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Insurance Services Statistics and the National Accounts

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INSURANCE SERVICES STATISTICS AND THE NATIONAL ACCOUNTS

Contents

1. Introductory

1.1 General background. Statistics of insurance services were discussed by the Group in sessions on Model Surveys, both in 1992 at Williamsburg (reported at pages 184-5 of the Papers and Final Report volume) and in 1993 at Oslo (reported at pages 299-301). In both years the discussion was based on papers by Statistics Canada and by Eurostat, also included in the volumes. The broad outlines of the treatment of insurance in the new SNA were known, but the 1993 SNA in its published form was not available.

1.2 Since then work in Eurostat has progressed on two fronts :-

a. ESA 1995 has been published. It is compatible with SNA 1993 but includes some improvements, including one in insurance (see para 2.1.b below).
b. The EU Insurance Services Statistics (ISS) are near to completion. The proposal is to introduce it as an additional Annex (No. 5) to the Regulation 58/97 concerning structural business statistics.

1.3 The ISS are largely based on the harmonization of the data required for the regulation of insurance enterprises in Europe, including the Accounting Directive on insurance enterprises (91/674/EEC) and the introduction of control based on the home country of insurance enterprises, in the Third Insurance Directives (on life and non life insurance). The ISS variables are likely to be collected under the mandatory provisions of the Structural Business Statistics Regulation. Derogations in time will nevertheless to be faced.

1.4 As part of this process, Eurostat's Methodological Manual for ISS has already been disseminated (from February 1997 onwards). In its conceptual parts, it is an updated version of the draft dated April 1993, which was attached to the Eurostat paper for the Group's 1993 meeting; but it now contains, on pages 15-79, the list of variables proposed in Annex 5 of the Structural Business Statistics Regulation. Moreover the relevant EU Regulations and Directives are attached in the annexes. There is also a Chapter on the secondary use of ISS, including the national accounts, the balance of payments statistics. The European product classification (CPA) for insurance services is now fully developed and is set out in other annexes to the Manual.

1.5 Purpose of this paper. The completion of the ISS provides an opportunity to improve the quality of the data on the insurance industry included in the national accounts and balance of payments statistics. This appears to be opportune, given current concern on the quality of data for the service industries included in the GDP figures for the EU countries, in the context of the progress of the Economic and Monetary Union and the Pact for Stability and Growth agreed at the Amsterdam Summit.

1.6 The ISS are a 'meso' level system which uses figures for complete insurance enterprises but it has been designed to be compatible with the concepts at macro level of the ESA 1995, the UN's SNA 1993 and the IMF's Balance of Payments Manual No.5. These systems now follow exactly the same concepts which, for insurance, are greatly improved by comparison to the concepts of the previous international systems. The main aggregates of these systems considered in this paper are the value of production, or (gross) output (including that part which is exported), the value added or the contribution to GDP, and current transfers between non-life insurance enterprises and their policy-holders.

1.7 1995 figures from ISS for non-life insurance enterprises in three EU countries, aggregating all insurance enterprises, are included in Annex 1 to this paper - also see commentary at paras 6.2-6.3 below. The context was the potential for using such figures in the balance of payments, but they also show estimates of output. At present, the national accounts figures are on the ESA 1979 basis. Therefore it is too early to compare the attached figures based on the ISS with what would compiled according to ESA 1995. However, the small adaptations which will be needed are dealt with qualitatively, later in this paper (paras 4.5-4.8 and Annex 3). It is expected that the differences will remain small, as mentioned later.

1.8 Thus the ISS provides a sufficient and thoroughly improved base for the macro-economic aggregates for insurance services, when considering annual data at current prices. Improvements to annual data will of course feed through to quarterly data. The ISS also have features capable of improving figures revalued to constant prices, see Section 7 below.

2. Improvements to the national accounts concepts

2.1 It is useful to recapitulate at this point the various conceptual improvements to the aggregates of insurance, which are about to be introduced in the national accounts and balance of payments estimates:-

a. The inclusion of income on the investment of policy-holders' funds as part of the output of insurance enterprises, thereby avoiding implausibly low or even negative figures. The concept is that of a "premium supplement" which the policy-holder is deemed to pay notionally, corresponding to the reality that, if insurance enterprises did not receive this income, premiums would have to be higher.

b. The ESA recommends that reinsurance services between residents should be recorded without consolidation (annex III, para 40, on page 274). This is in line with ISS and accords with the general preference in SNA for avoiding consolidation. It achieves thereby a correct routeing of transactions in the chain: policy-holder to direct insurer to reinsurer, or *vice versa* - and avoids the need to distinguish between the treatment of transactions between direct insurers and reinsurers, according to whether one of the parties is or is not a non-resident.

c. The new balance of payments Manual now accepts that international insurance transactions should be recorded on an accounting (or accruals) basis, rather than on a cash basis, as in the previous Manual. This brings the treatment in the balance of payments into line with that already adopted in ESA 1979, and with ISS which is -of course - based on the accounting of insurance enterprises. It avoids, for instance, overstating the export of non-life insurance services by deducting the claims payments, rather than as the claims incurred.

