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Employer retirement pension schemes

THE TREATMENT OF EMPLOYER PENSION SCHEMES AND OTHER DEFINED BENEFIT PENSION SCHEMES

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on the basis of the conclusions of the September 21-23, 2005 meeting of the Task Force on Employer Retirement Schemes

The views expressed in this paper do not necessarily represent those of the United States Bureau of Economic Analysis or of the International Monetary Fund.

The Treatment of Employer Pension Schemes and Other Defined Benefit Schemes

Executive Summary

The *System of National Accounts 1993* (*1993 SNA*) adopts different treatments of employer pension schemes depending on the ways in which they are set up. The *1993 SNA* specifies that separate output be measured for autonomous pension funds, but that the activity of non-autonomous funds be treated as ancillary to the main activity of the employer. Assets and liabilities, and the economic flows relating to changes in assets and liabilities, are only recorded in *1993 SNA* for 'funded' pension schemes (i. e. where segregated funds are set aside to meet future pension claims).

This approach gives rise to the following main problems:

- No output is measured for non-autonomous pension schemes. However, the management of these schemes provides services to the employees and therefore an output consumed by the household sector should be imputed
- The treatment of unfunded pension schemes is problematic for a number of reasons:
    - Unfunded pension schemes are based on the defined benefit model. Under this model, benefits are not dependent on or linked to assets. Obligations (liabilities) and related flows can be determined only by using actuarial calculations.
    - The treatment of unfunded pension schemes is not consistent within *1993 SNA*. While the predominant treatment is based on cash flows, in some places an actuarial basis is recommended.
    - The definition of 'funded' is itself ambiguous; in practice pension schemes can be anywhere on a spectrum from over funded to very substantially under-funded.
    - The requirement that a pension fund must have assets before it can have liabilities is not followed in respect of liabilities elsewhere in *1993 SNA*, and is not logically based.
    - The *1993 SNA* treatment of employer pension schemes is not consistent with the recommendations in the *Government Finance Statistics Manual 2001* (*GFSM 2001*) or international accrual based accounting standards.

- An additional problem is that the exclusion of holding gains and losses from calculation of output for autonomous pension schemes gives rise to volatile, and possibly negative, results because these schemes do not differentiate between sources of income in setting their service charges.

Economic and demographic developments have led to increasing concern about how pension funds are depicted in the *1993 SNA*, and substantial methodological work has been undertaken on this topic. A task force on employer retirement schemes convened by the United States Bureau of Economic Analysis and the International Monetary Fund discussed these issues at a meeting in Washington during September 21-23, 2005.[1,2] The task force reached consensus on the treatment of the output of employer pension schemes, and developed a majority view on the recording of the economic flows and stocks associated with all defined benefit pension schemes, regardless of funding status.

The consensus was that:

- Output for non-autonomous pension funds should be recognized; this output is consumed by the beneficiaries (i. e. the household sector);
- Output of non-autonomous pension schemes should be measured at cost; and
- It is appropriate to use expected transactions and expected holding gains and losses to explain the service charge of autonomous pension funds. However, further work is needed on the implications of using expectations in the practical calculation of pension fund output.

The clear majority view was that:

- All pension liabilities of employees should be recognized in the core accounts of the *1993 SNA*, irrespective of the degree to which the pension schemes are funded; and
- The accumulated value of benefits and related economic flows for defined benefit pension schemes should be calculated using actuarial estimates.

Questions to the AEG

Does the AEG agree that:

- Liabilities/assets of all employer pension schemes, and associated economic flows, should be recognized in the core accounts of *1993 SNA*.
- Accumulated benefits and related economic flows for all defined benefit pension schemes should be calculated using actuarial methods.
- Output should be calculated for non-autonomous pension schemes on a cost basis, and cost attributed to the beneficiaries (i. e. household sector).
- Expected holding gains and losses can be used in order to explain the service charge imposed by autonomous pension schemes.

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[1] Extensive earlier discussions took place in the framework of an electronic discussion group, see http://www.imf.org/external/np/sta/ueps/index.htm.
[2] A list of participants is included in Appendix I.

I. Background

1. The treatment of employer pension schemes in *1993 SNA* is controversial because the ways in which the economic stocks and flows associated with these schemes are recorded depends on the ways in which the schemes are organized, rather than on their underlying economic character.

2. The method of organization of employer pension schemes can be classified into the following categories:

- autonomous versus non-autonomous;
- funded versus unfunded; and
- defined contribution versus defined benefit.

3. The autonomous/non-autonomous distinction reflects whether a pension fund is sufficiently independent of the employer to be classified as a corporation or quasi corporation.[3] The funded/unfunded distinction hinges on whether segregated funds have been set aside to fund future benefits or not. Defined contribution schemes provide benefits that depend on past contributions of funds,[4] while defined benefit schemes provide benefits, based on some sort of formula (usually involving length of service and salary level) that are independent of any assets, which may be held by segregated funds. These categories are not completely independent, for example, autonomous pension schemes must be funded, and only defined benefit schemes are unfunded[5].

