9th Meeting of the Advisory Expert Group on National Accounts,
8-10 September 2014, Washington DC

Agenda item: 2.1
Topic: Accounting for pensions, methodology for delineation and measurement of pension entitlements

Introduction

According to SNA 2008, liabilities (and entitlements) in relation to employment-related pension schemes have to be recognised, whether or not they are funded. In recognising these liabilities, some flexibility is however allowed for pension schemes which are intertwined with more generic social security type of schemes. To arrive at better internationally comparable data on pension liabilities, the 2008 SNA has also included a supplementary table (table 17.10), according to which all pension liabilities are accounted for, both the liabilities which are recognised in the core system of national accounts and those which are not recognised in the core system.

In this note, two main issues will be put forward to the AEG on National Accounts for further consideration. The first one relates to the interpretation of the guidance provided by the 2008 SNA regarding the distinction between pension schemes for which the entitlements have to be recognised in the core system and the ones for which the entitlements will only feature in supplementary table 17.10. Apart from getting a common understanding of the SNA-standards, also the development of criteria that would distinguish between the various types of schemes will be dwelt upon. The second issue concerns the measurement of pension entitlements in practice. Here, the AEG is predominantly requested to provide further guidance on the conceptually most appropriate assumptions for estimating the entitlements.

Guidance on documentation provided
Not applicable.

Main issues to be discussed

The AEG is invited to express their views on the following set of issues:

Delineation of pension schemes:

- *Does the AEG agree with the presented ambiguity that one may derive from the current guidelines on pensions, and does the AEG agree on the need for further work on achieving more transparency?*
- *Does the AEG consider the setup of a decision tree, including criteria for determining whether or not pension liabilities should be recognised and recorded in the core tables?*
- *The AEG is requested to consider the various criteria that have been presented in this note, elaborate on new criteria and discuss a hierarchy or framework regarding the criteria. In particular, does the AEG support the assessment that closeness to social security is the single most important criterion for not recognising and recording pension liabilities in the core accounts?*

Adjustment of actuarial calculations:

- *Should national accountants, if possible, adjust actuarial data, calculated according to the accounting standards, in order to arrive at more comparable results?*
- *Should the SNA provide more detailed guidance on the conceptually preferred assumptions for the calculation of pension entitlements and related flows?*

Discount rate:

- *What is considered the conceptually most appropriate starting point for the discount rate? In this respect, should the long-term character of the pensions lead to stable assumptions regarding the discount rate?*
- *Does the grade of integration of international financial markets justify the recommendation of a (global) risk free discount rate of e.g. 3%; in real terms?*
- *Should these assumptions be reviewed only when usual revisions of national accounts are undertaken; e.g. every five years?*

ABO versus PBO:

- *What is considered the conceptually most appropriate approach: ABO or PBO? What would be the main criteria for the application of the ABO or PBO approach?*
- *Does the AEG recommend applying one and the same approach to all pension schemes, or to apply at least one and the same approach to all schemes managed by government?*

Life expectancy:

- *What are the kind of details on demographic developments that should be taken into accounts?*
- *Should harmonised population projections, prepared and regularly updated by international organisations, preferably be used for government and social security pension schemes?*

Other issues:

- *Does the AEG agree that, for example, survivor pensions are to be included in the calculation of pension entitlements?*
- *Does the AEG support the idea that national statistical offices are requested to compile a 'pensions fact sheet' providing basic information regarding coverage, scheme rules and major actuarial assumptions?*
- *Does the AEG recommend to include into the fact sheet, if possible, a sensitivity analysis regarding the main actuarial assumptions?*

Accounting for pensions, methodology for delineation and measurement of pension entitlements

1. Introduction

1. The 1993 SNA and ESA 95 recognised pension obligations only for funded "private" schemes. Hence, the activities of many pension schemes, such as social security and unfunded employer schemes, did not lead to the recognition of financial assets/liabilities. As the set-up of pension schemes, funded or unfunded, private or public, substantially differs across countries, the information on pension entitlements provided by national accounts was neither fully comparable nor comprehensive.

2. The 2008 SNA and ESA 2010 recognise that employment-related pension entitlements are contractual engagements that are expected to be enforceable. However, taking into account the problems associated with the recording of entitlements of unfunded pension schemes sponsored by government, the 2008 SNA provided some flexibility with respect to these schemes. Only some entitlements may be recorded in the "core accounts". At the same time, a supplementary table, table 17.10, has been introduced, to allow estimates to be recorded for all pension entitlements in social insurance, whether funded or unfunded.

3. The ESA 2010 is not offering the same degree of flexibility with respect to the core / non-core allocation of schemes and recording of pension entitlements. In addition, a guidance note leading to a comparable calculation of pension entitlements has been produced by Eurostat and the European Central Bank. This "Technical Compilation Guide for Pension Data in National Accounts" was published in January 2012. Based on the methodology outlined this Guide, the Member States of the EU will transmit data on accrued-to-date pension entitlements in social insurance on a mandatory basis to Eurostat for the first time by the end of 2017. Other countries, like the United States and Canada already published information on (main parts of) the relevant pension entitlements with the implementation on 2008 SNA.

4. In this note, two main issues will be put forward to the AEG on National Accounts. The first one, in section 2, relates to the interpretation of the guidance provided by the 2008 SNA regarding the distinction between pension schemes for which the entitlements have to be recognised in the core system and the ones for which the entitlements will only feature in the supplementary table (table 17.10 of the 2008 SNA). Apart from getting a common understanding of the SNA-standards, also the development of criteria that would distinguish between the various types of schemes will be dwelt upon.