3. ISS as a by-product of administrative data

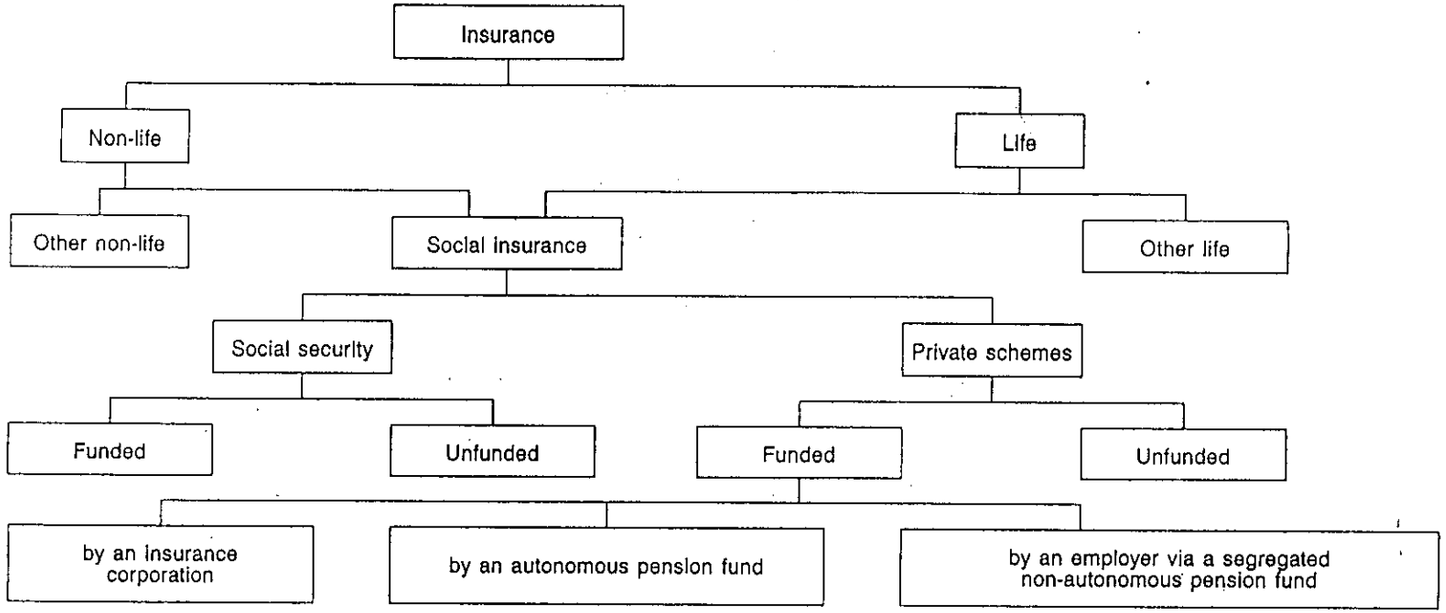
3.1 Chapter 5.2 of Eurostat's Methodological Manual gives a full description of the use of ISS for macro-economic purposes, and Chapter 4.3 sets out the production and generation of income accounts, as derived for the data available. Moreover the methods of calculating certain variables are laid down, which are required for this purpose. In this way a common and harmonized framework is established, for using enterprise-data as the basic input into the macro-economic estimates in the national accounts. The important consequence hereof will be much better comparability of the figures between countries.

3.2 The usual channels for compiling the ISS are the national insurance supervisory authorities. Often the ISS requires no more than what is already available in the annual accounts or returns to Supervisory Authorities. Some of the details are of particular value for the national accounts. One example is the separation of the claims management expenses within the gross claims incurred, since this distinction is a needed for calculating output and the cost of production. This is an example of the advantage of a common framework, to be of high use in many directions.

3.3 There are also an additional use of the ISS, potentially, with regard to other activities covered by business statistics. The inputs of insurance enterprises are outputs of financial auxiliaries. With reference to the Regulation 58/97 Eurostat is currently studying the development of enterprise statistics on financial auxiliaries.

