EUROSTAT

Price and volume statistics:

Insurance and pension funding

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PRICE AND VOLUME STATISTICS : INSURANCE AND PENSION FUNDING

Introduction

1. The production account of the activity group "insurance and pension funding" has the form set out in Annex 1 (pages 10 and 11); the first page shows the resources side of the production account and the second page the uses side leading to value added. The second page also shows the generation of primary income account leading to operating surplus (1).

2. The notion of changes in the volume of activity relates primarily to value added, that is, to the balance of the production account (item 9 on the second page of Annex 1). Changes in prices can relate to turnover, to (gross) output (item 6 on the first page of Annex 1, where it is called the "value of production"), or to the implied change in the unit value of the net output of services (or "value added").

3. In this context, there are four things to note about the production account of insurance services :-

(a) For an individual enterprise, the value of sales is affected by much subcontracting to reinsurers and is after deducting this ("outgoing reinsurance premiums").

(b) The net value of sales is after deducting claims incurred: in line with the national accounts and with insurance enterprises' own accounts, the 'risk transfer' element of insurance is netted out, on the resources side of the production account, before arriving at (gross) output.

(c) The other main element of insurance activity - the management of investments (property and financial assets) on behalf of policy-holders - is also treated as a production resource, and in a similar way : -

(i) on the one hand, in the new SNA, for both life and non-life insurance, portfolio investment income on policy-holders' reserves, after its imputation to the sectors (households and other) in which the policy holders are to be found, is transferred back to the resources side of the insurance enterprises' production account; and

(ii) on the other hand, a deduction is made within the production account when insurance enterprises subsequently transfer this income to the reserves attributed to policy-holders ("technical provisions"), so that the balance of the account includes only income on policy-holders' reserves (if any) that is allowed to carry through to distributable profits.

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(1) These tables are taken from Eurostat's Methodological Manual on Service Statistics : Chapter on Insurance. The concepts relate to 'meso'-type data for individual enterprises, but are consistent with the concepts to be used in the revised SNA, though the perspective is that of the insurance enterprise, rather than that of the purchaser of the insurance service. They cover both life and non-life insurance.

The items shown in the tables are defined in a "General Framework" and, to the extent that there are special features for insurance, in an annex to the Chapter on Insurance. A bridge is also provided between these definitions and those proposed for an EC Directive on the annual accounts of insurance undertakings. The code numbers under 80 refer to general definitions and those over 80 to special definitions for insurance.

(d) The resources side of the production account is complex, so that there is some attraction in adopting the 'bottom up' approach towards estimating value added, as the sum of factor incomes (labour costs and profits): but, as usual, this process is subject to the difficulty that trading profits as shown in the industry's own accounts may be defined very differently from operating surplus in economic statistics.

Units

4. Data on prices and volume depend on disaggregation, eg. by product, and so are particularly affected by systems of classification and by the unit of observation which is chosen. In Eurostat's Manual on Service Statistics, the preferred units of observation are the enterprise and the local unit. The local unit is not used for insurance, and in some cases a unit other than the enterprise may have to be chosen. The relevant extract from the Manual is given in Annex 2 to this note. It is not suggested that there should be any change in unit, for the purposes of price and volume data.

Classifications

5. The relevant sections from Eurostat's Manual are attached as Annexes 3 and 4 to this note. They deal with both classification by activities and classification by product. Annex 4 shows, in the case of non-life insurance, the bridge between the CPC classes, those used by the O.E.C.D. Insurance Committee and those set out in an EC Directive (the first two being virtually identical), and makes some suggestions for further sub-divisions. For life insurance, the draft CPC merely repeats the activity classification but in the last page of Annex 4 I have made some suggestions for a subdivision by product.

Volume Changes

6. There are various approaches to measuring changes in the volume (ie. quantity + quality) of activity, that is to say, changes in the value of activity measured at constant prices. All involve a greater or lesser degree of disaggregation by product :-

(a) double deflation : of (gross) output and of intermediate inputs;

(b) single deflation of (gross) output ("the value of production");

(c) single deflation of elements of (gross) output - eg. of claims or of benefits paid to households

(d) revaluation of factor incomes - labour costs and operating surplus ;

(e) use of direct indicators of quantity ("extrapolation"), eg. :-

(i) output indicators, such as the number of policies in force or the deflated value of cover provided; or

(ii) input indicators, such as the number of employees or of employee hours worked.

These possibilities apply to both life and non-life insurance but in what follows I look mainly at non-life insurance.

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7. There are considerable difficulties with the first three methods, in the case of insurance. Double deflation (method a) cannot work for non-life insurance if the only inputs which are separately deflated are intermediate inputs, but might work if claims were to be treated, for this purpose only, as like an intermediate input. However, the deflators which should then be used for premiums should apply only to the 'price' component of the total increase in the *premium rate* (2) - the element which reflects the insurance enterprise's *expectation* of an increase in the average cost of claims, or its *objective* to increase its margin. It must exclude the other element reflecting the expectation of *more frequent risk transfer* (an increase in the number of claims), which is a volume component.

8. Even if this information were available, the gross flows of premiums and claims would be large in relation to the balance between them, so that the likelihood of measurement error is also large. Annex 5 illustrates these problems with some notional figures, which make the assumption of an unexpected increase in the number of claims. It indicates that the results of double deflation depend in particular on whether an appropriate deflator is available for premiums, and that the use of proxies for this deflator can well lead to substantial error.

9. In fact, so far as I am aware, no insurance company releases data making an explicit distinction between the contribution of more frequent risk transfer and that of other factors in setting its premium rates; and probably such an explicit distinction is not even made internally in each and every case, when setting the premium rates for the great variety of policies that exist. Competitive forces affect the rates charged a lot, and often the justification given for quantity discounts appears to mix the idea of being able to average out the incidence of claims with that of economy of scale on administration proper.

/ Continued.. 10.

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(2) The premiums charged by an insurance company for a particular type of cover are often expressed as so much per unit of cover. These *premium rates* are specific to products, but they mix up the volume of risk transfer with the 'price' components. The transfer of risks, as measured by claims (in principle excluding the costs of settling the claims) is just that - a transfer from one policy holder to another. In determining its premium rates an insurance enterprise will be concerned with securing enough revenue to fund the total anticipated value of claims.

The value of claims may increase for reasons quite unconnected with the cost of providing the insurance service proper, for instance : -

(i) the incidence of claims may become higher or lower, that is, risk transfer may become more or less frequent ;

(ii) the contracts of insurance may offer indemnities determined in real terms and if so the value of claims will be affected by movements in relative costs; that is, the cost of claims relative to the costs of producing the insurance service. Obvious examples are 'new for old' indemnities on the loss of household goods; medical expenses insurance; and 'comprehensive' motor insurance which covers the actual cost of repairs following an accident.