5. Section 3 will propose some further guidance on the measurement of pension entitlements in practice. Here, the AEG is predominantly requested to provide further guidance on the conceptually most appropriate assumptions for estimating the entitlements.

2. Criteria for distinguishing between schemes recorded inside or outside the core accounts

6. The recording of pensions has changed quite considerably in the SNA 2008. This was mainly due to the fact that the 1993 SNA was considered to be inconsistent in its recommended treatment of funded and unfunded pension schemes, leading to different "impacts" on key variables like income, saving, financial assets or liabilities, thus leading to a lack of international comparability of data on pension schemes across countries.

7. Considerable discussions have taken place on an international level, which ultimately led to the amendments to the SNA 1993 on the treatment of pension schemes. Most important in this respect are the conclusions of the Advisory Expert Group (AEG) on National Accounts with regards to the International Task Force meeting on employers' retirement schemes. There was strong support of the AEG for the Task Force recommendation to recognise the liabilities for all employer pension schemes, including unfunded ones, and any associated assets and transactions. Nevertheless, due to the difficulties for some countries in drawing the line between pension schemes for government employees and social security schemes, the AEG stressed the importance to develop criteria that would distinguish between the several types of schemes. The possibility was raised of countries not including the liabilities for pensions of government employees in the core accounts but of including them together with the liabilities for social security schemes in supplementary accounts, until criteria were developed to distinguish between the various types of schemes. Possible criteria that were mentioned to explain the distinction between those schemes carried forward to the core accounts and those recorded only in the supplementary table, were, among others, the employer/employee relationship, or the nature of the liability (e.g. whether it is a contingent or an actual liability).

Current guidelines in SNA 2008

8. The main conclusion that could be drawn from the discussions is that, in general terms, there was a clear consensus to record, in the core accounts of the SNA, liabilities arising from employment-related pension schemes, whereas social security pension schemes should only be recorded in the supplementary tables. This treatment has also been envisaged by the amendments that were made to the SNA guidelines. In the annex, the most important paragraphs on how to record pension schemes in the 2008 SNA are presented.

9. An unresolved issue concerns however the treatment of employment-related pension schemes which are strongly intertwined with social security schemes. In these cases, clear criteria are still needed to distinguish whether a pension scheme leads to a liability and should be recorded as such in the core accounts, or whether it does not and should only be recorded in the supplementary tables. In the meantime, the SNA provides some flexibility on which pension liabilities should (not) be recorded in the core accounts, in the case that it is not entirely clear whether a pension scheme leads to unambiguous entitlements.

Challenges that arise from the new guidelines

10. The 2008 SNA guidelines on pensions provide improved guidance on how to record pension entitlements derived from various pension schemes within the system of national accounts. However, the current wording still leaves room for interpretation, and in some cases they seem to contradict to a certain extent. This may give rise to an inconsistent interpretation and recording of data on pension schemes. The ambiguity in the current guidelines seems to be mainly caused by the fact that multiple distinctions for pension schemes, and different terms for the same phenomena are applied. Below, the possible distinctions that are made in the 2008 SNA are presented with a reference to the relevant paragraphs in the 2008 SNA. Special attention is paid to potential contradictions.

1. Employment-related pension schemes versus social security pension schemes

11. The distinction between employment-related pension schemes and social security pension schemes is an important one, as pension entitlements related to social security type of pension schemes are not recognised in the core accounts, and as such only recorded in the supplementary table. The main reason for this non-recognition is explained in para. 17.192, which states that estimates on the entitlements derived from social security are of limited usefulness, as government has the possibility of changing the basis on which entitlements are determined. Social security more generally is defined as: "… schemes imposed, controlled and financed by government units for the purpose of providing social benefits to members of the community as a whole, or of particular sections of the community" (SNA 2008, para. 8.77). The other way in which pensions are provided is via employment-related schemes, as explained in para. 17.118[1]. However, the distinction between employment-related and social security pension schemes is not always as straightforward as implied here, giving rise to discussion whether only "pure" social security pension schemes are to be recorded in the supplementary accounts, or also part of the employment-related pension schemes that are closely intertwined with social security. Criteria may be derived from the above-mentioned guidance of para. 8.77.

2. "Private" versus "public" pension schemes

12. The 2008 SNA also makes a distinction between "private" and "public" pension schemes. In the 2008 SNA, these terms are being used in a couple of paragraphs that relate to the recording of pension schemes. However, it seems that this is not done in a fully coherent way, leaving room for interpretation what exactly is meant by "private" and by "public" in the relevant paragraphs. Para. 17.121 refers to pension schemes that are run by private employers. It is mentioned that these are usually not subject to retrospective adjustments of the amounts payable, but that there is a risk that the employer may be unable to pay because he has gone out of business. It is assumed that this reference to "not usually being subject to adjustments" is mentioned here to clarify where these schemes differ from social security type of pension schemes. However, in this respect, it is not quite clear why only mention is made of "private" employers and not of all employers, thus including government as an employer. This is somewhat remarkable if one relates this to the next paragraph (17.122), in which it is stated that "employment-related pensions, other than the most basic form of social security, are seen as part of the compensation package and negotiations between employees and employers may focus on pension entitlements as much as on current conditions of service and pay scales". This seems to imply that reference is made to "private" as well as with "public" employers. Here, it is assumed that the 2008 SNA wants to stress once again, as was done in para. 17.121, that employment-related pension schemes often provide more safeguard from adjustment of the amounts payable and therefore differ from social security pension schemes. However, where in para. 17.121 only reference is made to "private" employers, para. 17.122 refers to all employers.