In a kind of indirect manner consistency should exist between the data being part of the ISS and the turnover of financial auxiliaries (= commissions payable). Unless some auxiliaries are non-resident, it provides a control for estimates of output of resident auxiliaries, other than their exported output.
With rather less precision, the ISS could also provide orders of magnitude for the *external* component of insurance enterprises' claims management expenses (output of loss adjusters, etc.) and

Figure A.IV.1. Insurance and social insurance schemes



of their investment management expenses (output of fund managers, consulting actuaries, etc.). However, the split of inputs is rather less, in the product dimension, than proposed in the Canadian papers about a Model Survey.

4. Scope of ISS and the national accounts.

4.1 There are two aspects to this : scope by activities and geographical scope. I will deal with each in turn.

4.2 Scope : by activities. The ISS system covers all insurance enterprises, but not pension funds except in so far as an insurer enterprises write pension funding business. In the attached chart (page 5), which is taken from the UN's 1993 SNA, the ISS system covers all the

> elements except "social security" (funded and unfunded) and two sub-sections of "funded private social insurance (pension) schemes" - when funding is by an "autonomous pension fund" for a group and when it is by an employer *via* a "segregated non-autonomous pension fund" (often known as a "book reserves" pension scheme). The ISS system covers the third sub-section of pension funding, that undertaken by an insurance enterprises. There are plans to develop statistics on pension funds (autonomous pension funds) in the future.

4.3 Personal pension products (those in the names of individuals) are included, but not distinguished, in the ISS. In the SNA *schema,* personal pension funds, if for employees, could either be part of "social insurance" or part of "other life insurance", depending whether or not the employer makes contributions. Those for the self-employed will usually be treated as part of "other life insurance".

4.4 Insurance enterprises may well contribute indirectly to both autonomous and non-autonomous pension funding, e.g. through providing risk coverage to pension funds. In the accounts this should normally be treated as reinsurance ceded of pension funds and accepted of insurance enterprises.

4.5 Scope : geographical. Enterprise based statistics cover the activities of the whole enterprise, including branches and freedom of provision of services business undertaken in countries other than the country in which the head office of the enterprise is located. They exclude subsidiaries in other countries which are then included as normal enterprises there. The data of the ISS of the home country therefore need adjustment, for non-resident branches but not for non-resident subsidiaries, if they are to cover only the activities of the enterprise in the geographical limits of the home country.

4.6 The difficulty of this situation has been transformed, for the better, by the introduction of the "home" country basis for supervision of EU insurance enterprises, because this is coupled with the provision of certain data *via* home country supervisors to supervisors in the host countries, where branches are located. The ISS fully incorporates this concept. A matrix can therefore be constructed of the premiums written by non-resident branches, connecting the 15 host countries with the 15 home countries. The adjustment of data for the whole enterprise to the basis relating only to activities in the territory of the country in which it is located, as required for the national accounts and balance of payments, can therefore be done. This is the last step at the macro-level, using this information - in so far as branches in the EU countries are concerned. Similar adjustments can be undertaken for non-EU branches in using the data of the ISS. Moreover the ISS provide data on direct exports of services to other EU countries, under the freedom to provide services. The adjustment for non-resident branches is thought of still being minimal, in the order of often less then 1 % of the gross premiums written.

4.7 Annex 2 sets out a numerical example of this process for non-life insurance, using imaginary figures, but for the variables defined as in ISS.

5. Analysis of turnover by counterpart sector.

5.1 Turnover is the starting point for the analysis of output (or the service charge) by counterpart sector, which in turn leads to the routeing between insurance enterprises and counterpart sectors of those non life insurance transactions which are regarded, in the national accounts, as current transfers - claims incurred and premiums earned after deducting the service charge. (See the "secondary distribution of income account" in Tables A.IV.3 ...7, on pages 317 *et seq.* of ESA 1995).

5.2 In ISS, the analysis of premiums by type of client is only a possibility for the future (see pages 99-100 of the Methodological Manual). However, insurance enterprises are to supply from the outset a geographical breakdown of premiums written, ceded to reinsurers and of reinsurance premiums accepted (pages 60-1 of the Manual). This identifies one major counterpart sector - the rest of the world. Amongst premiums payable by residents, those which are final consumption expenditure rather than intermediate consumption expenditure are mainly premiums payable by households, which are covered in household expenditure surveys. In addition, the analysis in ISS of the output of insurance enterprises by product, see Section 6 of this paper, assists in subdividing the flows to and from counterpart sectors between the service charge (output) and current transfers.

6. Analysis of output by products

6.1 In the case of non-life insurance, the ISS enables good estimates to be made of output classified by the 10 main products of the CPA - see page 119 of the Manual - and so to document the differences in the ratios of the service charge (= insurance enterprises' output) to turnover. There will be various uses of these estimates at the macro-economic level :-

a. Transactions with non-residents.

