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*Enterprise-based Statistics in the macro-economic Framework:
with Reference to Insurance*

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ENTERPRISE-BASED STATISTICS IN THE MACRO-ECONOMIC FRAMEWORK :
WITH REFERENCE TO INSURANCE

1. INTRODUCTION.

1.1 Suggested Terminology.

- (a) "Micro-data" are taken to mean data capable of supporting a cross-section analysis by household, family or individual.

Scope. Concerned with factor income, distributive transactions, consumption, financial transactions and wealth - but not generally with *production*.

Units. See above.

- (b) "Meso-data" are taken to mean data capable of supporting a cross-section analysis by individual productive units.

Scope Generally such information systems are designed to provide information on production and accumulation of physical capital, but they are also capable of extension to cover distributive transactions, financial transactions etc., if suitable units of observation are employed for this purpose.

Units For *production* - local units [but not
for insurance]
- enterprises.

For *distributive transactions, etc* - enterprises
- enterprise groups.

- (c) The term "macro-economic" when applied to data is taken to denote statistics which portray activities of the whole domestic economy considered within its world-wide setting.

Scope Comprehensive.

Units For *production* - an aggregation by industries (branches), preferably based on local units or enterprises (which, in the corporate sector, correspond to institutional units).

For *distributive transactions, etc* - an aggregation by sector (corporate, households, rest of world, etc.), preferably based on institutional units rather than on enterprise groups.

When the same units and definitions are employed, macro aggregates can often be derived as the summation of "meso" data; this accords with the SNA recommendation that, for distributive transactions etc., the basic unit should be the institutional unit (equalling, for productive activities the enterprise), generally without consolidation of transactions between units. In insurance, where the local unit is not used to measure production, the enterprise will therefore become the unit for the industry throughout.

- 1.2 Application to services. Hitherto, Eurostat's approach has concentrated on enterprise-based statistics of production and accumulation. This was obviously the correct approach, as basic data on the productive activities of the service sectors were deficient; and the same approach would serve to improve the quality of macro-economic data for the service sectors. However, in the case of financial enterprises (credit institutions, insurers and investment intermediaries) it is particularly necessary to consider the interaction with the more comprehensive macro-economic framework. There are two rather different aspects to this interaction :-

The "Horizontal" dimension. The interaction of the producers of services with their customers, who may be other producers or may be final consumers; the services purchased are treated respectively as intermediate consumption or as final consumption. Insurance services purchased as part of the intermediate consumption of producers are allocated in most detail in input-output estimates, for which it is necessary either to specify insurance services (or, at least premiums) within the purchases of the various other producers who consume them, and/or to allocate by industry insurance-based information on the services produced.

The "Vertical" dimension. The interest of users of information about financial enterprises is often on their transactions in financial markets (the "flow of funds") and on the structure of their balance sheets. And in the case of financial enterprises, statistics in these areas are often well developed - better even than information on the value of the services produced. However, at the "meso" level, there is at present usually no well developed link in this "vertical" dimension. In the case of financial enterprises (including insurance) there may be a case for extension of Eurostat's General Framework for enterprise-based statistics, to cover this point.

2. APPLICATIONS TO INSURANCE : THE "HORIZONTAL DIMENSION"

(a) Defining the non-life insurance service.

2.1 A major point in the case of insurance is that the perception of the value of the service, both by the industry itself and in the macro-economic framework, involves deducting claims from premiums. In the macro framework, the premium is split into two components - firstly what is called, in this context, the "net" premium (equal in aggregate to claims) and, secondly, the "service charge" (or "value of production"). The latter is the total of the insurance industry's intermediate costs, labour costs and profit.