13. Furthermore, in para. 17.193, schemes sponsored by the government are mentioned, probably to distinguish them from schemes that are sponsored by "private" employers. Para. 17.193 mentions that flexibility is provided regarding the recognition of pension entitlements of unfunded pension schemes sponsored by government for all employees (whether private sector employees or government's own employees). Doing so, the 2008 SNA may refer to the

[1] SNA 17.118: Social insurance pensions in all countries are provided, if at all, in part by general government and in part by employers. The part provided by general government is called social security and the part by employers is called employment-related schemes other than social security.

type of schemes that are closely related to social security schemes, and can be distinguished from the latter schemes.

3. Funded versus unfunded pension schemes

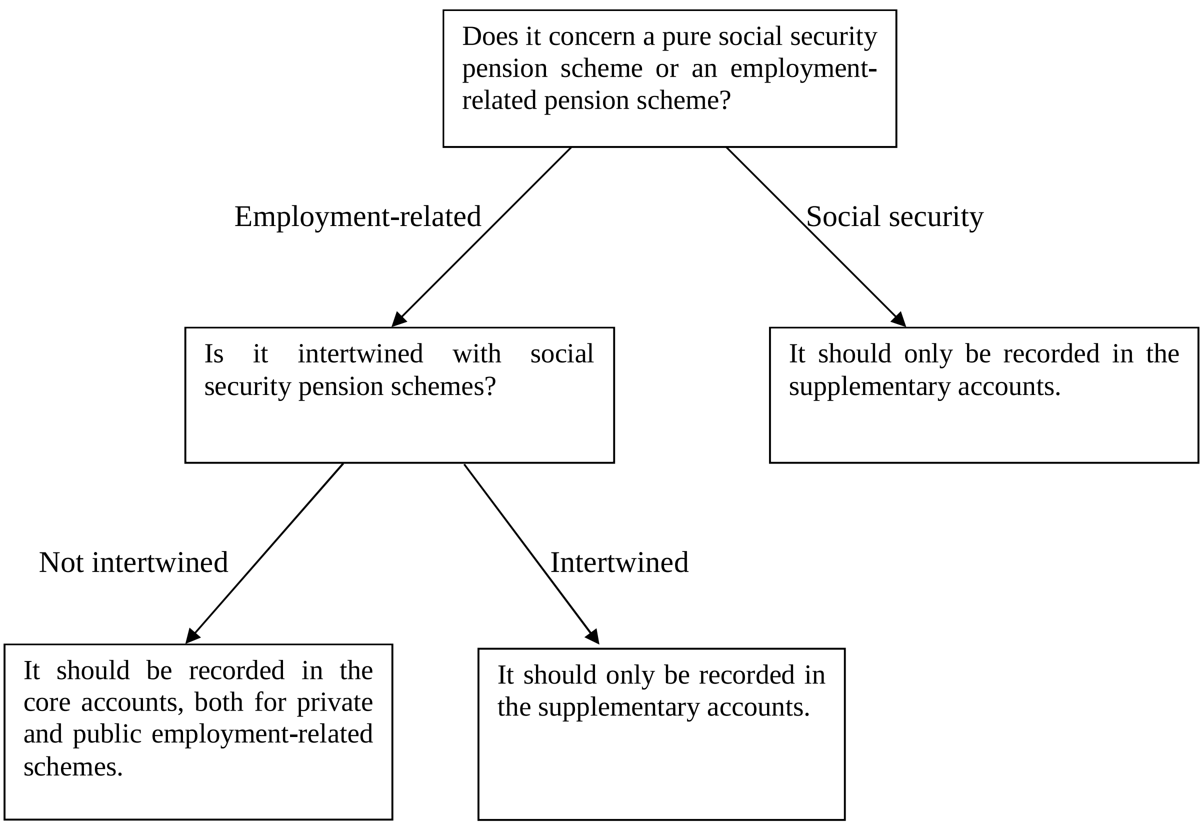
14. Finally, the 2008 SNA makes a distinction between pension schemes that are funded and those that are unfunded, also referred to as "pay-as-you-go-systems". In para. 17.121, it is stated that "while social security may be, and very often is, financed on a pay-as-you-go basis, without building up reserves for future liabilities, other employer schemes are increasingly likely to have reserves set aside". This is followed by the statement that "even if there are no reserves, accounting conventions may require them to recognize pension entitlements of present and past employees in their accounts". Further on, in para. 17.191, it is put forward that in recognition of the fact that social security is normally financed on a pay-as-you-go basis, entitlements accruing under social security are not normally shown in the core system. However, it seems that this is to be interpreted as "unfunded" being a supporting argument, and not a decisive argument, for non-recognition in the core accounts. Para. 17.192 goes on with explaining that there are two problems with simply recognising these entitlements in the core system. Firstly, "… reliable estimates may not be available whereas that is increasingly the case for private schemes" (again, there is mention of private schemes, whereas it might be better to refer to employment-related schemes). Secondly, there is an argument "… that such estimates are of limited usefulness where government has the possibility of changing the basis on which entitlements are determined in order to keep entitlements within the bounds of what is budgetary feasible". In relation to the discussions in the international meetings that led to the amendments in the 2008 SNA, especially this second argument seems to be the decisive argument why these entitlements are only recorded in the supplementary accounts and not in the core accounts. The first argument only stresses that it is difficult to make good estimations, regardless of whether it should be recorded in the core or in the supplementary accounts.