6.2 Here the service charge element (= exports or imports of services) needs to be separated from current transfers. Annex 1 shows how the figures in the profit and loss account for three countries which can be arranged to obtain estimates of the service charge element using both 'top down' and 'bottom up' approaches. This annex shows further how to use the actual figures available in ISS relating to products (premiums, claims, operating costs and reinsurance balance) so as to obtain estimates of the service charge by product using both the 'top down' and 'bottom up' approaches. These give differing results, largely because of the assumption, necessary in the 'bottom up' approach, that the profit margin is the same for all products. But the 'bottom up' approach seems to be a valuable cross check.

6.3 The purpose of these estimates is to deal with the situation that the mix of business conducted with non-residents is likely to be different from the mix of business conducted with residents. If it emerges that the ratios of service charge to premiums differs between products, as is to be expected, the service charge ratios on business with non-residents can be reweighted accordingly, using such information as is available on the product breakdown of the cross-border business. Quite full information is available in ISS on the product breakdown of intra-EU premiums (pages 61-2 of the Manual) and, traditionally, separate estimates are made of premiums on the transportation of goods.

b. Transactions with residents

6.4 Similar processes could be followed, on the subdivision between the service charge and transfers, for business with other resident sectors, though here the information on the product breakdown of premiums, cross classified by counterpart sector, is much less complete. If data by products are available from household surveys, they could be matched with data by products for international transactions, and the remainder of the total would then relate mainly to resident non-financial corporations.

c. Output and value added at constant prices.

6.5 For insurance, this is conceptually a very difficult area, see Section 7 below. But the subdivision of output by products is of the essence of finding robust ways of revaluing

current price data to constant prices, particularly if chain linking of annual weights, by product, is to be used.

7. Prices and Quantities : more general aspects

7.1 The question of price and volume statistics for insurance and pension funding was discussed at the Group's 1991 meeting at Helsinki, on the basis of papers by Eurostat and Finland (see the report on the session at pages 468-9 of the volume). The group reached the conclusion that the national accounts definition of output did not lend itself to double deflation, because output itself was a net figure, and that statisticians should look at alternatives such as direct collection of quantity measures. The report said that the Eurostat paper had described five possible approaches to measuring changes in the volume of insurance activity, which were (page 468) :-

i. double deflation of gross output and of intermediate inputs;

ii. single deflation of gross output;
iii. single deflation of gross output elements
iv. revaluation of factor incomes
v. extrapolation using quantity indicators, such as the number of contracts and the number of employees.

At the time a product classification for insurance had not been fully developed. Now the CPA in insurance exists and many variables in non life insurance will be broken down by product.

7.2 A recent OECD paper surveyed indices used to derive annual constant price value added in services. Within Section J, for the components of insurance (life and non-life), 6 EEA countries used 9 variants of the double deflation approach, 4 countries used deflation of value added, 6 extrapolation of value added, and 1 part deflation, part extrapolation of gross output. (There is some double counting of countries between life and non-life insurance.)

7.3 As a preliminary to more substantive discussion, the following four general propositions can be suggested (with two conceptual dilemmas) :-

a. Conceptually similar methods for separating prices and volume should be adopted in the national accounts, the balance of payment, business statistics and in statistics at micro level of household consumption (which lead to consumer price indices).

b. The product classification, especially for non-life insurance, should be used.

c. Because of the rapid changes in the structure of the insurance industry, consideration should be given to using chain-linking of Laspeyres-type indices (but see the Finnish paper for the Group's 1991 meeting).

d. It is important that the concepts underlying micro-level data for households, used for consumer price indices, should be compatible with those used in meso- and macro-level data. The conceptual dilemmas are inter-connected.

e. Can net non-life premiums ("net" in the national accounts sense) and claims, which are treated as current transfers, be split into price and volume components ? In other words, if the premium rate for a given volume of cover increases due to an increase in the frequency of claims, is this a price effect or a volume effect?

It tends to be regarded as a price effect by the policy-holder. Considered 'bottom up', the output of insurance services consists of intermediate inputs, labour costs and operating surplus. 'Top down' it is measured net of claims - claims are not inputs of insurance enterprises. This suggests the contrary position - that an increase in the frequency of claims should normally be regarded as only affecting transfers between policy-holders. If the increase had been predicted and premium rates raised accordingly, net non-life premiums will be sufficient to cover the excess claims; and output, in both current price and real terms, will largely be unaffected.

f. However, premium rates are necessarily set by insurance enterprises *ex-ante*, based on their expectations of the frequency of claims. If the actual frequency is much higher, they make a loss and there may be negative value added or even negative output. This raises the question whether the impact of unexpected changes in the frequency or unit cost of claims should in some way be discounted, so as to avoid substantial fluctuations in the value and volume of insurance enterprises' output. But it seems unlikely that such 'smoothing' of real output figures could be justified unless the same was also done with the figures at current prices.