4. The treatment of employer pension schemes is important for several reasons. Firstly, they involve large resources. Pension schemes account for a substantial part of the income and wealth of the household sector; indeed, in many cases such schemes may account for the bulk of the savings of some households. Similarly, recent events have emphasized the importance of pension obligations for corporations. In the case of general government, many governments operate relatively generous unfunded or partially funded pension schemes whose treatment is very problematic under the *1993 SNA*. Secondly, the operation of a pension scheme involves a very long cycle, extending over several generations, and therefore the current largely cash flow approach can hide the accumulation of large obligations by one generation which may have to be met by subsequent generations. Finally, the role of holding gains and losses in generating returns

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[3] Autonomous funds can be set up to operate pension schemes for one employer, or can be multi-employer schemes. To be considered genuinely autonomous, the employer should have no obligation for pension benefits accrued in any period once it has made the agreed contribution to the fund. That is, the pension fund should not have any recourse to the employer to meet its obligations, and if it does have recourse, it should be seen as managing the employer's pension liabilities rather than operating autonomously.

[4] The creation of 'notional' defined contribution schemes of the type set up in Sweden has introduced a new pension scheme category. While future benefits depend on past contributions, those benefits are funded on a pay-as-you-go basis.

[5] Notional defined benefit schemes are funded in the sense that they have segregated funds, although they are operated on a pay-as-you-go basis.

for pension funds can generate very volatile estimates of output for funded pension schemes.

II. Main Reasons for Change

5. The main issues relating to the recording of employer's pension schemes concern:

- The attribution of output for non-autonomous employer pension schemes,
- The calculation of output of autonomous pension schemes, and
- The treatment of unfunded employer pension schemes in the *1993 SNA* balance sheet and the corresponding economic flow entries that result from that treatment.

The main issue relating to the recording of defined benefit pension schemes in general is that:

- The *1993 SNA* does not show the possible under funding or over funding of such schemes or the true value of the beneficiaries' claims on future benefits in such cases.

Attribution of pension fund output

6. The *1993 SNA* measures output separately only for autonomous employer pension schemes, and treats the output of non-autonomous schemes as ancillary to the main activity of the employer. However, this is not in line with the economic nature of this activity, which provides services to the beneficiaries rather than to the employer. Therefore, activity associated with employer pension schemes should be treated as secondary, rather than ancillary, activity, and the cost borne by the household sector.[6]

Calculation of output of autonomous pension funds

7. The recording of output of autonomous pension schemes has caused problems because of the different recording treatment used for investment income from transactions (interest, dividends) and holding gains or losses. The calculation of output, following the *1993 SNA*, is currently derived as follows:

> actual premiums earned *plus* premium supplements (i. e. investment income from transactions) *minus* benefits due *minus* change in insurance technical reserves due to transactions.

Wherever a large part of the return on investment of autonomous pension schemes is derived from holding gains and losses, this formula results in volatile, and even negative, output for these schemes. However, if the operating procedure of these schemes is examined it is seen that during the ratemaking process a service charge is calculated explicitly, and charged to the policy holder as an implicit part of total premiums. To approximate this service charge two mutually consistent indirect methods can be applied:

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[6] Anne Harrison, *Accounting in Full for Pension Liabilities* & Tony Johnson and Tulsi Ram, *Defined Benefit Pension Schemes in the SNA – Australian View.*

- Output = costs + (expected) profits
- Output = premiums (ex ante) + (expected) investment income – (expected) claims – (expected) change in insurance technical reserves.

8. Insurers include expected holding gains and losses in their calculations because they do not differentiate between sources of income in setting the service charge.[7]

Treatment of unfunded pension schemes

9. This is the most important issue relating to the treatment of employer pension schemes. The *1993 SNA* records employer liabilities and household assets only for funded employer pension schemes, on the basis that the household sector owns the assets of insurance schemes and therefore only funded schemes can give rise to household assets. Accordingly, the property income attributed to insurance policy holders is only shown for funded schemes and is the actual investment income (due to transactions) from fund assets. Similarly, where employers make actual contributions, these are recorded as the pension component of compensation of employees.

10. This line of reasoning is understandable in the case of defined contribution schemes, where the benefits that are eventually received by the pension beneficiaries depend on the amounts that have been contributed to the fund, and the results of investing those assets. However, the application of this treatment to defined benefit schemes raises several issues of logic and consistency within the *1993 SNA* itself, and runs counter to developments in related statistical systems and in international accounting.

11. All employer funded pension arrangements are part of the employer-employee contract, but the obligations assumed by the employer differ according to the pension model used. In the case of defined contribution schemes, the employer is obliged to contribute to pension fund assets in each period, but is not directly responsible for providing future benefits. In contrast, in the case of defined benefit schemes, the obligation of the employer is to eventually provide retirement benefits in accordance with the conditions associated with the scheme, and any contribution to a segregated pension fund is a second order issue. Assets held by segregated funds may speak to the reliability of the household asset corresponding to this liability, but do not correspond to the asset itself. Similarly, the increase in the employer's pension liability due to service in the current period, and the increase in the liability due to service in past periods, is independent of cash contributions and investment flows.[8]

12. The benefits provided by defined benefit schemes are normally based on a formula that takes account of time worked and salary (often final salary or salary over the final years of service). During an accounting period, the value of these benefits will increase due to both the service provided in that period, and the increase in the value of benefits due to past service resulting from a decrease in the period used in discounting future benefits to present value. The increase in future benefits due to service provided in

[7] Ingber Roymans and Peter van de Ven, *Measurement of Life Insurance: Theory and Practice*.
[8] Brian Donaghue, *Where and How Should the National Accounts Record Defined Benefit Schemes.*

the current period, discounted to present value, provides the economically correct measure of the increase in the employer's liability to provide pension benefits due to current service and is the pension component of compensation of employees. The increase in the value of the future employee benefits due to the reduction in the discount period is property income/expense because it measures the increase in an existing household asset/employer liability (the insurance technical reserves) due to the passage of time.[9]

13. Actual employer contributions, and supplementary contributions based on the investment returns for defined benefit schemes, have no necessary relationship to changes in the pension liability, which must be calculated by actuarial models using parameters appropriate to the scheme.