10. Turning to changes in the value of claims, parallel information subdividing the *ex post* 'price' and volume components might be less hard to obtain. Estimation of the 'price' component - changes in the unit value of claims - could be approached by way of changes in the average value of claims, subdivided by product, but such estimates would still suffer from other shifts in the mix, eg. from small claims to large.

11. Single deflation of (gross) output - method (b) - is also problematic for non-life insurance. The obvious deflator, to apply to the balance between premiums and claims, would be changes in the unit value of claims, using this, effectively, as the deflator for both premiums and claims. Apart from the estimation difficulties mentioned above, there is then the additional problem of implicitly making an assumption that the insurance enterprise, when setting *ex ante* the 'price' component of its premium rates, had an objective to maintain constant percentage margins.

12. Deflation of claims, or of benefits to households - used as a single indicator of the insurance service (method (c)) - implies that the production of the insurance service can be assimilated to the processing of claims. It is therefore very similar to using the number of claims as a direct indicator of output (see paragraph 16) and suffers from the same disadvantages.

13. It seems therefore that estimates of changes in the volume of the output of non-life insurance services should be based either on the use of direct quantity indicators of output, or of input, or on the deflation of factor incomes. The first method lends itself to disaggregation but raises the problem of quality change. The other two are straightforward, but are highly aggregated (and the last method encounters conceptual difficulties over the deflation of profits).

14. In life insurance and pension funding, there is an element of risk transfer but the main activity is the management of (mainly financial) investments. The return on investments, whether as portfolio investment income or as capital gains, is subdivided between that attributed to policy holders and that held in general reserve. This depends on actuarial calculations of long-term revenue and, beyond these, on the degree of competition and on national regulation. As with non-life insurance, there seems to be little prospect of measuring changes in the volume of the insurance service produced, by deflating all the items on the resources side of the production account.

Price Changes

15. Before going on to a more detailed consideration of using direct quantity indicators or the deflation of factor incomes to estimate changes in volume, it

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is useful to look at other possible uses of disaggregated 'price' data. They are likely to be needed in contexts other than the measurement of changes in value added at constant prices, viz. as part of consumer price indices or producer price indices. It seems that there is a considerable danger, particularly in the case of non-life insurance, in using for these purposes data on changes in premium rates, unless it is possible to allow for the predominant element of risk transfer which affects the premium rates. The appropriate price is still that of the insurance service, even through the individual household's perception of it is likely to be the premium rate. To the extent that changes in the premium rate reflect an increased incidence of risk, those who make claims are benefiting at the expense of those who do not; and an increase in the incidence of risk will lead to higher transfers between policy holders without increasing their aggregate purchasing power. It seems, therefore, that for these purposes too the 'price' of the insurance service also should be measured indirectly, either by using what is implied from direct quantity indicators of output (which would provide the more disaggregated approach) or from direct quantity indicators of input, or by revaluation of the factor incomes generated.

Direct Quantity Indicators of Output

16. The obvious indicator is the number of policies in force, classified by product group (3). Another possibility might be the number of claims paid, but the amount of the insurance service (as reflected in factor incomes) will not rise proportionately to the number of claims, in a year of heavy claims, nor will it fall proportionately, in a good year (4). Moreover, there is often considerable delay in finally settling claims and the payment or payments made will often fall into later years than those in which the bulk of the administrative work has been done.

17. A refinement of the number of policies in force would be the value of cover provided, but this raises three problems :-

(a) With non-life insurance, only for certain types of insurance is the amount of cover expressed as a straightforward monetary value: various types of loss or damage insurance (CPC 81292-95 inclusive, see Annex 4, page 23), and of of liability insurance (CPC 81292-93 and 97). Liability insurance is often combined with loss or damage insurance and may be secondary to it.

(b) The maximum value of cover is specified, not the average expected loss.

(c) The value of cover would need to be deflated and an industry-specific deflator would be hard to find - possibly the long-term trend in the average cost of claims.

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(3) The number of members of the pension scheme, in the case of pension funding.
(4) The same point applies to the number of policies in force, but the gearing is much less.

18. With life insurance too, there would be problems in using the deflated value of cover as an indicator of output. One could look at either maturity value or accumulated value to date. In the case of "with profits" policies, the ultimate maturity value is indeterminate, though bonuses allocated to date are known. The maturity value of unit-linked policies varies with the stock market. Probably surrender values would have to be used, to indicate accumulated value to date; but for "term" policies there is no surrender value, only a maturity value during the term. With pension funding, the accumulated pension rights have no surrender value, though there are actuarial valuations of the total assets in the fund. If the idea of 'output' were to be linked only to the insurance enterprise's function as a manager of the contractual savings of households, the value of life technical provisions, or of "life funds", could be taken. As for non-life insurance, any such values would have to be deflated if they were to be used as indicators of changes in the volume of output.

Direct Indicators of Output : the Problem of Quality Change

19. The only way to correct for quality change would be to ask insurance companies to provide special data. Commonly, when a premium rate is increased, a 'consolation prize' is offered to the policy holder in the form of an extension of cover. Conversely, exclusions of cover are made upon renewal of the policy, which are general to all policy holders. In principle, an insurance enterprise should be able to compare the new premium rate (which includes the changed level of cover) with what the new premium rate would have been, if the previous level of cover had continued, so that the proportionate change could be treated, *pro rata*, as an improvement or reduction in quality. In practice, this is a very difficult area. Similarly, completely new products could be linked in, with a weight dependent on the premium, by comparison to the premium for other similar products, with the usual problem of linking this weight back to the base year.

Combining Disaggregated Indicators of Output

20. Within a particular product group, indicators of output such as the number of policies in force should ideally be classified into groups, eg. according to size of premium, so that they could be weighted together in a manner which is unaffected by a shift from large policies to small, or *vice versa*. The distinction between single premium policies, annual policies and short term policies does not exist at present in the product classification (although it could be introduced there - see pages 25-27, Annex 4); otherwise this distinction should also be made, when combining indicators of the number of policies in force.

21. As between product groups, output indicators, of whatever type, should ideally be weighted together by the *net* output of each product group. But this

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is unlikely to be available, because portfolio investment income is not broken down in this way. There would also be difficulties owing to the great variability of claims. One line of business may be operating at a loss in a year of heavy claims, even to the point of negative value added - but the labour costs and intermediate inputs are being incurred nevertheless.

