for the adjustment for the change in the net equity of households on pension funds.

37. The increase in the liability for expected pension benefits during an accounting period because the future benefits are discounted over one fewer periods is treated entirely as property income in *GFSM*. This position differs from *SNA 1993*, which treats only the part equal to the income earned on the investment of pension fund assets as property income and the remainder as a holding gain or loss. With an unfunded pension scheme, there are no pension assets and, therefore, no income is earned from the investment of pension assets. Because the increase in the liability resulting from fewer discounting periods has the character of interest, it is treated as property income in *GFSM.* The same treatment is applied to funded government employer pension schemes. The alternative would be to treat the entire change in the liability as a holding gain or loss.

V. THE TREATMENT OF PENSION SCHEMES IN INTERNATIONAL ACCOUNTING STANDARDS

38. The methodological guidelines of economic statistics and accounting standards often diverge because of the differing goals and requirements of financial accounting and economic statistics, but both are based on similar principles and it is often instructive to compare the parallel treatments of a given activity. In this case, the treatment of employer pension schemes of publicly held for-profit enterprises is covered by International Accounting Standard 19 (IAS 19), *Employee Benefits*. The objective of the standard is to require an enterprise to recognize "(a) a liability when an employee has provided service in exchange for employee benefits to be paid in the future; and (b) an expense when the enterprise consumes the economic benefits arising from service provided by an employee in exchange for employee benefits." The standard's coverage is quite broad, covering short-term benefits, such as paid annual leave, and long-term benefits, such as pensions, post-employment medical care, long-service leave, and other deferred compensation.

39. IAS 19 applies the same treatment to all arrangements for post-employment benefits, a treatment that is similar to the treatment of funded pension schemes in *SNA 1993*. It does not matter "whether or not they involve the establishment of a separate entity to receive contributions and to pay benefits," so that unfunded schemes are treated in the same way as funded schemes. That said, it is likely that the overwhelming share of pension schemes of publicly owned enterprises are funded.

40. For defined-benefit plans, IAS 19 requires that actuarial techniques be used to estimate the amount of benefit that employees have earned in return for their services in the current and prior periods, discounting the future benefits to present value, valuing any assets of the pension scheme at fair value, and recognizing changes in the present value

of future benefits resulting from changes in the actuarial assumptions and estimates. This estimation method is the same as recommended in *SNA 1993* for funded pension schemes.

41. One difference between IAS 19 and *SNA 1993* is that there is no dual recording of contributions to funded schemes and benefits paid by them in IAS 19 because it is to be applied only by the employer and such payments are viewed by employers only as changes in liabilities. Another difference is that the increase in the pension liability resulting from a decrease in the number of discounting periods is to be reported as interest rather than partly as property income and partly as a holding gain or loss. In IAS 19, all expenses of the current period can be aggregated and reported as a single "current service cost" net of the return on the pension assets, and the employer's pension liability can be reported net of the fair value of pension assets, but these are only presentational differences.

42. IAS 26, *Accounting and Reporting by Retirement Benefit Plans*, covers the detailed reporting of pension schemes. It requires detailed statements of the assets and liabilities of a pension fund and the sources of changes in those assets and liabilities.

43. IAS 19 and IAS 26 do not cover governments, which are likely to have the bulk of the unfunded pension schemes. The International Federation of Accountants (IFAC) through its Public Sector Committee (PSC) is developing a set of International Public Sector Accounting Standards (IPSASs) that will apply to government accounting. The IPSASs are explicitly based in the IASs, but with modifications as necessary for the different nature of governments. As of September 2002, the PSC has issued 18 IPSASs, but it has not issued a standard covering employee benefits. The stated reason is that the International Accounting Standards Board is planning an extensive review and possible modification of IAS 19, and therefore it is judicious to wait until that review is completed. Given the similarity of the existing IPSASs to their IAS counterparts, it is likely that the IPSAS on employee benefits will be based on the revised version of IAS 19.

44. Although social security schemes are not directly related to employer pension schemes, there are similarities between them. In this connection, it is noteworthy that the PSC has established a Social Policy Obligations Steering Committee that will examine government accounting for social obligations, including social security pension schemes. The conclusions of this committee may influence the IPSAS on employee benefits.

VI. Reasons to Consider a Change in the Treatment

45. There are a number of reasons to consider changing the treatment in *SNA 1993* of unfunded pension schemes. Most importantly, it is a basic premise of *SNA 1993* that similar events should be treated similarly. An overall consideration, therefore, is to decide whether differences in funding arrangements of pension schemes are sufficiently important that the liabilities for future pension benefits should be treated differently.

Funded and unfunded schemes are similar in that both arise from contractual agreements between employers and employees, and both the nature of the benefits provided by the schemes and the eligibility criteria to obtain the benefits are the same. Employers with pension schemes incur a legally enforceable liability to provide those benefits in accordance with the contracts with employees. The legal nature of the obligation, the valuation of the obligation at any given time, and the factors governing the evolution of the value of the obligation over time are independent of the means for funding. The fact that a separate entity or a separate group of accounts has not been established to manage the scheme's financing does not affect the employer's obligations to provide the benefits.