14. The current *SNA* records actual contributions to segregated pension funds, where these exist, as part of compensation of employees. Where no segregated funds exist, the *1993 SNA* acknowledges that contributions should be based on actuarial estimates, but in practice recommends that where such estimates are not readily available, compilers use the current benefits provided as a proxy for the actuarial estimate. This approach implicitly assumes that a steady state applies, and that the pension liability does not change over time. In fact, because there is no reserve into which an excess of contributions over benefits (or vice versa) can be put, the *1993 SNA* has no mechanism to cope with a situation where contributions do not exactly match benefits[10]. However, there is potentially a very long time difference[11] between when pension obligations are built up (imputed employer contributions) and when pension benefits actually begin to be provided, during which time the composition and size of the workforce is likely to change. Therefore, benefits provided are a poor proxy for actuarially determined employer contributions. Where the administrative arrangements change, for example due to privatization or reorganization of government responsibilities, the use of benefits as a proxy for employee costs can be completely misleading.[12] In fact, actuarial estimates should be used for all defined benefit schemes, whether actual employer contributions are made or not, because the increase in the employer's obligation to provide future benefits is independent of amounts contributed to segregated funds.

15. The *1993 SNA* is logically inconsistent in its treatment of employer pension schemes. In particular, *1993 SNA* apparently holds two mutually inconsistent views as to the nature of the insurance technical reserves asset/liability. Initially, as noted above, it measures this asset/liability as equal to pension fund assets, and this is also consistent with the financing flows for funded pension schemes. However, elsewhere when discussing the net worth of pension funds, and other economic flows associated with insurance technical reserves, it adopts an actuarial view, which is also acknowledged as

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[9] Anne Harrison, *Accounting in Full for Pension Liabilities.*
[10] Ibid.
[11] A generation or more.
[12] For example, the pensions task force was informed that these problems have seriously compromised the usefulness of sectoral aggregates for India – Ramesh Kolli and J. S. Venkateswarlu, *Implementation Concerns of Developing Countries with Main Focus on India.*

the conceptually correct way of estimating imputed employer contributions (even if *1993 SNA* goes on to recommend use of benefits provided in the current period as a proxy for this flow).[13]

16. The nature of a 'funded' pension scheme is also poorly defined, because a pension scheme might have segregated funds that are not sufficient to meet its current obligations. The *1993 SNA* appears to assume that where a scheme is 'funded' the assets would be sufficient to meet its current obligations, and that any departure from this situation would be relatively minor and short term. However, this need not be so, especially for government employer pension schemes, where the extent of funding provided in any one period often depends on budget circumstances. Therefore defined benefit schemes can appear anywhere in the spectrum from considerably over funded,[14] via fully funded to largely unfunded.[15] The current treatment of substantially under funded 'funded' schemes is of course analytically misleading.

17. Finally, the requirement that a pension fund must have assets before it can have liabilities is not followed elsewhere in the system. It is true that where funds sufficient to met current obligations are not set aside in an autonomous fund, then the likelihood that the promised benefits will eventually be provided depends upon the continuing viability of the employer or other sponsor of the pension scheme. This is also true for segregated but non-autonomous funds, because this category is essentially an administrative distinction but this condition also applies to other types of liabilities. For example, loans are made to corporations and governments in the expectation that they will eventually be repaid, and are recognized as liabilities of these entities despite the absence of matching assets. In practice, the majority of unfunded pension schemes (at least by value) are operated by governments, precisely because governments are expected to remain viable and meet their obligations in all except very extreme circumstances (such as revolutions, or invasions). This is frequently misunderstood as meaning that future tax revenues are recorded as offsetting 'assets,' but all it means is assuming that governments will continue to meet their obligations, for pensions as for debt, without need to set apart any specific assets to back these obligations. In addition, where a corporation or government does in fact dishonor its pension obligations, in whole or in part, this is an important economic event, which should be recorded in the national accounts (in the Other Changes in the Volume of Assets account).[16]

18. Apart from the logical and consistency problems identified above, two changes in the economic environment also support the case for changing the current treatment of employer pension schemes. The majority of unfunded defined benefit schemes are operated by the general government sector, and at the time that the *1993 SNA* was adopted governments used a cash accounting basis, which is consistent with the SNA treatment. The *Manual on Government Finance Statistics 1986 (GFSM 1986)* was also on a cash basis. However, the new *Government Finance Statistics Manual 2001 (GFSM*

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[13] Brian Donaghue, *Where and How Should the National Accounts Record Defined Benefit Schemes.*
[14] Some countries require that pension funds be overfunded for prudential reasons.
[15] Brian Donaghue, *Where and How Should the National Accounts Record Defined Benefit Schemes.*
[16] Ibid.

