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Item 3 of the provisional agenda

NEW ESTIMATION OF NON-LIFE INSURANCE SERVICES IN SNA 93, REV.1<sup>1</sup>

Submitted by the Organization for Economic Co-operation and Development (OECD)

The meeting is organised jointly with Eurostat and the Organization for Economic  
Co-operation and Development

1. Catastrophic events such as the 11 September 2003 terrorist attack, a major storm in France and in other European countries in 1999, hurricanes and major fires in Australia, or similar events in other countries, generate massive claims for non life insurance companies. The mechanical use of the current SNA 1993 formula to compile the production of non-life insurance services recommendation leads, particularly in these cases, to absurd movements of the production and, therefore, of the consumption, of insurance services at current prices in the national accounts. The impact on GDP can be up to 0.5% in particular periods.

2. The AEG set as a general principle that the production of insurance services does not occur when the risk event occurs<sup>2</sup>. The concept of insurance service is the service of covering for the risk. As such, its measurement should not be affected by the volatility of the occurrence of the risk event. Neither the volume nor the price of insurance services should be directly affected

<sup>1</sup> This paper has been prepared by Mr. François Lequiller, OECD, at the invitation of the secretariat.

by the volatility of claims. The AEG decided to continue to use a formula to measure output based on the difference between premium (plus premium supplements) and claims, but to use *adjusted* claims and, optionally, *adjusted* premium supplements in this formula in order to correct for the volatility of observed flows. There are three practical solutions to implement this general recommendation: (1) the expectation approach (which uses statistical smoothing of past data to extrapolate into the future), (2) the accounting approach, and, (3) the sum of costs plus “normal” profit approach. The newest approach is the *expectation approach* which consists in replicating the *ex-ante* model used by insurers to price their premiums, on the basis of their expectations. When accepting risk and setting premiums, insurers consider both their expectation of loss (claims) and of investment income (premium supplements). Their expected margin (premiums plus expected premium supplements minus expected claims) is a much better measure of the concept of insurance service than the current formula applied ex-post. In the new formula, expected claims and expected premium supplements are estimated using past smoothed data, and applying a special treatment in the case of major catastrophes. Description of statistical methods to derive a good estimate of expected claims and expected premium supplements will be included either in the new special annex on insurance or an implementation manual.

3. Also, the AEG adopted a practical recommendation for the compilation of the growth rate of the volume of production (and consumption) of non-life insurance services. One solution proposed is to use the rate of change of an indicator based on gross premiums deflated by CPI or PPI price indices for insurance.

#### Implications for new data collections

4. The method proposed does not increase significantly the amount of data necessary for the calculation of non life insurance flows in the national accounts. Because it relies on smoothing, it however would need longer time series of claims, by detailed categories. The method needs also a rapid estimation of claims of major catastrophies.

#### Quantitative impact

5. These changes will increase the interpretability of the national accounts measure of the production and consumption of non life insurance services. It will eliminate some currently unwelcome hikes or decreases in GDP growth. There will remain certainly problems, in particular to interpret the implicit price index, but a positive step has been made. Some countries (Australia, USA) have already implemented very successfully the main recommendation.

## ANNEX

### **DECISION OF THE AEG ON THE MEASUREMENT OF INSURANCE AND REINSURANCE IN THE SNA 1993 rev 1.**

1. The task force on the measurement of insurance in the context of catastrophes (moderator: OECD) presented its recommendations to the February 2004 meeting of the AEG. The AEG has decided to adopt these recommendations for implementation in the SNA 1993 rev 1, except for two (see at the end) that will be finalized using a written consultation. The AEG recommended that the proposal be forwarded to the BOP Committee for its view. The full report of the task force (revised version after AEG meeting) is attached to the present decision. It includes a complete set of redrafted paragraphs for the 1993 rev 1 SNA.

#### Background.

2. Catastrophic events such as the 11 September terrorist attack, a major storm in France and in other European countries in 1999, hurricanes and major fires in Australia, or similar events in other countries, generate massive claims for non life insurance companies. The mechanical use of the current SNA recommendation leads, particularly in these cases, to absurd movements of the production and, therefore, of the consumption, of insurance services at current price in the national accounts. There is therefore a strong need to change this situation. This change will be welcome by users of national accounts.

#### Main recommendations.

3. The first recommendation of the task force was to propose to set as a general principle that the production of insurance services does not occur when the risk occurs. The concept of insurance service is the service of covering for the risk. As such, its measurement should not be affected by the volatility of the occurrence of the risk. Neither the volume nor the price of insurance services is directly affected by the volatility of claims.

