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Pensions

By the European Central Bank and Eurostat

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Pensions

1. Introduction

Demographic projections for the EU, as for many other industrialised countries, are characterised by an ageing of the population. This will also have a substantial impact on general government revenue, expenditure and debt. A declining European workforce combined with a rapidly expanding number of retirees will force up spending on pensions, health-care and long-term care, while populations will fall and tax bases will shrink.

The dynamics of general government-sponsored pension schemes are usually based on the pay-as-you-go principle whereby current contributions finance current benefits. To examine and improve the recording of these schemes in the System of National Accounts (2008 SNA) Eurostat and the ECB have co-chaired a Task Force *on the statistical measurement of the assets and liabilities of pension schemes in general government*. This Task Force has made significant input to the SNA update process for pensions, notably through the design and compilation of a supplementary table on pension schemes in social insurance.

2. Background to the Eurostat/ECB Task Force

The Eurostat/ECB Task Force on pensions was established by the European Committee on Monetary, Financial and Balance of Payments Statistics (CMFB) in June 2006 to take forward the results of extensive work on pensions-related issues in the review of the 1993 SNA. The Advisory Expert Group on National Accounts (AEG) had agreed, in its meeting of January/February 2006 some far-reaching conclusions on the principles for the future recording of pension schemes in the national accounts, but certain issues had been identified in the application of these principles to many European countries.

The Task Force met six times between September 2006 and December 2007 with experts from the following countries and international organisations participating: Czech Republic, Germany, Spain, France, Italy, Hungary, the Netherlands, Poland, Finland, Sweden, the United Kingdom, DG ECFIN, the IMF, the OECD and the SNA Editor.

The main tasks carried out by the Task Force were (i) the design and the description of a supplementary table on pension schemes in social insurance to be part of the pension section in the updated SNA; (ii) the specification and definition of concepts related to the institutional units involved and to the stocks, transactions and other flows shown in the table; (iii) the selection and assessment of criteria to distinguish between defined-benefit government-sponsored employer pension schemes to be recorded in the core accounts or only in the supplementary table; (iv) the stock-taking of the features of all pension schemes in social insurance (including government-sponsored employer pension schemes and social security pension schemes) in the EU Member States, based on a questionnaire; (v) the coordination of the modelling work and the estimation of pension entitlements by using national models and generic models as provided by consultants of the Research Center for Generational Contracts of the Freiburg University and of the World Bank; (vi) the presentation of the Task Force work to the CMFB and other committees and working groups.

The final report of the Task Force is posted on the CMFB website at www.cmfb.org.

3. The international compromise on the treatment of pensions schemes in the 2008 SNA

With respect to *methodological work*, the Task Force has developed, and taken forward, an international compromise on the treatment of pension schemes in the 2008 SNA. This compromise particularly focused on the treatment of unfunded government-sponsored pension schemes, introducing flexibility in the recording of their entitlements.

The six "basic principles" were as follows:

(i) *All employer pension-related flows and stocks, including pension entitlements, provided by private schemes are recorded in the core accounts, even if they are unfunded. In this context a private scheme is any for which the government is not directly responsible (as noted in point (vi), even schemes for which government is responsible are included if they are mainly funded);*

(ii) *The updated SNA will include a supplementary table on pensions which will become a standard requirement in the updated SNA. In this table, all flows and stocks of all pension schemes (autonomous pension funds, segregated non autonomous employer schemes, pension part of social security, etc.) will be shown. This table will thus include details of pension flows and stocks that are recorded in the core accounts plus those that are not included in the core accounts also giving a complete view of households' pension "assets";*

(iii) *It is suggested that this supplementary table would be compulsory for EU member states through ESA regulation.*

Concerning government sponsored systems:

(iv) *Pension entitlements of unfunded, pay-as-you-go government sponsored systems which provide the basic social safety net type of provision, sometimes referred to as pillar one type provision, will be only recorded in the supplementary table (but not in the core account);*

(v) *The recommendation of the new SNA regarding the recording of unfunded pension schemes sponsored by government for all employees (whether private sector employees or government's own employees) will be flexible. Given the different institutional arrangements in countries, the updated SNA will permit recording only some of these pension entitlements in the core accounts. However, it will be a requirement that a set of criteria be provided to explain the distinction between those schemes carried forward to the core accounts, possibly where the pension promise is of sufficient strength, and those recorded only in the supplementary table. Providing a single set of internationally recognized criteria for this distinction should be on the long-term SNA research agenda; and*

(vi) *Pension entitlements of funded systems sponsored by the government will be recorded in the core accounts. The updated 1993 SNA will include a specific section on pensions in its Chapter 17. Given the close cooperation between the SNA Editor and the Task Force, the existing draft Chapter 17 is broadly consistent with the Task Force's work (even if in some areas it is naturally more general, and for some specific issues takes a different viewpoint).*

4. Main recommendations of the Eurostat/ECB Task Force

As a follow up of this compromise, which was endorsed in broad terms by statistical authorities, the Task Force developed a standard supplementary table on pension schemes (see annex 1) which provides a complete accounting of pension entitlements (stocks and related flows) for all *pension schemes in social insurance*, including social security pension schemes. This supplementary table, to be compiled by all countries, will present users with an overview of pension scheme data and provides the means by which more comparable data can be achieved across countries worldwide.