46. The biggest difference between funded and unfunded schemes is that unfunded schemes have no assets subject to direct claims by households. In addition, unfunded schemes are similar to nonautonomous pension funds in that both are integrated into the activities of the employer and the confidence employees have in obtaining the promised benefits depends on the survival and viability of the employer. On the other hand, autonomous pension schemes and schemes managed by insurance enterprises provide greater confidence to employees because assets exist under separate trustee control that can be used only to pay the benefits.

47. In recent years, a substantial body of accounting research has developed support for the principle that pension liabilities for all types of schemes should be treated alike to the extent possible. If different standards are to be applied to funded and unfunded pension schemes, then the differing needs of macroeconomic statistics should be clearly enumerated to support a different approach.

48. The majority of unfunded pension schemes are probably organized by governments. The development of accrual accounting standards by IFAC suggest the principles of accrual accounting should be applied to all government activities, that there will be a continuing trend of governments converting to accrual standards, and the source data for economic statistics will reflect the recognition of all pension liabilities, regardless of funding sources.

49. There is a large demographic change coming for a number of countries as the so-called Baby Boomer generation begins to retire. It is inevitable that employers with unfunded pension schemes will, therefore, have to plan for increased cash outflows of pension benefits; recognition of the existing liabilities for these payments in economic statistics should aid policy formulation and analysis.

VII. Scope of the Electronic Discussion Group

50. The description and analysis of unfunded employer pension schemes has demonstrated that there are important similarities between funded and unfunded employer pension schemes on one hand and between employer pension schemes and social security schemes on the other hand. For example, it was noted that the same methodology should be used to value of the liability of all employer pension schemes. Thus, the discussion of

unfunded pension schemes may result in implications for the treatment of funded pension schemes.

51. There are also important differences between the various schemes that may suggest a need for different treatments. For example, the legal nature of the pension obligations of employer and social security schemes is quite different. Employer pension obligations are legal contracts between employer and employee with the acquisition of rights to the future benefits being an element of current compensation of employees. Social security pension obligations are part of the unwritten social contract between a government and its population, the terms of which the government can change at will. In practice it is unlikely that a government can completely evade its commitments under a long-established social security system, but it is much more likely that it can change the structure, eligibility, and level of the pension benefits of a social security scheme than of a government-employee pension scheme. In addition, social security pensions are provided to the population as a whole or large portions of it as a social, economic, and fiscal policy. They are transfer payments in that the government does not receive anything of value in exchange for the pension payments. Employer pensions are provided only to government employees as a part of the exchange of an employee's services for monetary and other compensation. The pension payments are deferred payments for services previously received.

VIII. Questions to Discuss

52. The principal question to be discussed by the EDG is whether a liability equal to the present value of promised pension benefits should be recognized in macroeconomic statistics for employers with unfunded pension schemes. *SNA 1993* currently does not recognize the liability in its sequence of accounts for institutional units, but it does suggest that a memorandum item should be noted for households and employers on their balance sheets (see paragraph 13.88). Is the memorandum sufficient or should the liability be included on the balance sheet? Similarly, should a liability be recognized for social security or social assistance benefits?

53. In addition to the fundamental question about the liability, there are a number of additional questions raised by this review of the accounting of pension schemes. First, the amount included in compensation of employees for unfunded pension schemes is based on actuarial estimates, but the amount for funded pension schemes is the amount actually contributed. Should contributions to funded pension schemes also be estimated on an actuarial basis, especially in the case of severe under- or overfunding? If an employer makes a supplemental contribution to a funded scheme because its previous contributions were inadequate, should such a contribution be classified as current compensation of employees or as a transfer payment?

54. Paragraph 7.46 of *SNA 1993* suggests that the benefits actually paid in the current period by an unfunded pension scheme may "provide the best available estimates of the contributions and associated imputed remuneration," if an estimate based of actuarial

estimates in not available. Should this advice be retained? If not, what advice, if any, should be included?

55. The value of household claims to pension benefits increase during an accounting period because the present value of the future benefits is calculated using one fewer discounting periods. If a liability were to be recognized for unfunded pension schemes, a flow would have to be added equal to the increase in the value of the liability because of the change in the number of discounting periods. Should the increase in the liability be treated as a holding loss for the pension scheme and a holding gain for households or should it be treated as property income? Regardless of the choice, should the same treatment be adopted for funded pension schemes or should the current treatment—part property income and part holding gain/loss—in *SNA 1993* be retained?

56. In *SNA 1993* pension funds are permitted to have a net worth when the value of their assets differs from the value of their liabilities. Alternatively, households or employers could have a claim on excess assets and employers could have a liability for a shortage of assets. Another alternative would be to value the liability for the promised benefits so that the net worth of the pension funds is always zero. What should be the valuation of the liability for promised pension benefits? Should pension funds have a net worth?

57. In *SNA 1993* output is estimated for pension funds operated by insurance enterprises and for autonomous pension funds, but not for nonautonomous pension funds or unfunded pension schemes. Should output be estimated for all pension schemes? If so, what should be the methodology for estimated output of unfunded schemes?