4. The task force proposed to continue to use a formula based on the difference between premium (plus premium supplements) and claims, but to use *adjusted* claims and, optionally, *adjusted* premium supplements in this formula in order to correct for the volatility of observed flows. **The AEG accepted this recommendation.**

5. The recommended formula for the measurement of output of non life insurance in the SNA 1993 rev 1 will therefore be: [Actual premiums earned [i.e. premiums receivable less changes in the reserves due to pre-payment of premiums] + Adjusted premiums supplements - Adjusted claims incurred. **The AEG proposed that the recommendation regarding the adjustment of premium supplements remains optional.**

6. There are three practical solutions to implement this general recommendation. The expectation approach (which uses statistical smoothing of past data), the accounting approach, and the sum of costs plus “normal” profit approach. **The AEG approved the reference to these three solutions in the new SNA.**

7. The expectation approach consists in replicating the ex-ante model used by insurers to price their premiums, on the basis of their expectations. When accepting risk and setting premiums, insurers consider both their expectation of loss (claims) and of income (premium supplements). This expected margin (premiums plus expected premium supplements minus expected claims) is a much better measure of the concept of insurance service than the current formula applied ex-post. Its extreme version would be to use effectively the micro data transmitted by insurers. In the absence of this data, the proposal is to simulate this approach by (1) using macro statistics, and, (2) using smoothed past data to forecast the macro expected claim and/or macro expected premium supplement. In this case, the SNA formula becomes: *Formula (2) [Actual premiums earned [i.e. premiums receivable less changes in the reserves due to pre-payment of premiums] + Expected premiums supplements - Expected claims due*. In this formula, expected claims and expected premium supplements are estimated using past smoothed data, and applying a special treatment in the case of major catastrophes. Description of statistical methods to derive a good estimate of expected claims and expected premium supplements will be included either in the new special annex on insurance or an implementation manual.

8. The *accounting approach* consists in (1) extending the scope of the technical reserves (called “technical provisions” in the new SNA), (2) apply an extended formula including, when necessary, changes in own funds: *Formula (4): [Premiums earned + premium supplements] – [claims due + addition to, less withdrawal from, equalization provisions + addition to, less withdrawal from own funds, when necessary]*. Contrary to the expectation approach, the accounting approach uses ex-post data, thus observed claims incurred. However, the volatility of claims incurred is expected to be compensated by the movements of the equalisation provisions and, in the case of catastrophes, of own funds. It is to be noted that if changes in own funds are introduced in one given period to dampen the volatility of a claim in case of catastrophe, the rebuilding of own funds after this period will also intervene (with an inverse sign) in the formula for the next periods.

9. **The AEG approved the extension of the SNA definition of provisions for unearned premiums, and provisions for bonuses and rebates, and in the SNA definition of provisions for claims outstanding the provisions for incurred but not (enough) reported incidents and equalisation provisions.** These extended technical provisions will be considered assets of policyholders or beneficiaries, depending whether they are classified as provisions for unearned premiums or provisions for outstanding claims. All income from these provisions will be considered as premium supplements.

10. The *sum of costs plus “normal” profit* approach consists in obtaining a measure of output as the sum of costs (a variable which is generally well mastered) plus an estimation of “normal” profit. The estimate of “normal” profit generally implies the use of smoothed past actual profits. Thus this approach is, in practice, similar to the expectation approach. “Normal” profit is indeed equal to premiums + adjusted premium supplements – adjusted claims – costs.

11. The change of the measure of production necessitates an adjustment in the distribution accounts. **The AEG supported the recommendation of the task force to decouple net insurance premiums (D71) and non life insurance claims incurred (D72) in the distribution accounts.** The latter would not change in the SNA. D71 would be still calculated as Premiums earned + Premium Supplements – Output but the change in the calculation of output will result in its disconnection with D72. It will now represent adjusted claims plus (optionally) the

difference between actual premium supplements and adjusted premium supplements. The positive or negative difference between D72 and D71 will represent a transfer from insurance companies to policy holders. **The AEG agreed that, in exceptional cases, such as catastrophes, part of this transfer is classified as a capital transfer (D99).**

12. The task force made a recommendation to adopt a new treatment of reinsurance in the national accounts, where all reinsurance flows are treated gross and the same formulae (using adjusted variables) are used as for direct insurance. **The AEG supported this recommendation.**

13. The AEG requested some clarification before deciding on two other proposals of the task force: (1) the inclusion of income from own funds in the calculation of production, (2) the treatment of profit sharing and bonuses. A consultation was organised. The consultation revealed a majority of the AEG in favor of:

- i. excluding income from own funds in the calculation of output of non-life insurance;
- ii. treating commissions and rebates as negative premiums, and profit sharing and bonuses as other income transfers; and
- iii. treating payments resulting from exceptional claims as capital transfers.

14. The AEG agreed this consultation represents their final position. □

<sup>2</sup> The exact AEG decision is shown in the Annex to this paper.

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