2.2 However, the consumer of non-life insurance services does not perceive this distinction and tends to regard the whole premium as representing the cost of the service. The corollary is that, in his accounts, expenditure on replacement goods (or on services obtained whose cost is indemnified by insurers) is not regarded as a cost like any other, and tends to be netted out. (It is rather different when the cover is against *financial* loss.) The macro-economic framework, however, requires this expenditure to be shown gross in the consumers's accounts, as it reflects production elsewhere in the economy. It is fundamentally for this reason that the macro-framework treats both "net premiums" and claims as transfers; the indemnities from insurers finance expenditure which generates production.

2.3 These differences of perception impact upon measurement of both the price and the volume of the insurance service.

(b) Services produced without explicit charge

2.4 In the macro framework, the value of the non-life insurance service will in future be regarded as including the investment income received by insurers on funds due to policy holders which the insurers hold on their behalf. In the "meso" framework, when looking at the production account of insurers, this approach is also adopted (see the Manual). The mechanism to be adopted in the macro framework, when considering the interactions between insurers and policy holders, is to regard this investment income as transferred to the policy holders (an imputed flow treated as a transfer) and then returned by the policy holders as an imputed premium (or "premium supplement") on top of the actual premium : viz., as a payment into the production account of insurers.

2.5 These imputed flows therefore need to be allocated according to the economic sector of the policy-holder (viz households, local authorities, non-financial enterprises, financial

enterprises and the rest of the world). In the macro framework this is regarded as practical (see Annex 1). There are parallel, but much larger and much more difficult, problems with the valuation and allocation of services provided by credit institutions to their customers without explicit charge.

(c) Relations with the Rest of the World

- 2.6 Accruals basis of accounting. In both the "meso" framework and in the ESA, premiums and claims are recorded on an accruals basis. In the previous IMF balance of payments Manual and in the 1968 SNA, however, they were recorded largely on a cash basis. I understand that this is now to be changed. The corollary is that the balance of payments capital account will now need to show, presumably as part of trade credit, changes in premiums due by non-resident policyholders but not yet paid (assets of domestic insurers) and changes in the much larger amounts of claims due to non-resident policy holders but not yet paid (liabilities of domestic insurers). Other items are changes in "unearned" (pre-paid) premiums and changes in the life insurance provision (actuarial reserves) - both liabilities of domestic insurers. I am not clear whether the Balance of Payments Manual gives guidelines about the recognition of these transactions in the balance of payments capital account.

(d) Transactions between direct insurers and reinsurers.

- 2.7 Transactions between resident direct insurers and *resident* reinsurers have hitherto been consolidated in the ESA, being treated as part of a single insurance plus reinsurance activity. But it has always been necessary to show in non-consolidated form transactions between resident direct insurers and *non-resident* reinsurers. If such reinsurance transactions were to be 'netted out' in the accounts of a resident direct insurer who reinsures abroad part of a domestic risk, the implication of the recording system would be that his domestic customer is directly importing a service from the non-resident reinsurer, which plainly is nonsense.
- 2.8 The proposal in the "meso" framework, taking advantage of the additional information in the 1991 Accounting Directive, is also to avoid 'netting out' transactions between direct insurers and reinsurers, and always to show these as the purchase by the direct insurer of a service from the reinsurer. (This is in line with the general recommendation in the new SNA that transactions should be so far as possible recorded on a non-consolidated basis.) Not only will this provide the information required on international reinsurance transactions, but it would support - from the "meso" data - a better regional analysis of economic activity, for instance

when a direct insurer is located in one region and the reinsurer in another. Since administrative data in the EC will support the separation of direct insurance and reinsurance, it is open for the new ESA to dispense with the present rule that, exceptionally and for practical reasons, transactions between resident insurers should be consolidated.