22. At the level of *gross* output (called the "value of production"), the primary split of activities, that between all non-life insurance and all life insurance, is likely to be available - even for the "composite" companies (see Annex 1 to this note). Within each of these two main categories, the weights of the various product groups will probably have to be based on proxy indicators of output. It is a fairly common practice to use turnover as a proxy for gross or net output when weighting together indicators of quantity (or of price) analysed by product class. In the case of non-life insurance, however, the amount of sub-contracting (reinsurance) varies a lot from one product class to another - for instance, there is a lot of reinsurance in the "marine, aviation and other transport" class but less in the "motor vehicles" class. The proxy figures to be used should therefore be "net written premiums" (see Annex 1). The O.E.C.D. Insurance Committee are now collecting a breakdown of non-life insurance premiums by product class, and this includes "net written premiums", though there is a problem with an unclassified element of reinsurance, known as "treaty reinsurance".

Direct Indicators of Quantity : Input Indicators.

23. The usual indicators are the number of employees, or the number of hours worked. They are subject to the difficulty of not allowing for changes in productivity of the work force (unless a notional allowance is made), and also cannot be disaggregated very far by product, so they are very much a second best. However, data problems are easier: the following indicators are envisaged in Eurostat's Manual on Service Statistics :-

1. Number of persons employed
2. Number of wage and salary earners (part of 1.)
3. Number of persons employed on a part time basis (part of 1.)
4. Number of salaried hours worked
5. Variables relating to personnel qualification levels.

They would be collected for individual enterprises and the present proposal is to adopt them without amendment for the insurance sector. There might be some difficulty in splitting them between life and non life insurance activities, and certainly no further split by product is likely to be available. For the "composite" companies, the split of staff between those working on life insurance and those working on non-life insurance may not be available and, likewise, in

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some countries life and non-life enterprises, albeit separate, employ the services of a central service company which has all the staff.

Deflating Factor Incomes

24. Conceptually this method is also a second best but it is more robust than others. It is highly aggregated and so less suitable for a detailed analysis of insurance activity. A split of value added between life and non life insurance is likely to be available when (as is often the case in Europe) national regulation requires either separate enterprises or separate sets of accounts for the two activities. In the case of the "composite" company, it is likely that the distinction between life and non life insurance will be available down to the level of (gross) output (or "value of production"), see Annex 1, and it could perhaps be estimated for the intermediate inputs leading to value added (5).

25. The factor incomes reflecting value added could then be deflated in the usual way, using as deflators, for labour costs, changes in the average salary levels of insurance company employees. It is unlikely to be necessary to split the *deflators* between life and non life. For operating surplus (the return to capital), the implied GDP deflator could perhaps be used (6). There are conceptual objections to deflating a balancing item in the accounts and an alternative might be to take *total* portfolio investment income as a proxy for the return on total capital employed, ie. both that attributed to policy holders ("technical provisions") and that not so attributed and so implicitly belonging to shareholders ("general reserves") : but there would still be problems about an appropriate deflator (7). Combining the deflated figures of the two elements of factor income (labour and capital) would provide estimates at constant prices of the net output of non life and life insurance, taken separately. An implied deflator for the net output (value added) of the two types of activity would then emerge by comparing the current price figures with the constant price figures. This would be an estimate of the change in the 'price' of the insurance service.

Information Requirements and Sources.

26. These can be summarised as follows :-

(a) A production and generation of primary income account for non life and life insurance separately - see the "Sources of Information" section of Eurostat's Manual, Chapter on Insurance.

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(5) In the case of insurance, commissions to independent agents are an important intermediate input; the commissions are shown separately in the annual accounts of insurance enterprises.

(6) In the case of pension funding, there is no (net) operating surplus, though there may be some capital consumption.

(7) Professor Hill has suggested consumption of fixed capital at constant replacement cost (U.N.S.O., 1979) ; but fixed capital is only a small part of the assets employed by insurance enterprises.

(b) Information on the number of employees and on employee hours worked : also provided for in Eurostat's Manual.

(c) A subdivision of net written premiums by product class, using the product categories in the CPC. For non life insurance, this is already being collected by OECD. It would be helpful to have the further subdivisions suggested in Annex 4.

(d) Indicators of the number of policies in force, subdivided by product class, possibly with some further subdivisions within product class, possibly also supplemented, for some types of non life and life insurance, by information on the value of cover provided.

(e) Information on quality change, eg on the effect of extensions or reductions in cover upon renewal.

(f) Possibly details, by product, of changes in the average value of claims.

(g) Deflators for labour costs and for operating surplus or portfolio investment income.

Items (d) to (f) would require there to be special enquiries of insurance companies and pension funds, unless the information has been obtained already for "real output" estimates.

27. In my opinion, it is not appropriate to collect detailed information on changes in premium rates, unless it can be broken down between the effect of changes in the volume of risk transfer and the effect of changes in the 'price' components, and is also accompanied by estimates of changes in the unit value of claims, based on detailed information about changes in their average value. Even so, double deflation, of premiums and claims, seems unlikely to give robust estimates of changes in the volume of the insurance service. Another approach might be to use estimates of changes in the unit value of claims, broken down by product, as the deflator for both premiums and claims. This involves making the assumption that non-life insurance enterprises, when determining their premium rates, aim for a constant percentage margin and also are successful in predicting changes in the unit value of claims.

John Walton. July 1991

<u>References</u>

I have made extensive use of

U.N.S.O. Statistical Papers, Series M No 64, "Manual on National Accounts at Constant Prices", by Professor T P Hill (U.N.S.O., 1979).

Other references are :

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Table 1

INSURANCE: ACCOUNTING VARIABLES ON THE UNITS: TABULAR PRESENTATION

Item number in this Table		Code	Of which: Exports (and code)	(For NACE/70 821) Split life/non-life
I. PRODUCTION ACCOUNT				
Credits (net)				
1. Premiums				
(a) Gross premiums written:				
(i) Direct insurance		81a	No	Yes
(ii) Reinsurances accepted		81b	No	Yes
(iii) Pension contributions:				
- Schemes for individuals		81c	No	Yes
-- Schemes for groups (from employers and employees)		81d	No	Yes
(iv) Total		8	Yes: (8b)	Yes
of which: - Regular premiums and contributions		81e	No	Yes
- Single premiums and contributions		81f	No	Yes
(b) less Outgoing reinsurance premiums (premiums ceded to reinsurers)		13a	Yes: (13b)	Yes
(c) equals Net written premiums plus pension contributions		89a	Yes: (89b)	Yes
(d) Change in provision for unearned premiums (net of reinsurance) (+ or -)		81g	No	Yes
(e) equals Earned premiums plus pension contributions		89c	No	Yes
2. Gross portfolio investment income (on technical provisions: including investment income (pension funds)		82a	No	Yes
3. Commissions received (aa)		83	No	Yes
4. (a) Less Net claims incurred (-)		84	No	Yes
(b) of which:				
- Claims paid (-)		84a	No	Yes
(c) of which: - Pension & annuities		84b	No	Yes
(d) - Other (bb)		84c	No	Yes
(e) - Amounts recoverable from reinsurers (+)		84d	No	Yes
(f) - Change in provision for claims, net of reinsurance (Incr. -)*		84e	No	Yes
5. Less Change life insurance provision and in other technical provisions (net of reinsurance) (Incr. -)* (cc)		85	No	Yes
6. Total = Generation of the "Margin" (or value of production of insurance services)		21	No	Yes

Notes:
* Incr. = Increase
(aa) Including other technical income.
(bb) Including capital sums paid from pension schemes & on maturity of life policies.
(cc) Excluding the change due to the crediting of capital gains: see Annex 6, Group F.
Including surpluses of pension funds; & change in provision for unexpired risks.