15. Para. 17.193 also mentions unfunded pension schemes, when explaining that in recognition of the problems of simply showing all entitlements from social security in the core system, "… some flexibility is provided regarding the recording of pension entitlements of unfunded pension schemes sponsored by government for all employees (whether private sector employees or government's own employees)". In relation to the outcomes of the international discussions that led up to these amendments, it is assumed that this flexibility is provided because some employment-related pension schemes are strongly intertwined with social security and cannot easily be distinguished from the latter schemes. The pension liabilities related to these schemes may also not be recognised in the core, and only recorded in the supplementary table. However, to stay in line with the rationale behind this flexibility, this should only be done in the case of a strong intertwinement with the social security type of schemes. If the pension schemes are funded, it can easily be concluded that the systems are not intertwined. However, in case of an employment-related pension scheme being unfunded and sponsored by the government, this can be an indication that the two are intertwined. This having to be interpreted as simply being an "indicator", there still is a strong need for clearer criteria when – in these specific cases where employment-related pension schemes are intertwined with social security pension schemes – entitlements should be recorded in the core system and when only in the supplementary table. In formulating these criteria, the criterion that the basis for entitlements can easily be adjusted (as mentioned in para. 17.192) may bear quite some importance for not recognising the entitlements in the core accounts. Also the benefits being tailored to the specific characteristics of the individual and the more

they are applicable to a specific group of government employees (as mentioned in para. 17.194) may serve as usable criteria. Also the more generic criteria for defining and delineating social security should be apllied here. On the other hand, if it is clear that the unfunded government sponsored employment-related pension schemes are not intertwined with social security, and the relevant schemes have been set up for a specific group of government employees, there seems to be no reason not to recognise the relevant entitlements in the core system.

Proposal for a decision tree on recording pension schemes

16. By using different ways of distinguishing between various pension schemes for determining what should (not) be recorded in the core system, one runs the risk of users interpreting the 2008 SNA quite differently, and arriving at differences in the recording of similar pension schemes. Therefore, it may be advisable to review the current wording and try to better align them. Next to that, it may be sensible to look at the possibility of developing a decision tree that can be used for determining which pension entitlements should (not) be recorded in the core system of national accounts. Below, a possible decision tree is presented.



17. The first question in the decision tree focuses on the distinction between a “pure” social security type of pension scheme and an employment-related pension scheme. In the first case, the recording is straightforward; all entitlements that arise from social security pension schemes should only be recorded in the supplementary tables. For employment-related pension schemes this is less straightforward. In most cases these schemes will lead to

entitlements that need to be recorded in the core accounts, but as in some countries these schemes may be closely intertwined with and cannot be distinguished from social security schemes, both should only be recorded in the supplementary table. When employment-related pension schemes are funded, they are not likely to be intertwined with social security schemes which are typically on a pay-as-you-go basis. However, when an employment-related pension scheme is not funded there may be a possibility of the scheme being intertwined with social security. One must bear in mind, however, that the absence of funding is only to be considered as an "indicator" for the intertwinement. It is advised to develop more precise criteria, for example those related to the possibility of changing the basis on which entitlements are determined (para. 17.192 of the 2008 SNA), the ones mentioned below and included in para. 17.194 of the 2008 SNA, and the more generic criteria for defining social security in para. 8.77. Also the work done in the EU, including the responses to the EU-questionnaire, as presented in the section below, may be very helpful in this respect.

Discussion on possible criteria from a European perspective

18. As stated before, the 2008 SNA includes various criteria to establish the distinction between those schemes carried forward to the core accounts and those recorded only in the supplementary table. However, none of these criteria alone seems to be necessarily decisive for the classification of a pension scheme and further work on the refinement of these criteria is part of the SNA research agenda. The then AEG took into account the work of the European task force on the measurement of pension entitlements while elaborating on the criteria. The European task force considered five possible criteria to record pension entitlements in the core national accounts or not in the core national accounts and included them into a questionnaire which has been sent to Member States of the EU: (a) the degree of integration within the general government structure; (b) the risk exposure and ability to change the benefit formula; (c) the nature of the contract; (d) the legal framework close to social security pension schemes; and (e) the funding of the scheme. Moreover, the strength of the pension entitlements was considered as an additional criterion, but was not included in the list because of difficulties in interpretation.

(a) *Degree of integration within the general government structure (degree of autonomy):* The Task Force considered whether the scheme is separately organised or completely integrated into the government structure (autonomous versus non-autonomous pension schemes in the 1993 SNA). Autonomous pension schemes are seen as institutional units separate from the employers, while non-autonomous pension schemes are managed by the employers, with or without segregated reserves. Autonomous pension schemes are classified as financial corporations, while non-autonomous pension schemes are part of the sector of the sponsor; if quasi-corporations are established for the pension schemes they should be classified as autonomous pension schemes.

(b) *Risk exposure and ability to change the benefit formula:* The Task Force decided that the risk exposure of a government-sponsored employer pension scheme may be assessed by two related questions. If the risk exposure is mainly with the government the pension scheme should only in the supplementary table (non-core). If the government is able to unilaterally change the benefit formula at any point in time, and thereby partially default on its pension obligations, the pension scheme should only be recorded in the supplementary table (non-core).

(c) *Nature of the contract:* The question also arises whether the contract is voluntary or compulsory and imposed by government. The availability of a *contract* is usually determined by mutual agreement between the employer and its employees and the benefits are linked to the contributions. By contrast, participants of a government employer pension scheme might not enter

into the agreement voluntarily, but are rather forced by law to participate (in a similar way to enforced membership of a social security scheme), which would be indicative of a non-core recording. Such agreements are of a 'public' law nature which does not always allow for "officially" acknowledged government obligations.