3. APPLICATIONS TO INSURANCE : THE "VERTICAL DIMENSION."

- 3.1 Inter-relationships between the various accounts, in the "vertical" dimension, are of the essence of macro-economic statistics and evidently, in the case of financial enterprises, the financial transactions account and balance sheet are particularly important. (In individual enterprises' accounting, there is always a profit and loss account and a balance sheet, but not usually a financial transactions account.) In principle, a 'top to bottom' set of accounts could be extended to the meso level - a data-base which is capable of supporting cross-section analysis - provided that suitable units are used for the purpose. The structure of enterprise groups in some countries may mean that the unit for this purpose will be the enterprise group, having excluded its non-resident activities, rather than the enterprise - even though this would mean partial consolidation; much will depend on how wide is the unit that is taken in the various countries for purposes of regulation and for publishing annual accounts.
- 3.2 Capital gains. The presentation of 'top to bottom' accounts in macro-economic statistics will be rather different from the accounting system as seen by an individual life insurance enterprise. In the latter, many if not all capital gains will be taken through the profit and loss account before appearing on the liabilities side of the closing balance sheet (liabilities to either policy-holders or owners, reflecting assets, as valued). In macro-economic statistics, capital gains are generally excluded from the production and distributive transactions accounts, and will be shown only in a separate "reconciliation" account which links the opening and closing balance sheets in conjunction with the financial transactions account.
- 3.3 The Manual's presentation is to follow enterprise accounts in showing capital gains gross. They appear in the Manual's production account - as quasi income offset by provisions - which leaves the balance of the account broadly unchanged. This still leaves open the option of following the presentation of macro-economic statistics, as regards the link between opening and closing balance sheets. But there are estimation problems, both in the Manual and in macro-economic statistics - see Annex 2; in essence these have to do with separating capital gains which are allocated to policy-holders from others which remain in general reserve.

4. CONCLUSION

- 4.1 Insurance, like banking, presents difficulties in integrating output as seen by the industry with the same output as seen by the consumer of the service. In the case of non-life insurance, it has always been necessary to carry into the accounts of the consuming sectors or industries a conceptual distinction between the insurance service and indemnities (transfers), a distinction which is not perceived by the consumer of the service. The allocation to counterpart sectors or industries of the newly-introduced premium supplements (investment income on the technical reserves of non-life insurance enterprises due to policy-holders) can follow similar techniques of estimation. An accruals basis of accounting of insurance transactions should be introduced into the balance of payments estimates, so that they are congruent with transactions between resident sectors and non-resident sectors appearing in the "horizontal" analysis in the national accounts. It is particularly welcome that the new SNA contains an annex on insurance, which addresses these issues and illustrates the matrix of accounting entries.
- 4.2 There are two other matters for consideration. Firstly, in the EC at least, it will now be possible to separate direct insurance and reinsurance, which will assist in identifying reinsurance transactions between residents and non-residents, but will also open up the possibility of non-consolidated recording of transactions between resident insurers. Secondly, there are problems - both in meso data and in macro data - in distinguishing between capital gains which are allocated to policy-holders and those which are not (either because they are held in a holding reserve or are formally allocated to the shareholders or other owners of insurance enterprises). For instance, in the national accounts, the increase in actuarial reserves due to policy-holders, *other than from capital gains*, is an element in the calculation of output; but this can only be determined by estimating or assuming what part of the increase in *total* actuarial reserves (or, "change in the life insurance provision", as it is called in insurance enterprises' accounts), is due to capital gains credited to policy holders. Unfortunately the administrative data, e.g. those provided for in the EC Directive on insurance enterprises' accounts, are insufficient to identify capital gains credited to policy-holders.