7.4 Annex 4 gives an example of the effect of a bad year, using imaginary figures. The scenario is that there is no general inflation, that the volume of insurance services is not changing (e.g. the number of policies does not change), and that insurance enterprises, when confronted with a sudden increase in the frequency of claims, half of which they expect to continue, budget to restore their margins on future business without seeking to recoup past losses. It can be seen that there are substantial exceptional changes in volume, both of output and of transfers, one tending to offset the other.

7.4 Anticipating a possible need for the direct collection of quantity measures, Eurostat's Methodological Manual proposed the following (see pages 77-9):-

a. number of active contracts outstanding at the end of the accounting year, relating to direct business, for certain product categories;

b. number of insured persons at the end of the accounting year, relating to direct business, for certain (other) product categories;

c. number of insured vehicles at the end of the accounting year, relating to direct business, for motor insurance products;

d. gross sum insured at the end of the accounting year, relating to direct business, for certain life insurance products;

e. number of claims incurred in the accounting year, relating to direct business, for motor insurance third party liability.

These variables will get available successively during the next years. They will be able to provide some orientation for the problems stated above.

7.5 The whole subject needs further debate, preferably in a wide forum including national accounts compilers and the compilers of consumer price indices.

8. Some practical and conceptual issues in the use of ISS in the national accounts and balance of payments.

8.1 Some notes on these more technical matters are set out in Annex 3. In most case adjustments, if needed, could only be made at macro level. The notes cover the following topics :-

a. What income is derived from the investment of technical provisions (= premium supplements).

b. Premium supplements flowing between direct insurers and reinsurers.

c. Investment income on bonds.

d. The treatment of capital gains.

9. Conclusion.

This paper sets out the state of play in the EU regarding use of ISS as the basic input into the national accounts and balance of payments, when at current prices and on an annual basis. As ISS are well developed enterprise statistics, few additional adjustments and little additional data collection is needed at macro level; the main topics of this kind are covered in Annex 3.

This paper does not deal with the compilation of quarterly data, except in so far as a comprehensive annual system is a necessary starting point. On the question of estimates of the real output of the insurance industry, the paper is more in the nature of a problem statement than of a solution, though again the comprehensive system at current prices, particularly with its product breakdowns and proposals for direct indicators of quantity according to products, provides a very solid base.

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ANNEX 1

Calculation of the service element on the base of real figures

Accounting year: 1995
Business: Total non-life
Source: ISS / Eurostat D2

I) Profit and loss account of non life insurance enterprises

			Luxembourg Mio ECU	Germany Mio ECU	Denmark Mio ECU
21100	**1) Gross premiums earned**	**+**	**568.21**	**73 915.94**	**3 792.56**
12110	gross premiums written		558.33	74 031.22	3 684.21
21120	gross change in the provisions for unearned premiums		9.88	-115.28	108.35
21300	**2) Gross claims incurred**	**-**	**401.12**	**51 570.38**	**2 892.86**
21310	gross claims payments		333.21	46 592.66	2 706.45
21320	gross change in the provision for outstanding claims		67.91	4 977.72	186.41
26140	of which claims management expenses (estimated, but available within ISS)		7.55	4 472.32	250.00
104	Gross claims incurred (excluding claims management expenses)		393.57	47 098.06	2 642.86
21400	**3) Gross operating expenses (including all acquisition costs)**	**-**	**31.96**	**15 844.16**	**1 112.17**
21200+21500+21600	**4) Other income/ expenses allocated in the technical account (including the change in equalisation provision)**	**+**	**-3.40**	**-5 527.96**	**300.08**
21200	Allocated investment return transferred from....			426.95	225.57
21500	Change in the equalisation provision		-3.40	-1 802.27	38.48
21600	Other items, gross amount			-4 152.64	36.03
21700	**5) Gross technical balance**	**=**	**131.73**	**971.32**	**85.48**
21800	**6) Reinsurance balance**			**1 085.52**	**127.05**
21900	**7) Net technical balance**		**131.73**	**-116.88**	**-41.57**
24200	**8) Investment income**	**+**		**6 055.77**	**894.37**
26180	**9) Investment management expenses**	**-**		**210.81**	**43.94**
24300+(24400-26140)-24500+24600-24700	**10) Other income/expenses (i.a value adjustments on investments)**	**-**	**0.00**	**-2 036.56**	**-306.08**
24300		+		0.00	
24400	Investment charges	-		1 043.36	47.35
26180	Investment management charges	+	0.00	210.81	43.94
24500	Allocated investment return transferred to the non-life ins. technical account	-		426.95	306.22
24600	Other income	+		3 552.77	19.51
24700	Other charges, including value adjustments	-		4 329.82	15.97
25100+25000	11) Profit for the financial year (before tax)	+	-131.73	3 692.06	585.92

ii) Calculation of the service charge element

The following calculations are to be in line with the production account as outlined in the Manual on ISS.