(d) *Legal framework close to social security pension schemes:* The following features of social security have been identified and compared with a corresponding government-sponsored employer pension scheme: (i) Coverage and purpose; (ii) Funding; (iii) Property of separate funds (government or beneficiaries); (iv) Financing of the schemes (only contributions or also transfers from other government units); (v) Nature of the contracts; (vi) Benefits received not necessarily determined by the contributions paid; and (vii) Treatment of transfers of pension entitlements between schemes. If the legal framework is identical to or very close to that of social security, then this would be an indicative of a non-core recording.

(e) *Funding (funding versus no funding):* Funded pension schemes are defined as those schemes that finance pension payments by drawing down on segregated and earmarked assets. These segregated and earmarked assets are dedicated to the payment of pension benefits. From a beneficiary perspective, a pension scheme is seen as funded if assets, the pension entitlements, exist against which households can establish legal claims. This meaning of funded does not refer to the adequacy of the reserves established for the payment of benefits vis-à-vis the pension obligations. That is, a funded scheme can be exactly funded, under-funded or over-funded depending on the size of the accumulated assets held for the payment of benefits relative to the value of the pension entitlements. By contrast, unfunded pension schemes are schemes with no identifiable reserves that are assigned for the payment of benefits and against which the beneficiaries (households) can lay claims. This does not exclude that unfunded schemes may hold sizeable assets (for example for liquidity purposes or as buffer funds). A funded pension scheme would be indicative of a core recording.

Table 1: Possible criteria to record pension entitlements in the core national accounts or not in the core national accounts

Criterion	Very important	Important	Less important	Un-important
Degree of integration within the general government structure (autonomous versus non-autonomous)	PT, IT, Norway	FR, MT, RO, PL, ES	AT, CZ, EE, SE, SK, IE, SI, UK	FI, DE, NL, DK
Risk exposure / ability to change the benefit formula (general government has discretion to change unilaterally the benefit formula at any point in time and thereby partially default on its obligations)	FR, FI, DE, IT, ES, DK, UK	AT, CZ, NL, PL, SK, IE	PT, MT, RO, EE, SE, SI	
Nature of the contract (generally forced by law to participate)	FR, FI, RO, NL, PL, UK	PT, SE, SK, ES, SI	AT, CZ, MT, EE, IT, IE, Norway	DE, DK
Legal framework close to social security pension funds	FR, CZ, FI, DE, RO, PL, SK, IE, ES	AT, PT, IT, SI, UK	MT, EE, NL, SE, NO	DK
Funding (no funding versus funding)	CZ, PT, RO, SK, IT, NO	AT, EE, SI, UK	FR, MT, NL, IE, ES	FI, DE, SE, PL, DK
Other criteria listed by the EU Member States: PT: additional criteria i) the possibility of an individual leaving the scheme being reimbursed of his contributions; ii) the government faculty of arbitrarily changing the rate of contribution; FI: *Is the scheme part of collective system covering the large part of community or not;* NL: Is the whole population covered? Is it related to a collective labour contract? A collective labour contract is compulsory by law; FR: As important as the legal framework is the degree of financial integration within the social security (participation in an "equalisation" mechanism).				

19. Table 1 above reflects the difficulty of finding the most important criteria valid for a majority of EU countries, taking into consideration the different national settings of government employer pension schemes. Nevertheless, the outcome of the questionnaire

shows that the criterion “legal framework close to social security pension schemes” is seen as very important by nine EU countries and as important by five countries (out of 19 countries which have responded). Whilst all Task Force members and most countries can find at least one criterion which they would consider relevant for making the choice, the Task Force found it difficult to decide upon a hierarchy of criteria when making a decision.

20. In ESA 2010 the decision was taken that pension entitlements under unfunded government defined benefit employer pension schemes or social security pension funds are recorded in the supplementary table on accrued-to-date pension entitlements in social insurance, and not in the core accounts. This decision reflects the situation in many European countries with large similarities between unfunded government defined benefit employer pension schemes and social security pension funds. These contingent pension entitlements are not liabilities of the central government, state government, local government or social security funds subsectors and are not financial assets of the prospective beneficiaries. In addition, the European decision assures the cross-country comparability of the data between core and non-core recording. This is also in accordance with the nature of ESA 2010, being a legally binding regulation.

Concluding remarks

21. It is explained that the new 2008 SNA guidelines on recording pension schemes still leave room for interpretation. This is mainly caused by the use of various ways for characterizing pension schemes and using various characteristics for deciding what should be in the core and what should be in the supplementary accounts. It is recommended that more clarity is given on how to interpret the current guidelines and what indicators are leading to determine what to record in the core and what in the supplementary tables. The setup of a decision tree as is presented here may be a good solution to gain this clarity.

22. The AEG is invited to express their views on the following:

- *Does the AEG agree with the presented ambiguity that one may derive from the current guidelines on pensions, and does the AEG agree on the need for further work on achieving more transparency?*
- *Does the AEG consider the setup of a decision tree, including criteria for determining whether or not pension liabilities should be recognised and recorded in the core tables?*
- *The AEG is requested to consider the various criteria that have been presented in this note, elaborate on new criteria and discuss a hierarchy or framework regarding the criteria. In particular, does the AEG support the assessment that closeness to social security is the single most important criterion for not recognising and recording pension liabilities in the core accounts?*

3. Mains issues related to the measurement of pension entitlements in practice

23. The statistical estimation of defined benefit accrued-to-date pension entitlements requires model estimates of the outstanding stocks and the related transactions, revaluations and other changes in the volume of assets. Important parameters in calculating the pension entitlements are the following:

- the discount rate;
- the treatment of promotions and (future) wage increases; and
- life expectancy.