Table 1; continued

INSURANCE: ACCOUNTING VARIABLES ON THE UNITS: TABULAR PRESENTATION (CONTINUED)

Item number in this Table	Code	(For NACE/70 821) Split life/non-life
II. COSTS OF PRODUCTION AND BALANCES		
6. Value of production of insurance services ("Margin") # B/F	21	Yes
Debits		
7. External expenditure on goods and services other then from re-insurers (1) of which	89d	No
8.a. Commissions payable to agents	86a	No
8.b. Rent chargeable & other administrative expenses	86b	No
8.c. Other external expenditure on goods and services	86c	No
9. Balance = Gross value added at market prices #	20	No
Debits (continued)		
12. Labour costs:		
(a) Gross wages and salaries	11	No
(b) Employers' compulsory social security contributions	12a	No
(c) Employers' contributions to own (group) pension schemes and other labour costs	12b	No
13. Balance = Gross operating surplus at factor cost	31	No
III. REMAINDER OF PROFIT AND LOSS ACCOUNT (part)		
14. Other portfolio investment income	82b	Yes
15. Profits receivable from direct investments in other countries	87a	No
[Items 16 and 17 are doubtful]		
16. Profits receivable from domestic subsidiaries & trade investments $	87b	No
17. Balance = Total available for distribution (before taxes on income) $	87c	No
IV. CAPITAL ACCOUNT (part)		
18. Net change in fixed capital	88b	No
Memo item		
19. Turnover adjusted to include gross portfolio investment income on technical provisions (This is Codes 8 + 82a)	89e	Yes

Notes:

* Part of item

$ Doubtful items

Including gross portfolio investment income (on technical provisions) and investment income of pension funds

(1) Code 89d = Code 13 less Code 13a

= Total of Codes 86a to 86c, where Codes 13 and 13a are defined as in the General Framework, as adapted for insurance, see Ar
For Code 13a, see item 1 (b) in the table on the previous page.

2. THE ENTERPRISE AS THE BASIC STATISTICAL UNIT IN THE SECTOR

2.1 Potential statistical units in the sector

808. The General Framework lists and defines four types of statistical unit, in accordance with NACE 70.

- the enterprise or legal unit.
- the group of enterprises.
- the local unit.
- the kind-of-activity unit.

As far as statistics on the insurance sector are concerned, these units are of varying significance, as discussed in the following paragraphs.

809. It is suggested that in the case of insurance, as for other financial service activities, the statistical unit should generally be the "enterprise". It is the lowest level unit which is legally autonomous, which keeps a separate and complete set of accounts and which is assessed for taxes on income.

810. In many member states existing statistical enquiries directed to insurance undertakings are likely to have been designed on the basis that the "enterprise" is the statistical unit: and the situation may well be the same, at present, in respect of returns required by most national supervisory bodies. But in some member countries, where consolidation of published accounts is already the norm, statistical enquiries will have been designed taking the group of enterprises, with non-resident subsidiaries de-consolidated, as the unit.

811. In some member states the legally autonomous enterprises may not qualify as separate "institutional units" (as defined in ESA 212-216) because they do not have autonomy of decision with respect to income distribution and financing. Where the enterprise and institutional unit are not identical, the latter may be the only feasible unit for reporting certain variables - see para 815 below. For preference, the degree of aggregation of the enterprises should still be only to the lowest level at which there is autonomy decision. So the enterprise is the preferred unit.

812. The arguments against an even lower level of unit (such as the "local unit") seem compelling, in the case of insurance. The underwriting of risks is a centralized function; so is the investment of funds. The sale of insurance is often done by mail or through independent intermediaries (brokers), so that in most countries insurance enterprises have few local offices. There is little point, therefore, in collecting separate figures for the few local offices of insurance companies.

813. The arguments against taking the group of enterprises as the unit are not quite as conclusive. The Seventh Council Directive of 13 June 1983 [2], requires the preparation of consolidated accounts bringing together the results of parent undertakings and of all subsidiary undertakings, regardless (see Article 3) of where the registered offices of such subsidiaries are situated. Moreover, the exclusion of insurance companies from the Fourth Council Directive on the annual accounts of certain types of companies (25 July 1978) would cease if the 1987 Proposal for a Council Directive COM(89) 474 final-SYN 78 comes into effect; in the latter "the opportunity has been taken ... to dovetail the provisions relating to the annual accounts of insurance undertakings with the requirements of the Seventh Council Directive of 13 June 1983 on consolidated accounts". This emphasis on consolidated accounts means that the separate accounts for the constituent undertakings may have less importance than hitherto, and may not even be published separately. Therefore the group could be considered as a potential unit.

2.2 Structure of enterprises in the sector

814. In general, the structure of the enterprises corresponds to the structure of the activities. Enterprises specialize in life insurance or in non-life insurance. Some specialize in reinsurance but reinsurance is also conducted by enterprises mainly engaged in direct insurance. Lloyd's' of London also specializes in reinsurance; in form it is an association of underwriters but it appears to qualify as a quasi-corporate enterprise (as defined in ESA 223.1 and 235e). In a number of member countries, there exist "composite" insurance enterprises which conduct both life and non-life business and pool their costs. In other countries, whilst life and non-life insurance enterprises are legally separate, they have only a small staff and purchase the services of a separate enterprise, which provides common administrative services to both life and non-life enterprises.

815. In some member states the organization of an insurance group of enterprises has the structure of the diagram which follows, in which non-resident subsidiaries are not owned directly by resident insurance enterprises, and in which the "institutional unit" brings together both life and non-life insurance activities. A further characteristic of the institutional set-up in these and possibly other member states is that certain statistical data (variables) may have to be obtained on the basis of the enterprise as the unit, and others (eg. central staff costs) on the basis of the "institutional unit".

816. In the diagram above, the top holding unit is included within the insurance institutional unit, since the institutional unit is used in describing the process of income distribution and financing and the underlying legal units do not have autonomy with regard to this process. Secondly, when (as in some countries) subsidiaries located in foreign countries are owned directly by the top holding unit, the institutional unit excluding the top does not possess information about these subsidiaries.