Top down approach:

			L Mio ECU	D Mio ECU	DK Mio ECU
21100	1) Gross premiums earned	+	568.21	73 915.94	3 792.56
104	2) Gross claims incurred (excluding claims management expenses)	-	393.57	47 098.06	2 642.86
24200+103	3) Investment income + portfolio investment income of reinsurers	+	0.00	7 235.48	1 017.93
24200			0.00	6 055.77	894.37
103				1 179.71	123.56
21500+21600	4) Other income/expenses allocated in the technical account	+	-3.40	-5 527.96	300.08
	5) Balance = Service charge element		171.24	28 525.41	2 467.71

According to the treatment of the investment income in the manual on Insurance Services Statistics this income as shown in the profit and loss account has been increased in considering also the part of the investment income which is achieved from reinsurers on assets which they hold on their share of the gross technical provisions of the direct insurers. The amount is calculated as outlined in the manual (code 103).

Bottom up approach:

			L Mio ECU	D Mio ECU	DK Mio ECU
21400	1) Gross operating expenses	+	31.96	15 844.16	1 112.17
26140	2) Claims management expenses	+	7.55	4 472.32	250.00
26180	3) Investment management charges	+	0.00	210.81	43.94
24300+(24400-26140)-24500+24600-	4) Other income/other expenses	+	0.00	2 036.56	306.08
21800+103	5) Reinsurance balance + investment income achieved from reinsurers....	+	0.00	2 265.23	123.56
25000+25100	6) Profit and loss for the financial year (before tax)	+	-131.73	3 692.06	585.92
	7) Balance = Service charge element		-92.23	28 521.13	2 421.66

All items in Bold are available within the Insurance Services Statistics.

ANNEX 1

Calculation of the service element on the base of real figures:

Accounting year:	1995
Business:	Non-life / products
Source:	ISS

I) Profit and loss account of non life insurance enterprises

			Accident and health insurance services	Motor vehicle Insurance services	Fire and other damage to property insurance service
			CPA 66031	CPA 66032	CPA 66034
			L	D	DK
			Mio ECU	Mio ECU	Mio ECU
31110	1) Gross premiums written	+	19.33	23 173.32	1 279.74
31310	2) Gross claims incurred	-	7.42	19 109.81	818.23
	of which claims management expenses (L 3.46%) (D 31.30%) (DK 34.74%)		0.26	1 399.93	86.84
	Gross claims incurred (excluding claims management expenses)		7.16	17 709.88	731.39
31410	3) Gross operating expenses	-	1.19	3 176.52	256.00

II) Calculation of the service charge element

The following calculations are to be in line with the production account as outlined in the Manual on ISS.

	Top down approach:		CPA 66031	CPA 66032	CPA 66034		
			L	D	DK	D	DK
			Mio ECU	Mio ECU	Mio ECU		
31110	1) Gross premiums written	+	19.33	23 173.32	1 279.74	100%	100%
	2) Gross claims incurred (excluding claims management expenses)	-	7.16	17 709.88	731.39		
	3) Investment income (L %) (D 46.6%) (DK 14.80% *)	+	#VALUE!	3 371.74	150.65		
	4) Other income/expenses allocated in the technical account (L 3.46%) (D 31.30%) (DK 34.74%)	+	-0.12	-1 730.37	104.24		
	5) Balance = Service charge element		#VALUE!	7 104.81	803.24	31%	63%

* estimated for DK; deviates from the relation of the premiums because the technical provisions include certain saving products which cause high investment income

ANNEX 1

	Bottom up approach:		CPA 66031 L Mio ECU	CPA 66032 D Mio ECU	CPA 66034 DK Mio ECU	D	DK
31410	1) Gross operating expenses	+	1.19	3 176.52	256.00		
	2) Claims management expenses (L 3.46%) (D 31.30%) (34.74%)	+	0.26	1 399.93	86.84		
	3) Investment management expenses (D 46.6%) (DK 14.80%)	+	#VALUE!	98.24	6.50		
	4) Other income/expenses(L 3.46%) (D 31.30%) (34.74%)	+	0.00	637.48	106.32		
	5) Reinsurance balance *	+		-101.94	150.00		
	6) Profit and loss for the financial year (before tax)(L 3.46%) (D 31.30%) (DK 34.74%)	+	-4.56	1 155.69	203.52		
	7) Balance = Service charge element		#VALUE!	6 365.92	809.19	27%	63%