In developing the supplementary table, the **Task Force made the following recommendations**:

- The supplementary table should include pension entitlements for survivors, and also for disability or invalidity type benefits which are provided for within a pension scheme.
- All recording in the supplementary table should be undertaken *gross of taxation and social contributions* (to ensure harmonisation of recording across regimes where pensions are treated differently).
- Pensions schemes are categorised according to structure (defined contribution and defined benefit), and also with respect to *"sponsor"*. The Task Force adopted a definition of sponsor based on the OECD pension glossary, whose main criterion for a sponsor is that it "designs, negotiates and normally helps to administer an occupational pension plan for its employees or members." The concept of sponsor is intended to be used when one unit (generally the employer) mandates another unit to operate a pension scheme on its behalf, in some cases making a commitment to make good any underfunding in the pension scheme.
- To ensure a full reconciliation for *social security pension scheme entitlements*, where no imputed employer social contribution would be appropriate, a separate row is included in the supplementary table for the "other (actuarial) increase of pension entitlements in social security pension schemes". The entries in this row might be positive or negative.
- The *distinction between transactions* and *other economic flows* should be carefully defined, since employers' imputed social contributions (part of compensation of employees) are usually calculated as a residual when completing the supplementary table. Where possible *other economic flows* should be further broken down. More specifically:
  - The impact of *changes in real wages* should be reflected in *transactions* (irrespective of the method chosen to account for wage increases – see below – where application of the ABO or the PBO approach should lead to similar levels of transactions being recorded over time), except for periodic revisions to assumptions for future real wage changes due to the general review of assumptions or major re-structuring of the workforce.
  - *Reforms to a pension scheme* which impact on already-accumulated pension entitlements should be recorded as *transactions* (capital transfers), except where the reforms have been imposed by a third party.

Following the advice of the UN Statistical Commission and of the CMFB, the Task Force worked on the possible *criteria to determine if the pension entitlements of a pension scheme should be recorded in the "core" national accounts or only in the supplementary table*. This proved to be a very challenging task given the diversity in institutional arrangements for pensions across countries, and a questionnaire of European countries revealed a wide diversity of opinions across EU Member States. **The Task Force concluded** that:

"The distinction between those schemes whose entitlements are carried forward to the core accounts, and those which are not, should be based on an analysis of the characteristics of the individual pension scheme. The analysis should take into account several criteria - the closeness between government employer pension schemes and social security pension schemes, for example through the legal or financial integration of the government employer pension scheme with the social security pension scheme, the funding and the risk aspects of the scheme, the nature of the contract, and the ability of governments to change the benefit formula. Whilst no single criterion may be decisive, the analysis should examine these criteria to obtain a balanced view. There should be full transparency of the reasoning for core and non-core recording."

The Task Force recognised that there is clearly further work to be undertaken on this distinction during the process of revising the ESA.

The *practical statistical estimation* of defined benefit pension entitlements (for past periods) requires model estimates of the outstanding stocks and the related transactions, revaluations and other changes in the volume of assets. In this context, various key assumptions have to be made before carrying out any empirical work. This refers predominantly to the definition of the pension entitlements to be measured as well as the determination of the discount rate, of the wage growth and the demographic assumptions. The Task Force therefore concentrated on the definition of pension entitlements[1] and also identified the key assumptions to be made in an actuarial model for a pension scheme (discount rate, wage growth and demographic data). Given the importance of developing comparable statistics on pension schemes across countries, the Task Force has agreed on the importance of comparable (but not necessarily identical) assumptions during the modelling of pension schemes. The **Task Force recommended the following assumptions**:

- *The discount rate* should predominantly be based on yields on central government bonds (where the market is sufficiently liquid and the instruments are sufficiently mature) or, exceptionally, high quality corporate bonds. In principle the same discount rate should be applied for all government-sponsored schemes in a country.
- *The Projected Benefit Obligation (PBO)* approach will be most appropriate for the treatment of the impact of *real wage changes* on pension entitlements in national accounts. The PBO approach assumes a non-zero (usually positive) future development of real wages, unlike the alternative *Accumulated Benefit Obligations (ABO)* approach which assumes zero future changes in real wages.
- *Demographic assumptions* (notably mortality) should be based as far as possible on the comparable demographic data compiled by Eurostat (EUROPOP).