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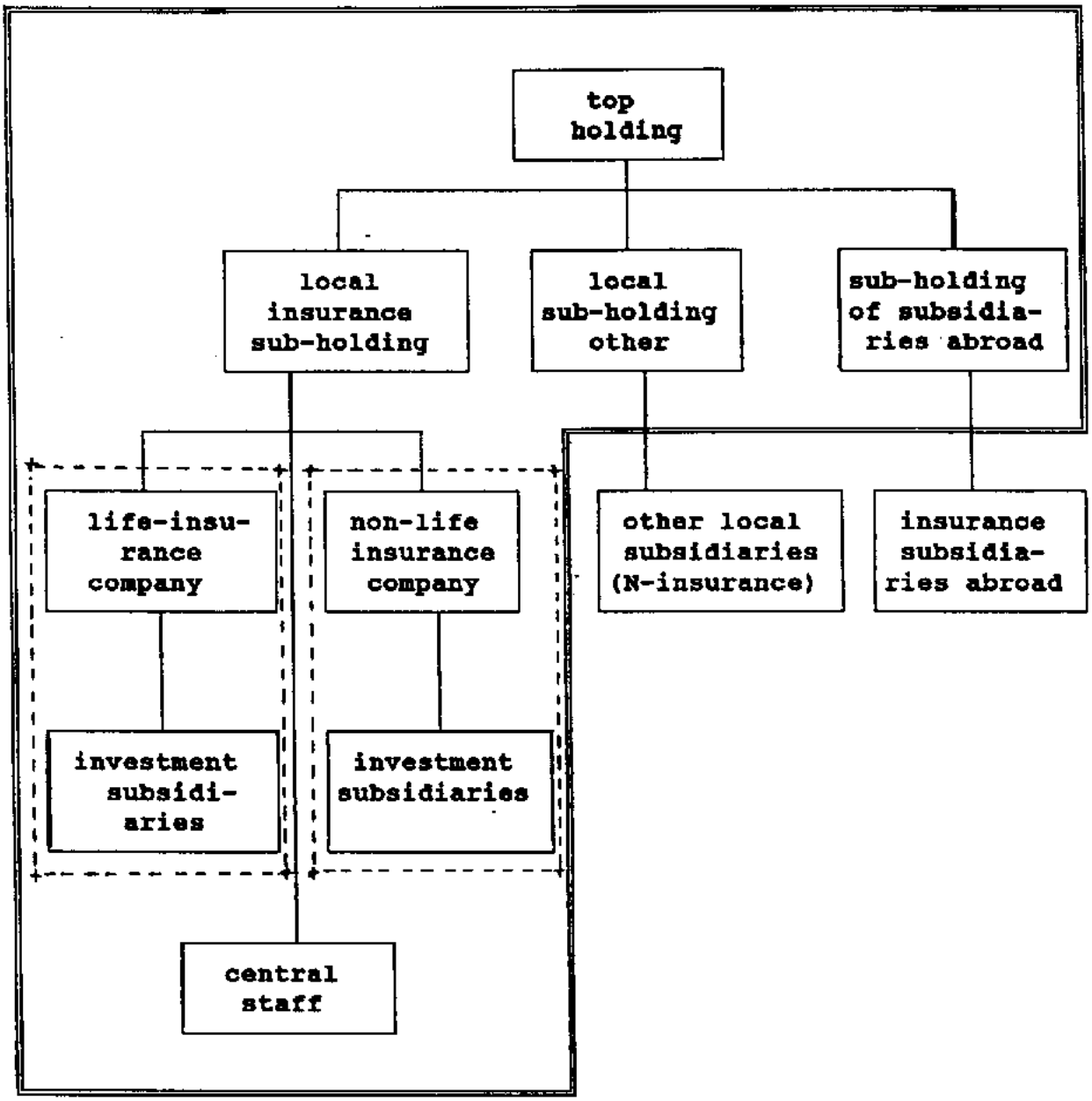
2 Official Journal L 193/1 of 18 July 1983.

Figure 1 - The possible structure of an insurance group



Source: CBS, Netherlands

Explanation of the symbols

——————— border of the legal units
-- -- -- -- border of the enterprise
═══════ border of the institutional unit

2.3 Advantages and disadvantages of the enterprise as the basic statistical unit in the sector

817. Analytical advantages and disadvantages: In section 2.1 the tentative conclusion was drawn that, in the case of insurance, the enterprise was preferable as the unit of observation for analytical purposes.

818. It appears to be unusual for insurance enterprises to market subsidiary products which are clearly non-financial, so that there would not be the same kind of problem as with certain credit institutions which run estate agencies and other non-financial activities. However, the management of investments may well include the management of non-financial investments; for instance, the financing of the construction of real property or the management of real property.

819. Advantages and disadvantages in data collection: It is common for a financial institution to engage in financial activities other than the mainstream ones. For instance, it is common for credit institutions to offer insurance to their customers from within the same company group. But a separate insurance subsidiary is usually set up for the purpose - that is, a separate enterprise, with its own accounts; indeed, national regulation of insurance may demand this. This phenomenon points to an advantage of taking the enterprise as the unit; the figures for the credit institutions based on the enterprise unit would then show separately their profits derived from ancillary activities such as insurance.

820. In some countries, however, the regulation of insurance, and the requirements for the publication of accounts, relate to the group. The proposed Council Directive COM(89) 474 final-SYN 78 also relates to consolidated accounts, i.e. to accounts for the group of enterprises. In these cases data relating to the constituent enterprises of the groups would have to be obtained separately, as they would not appear in the published accounts.

821. There are serious disadvantages to the use, for economic indicators, of data taken only from the consolidated accounts of groups of enterprises:

a) Such consolidated data cover group transactions whether in the reporting country, in other member states or in non-member states; but it is fundamental to macro-economic statistics that subsidiaries and branches situated in other countries should be separated from their parents.

b) The groups may be conglomerates: e.g. banks which own insurance companies.

c) The coverage of the company group may well change over time.

d) Generally, data taken from a unit at a high level of aggregation is less informative than that taken from units at a lower level of aggregation.

822. One alternative, where published figures are used as the primary source, is to de-consolidate partially by obtaining separately only figures for those enterprises within the group which are located outside the domestic territory; this is necessary in any event, in order to compile figures for the balance of payments. The result will be to obtain a figure consolidated at the level of the domestic territory, in which only transactions with subsidiaries and branch offices located outside the domestic territory will be treated as transactions with separate enterprises. This may be adequate for macro-economic statistics but is only a second best for other analytical purposes: for instance, the partially consolidated figures relating to the domestic territory would not show separately transactions between direct insurers and any specialist reinsurer which, although a separate enterprise, was part of the same company group. The resulting institutional unit will not be wider in its scope than the resident part of a company group, since by definition institutional units always exclude non-resident entities; also, as with statistics based on the company group, the resident parts of non-resident entities should be included, as "notional resident units", ESA 214.817.