* estimated for DK

Annotations:

a) The percentages used above are calculated as follows:
3.46% and 31.30 %: On the base of the gross premiums earned of the product to the total of gross premiums earned in non-life insurance. 46.6%: On the base of gross provisions for outstanding claims for direct motor insurance to the total of gross provisions for outstanding claims in non life insurance (73130).

b) Like for the total business the reinsurance balance for the direct motor insurance includes the part of the investment income which is achieved from reinsurers on assets which they hold on their share of the gross technical provisions of the direct insurers. The percentage XX.X% for Luxembourg and 46.6% for Germany have been applied.

All items in Bold are available within the Insurance Services Statistics.

Note:
Both calculation methods seem feasible. As in the bottom-up approach the profit and loss of the financial year has to be allocated at products which is a conceptual problem preference is expressed for the top-down approach on the level of products.

A N N E X 2.

TRANSACTIONS OF NON-RESIDENT BRANCHES OF RESIDENT INSURANCE ENTERPRISES

(See also pages 80-1 of the Manual)

INTER-E.U. TRANSACTIONS (regulated entirely on "home" country basis)

The three country scenario considered * .

Country A - insurance enterprises have branches in EU countries B & C.

Country B - insurance enterprises have branches in EU country A.

Country C - insurance enterprises have branches in no other EU country.

Method 1 (on page A2/2).

Indicator of transactions of non-resident branches (for each other EU country) : gross direct premiums written. Service charge and value added of non-resident branches : in proportion to all transactions of resident insurance enterprises.

Method 2 (on page A2/3).

Indicator of transactions of non-resident branches : gross direct premiums written analysed by non-life products (and for each other EU country). Service charge and value added of non-resident branches, for a given non-life product, in proportion to all transactions of resident insurance enterprises, for the same product.

Method 3 (requires data which are at low priority).

A modification of method 2, taking account of specific data, by product, for the claims incurred and commissions payable by branches, in each other EU country.

For Country A (also see foot of page A2 / 2) :-

Exclusion of branches in countries B & C - as above, based on data for enterprises in country A.

Inclusion of branches in country A of enterprises in country B - from an exchange of data : in this scenario, only from country B.

EXTRA-E.U. TRANSACTIONS

Exclusion of branches in non-E.U. countries : Not covered in ISS, partner country data possible on a bilateral basis (e.g. BoP direct investment data).

Inclusion of branches in E.U. countries of enterprises with centre of interest in non-E.U. countries : Subject to regulation in host country - covered in ISS.

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* The full matrix is 15 x 15. For simplicity, the numerical example is for a 3 x 3 matrix only.

Method 1

Non-life enterprises in Country A.

	Total	Transactions with branches in other EU countries: Country B	Country C	Other Transactions
Output				
Gross direct premiums written	9,000	30	20	8,950
Reinsurances accepted	600			
Change in gross provision for unearned premiums	400			
Gross premiums earned	10,000			
plus Premium supplements :-				
On investments or reporting enterprises	800			
On investments of reinsurers	200			
Total	1,000			
less Gross claims incurred	8,400			
less Claims management expenses	-400			
= Claims incurred to policy-holders	8,000			
less Change in equalisation provision & other technical provisions	500			
Net total = output	2,500	8.3	5.6	2,486.1
(Ratio to gr. direct prem. written)	(26%)		(*per ratio*)	
Intermediate consumption				
Services from reinsurers :-				
reinsurance balance	200			
premium supplements payable to reinsurers	200			
Total	400			
Gross acquisition costs (commissions) & other *external* operating expenses	500			
Other: *External* claims managemt. exps.	200			
Other	100			
Total intermediate consumption	1,200	4	2.7	1,193.3
(Ratio to gr. direct prem. written)	(13.3%)		(*per ratio*)	
Balance = Value added	1,300	4.3	2.9	1,292.8

Adjustment to territorial basis (exclusion of branches in other EU countries)

		Output	Intermediate Consumption	Value added
Sum of enterprises		2,500	1,200	1,300
Deduction for branches :	Country B	8.3	4.0	4.3
	Country C	5.6	2.7	2.0
Balance		2,486.1	1,193.3	1,292.8
Add Branches of Country B enterprises		+ x	+ y	+ z

Method 2

Non-life Insurance enterprises, by product (for direct business)