The Task Force noted that the consistent application of these recommendations across all pension schemes in the economy will be very difficult, given the coverage and the broad variety of source data in the various EU Member States (individual data versus aggregated data by age, gender or type of entitlement).

Task Force members undertook a *modelling* of selected government-sponsored pension schemes, and explored the issues to be addressed when completing the supplementary table. In a few cases the World Bank's PROST software provided a helpful benchmark, although it is not expected that this software would be widely used in future national accounts compilation. In addition experts from the Research Center for Generational Contracts of the Freiburg University have worked with the Task Force to compile estimates for selected government-sponsored pension schemes (notably social security pension schemes) using the 'Freiburg model'.

A relatively broad range of estimates has already been made available for pension entitlements of social security pension schemes. Estimates have been carried out by using national models (Germany, Spain, France and Sweden), the World Bank model PROST (Germany, France and Poland) and the Freiburg model (Czech Republic, Germany, Spain, France, Hungary, the Netherlands, Poland and Sweden). The results show that the pension entitlements are very substantial; particularly for social security pension schemes whose entitlements may exceed 300% of GDP in some countries using PBO-estimates.

5. Some follow-up work of the Eurostat/ECB Task Force

Within the EU, the intention is to produce a specific chapter on pensions in the revised 1995 ESA which, in line with the general revision policy of ESA, will follow the 2008 SNA. Given the administrative uses of national accounts in the EU, it can be expected that the guidance for recording of pension schemes in the new ESA would need to be more detailed than that of the 2008 SNA, possibly including a discussion of the appropriate modelling assumptions to be made. In order to implement the supplementary table on pensions in social insurance, it will be necessary to draw up a common data transmission process as part of a future ESA transmission programme.

[1] The Task Force believes that the *"accrued-to-date" definition of pension entitlements* is the most appropriate for national accounts. These pension entitlements are actuarially estimated: They consist of the present value of all future pension expenditure due to current workers and pensioners (confined to those pension rights accrued to date).

Eurostat and the ECB have established a "Contact Group" for pensions amongst all EU countries to exchange good practice and practical ideas, through documentation of the main characteristics of social insurance and model estimates by country and seminars. This recognises that the implementation of the revised approach to recording pension schemes in national accounts will not be at all straightforward in practice. Countries are being encouraged to commence work as soon as possible on a gradual preparation, notably by establishing a closer working relationship among public pension experts and pension regulators.

6. Outstanding issues

The Eurostat/ECB Task Force had close contacts with the SNA Editor during the process of drafting the revised SNA Chapter 17 text on pensions and was grateful that a very significant convergence of approach was possible. Nevertheless, apart from the long term research agenda items, there are four areas in which the current text of the SNA 2008 could be amended.

1) Definition of "sponsor"

Employers, including governments, may arrange for third parties to regulate and manage pension schemes for their employees, even if they retain some form of ultimate policy or financial responsibility for the scheme. The Task Force identified this aspect by defining a sponsor, and recommending that the relations between a sponsor and the sponsored pension fund (if recorded in a different sector) should be recorded in the financial accounts.

The notion of a sponsor is present in SNA 2008 (within the financial asset sub-category "claims of pension funds on sponsor" – SNA 2008 para 11.108), nevertheless it is not defined in chapter 17. A definition would be important if the financial asset sub-category is to be retained.

2) Recording of pension scheme reforms

Governments are increasingly reforming the pension schemes they sponsor in response to demographic and other factors. Pension reforms may take the form of a change of the benefit formula, a change in the retirement age, or a change in other scheme provisions.

In some cases the government decides to make reforms which affect the accrued-to-date liabilities for existing members, for example a general increase in the retirement age for all members. These types of reforms change the stock of pension entitlements during the year in which they are enacted. This effect must be accounted for in the supplementary table as a flow. The key question is what type of flow should be used.

There was a strong agreement of the Task Force that all reforms should be treated in the same way in the accounts, since to distinguish between negotiated and non-negotiated reforms would not be practicable. Whilst there was a case made for recording an other change in volume effect (to reflect a unilateral reduction of pension entitlements by government, the majority of Task Force members felt that in general the effects of specific reforms to individual pension schemes should be recorded as transactions, given that they may be perceived as a cost or benefit to the government.

3) Recording of experience effects

As noted above, estimates of pension scheme entitlements are derived from models which rely on a number of assumptions. When these assumptions do not prove correct in reality, they lead to a difference between the pension entitlements in opening and closing balance sheets. This difference must be accounted for as a flow in the supplementary table.

There are two ways of looking at experience effects. Either they are part of the impact of modelling effects (along with changes in modelling assumptions) and therefore should be recorded as other economic flows, or they are effects to be recorded as transactions as impacting on the costs of pension schemes to employers. The latter treatment was recommended by the Task Force, bearing in mind that not to record experience effects may lead to important costs to employers not being recognised in the accounts.