823. Also, for consistency with the definitions used in the balance of payments and national accounts, the activities of the enterprise should cover only those activities which are conducted on the domestic territory. It may be necessary to adjust the figures in the annual profit and loss account of the parent enterprises, which may include the activities of their branches (as opposed to subsidiaries) resident in other countries. Most multinational activity is however conducted through subsidiaries, which by definition are separate enterprises with separate accounts.

824. A different situation occurs when the principal activity of a financial institution is combined with other kinds of subsidiary activities. In these cases any figures based on group accounts would include both the subsidiary and principal activities. When the subsidiary activities cross the boundary between insurance and monetary intermediation or other financial intermediation, de-consolidation of group figures will be necessary. In that situation, the whole group would be divided into separate institutional units and the top holding unit would then form an institutional unit by itself.

825. Another phenomenon is that of the life insurance company which owns one or more Unit Trusts (or in french SICAV - société d'investissement à capital variable). These may well be set up as separate subsidiaries. The reverse phenomenon, that of the Unit Trust which owns a life insurance subsidiary, for instance in order to qualify for tax relief on pension business, also exists. If figures are taken at group level, it may be acceptable for analytical purposes to treat the unit trust subsidiaries of life insurance companies as part of the life insurance activity. Conversely, a unit trust will be classified to another heading of the activity classification (probably 6712 in NACE/Rev.1) so that, when it is the parent company, figures taken at group level would include its life insurance subsidiaries in a non-insurance activity.

842. As mentioned in paragraph 815, institutional differences between countries are such that, in some countries, some variables can only be obtained for institutional units (ESA 211-216), and some - notably employment variables - only for a combination of life and non-life enterprises. Table 2 on page 18 sets out the various possibilities; when reporting data it is important that member states identify the variables for which a unit other than the enterprise has been used.

846. Table 2 Variables and the statistical unit

Type of varaible	Type of statistical unit				
	Enterprise level only	Enterprise or Institutional unit level (1)	Clusters of enterprises with a combined staff (2)	Composite companies: Life and non-life — Distinguished	Composite companies: Life and non-life — Not distinguished
Structural variables					
Number of enterprises	X	X	E		X
Number of institutional units		X	-		X
Characteristics (ownership)		X	?		X
Division by:					
number of persons employed		X	C		X
class of value added		X	E		X
Market share internationalization		X	?		X
Accounting data					
Production account (credits) and Value of production		X	E	X	-
Production account (debits) and other balances		X	E(3)	(4)	X
Profit and loss account - income from direct investments		X	?E	(4)	X
Capital account - net change in fixed capital		X	E	(4)	X
Employment variables (5) All		X	C		X

(1) When there is a choice, the enterprise level is to be preferred; for instance, credits and debits in the production account may be available at enterprise level, even if data on ownership and on income from direct investments are only available at the level of the institutional unit.

(2) When certain data can be reported at enterprise level (E), but others only for the whole cluster (C).

(3) Where a single charge for services rendered is made to an insurance/enterprise by the service company which employs the combined staff, it should be possible to estimate the sub-division of that charge between the labour costs and the other services received by the insurance enterprise.

(4) No sub-division at present, but the eventual sub-division is envisaged with NACE/Rev.1 and the proposed EC Directive.

(5) As regards employment data, the reporting unit should be the enterprise, a cluster of enterprises with a centralized staff or the institutional unit, in that order of preference.

3. SCOPE AND STRUCTURE OF THE SECTOR

3.1 Main activities of the sector

826. Insurance is generally understood as being the accepting (or "underwriting") and spreading of risks, with the provision of an indemnity in monetary form on the occurrence of specified events. The contract between insurer and insured is set out in a "policy"; the insured person pays, usually annually, a specified "premium" to secure the indemnity or indemnities specified in the policy. Often the insurer lays off, or reinsures, part of the risk with another insurer or with a specialist reinsurer, particularly in the case of large risks which are to be insured against casualty or accident. Premiums received from policy holders are known as "direct" insurance, as distinct from premiums accepted from other insurers for reinsurance. There is a main distinction between life and non-life (accident and casualty) insurance.

827. In several EC countries life insurance enterprises now do much deferred annuity business ("pension funding") in which payment of an indemnity on death is secondary, and the main purpose is the provision of a pension, on survival to a specified retirement age. This is the main method of provision of private ("occupational") pensions in some countries and is a development of two earlier variants of life insurance proper - "endowment" insurance (payment of a capital sum on survival to a specified age) and annuities (payment, in exchange for a capital sum, of an annuity so long as the annuitant survives). In NACE/Rev.1, pension funding is shown separately from other life insurance.

828. In the case of life insurance and pension funding, where the insured events occur in the long-term, the activity of insurance enterprises is to a large extent the investment of the funds received as premiums, to the policy-holder's best advantage. It therefore overlaps with the parallel activity of other financial intermediaries - banks, investment funds managed by intermediaries such as stockbrokers, unit trusts and investment trusts.

829. Such intermediaries also engage, for example, in funding for pension provision. So do large companies (both non-financial and financial) on behalf of their own employees. The companies appoint independent "trustees" to manage the pension fund. Sometimes the trustees themselves manage the investments of the fund; sometimes they hand investment management over to a financial intermediary, which could be an insurance enterprise. When they take the former course, the fund can be called a "self-administered" pension fund.

830. Investment intermediation is classified in NACE/Rev.1 either to 65.23 ("other financial intermediation n.e.c.: ISIC/rev.3 6599") or to 67.12 ("security dealing activities - within which the draft CPC has 81323 "portfolio management services"). In the present state of affairs, however, it is only realistic to regard life insurance as a single activity; and to continue to accept the convention which gives risk spreading precedence over investment intermediation and so classifies the integral activity of a life insurance "enterprise" to one activity heading. This is the approach of NACE and ISIC (NACE/Rev.1: 66.01-66.02; NACE/70: 822).

831. Non-life insurance is included as a single activity in the international classifications (NACE Rev.1 66.03). The breakdown by types is a matter for the product classification.

832. The activity of insurance and pension funding is accompanied by auxiliary activities (NACE/Rev.1 67.20). The main one is insurance broking - independent agents who act for the insured person, advise him on competing insurers and place business on his instructions. They are remunerated by a commission from the insurer who gets the business. Loss adjusting - the negotiation on the value of the indemnity, when a claim is made in respect of non-life (casualty and accident) risks - is another activity which appears to be auxiliary to insurance. The loss adjuster is both employed and remunerated by the insurer; his remuneration may be on a time basis or on a commission basis. Other activities identified as auxiliary are: insurance and pension consultancy services; independent actuarial services and salvage administration services.