24. The actuarial issues underlying the estimates of pension entitlements and related flows are codified in national and international business accounting standards. In this respect, international comparability of non-government pension entitlements is secured, at least to some extent, via the harmonisation and application of international accounting standards (IAS 19). Having said that, specific national legal requirements may lead to a certain lack of international comparability in the methodologies applied. An example is the discount rate that needs to be applied in the actuarial estimates. In some countries, supervisory law states that a market interest rate has to be applied, in other countries the use of a fixed discount rate, based on long-term projections, may be allowed. Furthermore, legal requirements may change over time, hampering the compilation of consistent time series data. In many cases national accountants indicated that they will/have to continue to use pension entitlements data from actuaries or supervisory institutions. On the other hand, the BEA has devoted significant resources to the improvement of the comparability of key actuarial parameters like the discount rate. This raises the question whether or not actuarial data should be revised for statistical purposes, if possible at all.

25. On the other hand, for (unfunded) defined benefit type of pension schemes sponsored by government and/or social security type of schemes, this issue of international comparability is even more relevant. At the moment reliable and comparable estimates for these entitlements may not be readily at hand for all countries. It goes without further saying that the issue of comparability is directly related to the actuarial assumptions that are applied in practice. In this respect, it can be noted that the 2008 SNA does not provide any specific guidance. The European Task Force made several recommendations, which are taken into account in the section on actuarial assumptions of chapter 17 of ESA 2010. Further advice is provided in the 'Technical Compilation Guide for Pension Data in National Accounts'[2].

26. Experience from pension visits to several countries carried by Eurostat showed that this guidance is respected by the Member States and will be applied to (unfunded) defined benefit schemes of general government. However, as stated before, modifications to actuarial calculations of private schemes, as applied by the BEA, will usually not be undertaken by European national statistical institutes. Below, the three main assumptions in estimating defined benefit pension entitlements will be briefly presented.

27. Before doing so, it is important to realise that the actuarial assumptions of private schemes and the ones applied for government schemes are somewhat related. Using internationally agreed assumptions for the estimation of the pension entitlements of government schemes may lead, at the national level, to a divergence with the actuarial

[2] http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-RA-11-027

assumptions for private schemes, as a consequence of which the comparison of various schemes within a country is hampered. This may call for a discussion at a conceptual level on the most appropriate assumptions. These assumptions could then be used as goals to be strived for, while divergences in practice from these conceptually preferable assumptions would need to be resolved by publishing appropriate metadata.

28. The AEG is invited to express their views on the following:

- *Should national accountants, if possible, adjust actuarial data, calculated according to the accounting standards, in order to arrive at more comparable results?*
- *Should the SNA provide more detailed guidance on the conceptually preferred assumptions for the calculation of pension entitlements and related flows?*

3.1 The discount rate

29. The single most important actuarial assumption concerns the discount rate. The European Task Force agreed that the discount rate should predominantly be based on yields of central government bonds (where the market is sufficiently liquid and the instruments are sufficiently mature) or, exceptionally, high quality corporate bonds. ESA 2010, para. 17.167, recommends a risk-free rate:

“Some criteria for identifying suitable rates are given in the following sentences. The discount rate on high quality government and corporate bonds, e.g. of "AAA"-rating provides an appropriate reference. Yields for high quality corporate bonds are only used where the markets are broad. The bonds are to be of a residual maturity of the same order as the pension entitlements. The use of a discount rate based on a long-term maturity, where long-term is taken to be 10 years or longer, is recommended. The average of several years of the discount rate, linked to the length of the economic cycle, can be applied to smooth the time series of the discount rate. The assumption on the discount rate and the future development of wages should be consistent. Member states are required to provide the elements demonstrating the validity of the discount rate used for pension entitlements in the light of the various criteria mentioned above”.

30. The Technical Compilation Guide for Pension Data in National Accounts recommends setting the discount rate at three per cent in real terms and five per cent in nominal terms. This should considerably improve the comparability of results across EU countries. This decision is based on the considerations of the European Commission (DG ECFIN) and the Ageing Working Group which was set up by the Economic Policy Committee (EPC). It was thus agreed to assume a constant real interest rate of 3.0% over the entire projection period in the projections of the baseline scenario. While interest rate developments have not been stable over time, rates have been close to 3% in most European countries and the US over the long term. However, some European countries were in favour of a lower rate, e.g. 2%, in order to reflect more recent developments on the financial markets. They proposed to use this lower rate at least for the purpose of a sensitivity analysis. The application of two additional scenarios is a requirement of the ESA 2010 transmission programme.

31. The BEA favours the 'AAA'-rating when it comes to the determination of the discount rate. The BEA adjusted the actuarial data received for privately sponsored defined benefit

plans in order to arrive at a common discount rate for all plans which is based on an AAA corporate bond rate. The same rate is applied to government pension plans.

32. The AEG is invited to express their views on the following:

- *What is considered the conceptually most appropriate starting point for the discount rate? In this respect, should the long-term character of the pensions lead to stable assumptions regarding the discount rate?*
- *Does the grade of integration of international financial markets justify the recommendation of a (global) risk free discount rate of e.g. 3%; in real terms?*
- *Should these assumptions be reviewed only when usual revisions of national accounts are undertaken; e.g. every five years?*

3.2 Promotions and future wage increases: 'ABO' vs. 'PBO'

33. Defined benefit pension schemes apply a formula to the member's salary (whether final salary, an average of a period of years, or lifetime earnings) to determine the level of pension. Hence, pensions paid will be affected by the growth of members' salaries (notably through promotions/career progression). It is therefore appropriate to consider what assumption might be made for the future development of wages.