4) Possible criteria to determine the type of recording

Possible criteria to determine if the pension entitlements of a pension scheme should be recorded in the "core" national accounts or only in the supplementary table were already identified taking into consideration the diversity in institutional arrangements for pensions across countries. Based on this work some text could be included into the 2008 SNA saying that "the distinction between those schemes whose entitlements are carried forward to the core accounts, and those which are not, should be based on an analysis of the characteristics of the individual pension scheme. The analysis should take into account several criteria - the closeness between government employer pension schemes and social security pension schemes**,** for example through the legal or financial integration of the government employer pension scheme with the social security pension scheme, the funding and the risk aspects of the scheme, the nature of the contract, and the ability of governments to change the benefit formula. Whilst no single criterion may be decisive, the analysis should examine these criteria to obtain a balanced view. There should be full transparency of the reasoning for core and non-core recording. But further work should be undertaken on this distinction in the coming years.'

7. Conclusions

Looking to the future, the SNA research agenda has already included an item to elaborate further on the distinction between recording of pension schemes in the "core" national accounts and in a mandatory supplementary table where further guidance will be needed by countries. There will certainly be a general investigation of the recognition of social security pension entitlements as liabilities. As the models of pension schemes evolve, due to reforms and financial innovation, there will also be a need to ensure the continued relevance of the national accounts' standards (particularly as regards the accounting of reform measures and hybrid pension schemes).

Given that the proposed supplementary table will cover all pension schemes in social insurance, and therefore countries will be expected to publish actuarially-based estimates (whether in the core accounts or alongside them), over time one can expect the accumulation of experience. This will be helpful for both improving the quality of estimates for government unfunded pension schemes and for investigating the possible recognition of social security pension entitlements and other (long-term care and health care entitlements) as liabilities (since pensions form a large proportion of these entitlements). The availability of these data to users will also potentially provoke further developments.

It would nevertheless be helpful to clarify the treatment of the outstanding issues mentioned in section 6 above.

Annex:
Supplementary table developed by the Task Force

Rela-tions	SNA code	*Row No.*										Total pen-sion sche-mes	Counter parts: Pension entitle-ments of resident house-holds[4]
			Recording	Core national accounts						Not in the core accounts			
			Sponsor	Non-general government			General government						
				Defined con-tribution schemes	Defined benefit schemes and other[1] non-defined contribu tion schemes	Total	Defined contribu tion schemes	Defined benefit schemes for general government employees[2]: Classi-fied in finan-cial cor-pora-tions	Classi-fied in general govt	Classi-fied in general governm ent	Social security pension schemes		
			Column number	A	B	C	D	E	F	G	H	I	J
			Opening balance sheet										
	F63	1	Pension entitlements										
			Changes in pension entitlements due to transactions										
Σ 2.1 to 2.4	D5201	2	Increase in pension entitlements due to social contributions										
	D5201	2.1	Employer actual social contributions										
	D5211	2.2	Employer imputed social contributions										
	D5231	2.3	Household actual social contributions										
	D5241	2.4	Household social contribution supplements[5]										
		3	Other (actuarial) change of pension entitlements in social security pension schemes										
	D5321	4	Reduction in pension entitlements due to payment of pension benefits										
2 + 3 - 4	D7	5	Changes in pension entitlements due to social contributions and pension benefits										
		6	Transfers of pension entitlements between schemes										
		7	Changes in pension entitlements due to pension scheme reforms										
			Changes in pension entitlements due to other economic flows										
		8	Changes in entitlements due to revaluations[6]										
		9	Changes in entitlements due to other changes in volume [6]										
			Closing balance sheet										
1+ Σ 5 to 9	F63612	10	Pension entitlements										
			Related indicators										
	P1	*11*	*Output*										
		12	*Assets held at the end of the period to meet pensions[7]*										

1) Such other non-defined contribution schemes, often described as hybrid schemes, have both a defined benefit and a defined contribution element (see chapter 17 of the updated SNA).
2) Schemes organised by general government for its current and former employees.
3) These are non-autonomous defined benefit schemes whose pension entitlements are recorded in the core accounts.
4) Counterpart data for non-resident households will only be shown separately when pension relationships with the rest of the world are significant.
5) These supplements represent the return on members' claims on pension schemes, both through investment income on defined contribution schemes' assets and for defined benefit schemes through the unwinding of the discount factor applied.
6) A more detailed split of these positions should be provided for columns G and H based on the model calculations carried out for these schemes.
7) This row includes financial and non-financial assets held for the sole purpose of paying future pensions, excluding claims by the pension scheme on its sponsor; an explanation should be provided of which assets have been included.
The cells shown as █ are not applicable; the cells in ▒ will contain different data from the core accounts.