ANNEX 1

NON-LIFE INSURANCE : ALLOCATION BY SECTOR AND INDUSTRY OF IMPUTED PREMIUMS ("PREMIUM SUPPLEMENTS")

1. Allocation by sector and industry of the service charge, excluding imputed premiums. This is a familiar process. As much information as possible on the sectors or industries paying the premiums should be assembled. This will probably be on the basis of the premiums due on renewal, equivalent to what the insurance industry calls premiums written. When the policy-holders paying premiums are resident, the payers (rather than the insurance industry) are the preferable source. Information on premiums paid by non-residents can be obtained from the resident insurance enterprises which receive them. In principle premiums written, broken down by payer, should be converted to premiums earned (i.e., allowing for changes in pre-payments). The next step is to estimate, in this case from insurance industry sources, the proportion of the insurance service charge (excluding imputed premiums) to premiums earned. This proportion probably varies according to *product*, so it is preferable to estimate the proportions on a product-specific basis (see para 6.7 of the other paper). For instance, if the service charge on marine, aviation and transport insurance is above average, as a proportion of premiums, allowance should be made for the higher than normal weight of of this product amongst transactions with non-residents.
2. Allocation by sector of net non-life insurance premiums and of claims incurred. If premiums earned and the service charge (excluding imputed premiums) are allocated by sector, the allocation of net (in the national accounts sense) non-life insurance premiums is obtained by residual. The amounts of claims due to beneficiaries, by sector, will only be the same as the amounts of net non-life insurance premiums if the claims due to third parties (rather than to policy-holders) net out within sectors. It seems likely that certain types of claims due to third parties - under industrial injury or motor policies, for instance - go to households, when the policy-holders are corporate enterprises.
3. The most simple way of allocating imputed premiums ("premium supplements") by sector and industry is following actual premiums. However, the product split of technical reserves will certainly show that imputed premiums are higher as a proportion of actual premiums in some classes than in others - for instance, in marine, aviation and transport where claims reserves are relatively high. Again, therefore, allowance should be made for the higher weighting of this type of

insurance in the product mix supplied to some sectors, e.g., non-residents. The imputed premiums, allocated in this way, affect the value of the insurance services provided to the various sectors or industries in which the policy-holders are - in other words the amount of the service charges which they incur; but the imputed premiums do not affect "net non-life insurance premiums" * - they become a separate contra-entry in the distribution of primary income account.

4. When non-life insurance services are exported, the above processes will lead to estimates, for exports (preferably split by product), of the proportion of imputed premiums to the service charge excluding imputed premiums. For want of better information, the assumption could be made that the same (product-specific) proportions hold good for imported non-life insurance services.

* These equal either actual premiums less the service charge (excluding imputed premiums), or actual plus imputed premiums less the service charge (including imputed premiums).

[End of Annex 1]

ANNEX 2

LIFE INSURANCE : EFFECT OF CAPITAL GAINS AND LOSSES ON ESTIMATION OF VALUE OF PRODUCTION

1. Capital gains and losses in the EC Accounting Directive. The Directive will first apply to accounts for the year 1995, with some transitional provisions. Information will have to be given on the current value of investments, though they may still be shown at purchase price in the balance sheet. If so, their current value must from the year 1998 be given in the Notes to the Accounts (from the year 2000 for land and buildings).
2. All realized capital gains and losses will be taken through the profit and loss account on their way to the liabilities side of the balance sheet. In the case of unit-linked policies (called in the Directive "contracts where the investment risk is borne by the policy-holder"), all unrealized gains and losses will also be taken through the profit and loss account and will immediately be allocated as changes in liabilities to these policy-holders. Member States may require or permit other unrealized gains to be taken through the profit and loss account. In the UK, for instance, where investments must already be shown in the balance sheet at current value, the Government will permit, but not require, insurance undertakings to take other unrealized gains and losses through the profit and loss account. If so, there is provision in the Directive for them to be shown as passing to a holding reserve (called the "fund for future appropriations"), rather than to be allocated immediately as liabilities to either policy-holders or to owners.
3. The technical part of the life profit and loss account shows, on the debit side, the "increase in the life insurance provision" and also shows bonuses allocated to policy-holders. The liabilities side of the balance sheet shows the actuarially determined life assurance provision (shown separately for the unit linked policies) and the amount of any separate provision for bonuses intended for policy-holders, but not yet allocated to them. The increase in these provisions derives from premiums and interest, which are credited directly to policy-holders' accounts and - for the with-profits policy-holders - from a fixed proportion of investment 'profits' (in the UK, this is set at 90%). Except in the case of the unit-linked policies, the assessment of the amount of 'profits' on investments is an actuarial one which takes a long view; but these 'profits' certainly reflect capital gains, realized and

unrealized, as well as investment income proper - and it is presumably for this reason that, in the Directive, "investment income" in the technical part of the life profit and loss account includes capital gains.