2001) is now on a full accrual basis, which includes the use of actuarial estimates to calculate the stocks and flows associated with employer defined benefit pension schemes. In addition, governments are generally moving to adopt accrual accounting standards, which will also entail the use of actuarial estimates for these schemes. This leaves *1993 SNA* in the position of being inconsistent with related economic statistics, and with emerging accounting standards generally.[17] The task force on employer retirement schemes was informed that in two jurisdictions[18] where governments have already adopted an accrual accounting standard national accountants have also moved to an accrual basis for defined benefit schemes because to do otherwise would severely damage the credibility of the statistics.

III. Recommended Changes and Implications of Changes

19. Task Force on Employer Retirement Schemes discussed these issues at a meeting in Washington during September 21-23, 2005.

Attribution of pension fund output

20. The task force reached consensus that the output of pension schemes is not ancillary to the employer's main activity, but provides services to the beneficiaries and should therefore be treated as a secondary activity, and the costs borne by the household sector. There was also consensus that the output should be calculated on a cost basis. The property income associated with the scheme should include an allowance for the service charge.

21. There was also general support for the proposal that, where it is feasible to separate pension fund activity from the other activity, this should be done. The separate entity should be classified to the insurance sub-sector (even if its degree of autonomy is less than would usually be required for a quasi-corporation) to avoid having insurance type activity spread widely outside the financial corporations sector.

Calculation of output of autonomous pension funds

22. The task force discussion of the problems caused by the holding gains and losses component of the return on investment reached the conclusion that it is appropriate to use expected transactions and expected holding gains and losses to explain the service charge. The use of expected holding gains and losses in this way does not contravene *1993 SNA* rules on the treatment of holding gains and losses, because they are used as a way of determining the actual service charge. However, only investment returns on funds allocated to the underwriting function should be included in this calculation. The task force thought that further work is needed on the implications of using expectations in the practical calculation of pension fund output for national accounts purposes.

[17] Tony Johnson and Tulsi Ram, *Defined Benefit Pension Schemes in the SNA – Australian View.*
[18] Canada and Australia.

Treatment of unfunded pension schemes

23. In regard to the treatment of unfunded employer pension schemes, there were two alternative proposals presented at the task force meeting:

- Record in the core accounts the liabilities of the employers, and corresponding household assets, equivalent to the present value of the benefits promised to employees due to services provided to the present, plus economic flows corresponding to these stock items, calculated on an actuarial basis, for all defined benefit schemes.[19]
- Maintain the existing arrangements for employer pension schemes in the core accounts of the *1993 SNA*, but with the addition of information on the balances and related flows of both unfunded employer pension schemes and social security schemes in supplementary accounts.

24. Discussion by the task force on the treatment of unfunded pension schemes was restricted to defined benefit schemes. Unfunded pension schemes all are of the defined benefit model – defined contribution schemes are funded by definition.[20] The task force did not propose any changes to the treatment of defined contribution schemes.

25. The second option (i. e. the recording of unfunded pension and social security schemes in supplementary accounts) was favored by some representatives who argued that: [21,22]

- There are significant measurement problems in establishing the value of the liabilities of the fund. One factor giving unease is that, as confirmed by the actuaries in the meeting, changes in the discount rate used can cause very significant changes in the estimated liabilities. This in turn significantly affects the figures for government debt both in absolute levels and as far as the movement over time is concerned;
- There is also unease that the derivation of liabilities is determined by a model rather than observation;
- In a number of large EU countries, it is difficult to draw the boundary line between unfunded employer pension schemes, many of which refer to the government as employer, and social security schemes. Both are funded on a PAYG basis and thus from the point of view of government may be seen to be close substitutes;
- Recent experience in Europe is that both social security and employee pension benefits may be altered unilaterally and with retrospective effect at any time;
- The size of social security liabilities is much greater than that for employer pension schemes. The EDG moderators recognize this and thus do not propose including liabilities for these schemes. By contrast, and given the difficulties of

[19] Irrespective of the degree of funding.
[20] Although, as noted above, while 'notional' defined contribution schemes have segregated funds, they are nevertheless pay-as-you-go systems. This type of scheme is funded in the *1993 SNA* sense of having segregated funds, but unfunded in the sense that current benefits are paid out of current contributions.
[21] European Committee for Monetary, Financial and Balance of Payments Statistics.
[22] Reimund Mink and Richard Walton, *Unfunded Employer and Social Security Pension Scheme.* Reimund Mink, *Implicit Assets and Liabilities within an Updated System of National Accounts*.

distinguishing the borderline between the schemes, the EU suggestion is to include both sets of liabilities but in supplementary accounts;

- From an analytical point of view, the behavior of households and governments differ under funded and pay as you go schemes, otherwise why introduce funded schemes;
- The current treatment aligns with statistical recording in financial statistics, because funded schemes effectively carry out financial investments, which is not the case for unfunded schemes

26. The task force majority view was that the rationale behind this approach was not convincing for the following reasons:

- Unfunded pension schemes and social security schemes are not always seen as close substitutes; unfunded pension schemes may be a closer substitute for funded pension schemes;
- Governments can, and sometimes do, abrogate their liabilities, including loan liabilities, but those liabilities are still recorded in the accounts;
- Measurement problems have not prevented unfunded pension schemes being recorded for many corporations and governments; such measurement is required under accrual accounting standards which have already been adopted by several governments and are expected to be adopted by most OECD (and some non-OECD) countries in the near future. The *1993 SNA* should be forward looking and not limited by possible temporary difficulties in obtaining suitable data. Actuarial estimates are needed for the pension contributions component of compensation of employees and these use exactly the same modeling as would be used for unfunded schemes;
- Revisions due to changes in actuarial assumptions (including changes to discount rates) can be accommodated in the system via other economic flows
- The *1993 SNA* treatment imposes a ‘penalty’ on the debt of governments operating funded pension schemes versus those with unfunded schemes, because only funded schemes show pension liabilities;
- It is not obvious that the behavior of households and governments differ under funded and unfunded pension schemes; households appear to treat their pension asset interchangeability regardless of whether it is funded or not;
- It was suggested that an alternative to having a set of supplementary accounts could be to provide sufficient detail in the core accounts to permit the flows and stocks relating to unfunded schemes to be removed for analytical purposes.