34. One prudent approach is to assume that there is no future wage growth (whether nominal or real) – the Accumulated Benefit Obligation method (ABO). The ABO method is equivalent to members' pensions being determined on the basis of their current salary. The alternative approach is to make an explicit non-zero assumption for wage growth – the Projected Benefit Obligation method (PBO). In this respect, the PBO method takes into account expected promotions and other real or nominal wage growth factors while estimating

35. The choice between the two concepts will have a significant impact on the level of pension entitlements. Results are usually 10 to 20% higher when applying PBO instead of ABO. Therefore, clear guidelines are needed in order to ensure comparability of results across pension schemes and also across countries. The International Public Sector Accounting Standards (IPSAS 25) recommends applying the PBO approach to measure pension obligations of defined benefit plans. Business accounting standards, in particular the International Accounting Standards 19 (IAS 19), also recommend the PBO approach. The 2008 SNA does not contain an explicit recommendation of preference in discussing ABO versus PBO (see para. 17.180 – 17.186). The ESA 2010 rules regarding the valuation methods are in line with IAS/IPSAS. Where the pension formula includes, implicitly or explicitly, a factor for wage increases then the PBO approach is followed. Where such a factor is not present, an ABO approach should be applied. Furthermore, ESA 2010 asks Member States to apply actuarial specifications consistently across all level of government. On the other hand, the BEA applies the ABO approach to schemes of state and local government and uses the PBO approach for federal government plans.

36. The AEG is invited to express their views on the following:

- *What is considered the conceptually most appropriate approach: ABO or PBO? What would be the main criteria for the application of the ABO or PBO approach?*
- *Does the AEG recommend applying one and the same approach to all pension schemes, or to apply at least one and the same approach to all schemes managed by government?*

3.3 Life expectancy

37. Future pension payments are subject to demographic effects, in terms of the age/gender balance of members and their longevity. Demographic tables are well established for the modelling of pension and life insurance schemes.

38. In the case of private employer pension schemes, the membership of the scheme is well defined, and these data will be used by actuaries and should be reported to national accounts. In the case of unfunded government and social security schemes, recourse might be made to general population data, if no specific data on membership (which might be a sub-set of the general population) are available.

39. With respect to longevity (mortality) tables, it is proposed to use gender-specific tables, and - where the reliable data exist - specific mortality tables relating to the group of members covered. In addition, it is recommended to take into account that longevity of members receiving a disability pension might be significantly lower than for other members and therefore this group might be modelled with different longevity assumptions, although this may not generally be practicable.

40. Longevity assumptions should include the improvement of longevity over time, a trend noted over many years. This improvement might be modelled in a fairly general way, taking into account existing projection exercises in which significant empirical work has fed into the assumptions.

41. Neither the 2008 SNA nor ESA 2010 refer to specific mortality tables. However, the European pension compilation guide makes reference to the harmonised population projections prepared by Eurostat (through the EUROPOP exercise), as this approach could improve the cross-country comparability of the estimates Europe.

42. The AEG is invited to express their views on the following:

- *What are the kind of details on demographic developments that should be taken into accounts?*
- *Should harmonised population projections, prepared and regularly updated by international organisations, preferably be used for government and social security pension schemes?*

3.4. Other issues and additional information on pension schemes

43. Social insurance schemes may provide benefits other than pensions. The 2008 SNA includes separate transactions for the pension and non-pension elements of social insurance. In principle the supplementary table covers the pension part of social insurance only, but in practice it may not be possible (or may not be sufficiently important) to separate the non-pension element. However, some European countries indicated that elements that are not

related to pensions (e.g. for socio-professional reintegration) could be identified and separated from the supplementary table.

44. Furthermore, disability and invalidity can be considered as another form of retirement within a pension scheme and many pension schemes cover entitlements for survivors (e.g. dependent spouses, orphans). The 2008 SNA (para. 8.67) and ESA 2010 acknowledge that these entitlements are part of pensions, and should therefore be included in the supplementary table.

45. The practical calculation of accrued-to-date pension entitlements is a complex task. Data sources, models and institutional responsibilities may vary from country to country. Information on the different schemes is usually not supplied by the national statistical offices. This hampers international comparisons. A fact sheet providing basic information on the various schemes and the actuarial assumptions applied may improve the knowledge and understanding of the estimation of pension entitlements. It would also enhance the analysis of the relevant across countries.

46. The AEG is invited to express their views on the following:

- *Does the AEG agree that, for example, survivor pensions are to be included in the calculation of pension entitlements?*
- *Does the AEG support the idea that national statistical offices are requested to compile a 'pensions fact sheet' providing basic information regarding coverage, scheme rules and major actuarial assumptions?*
- *Does the AEG recommend to include into the fact sheet, if possible, a sensitivity analysis regarding the main actuarial assumptions?*

Annex – Relevant paragraphs in the SNA on the recording of pension entitlements

9.20 As individuals accrue pension entitlements in a social insurance scheme throughout their working lives, the corresponding entitlements become their assets and the liabilities of the units ultimately responsible for paying the pensions. Pensions due under social assistance are excluded because the amounts due do not necessarily accrue in a predictable fashion over time or for predictable reasons. Similar arguments apply to benefits due under social security. In some countries, government assumes responsibility for paying pensions even for non-government employees and these pensions are paid via social security funds. There is detailed discussion in part 2 of chapter 17 about when the liabilities for these schemes can be integrated into the sequence of accounts and when they only appear in a supplementary table. […]

11.107 Pension entitlements show the extent of financial claims both existing and future pensioners hold against either their employer or a fund designated by the employer to pay pensions earned as part of a compensation agreement between the employer and employee. […]