4. Capital gains and estimates of production. In the national accounts, however, the item in the production account entitled "change in the actuarial reserves and in reserves for with profits insurance" is defined as excluding any nominal holding gains or losses. Paragraph 18 of the SNA Annex states :-

"If the data sources available do not exclude these holding gains and losses, appropriate adjustments must be made in calculating the value of the output."

The following paragraphs address this problem. There is more detail in the Manual (pages 98 to 102 of the Insurance Chapter).

5. Returning to insurance enterprises' accounts, the primary distinction to be made is between unit linked policies and other life policies (including with-profits policies). All capital gains and losses, realized and unrealized, on the former are immediately allocated to the policy-holder and so have no effect on the balance of the production account, whether included or excluded. Unfortunately these gains and losses are not shown as a separate element within the profit and loss account; but there is information about the premiums on such policies and on the amount of the opening and closing liabilities, from which rough estimates of the capital gains and losses could be made.
6. As regards other life policies, there is regrettably no similar equality, in the short-term, between the capital gains and losses credited or charged to the profit and loss account and that part of the increase in the life insurance provision which, in some sense, could be regarded as being attributable to net capital gains allocated to the with-profits policy-holders. In effect, the concept of the increase in actuarial reserves and reserves for with profits insurance, excluding capital gains and losses, has no precise meaning - because the actuarial determination of the level of these reserves (provisions) is not directly linked to the current value of investments. There is however a loose connection, so that a crude assumption would be that the amounts derived from capital gains which are actually allocated to with profits policy-holders are $x\%$ (where $x = 90$, or whatever) of some trended version of total realized plus unrealized gains on investments (other than those for unit-linked policies, perhaps calculated from data lagged by one year.

7. A less approximate method might be to make use of the information provided for in the Accounting Directive's profit and loss account, which distinguishes between realized and unrealized capital gains, and which gives a very broad indication of the amount of unrealized gains on the unit-linked policies, which need to be segregated. For net realized gains on with profits policies, x % again might be regarded as being allocated to policy-holders.
8. The assumption to be made about net unrealized gains benefiting with-profits policy-holders would depend on the method required by each Member State for valuing investments in the balance sheet proper, and on the rules set for showing them, if at all, in the profit and loss account. If they are only carried into the profit and loss account because they are on their way to a holding reserve, the amount will be roughly identifiable, and could therefore be excluded.
9. The remainder, shown on the credit side of the profit and loss account, of net unrealized gains might then be found to be quite small; the reason would be that such net gains can be carried directly to the liabilities side of the balance sheet and included there in a reserve (perhaps a holding reserve). However, such holding reserves are run down when amounts, determined on an actuarial basis, are formally allocated to with profits policy-holders, so it appears that - in the profit and loss account - there might be debits (increases in the life insurance provision, including capital gains) which are not matched by credits (the corresponding net capital gains). It is likely, however that the objective of the accounting system is to prevent such a presentation, which would distort the balance of the life technical account; in other words, that any amounts allocated (on the debit side of the life technical account) to with profits policy-holders, which indirectly stem from unrealised capital gains and losses, would be roughly matched, in effect, by the amount of the net capital gains shown on the credit side.
10. In view of these uncertainties, it may again be best to fall back on the assumption that the net unrealized gains benefiting with-profits policy-holders could be represented by some trended version of unrealized gains (other than on unit-linked policies) in the past.

[End of Annex 2]