27. The view of a clear majority of the task force was that the current treatment of defined benefit employer pension schemes is not conceptually correct – in effect measuring the cash flows associated with these schemes rather than accrual transactions as elsewhere in the System. In addition, focusing on the assets of pension schemes rather than the liabilities does not properly reflect the contractual nature of the employer-employee relationship. Only the adoption of an actuarially based treatment of all defined benefit pension schemes in the core accounts – in accordance with the first option – will provide a solution that is conceptually correct, internally consistent, and in conformity

with the *GFSM 2001* and international accounting standards. This would entail the following changes for all employer defined benefit pension schemes:

- Inclusion of the employer liabilities and corresponding household assets, measured on an actuarial basis, in the sectoral balance sheets;
- The addition of an imputation to the Generation of Income Account, which can be either positive or negative, to make up the difference between actual employer contributions and the actuarially determined amount that would have to be contributed to meet the increase in pension obligations due to service provided in the current period;
- The replacement in the Allocation of Primary Income account of 'property income attributed to insurance policyholders' based on fund investments by an imputed amount representing the increase in the pension liability accrued up to the start of the current period, due to the reduction in the length of the discount period;[23]
- Consequential changes to the Secondary Distribution of Income, Use of Income, Financial, and Other Economic Flow accounts.

28. The adoption of an actuarial approach for all defined benefit schemes, whether funded or unfunded, ensures that the most analytically useful data are also provided for over funded or under funded (in addition to unfunded) defined benefit schemes.

29. An actuarial expert[24] informed the task force that although the required calculations are complex they are covered by well-developed actuarial and accounting standards, and would be regarded as a routine part of accrual accounting systems. The application of international standards and professional practice ensures that the assumptions used in actuarial calculations are reasonably consistent between pension schemes.[25]

30. The liability, and changes in liability, of the pension scheme should be calculated on the basis of service provided to the current date and using current wage and salary rates, i. e. as if the pension scheme were to be terminated at the balance date (sometimes called the accrued benefit obligation – ABO). However, it would also be useful if the liability calculated on the basis of service provided to the current date, but using wage and salary levels projected to retirement date (projected benefit obligation – PBO), were provided as a memorandum item, because this gives a measure of the pension liability if the pension scheme is treated as a going concern.[26]

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[23] The pension fund assets, if any, and investment income would be allocated to the employers or other sponsors.

[24] Tonya Manning (Aon Consulting), *Defined Benefit Employers' Retirement Pension Schemes in the United States*.

[25] For example, the most sensitive assumption used in the calculations, the discount rate, must be equivalent to that for high quality bonds relevant to the employer with a maturity period similar to the discount period.

[26] The actuarial experts informed the task force that accounting conventions are likely to move from the inclusion of PBO to ABO based estimates in the balance sheet, but PBO based estimates are expected to continue to be available.

31. The OECD representative[27] suggested that, as a compromise solution, the stocks and flows associated with unfunded pension schemes be included in the core accounts, but as a separate category, leading to alternative balancing items. The task force majority supported this approach to the extent of retaining classificatory distinctions between actual cash flows and imputations to allow alternative views of the economic effects of these schemes to be developed. A further compromise suggested by the OECD representative – that the stocks and flows associated with contributory social security schemes be included in supplementary SNA accounts – was noted with interest by the task force but not pursued further at the meeting.

32. The task force reached a consensus view that in some countries the relationship between social security and pension schemes appears to be very close, and that possibly the social security schemes should be seen as operating multi-employer pension schemes in addition to their normal social security function. The task force agreed that where specific pension obligations were assumed by governments for their own employees, as part of their conditions of employment, those obligations are contractual in nature (either explicit or implicit) even if they are included in a wider social security scheme. The task force also agreed that where employer pension schemes and social security functions are combined under a single umbrella organization the delineation of the boundaries between these components should be addressed as a matter of urgency.

IV. Task Force Recommendations

33. Attribution of output of non-autonomous pension schemes

- In principle, *1993 SNA* should record separate output for non-autonomous pension funds (as well as for autonomous pension funds);
- Output of non-autonomous pension funds should be measured at cost, including the full management cost of any insurance company managing the fund on behalf of an employer – NOTE Because the general government sector output is already measured on a cost basis no change is expected to measures of government output, but the cost of managing pension schemes should be reclassified from collective to individual consumption;
- Output should be recorded as consumed by the beneficiaries of the funds (i. e. households);
- For non-autonomous defined benefit schemes, an income should be imputed to the policyholders equal to the property income due to the reduction in the discount period plus the imputed service charge.