Section J Accounting for pension contributions and pensions

17.116 Pensions are provided to individuals in an economy under of three mechanisms, via social security, via employment-related schemes other than social security or via social assistance. Together, social security and employment-related schemes other than social security constitute social insurance schemes. […]

17.117 The means by which pensions are provided to persons in retirement varies considerable from one country to another. This part of chapter 17 describes the most common forms of pension provision made under social insurance schemes. […]

17.118 Social insurance pensions in all countries are provided, if at all, in part by general government and in part by employers. The part provided by general government is called social security and the part by employers is called employment-related schemes other than social security. The division between which pensions are provided by social security and which by other employment-related schemes varies considerably from country to country with the consequence that the coverage and therefore national perceptions of what the term "social security" designates also vary considerably. […]

17.119 The narrowest form of social security pension is very basic. […]

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

17.121 Pension schemes run by private employers are usually not subject to retrospective adjustments of the amounts payable. […] While social security may be, and very often is, financed on a pay-as-you-go basis, without building up reserves for future liabilities, other employer schemes are increasingly likely to have reserves set aside. Even if there are no reserves, accounting conventions may require them to recognize pension entitlements of present and past employees in their accounts.

17.122 Employment-related pensions, other than the most basic form of social security, are seen as part of the compensation package and negotiations between employees and employers may focus on pension entitlements as much as on current conditions of service and pay scales. […]

17.124 […] Social security pensions are frequently funded on a pay-as-you-go basis. The normal assumption in the main accounts of the SNA is that this is how social security pensions are funded. … No liabilities for the scheme are recognized in the main accounts of the SNA although concern is often expressed that benefits may exceed contributions and this situation is likely to worsen in an ageing society. For this reason, estimates of the liabilities of social security as well as any other pension schemes not included in the main accounts are included in a supplementary table […].

17.127 There are two forms of employment-related pension schemes other than social security. One is called a defined-contribution scheme […]. The other is a defined benefit scheme, sometimes referred to as a final salary scheme. […]

17.130 For both types of schemes, pension entitlements of the participants are recorded as they build up. […]

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

17.191 In recognition of the fact that social security is normally financed on a pay-as-you-go basis, entitlements accruing under social security are not normally shown in the SNA. […]

17.192 There are two problems with simply suggesting that entitlements from social security should be shown in the SNA. The first is that reliable estimates of the entitlements may not be readily available whereas it is increasingly the case that such estimates exist for private schemes. Secondly, there is an argument that such estimates are of limited usefulness where government has the possibility of changing the basis on which entitlements are determined in order to keep the entitlements within the bounds of what is budgetary feasible. However, the consequence of simply accepting that entitlements for private schemes are shown and for social security are not, is that some countries would include the greater part of pension entitlements in the accounts and some would show almost none.

17.193 In recognition of this dilemma, some flexibility regarding the recognition of pension entitlements of unfunded pension schemes sponsored by government for all employees (whether private sector employees or government's own employees) is provided. Given the different institutional arrangements in countries, only some of these pension entitlements may be recorded within the main sequence of accounts […]. In addition, however, a further table is to be presented that provides information disclosing the proportion of pension provision covered in the core accounts with some approximate estimates for the remaining schemes. It is a requirement, though, that a set of criteria be provided to explain the distinction between those schemes carried forward to the core accounts and those recorded only in the supplementary table.

17.194 The sort of criteria that might be considered are the following: the closer a government employer pension scheme is to the prevailing social security, the less likely it is to appear in the core accounts; the less the benefits are tailored to the specific characteristics of the individual and the more they are applicable to the population at large, the less likely it is to appear in the core accounts; the greater the ability of government to alter the benefit formula, the less likely it is to appear in the core accounts. However, none of these criteria alone is necessarily decisive in determining whether the scheme is treated in the core accounts or not.

17.197 […] All defined contribution pension schemes should be included in the core accounts. Estimates for all defined benefit pension schemes outside social security should also be included.

17.198 Government schemes for their own employees where separate accounting information, distinct from social security, is shown in the main accounts appear in columns E and F. Column E shows schemes managed by an insurance corporation and column F those managed by government itself. Any government schemes for their own employees distinct from social security that do not appear in the main accounts, are shown in column G. The sum of columns E, F and G therefore show the total responsibility of government for pension provision for their own employees. […] Column H relates to social security schemes. Column C shows the total of all non-government schemes. […]

A3.127 The 2008 SNA recognizes that employment-related pension entitlements are contractual engagements, that are expected or likely to be enforceable. They should be recognized as liabilities towards households, irrespectively of whether the necessary asset exist in segregated schemes or not.

A3.128 For pensions provided by government via social security however, countries have some flexibility to deviate from this procedure in the set of standard tables. This is because the division between which pensions are provided by social security and which by other employment-related schemes varies considerably from country to country. However, the full range of information required for a comprehensive analysis of pensions should be provided in a supplementary table that shows the liabilities and associated flows of all private and government pension schemes, whether funded of unfunded and including social security.

A3.134 The 1993 SNA recognized pension obligations on the balance sheet only for funded "private" schemes. Hence, the activities of many pension schemes, such as social security and unfunded employer schemes, did not lead to recognition of financial assets/liabilities. Further, the pension liabilities recognized were limited to the funds available and were not determined by the claims of employees and others on the schemes.

A4.39 As discussed in part 2 of chapter 17, social security entitlements are not recorded in the main accounts but they are shown in a supplementary table along with the pension entitlements of some other pension schemes managed by general government. Provisional criteria for determining whether the entitlements are shown in the main accounts or only in the supplementary table, are described in paragraph 17.187 [this should probably be 17.194]. Work continues to refine these criteria and to find agreed methods to determine the value of these liabilities.