3.2 Activity classifications

833. The way in which the services described in 3.1 above relate to the international classifications is straight forward. The classification in NACE Rev.1 is below; a comparison between it ,NACE/70, ISIC Rev.3 and CPC/COM is given in Annex 2.

Table 1 Activity classification in insurance: NACE/Rev.1

NACE/Rev.1		
66.0		**Insurance and pension funding, except compulsory social security**
	66.01	Life insurance
	66.02	Pension funding
	66.03	Non-life insurance
67.2		**Activities auxiliary to insurance and pension funding**
	67.20	Activities auxiliary to insurance and pension funding

834. Units engaged in several types of insurance. Except in the case of reinsurance, the so called "composite" undertakings exist in only seven member countries - Belgium, Greece, Italy, Luxembourg, Portugal, Spain and the United Kingdom; in many of these countries new "composite" companies cannot be set up. They were treated as a separate activity group in NACE/70 where they were classified under heading 821 but NACE/Rev.1 requires their business to be split between the 3 types: life, pension funding and non-life. This will cause difficulty. On the other hand, the OECD statistics indicate that for most countries the split of their premiums (turnover) between life and non-life is available. But data, on their investment income, on their costs and on the numbers of their employees cannot usually be split between the three types of business. However, the Proposal for a Council Directive COM(89) 474 final-SYN 78 does envisage that, in the profit and loss account, investment income and total administrative expenses should always be split between life and non-life business.

835. For units formerly classified in NACE/70 821 , it is proposed that, so long as the whole activities of these units cannot be allocated integrally to the three categories in NACE/Rev.1, the approach should be to split the variables between life and non-life wherever possible.

836. In both NACE/70 and NACE/Rev.1, reinsurance is included with direct insurance. Thus NACE/Rev.1 differs from NACE/70 in introducing, as an integral part of the classification, the process of subdividing the reinsurance business accepted by "composite" insurers between life and non-life.[3] The Proposal for a Council Directive on consolidated annual accounts also envisages that the reinsurance component should be subdivided between life and non-life, as part of the calculation of both earned premiums and of claims incurred; separate "technical" accounts for life and non-life are to be shown within the profit and loss account.

837. The term "reinsurance" is used when part or all of the risks underwritten by one insurer are transferred to a reinsurer on payment of reinsurance premium, the reinsurer accepting responsibility of that part of the risk so transferred. Much reinsurance is done for the so-called "large" risks, e.g. the insurance of ships, aircraft and oil rigs and of the civil liability attaching to their operation. This indicates that reinsurance is mainly important for the non-life insurance sector , as is supported by OECD statistics. Reinsurance is similar to the process of sub-contracting. It seems appropriate to confine the term to the transfer (or sub-contracting) of underwriting risks, and not to use it when the management of investments is transferred to another enterprise, eg by a pension scheme to a life insurance enterprise. In such a case, the life insurance enterprise usually only acts as the agent of the pension scheme. Self administered pension schemes, while managing their own investments, usually (but not always) insure risks such as "death in service" with an insurance company; that process should be regarded as the purchase of an insurance service by the pension scheme, not as reinsurance. When pension contributions are handed over in their entirety to an insurance enterprise, which both manages the investments and accepts the underwriting risk for premature death, it is unlikely to be possible - when the insurance company rather then the pension scheme is the source of information - to break down the sum transferred between the pension contribution proper and the insurance of premature death etc. In that case the total is better recorded as a pension contribution rather than as a life insurance premium. Double counting of the pension contribution must be avoided.

3.3 Product classifications

838. This section deals with the relation between a new activity classification and the draft classification by products. In principle a product classification is not just a subdivision of the activity classification, since any activity which has a principal product can be accompanied by subsidiary products which, when they are principal products, fall within another heading of the activity classification. But, it does not appear feasible to subdivide life insurance (considered as a product), between risk spreading (underwriting proper) and investment intermediation. This means that generally the headings of a product classification for insurance will be no more than subdivisions within the insurance activity; but they are very useful as such. The easiest way to study the extent to which the same financial services (products) are carried out by financial institutions (enterprises) falling into different headings of the activity classification, would be to obtain designatory data on the structure and ownership of both insurance enterprises and other financial enterprises.

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3 With respect to premiums (turnover), the same process is followed through in the OECD statistics, in arriving at "net written premiums".

839. Suggestions are given in Annex 3 for the classification of non-life insurance by categories of risk. They would be obtained only for premiums (gross, and net written). They correspond to the draft CPC headings and those which OECD have introduced for their collection of information on non-life premiums - the interrelationships are shown in Annex 3. These also give definitions in terms of the classes set out in the Annex to the EC Directive on non-life insurance, No. 239 of 1973.

840. As regards life insurance, the CPC (shown in Annex 2) introduces only one subdivision, between 'Life insurance services' and 'pension and annuity services'. This cuts across the primary subdivision of the activity classification, which is between life insurance and pension funding. In Annex 3 a note detailed arrangement into headings of the CPC, which avoids this problem, is suggested.

ANNEX 4

TABLE 1. NON-LIFE INSURANCE BY CLASS

CPC Subclass	Description	Classes and definitions as in annexes of Directive 73/239 regrouped for the purpose of this manual	Corresponding OECD classes of Non-life insurance	OECD definition
81291	Accident and health insurance services	1. Accident 2. Sickness	7. Accident and sickness	1. Accident 2. Sickness
81292	Motor vehicle insurance services	3. Land vehicles 10. Motor vehicle liability	1. Motor vehicle	3. Land vehicles 4. Railway rolling stock 10. Motor vehicle liability
81293	Marine, aviation and other transport insurance services	4. Railway rolling stock 5. Aircraft 6. Ships (sea, lake and river and canal vessels) 11. Aircraft liability 12. Liability for ships (sea, lake and river and canal vessels)	2. Marine, aviation and other transport	5. Aircraft 6. Ships (sea, lake and river and canal vessels 11. Aircraft liability 12. Liability for ships (sea, lake and river and canal vessels)
81294	Freight insurance services	7. Goods in transit (including merchandise, baggage, and all other goods)	3. Freight	7. Goods in transit (including merchandise, baggage, and all other goods)
81295	Fire and other property damage insurance services	8. Fire and natural forces 9. Other damage to property	4. Fire and other property damage	8. Fire and natural forces 9. Other damage to property
81296	Pecuniary loss insurance services	14. Credit 15. Suretyship 16. Miscellaneous financial loss	5. Pecuniary loss	14. Credit 15. Suretyship 16. Miscellaneous financial loss
81297	General liability insurance services	13. General liability	6. General liability	13. General liability
81299	Other insurance services	17. Legal expenses	8. Other non-life insurance	17. Legal expenses 18. assistance 19. Miscellaneous

Comments on table 1 : Non-life insurance by class

- The CPC subclasses 81292 : Motor vehicle insurance services, and 81293 : "Marine, aviation and other transport insurance services" relate to contracts which include liability for use, as well as coverage against loss or damage. In the OECD statistics, the coverage of liabilities -which is allocated to separate headings in the Annexes to the EC Directive - is also grouped with the coverage of loss or damage.