[27] Francois Lequiller, *Towards a Compromise for the New SNA.*

34. Use of 'expected' holding gains and losses

- It is appropriate to use expected transactions and expected holding gains and losses, which is determined in the ratemaking process on the basis of expected return from all sources, to explain the service charge of autonomous pension funds. However, further work is needed on the implications of using expectations in the practical calculation of pension fund output for national accounts purposes.

35. Recording of pensions

- A clear majority of the task force recommended that all pension liabilities of employers should be recognized, irrespective of the degree to which the pension schemes are funded.
- They also recommended that comprehensive recording of the stocks and flows of all employer pension schemes should be included in the core accounts.
- However, recognizing practical problems and user needs, a majority also recommended separately identifying the imputed component of flows and stocks.

36. Property income

- The value of property income imputed to the beneficiaries (and recorded as supplementary pension contributions) for defined benefit schemes should represent the expected return on the accumulated value of benefits, due to the unwinding of the discount factor applied to the value of these benefits plus the imputed service charge.

37. Actuarial estimates

- The accumulated value of defined benefit scheme benefits included in the balance sheet, and the increase in that value due to service provided in the current period, should be calculated only on service to date and using current wage and salary levels (ABO method). However, it is also recommended that the value of benefits based on service to date but using wage and salary levels projected to retirement date (PBO method) should be included as a memorandum item.
- The actuarial basis for calculating the value of the asset to the household is consistent with the employer's liability to provide future retirement benefits due to service provided to the current date.
- An acceptable discount rate would be the interest rate on high quality securities relevant to the sponsor of the pension scheme and with the terms to maturity consistent with the time horizon of the pension liability.

38. Pension schemes

- The task force agreed that pension schemes are arrangements set up to provide retirement benefits to participants, based on a contractual employer-employee relationship.
- They include funded, unfunded, and partly funded schemes.

- They may or may not be mandated by government.
- They can be autonomous or non-autonomous.
- Autonomous schemes are included in the pension subsector of the financial corporations sector.
- Non-autonomous schemes are included in the sector of the sponsor, unless quasi-corporations can be established for the pension funds, in which case they are also included in the pension subsector of the financial corporations sector.

39. Social security schemes

- The task force noted that basic social security is essentially a redistributive process that does not involve a contractual employer-employee relationship and where benefits provided are not directly linked to the size of contributions.
- However, some governments apparently operate schemes (composite social security) which combine this basic social security function with what is effectively a multi-employer pension scheme.
- The criteria for distinguishing basic social security from employer related pension schemes should be reviewed as a matter of urgency.

V. Outstanding Issues

- The task force did not reach a consensus on the allocation of the net worth of under or over funded autonomous pension schemes.
- The task force noted with interest, but did not pursue further, the proposal of Eurostat and the OECD that the updated *SNA* include a supplementary set of accounts for social security schemes.
- The task force also noted that the updated *SNA* should include recommendations regarding the treatment of transfers of (explicit or implicit) liabilities between different types of schemes.
- The task force did not explore all aspects of unfunded multi-employer defined benefit schemes, including the question how the liabilities should be recorded that represent the participating employees’ claims on future benefits.

APPENDIX I

TASK FORCE ON EMPLOYER RETIREMENT SCHEMES
List of participants of the September 21-23, 2005 meeting

Mr. Thomas Alexander, IMF
Mr. Bo Bergman, Statistics Sweden
Mr. Ole Berner, Statistics Denmark
Mr. Adriaan Bloem, IMF
Ms. Carol Carson, Manager *1993 SNA*, Rev 1
Mr. Brian Donaghue, consultant
Mr. Keith Dublin, IMF
Mr. Dieter Glatzel, Eurostat
Mr. Ron Gebhardtsbauer, American Academy of Actuaries
Mr. Cor Gorter, IMF
Mr. Peter Harper, ABS
Ms. Anne Harrison, Editor *1993 SNA*, Rev 1
Mr. Ivo Havinga, UNSD
Mr. Ramesh Kolli, CSO India
Mr. Steve Landefeld, BEA
Mr. François Lequiller, OECD
Mr. David Lenze, BEA
Ms. Tonya Manning, Aon Consulting
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APPENDIX II

ILLUSTRATIVE EXAMPLES

This appendix provides examples to illustrate the effect of the proposed changes. The numbers are purely illustrative. Depending on country circumstances, the impact of the proposed changes on aggregates such as compensation of employees, property income, saving, and the balance sheet may be significant, but at present data are not available to quantify the impact.

The examples also illustrate one option that might be used to allow analysts to evaluate the impact of different pension arrangements. This option shows separate lines for economic stocks and flows relating autonomous and non-autonomous pension schemes (and also separates pension schemes from other insurance arrangements, and social security, where appropriate). The funded/unfunded distinction could also be used, but as noted above the 'funded' category is not well defined, and the effect of 'funding' on economic behavior is not clear, whereas autonomous pension schemes can be clearly distinguished, and are likely to operate quite differently from non-autonomous schemes.

In the illustrations, item descriptions and values taken from the *1993 SNA* tables are shown in **bold** and additional items, and adjustments, are shown in plain text. Where new items are suggested, the item codes are derived by adding a dash and sub-item number to the original higher level item (e. g. the sub-items splitting item D.121 *Employers' actual social contributions* into sub-items for *social security, autonomous pension schemes*, and *non-autonomous pension schemes* are shown as D.121-1, D.121-2, and D.121-3, respectively).

The illustrations do not show any defined benefit scheme adjustments to autonomous pension scheme values, although such adjustments could possibly occur. There are two reasons for this:

1) Most defined benefit schemes will be non-autonomous (because their liabilities are open-ended and it is difficult for insurance companies and the like to predict and manage them effectively).
2) If defined benefit schemes were autonomous one would expect that the operators of such schemes would take good care to ensure that invested funds are sufficient to meet accruing liabilities, and therefore both contributions and investment income will track the actuarial measures fairly closely. In these circumstances, one would not expect compilers to adjust the contribution and investment data.

Table 6.1 Account 1 Production Account

Uses | **Resources**

Total economy	NPISHs	Households	General government	Financial corp.	Non-financial corp.	Transactions	Non-financial corp.	Financial corp.	General government	Households	NPISHs	Total economy
3057						**P.11 Market output**	**1722**	**102**	**80**	**1129**	**24**	**3057**
3						Non-autonomous pension scheme output adjustments	3					3

Table 7.1 **Account II.1.1** **Generation of Income Account**

Uses **Resources**

Total economy	NPISHs	House-holds	General govern-ment	Finan-cial corp.	Non-finan-cial corp.	Transactions	Non-finan-cial corp	Finan-cial corp	General govern-ment	House-holds	NPISHs	Total eco-nomy
174	**10**		**48**	**4**	**112**	**D.121 Employers' actual social contributions**						
147	8		36	3	100	D.121-1 Employers' actual social contributions - Social security schemes						
18	2		6	1	9	D.121-2 Employers' actual social contributions - autonomous pension schemes						
9			6		3	D.121-3 Employers' actual social contributions non-autonomous pension schemes						
19	**1**	**0**	**5**	**1**	**12**	**D.122 Employer's imputed contributions**						
6			4		2	Defined benefit scheme adjustments - due to imputation to make up the difference between actual contributions and the amount that would be necessary to meet entitlements to pensions accrued during the Period – plus use of actuarial estimates rather than benefits paid proxy for imputed contributions						

Table 7.2 Account II.1.2 Allocation of Primary Income Account

Uses | **Resources**

Total economy	NPISHs	Households	General government	Financial corp.	Non-financial corp	Transactions	Non-financial corp.	Financial corp	General government	Households	NPISHs	Total economy
						D.121 Employers' actual social contributions				**174**		**174**
						D.121-1 Employers’ actual social contributions - social security schemes				147		147
						D.121-2 Employers' actual social contributions – autonomous pension schemes				18		18
						D.121-3 Employers' actual social contributions - non-autonomous pension schemes				9		9
						D.122 Employers' imputed contributions (for non-autonomous pension schemes)				**19**		**19**
						Defined benefit scheme adjustments - consequent to changes in the Generation of Income Account				6		6
25				**25**		**D.44 Property Income attributed to insurance policyholders**	**5**	**0**	**0**	**20**	**0**	**25**
15			8		7	Defined benefit scheme and service charge offset adjustments				15		15
5				5		D.44-1 Property income attributed to insurance policyholders - Insurance schemes	5					5
20				20		D.44-2 Property Income attributed to insurance policyholders - autonomous pension schemes				20		20
						D.44-3 Property Income attributed to insurance policyholders - non-autonomous pension schemes						
12			8		4	Defined benefit scheme adjustments - the imputation of property income attributed to insurance policyholders for all non-autonomous Defined benefit pension schemes due to the passage of time				12		12
3					3	Non-autonomous output adjustment – imputed Property income attributed to policy holders of non-autonomous pension schemes to offset the service Charge				3		3

Table 8.1 Account II.2 Secondary Distribution of Income Account

Uses | **Resources**

Total economy	NPISHs	House-holds	General govern-ment	Finan-cial corp.	Non-finan-cial corp.	Transactions	Non-finan-cial corp.	Finan-cial corp.	General govern-ment	House-holds	NPISHs	Total economy
97		**97**				**D.6112 Employees' social contributions**	**1**	**20**	**76**			**97**
-3		-3				Defined benefit scheme adjustments	-1		-2			-3
76		76				D.6112-1 Employees’ social contributions – social security schemes			76			76
20		20				D.6112-2 Employees’ social contributions - autonomous pension schemes		20				20
3		3				D.6112-3 Employees’ social contributions – non-autonomous pension schemes	1		2			3
-3		-3				Defined benefit scheme adjustments - replacement of investment income of non-autonomous defined benefit funds by imputed values of property income attributed to insurance policyholders	-1		-2			-3
19		**19**				**D.612 Imputed social contributions** (for non-autonomous pension schemes)	**12**	**1**	**5**		**1**	**19**
21		21				Defined benefit scheme adjustments	9		12			21
19		19				D.612-1 Employers' imputed pension contributions	12	1	5		1	19
6		6				Defined benefit scheme adjustments - return to employer sectors of adjustments to imputed employer contributions for non-autonomous defined benefit pension schemes	2		4			6
						D.612-2 Employees' imputed pension contributions						
12		12				Defined benefit scheme adjustments - return to employer sectors of imputed property income attributed to insurance policyholders for defined benefit schemes	4		8			12
3		3				Non-autonomous output adjustment – return to employer sectors of imputed property income attributed to policy holders	3					3