- If as assumed, however, that it is not intended to include cover against liabilities to third parties in the CPC subclass 81294 : "Fire and other property damage insurance services". Therefore, if a contract providing cover against fire or other property damage also includes liabilities, the liability element should be included under the heading 81297 "general liability insurance services".

- The only difference between the arrangement of the classes as used here and that use by OECD is the inclusion of class 4 of the EC Directive "All damage to or loss of railway rolling stock" under the CPC heading" Marine, aviation and other transport insurance services", rather than under the heading "motor vehicle insurance services". This is because it seems more appropriate that the railway rolling stock should fall under "Other transport" of CPC subclass 81293 "marine, aviation and other transport insurance services, than under the subclass 81292 "Motor vehicle insurance services".

Table 2. Non-life insurance by classes. *(suggestions and adaptations)*
(see comments on page 65)

CPC Subclass	Description	Corresponding OECD classes
81295	Fire and other property damage insurance services	
Part of 81295	*Fire and other property damage insurance services for commercial and industrial property*	Part of 4 Fire and other property damage
Part of 81295	*Fire and other property damage insurance services for domestic property*	Part of 4
Part of 81291 part of 81295	*Short term package insurance services for*	Part of 7 Accident and sickness plus Part of 4. Fire and other property damage
part of 81299	*covering travelling risks*	plus Part of 8 Other non-life insurance
81299	Other insurance services n.e.c.	
part of 81299	*Insurance against (1) legal expenses*	Part of 8 Other non-life insurance
part of 81299	*Assistance insurance*	Part of 8
part of 81299	*miscellaneous*	Part of 8

(1) "Legal expenses" corresponds with class 17 of the annex of the EC directive 73/239.

Comments to table 2

Short-term package insurance to cover holiday and other travelling risks is a rapidly growing item which covers both personal property and accident and health risks during the period of travel. It is therefore suggested that it should be distinguished. Some contracts for package travelling insurance also include assistance e.g. recovery of stranded motor vehicules.

The counterpart transactions to insurance enterprises are either business or final consumers (mainly householders). The former's insurance costs (broadly premiums less claims) are intermediate consumption, the latter's are final consumption. Data from insurance enterprises do not readily distinguish these categories, particularly for motor vehicle insurance when the insured vehicle is a car. However, insurance relating to fleets of cars is one element of the category which is intermediate consumption. The split suggested of insurance against fire and other property damage (4a and 4b above) is more likely to be available. The total of Insurance taken by householders and other final consumers could be distinguished in broad terms as Classes 4b and 7 - though some accident, sickness or travel insurance may be taken by businesses for employees, without counting as their remuneration, and some general liability insurance (Class 6) may be taken by householders.

Table 3. Tentative breakdown of classes of life insurance and pension funding and its reconciliation with the categories distinguished in the annex of the first Council Directive 267 of 979

NACE /REV.1		Tentative CPC heading		categories as described in Annex to first Council Directive of 5.3.79
6601	Life insurance	81211	Whole of life policies (maturing on death)	Part of I Part of II Part of III
		81212	Endowment policies (maturing on survival) to a specified age or on earlier death)	Part of I Part of II Part of III
		81213	permanent health policies	IV
		81214	other policies usually involving regular single premiums*	Part of I,II, III,V,VII,VIII
		81215	Annuities	Part of I, II
		81216	Capital redemption (including bonds repayable on survival to a fixed date)	VI
		81217	Other policies usually involving only a single premium	Part of V, VIII
6602	Pension funding	81218	Schemes for individuals	not included
		81219	Schemes for groups	Part of VII

* However excluding annuities and any other policies usually involving only a single premium.

Note on table 3

If a policy falls within the tentative CPC headings 81211 to 81213 but exceptionally involves only a single premium it should nevertheless be grouped with those regular premiums.
The same for the policies under tentative CPC heading 81215 to 81216. If exceptionally the policy involves regular premiums it should nevertheless be grouped with those involving only a single premium.

ANNEX 5

Double deflation : illustration of effect of use of differing deflators for premiums

WORKING ASSUMPTIONS

1. **PREMIUM RATES** (α)
   (a) EXPECTED increase in number of claims : 15 %
   (b) EXPECTED increase in average cost of claims (β) : 13 %
   → 30 %

2. **CLAIMS**
   (a) ACTUAL increase in number of claims : 50 %
   (b) ACTUAL increase in average cost of claims : 10 %
   → 65 %

3. **FACTOR INCOMES**
   (a) ACTUAL increase in unit labour costs and GDP deflator : 10 %
   (b) ACTUAL increase in volume of labour inputs : 25 %

	BASE YEAR	CHANGE (%) IN			YEAR 1.			
		'Volume'	'Price'	Total	At Current Prices	Deflator	At Constant Prices	
A. CORRECT DEFLATOR FOR PREMIUMS (1(b))								
Premiums earned	120	+ 15	+ 13	+ 30	156	.8846 $(\frac{115}{130})$	138	
Claims incurred (γ)	-100	+ 50	+ 10	+ 65	-165	.9091 $(\frac{150}{165})$	-150	
Margin *	+ 20				- 9		- 12	**A**
B. PROXY DEFLATORS FOR PREMIUMS								
(a) **Premium rate** (1(a) x 1(b))								
Premiums earned	120	..	..	+ 30	156	.7692 $(\frac{100}{130})$	120	
Claims incurred (γ)	-100	..	+ 10	..	-165	.9091 $(\frac{150}{165})$	-150	
Margin *	+ 20				- 9		- 30	**B(a)**
(b) **Average cost of claims** (2(b))								
Premiums earned	120	..	[+ 10]	..	156	.9091 $(\frac{100}{110})$	141.8	
Claims incurred (γ)	-100	..	+ 10	..	-165	.9091 $(\frac{150}{110})$	-150	
Margin *	+ 20				- 9		- 8.2	**B(b)**
* Reflection of margin in factor incomes :-								
Labour costs (δ)	10	+ 25	+ 10	+ 37½	13.75	.9091	12.5	
Operating surplus (Balance)	+ 10				- 22.75	.9091	- 20.68	
	+ 20				- 9		- 8.18	**B(c)**

COMPARE A WITH B (a), (b) and (c). Other combinations of 'price' and 'volume' components will produce a different dispersion of the results.

(α) Further working assumption : an objective to maintain a constant percentage margin.
(β) And in maximum value of cover chosen by policy-holders.
(γ) Including net additions to reserves for claims not yet settled or not yet made.
(δ) Including intermediate inputs.

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