Table 9.1 Account II.4.1 Use of Disposable Income Account

Uses: Total eco-nomy	NPISHs	House-holds	General govern-ment	Finan-cial corp.	Non-finan-cial corp.	Transactions	Resources: Non-finan-cial corp.	Finan-cial corp.	General govern-ment	House-holds	NPISHs	Total eco-nomy
1243	**16**	**1015**	**212**			**P.31 Individual consumption expenditure**						
3		3				Non-autonomous pension adjustment – corporations						
2			2			Non-autonomous pension adjustment – general govt.						
156			**156**			**P.32 Collective consumption expenditure**						
-2			-2			Non-autonomous pension adjustment – general govt.						
11				**11**		**D.8 Adjustment for the change in net equity of households in pension funds**				**11**		**11**
21			12		9	Defined benefit scheme adjustments				21		21
11				11		D.8-1 Adjustment for the change in net equity of households in autonomous pension funds				11		11
21			12		9	D.8-2 Adjustment for the change in net equity of households in non-autonomous pension funds - defined benefit scheme adjustment				21		21

Table 11.1 **Account 111.2** **Financial Account**

Changes in Assets **Changes in Liabilities and Net Worth**

Total economy	**NPISHs**	**House-holds**	**General govern-ment**	**Finan-cial corp.**	**Non-finan-cial corp.**	**Transactions**	**Non-finan-cial corp.**	**Finan-cial corp.**	**General govern-ment**	**House-holds**	**NPISHs**	**Total economy**
11		**11**				**F.612 Net equity of households in pension funds**		**11**				**11**
18		18				Defined benefit scheme adjustments	6		12			18
11		11				F.612-1 Net equity of households in autonomous pension funds		11				11
						F.612-2 Net equity of households in non-autonomous pension funds						
18		18				Defined benefit scheme adjustments - resulting from the recognition of liabilities for unfunded pension schemes, and changed calculation of property income attributed to insurance policyholders	6		12			18

Table 12.2 Account III.3.2 Revaluation Account

Changes in Assets | **Changes in Liabilities and Net Worth**

Total economy	NPISHs	Households	General government	Financial corp.	Non-financial corp.	Transactions	Non-financial corp.	Financial corp.	General government	Households	NPISHs	Total economy
						AF.6 Insurance technical reserves (ITR)						
2		2				Defined benefit scheme adjustments	1		1			2
						AF.6-1 ITR – autonomous pension schemes						
						AF.6-2 ITR – non-autonomous pension schemes						
2		2				Defined benefit scheme adjustments - due to changes to prices affecting actuarial calculations for defined benefit schemes	1		1			2

Table 12.1 Account III.3.1 Other Changes in Volume of Assets Account

Changes in Assets | **Changes in Liabilities and Net Worth**

Total economy	NPISHs	Households	General government	Financial corp.	Non-financial corp.	Transactions	Non-financial corp.	Financial corp.	General government	Households	NPISHs	Total economy
2		**2**				**AF.6 Insurance technical reserves** (ITR)		**2**				**2**
-1		-1				Defined benefit scheme adjustments			-1			-1
2		2				AF.6-1 ITR – autonomous pension schemes		2				2
						AF.6-2 ITR – non-autonomous schemes						
-1		-1				Defined benefit scheme adjustments - due to changes in the structure of defined benefit pension schemes			-1			-1

Table 13.1 **Account IV** **Balance Sheet**

Assets **Liabilities and Net Worth**

Accounts	Total economy	NPISHs	House-Holds	General govern-ment	Finan-cial corp.	Non-finan-cial corp.	Stocks, transactions and other flows	Non-finan-cial corp.	Finan-cial corp.	General govern-ment	House-holds	NPISHs	Total economy
IV.1	**370**	**4**	**291**	**20**	**30**	**25**	**AF.6 Insurance technical reserves (ITR)**	**12**	**335**	**19**		**5**	**371**
Opening balance sheet	150		150				Defined benefit scheme adjustments	49		101			150
	135	4	56	20	30	25	AF.6-1 ITR – insurance schemes		135				135
	200		200				AF.6-2 ITR – autonomous pension schemes		200				200
	35		35				AF.6-3 ITR – non-autonomous pension schemes	12		19		5	36
	151		151				Defined benefit scheme adjustments - to change pension liabilities for defined benefit pension schemes to the present value of the obligations to provide future pension benefits due to service which has been provided to the balance date	49		101		1	151
IV.2	**38**		**38**				**AF.6 Insurance technical reserves**		**38**				**38**
Changes in balance sheet	18		18				Defined benefit scheme adjustments	6		12			18
	8		8				AF.6-1 ITR – insurance schemes		8				8
	30		30				AF.6-2 ITR – autonomous pension schemes		30				30
							AF.6-3 ITR – non-autonomous pension schemes						
	18		18				Defined benefit scheme adjustments - as described above	6		12			18
IV.3	**408**	**4**	**329**	**20**	**30**	**25**	**AF.6 Insurance technical reserves**	**12**	**373**	**19**		**5**	**409**
Closing balance sheet	169		169				Defined benefit scheme adjustments	55		113		1	169
	143	4	64	20	30	25	AF.6-1 ITR – insurance schemes		143				143
	230		230				AF.6-2 ITR – autonomous pension schemes		230				230
	35		35				AF.6-3 ITR – non-autonomous pension schemes	12		19		5	36
	169		169				Defined benefit scheme adjustments - as described above	55		113		1	169