	Total (all activity)	Reinsurances accepted	Direct Business		
				By products	
Output			Total	Accident & health	....
Gross premiums written	9,600	600	9,000	1,000	....
Change in gross provision for unearned premiums	400				
Gross premiums earned					
plus Premium supplements :-					
On investments or reporting enterprises	800				
On investments of reinsurers	200				
Total	1,000				
less Gross claims incurred	8,400	500	7,900	800	....
less Claims management expenses	-400				
= Claims incurred to policy-holders	8,000				
less Change in equalisation provision & other technical provisions	500				
Net total = output	2,500				
(Ratio to gr. direct prem. written)	(26%)				
Memo. Balances : gr. prem. written *less* gross claims incurred (for direct business & reinsurces accepted)	1,200	100	1,100	200	....
(Ratio to gr. prem. written)	(12½%)	(16.7%)	(12.2%)		
Thus, factor to obtain output by products (2,500/1,200 = 2.083%)	2,500	(208)	(2,292)	(417)	(...)
Intermediate consumption					
Services from reinsurers :-					
reinsurance balance	200	20	180	20	....
premium supplements payable to reinsurers	200				
Sub-Total	400				
(R.b. grossed up)		(40)	(360)	(40)	
Gross acquisition costs (commissions) & other *external* operating expenses	500	50	450	50	....
Other: *External* claims managemt. exps.	200				
Other	100				
Sub-Total (of above)	800				
(Other extern. op. exp. grossed up)		(80)	(720)	(80)	
Total intermediate consumption	1,200	(120)	(1,080)	(120)	(...)
Balance = Value added	1,300	(88)	(1,212)	(297)	(...)

ANNEX 3

a. What income is derived from the investment of technical provisions (= premium supplements).

1. ESA and SNA say that total premium supplements are equal to "the income from the investment of the insurance technical reserves" (ESA 3.63). For "insurance technical reserves", read "technical provisions", though there is perhaps some ambiguity about reserves held in suspense for policy-holders, explicitly or implicitly. In effect, ESA and SNA are silent about how this income, representing premium supplements, is to be estimated.

2. In the ISS Manual, which is concerned with what can be estimated at the level of the individual enterprise, the nearest equivalent to the ESA/SNA concept is taken to be portfolio investment income - equal to total investment income, excluding capital gains, less income from participating interests (which is broadly equivalent to direct investment income).

3. The underlying 'philosophy' is that insurance enterprises probably do not use policy-holders' funds as a source of finance for the physical assets which they need to run the business, or for investment in other enterprises (sometimes known as "financial fixed assets" and also as "direct investments"). In other words, assets such as tangible assets (other than land and buildings), cash, debtors and participating interests are regarded, implicitly, as being a prior charge on share capital and reserves. It is also assumed that land and buildings occupied by the enterprise for its own activities do not generate income recorded as investment income in the profit and loss account.

4. It may well be observed, at the macro level, that the value of portfolio investments exceeds the value of technical provisions. In that event, it would be possible to allocate the total of portfolio investment income between the amount deemed to arise on the investment of technical provisions and the amount deemed to arise on the investment of "excess" capital and reserves, where "excess" capital and reserves are defined as in para 3 above. The allocation would probably be *pro rata*.

5. However, it is not likely that this would be realistic. Certainly, part of investment income may belong to shareholders or to other owners, but not necessarily in this proportion, which might well exceed the maximum proportion of investment surplus which is allowed to be distributed to shareholders - commonly only 5 or 10 per cent. Also, part of the reserves in "capital and reserves" is held to satisfy requirements about solvency margins, and so is not distributable to shareholders or other owners except in a break-up situation.

6. In the case of the mutuals, in principle all reserves belong to the policy-holders. The recent incorporation of mutuals in the United Kingdom, including at least one insurance enterprise, has shown that large amounts can be released from general reserves to policy-holders. On balance, I suggest that a process of allocation at macro level, as set out in para 4 above, should not be recommended.

b. **Premium supplements flowing between direct insurers and reinsurers.**

7. The non-consolidation of transactions between direct insurers and specialist or other reinsurers implies that premium supplements must be recorded as flowing between the two groups. This was the conclusion of the Canadian paper presented to the Voorburg Group in 1992 and of both the Canadian and Eurostat papers presented to the Group in 1993. It can be seen, for instance, that if a direct insurer reinsures nothing, the premium supplements, represented by the investment income which he receives on the cumulation of premiums from a policy-holder, will be larger than what he himself would receive if he reinsured, say, half of the risk. Therefore, looking at the boundary between direct insurer and policy-holder, the premium supplements should be the same, for a given risk, regardless of where the policy-holder's funds are held.

8. This is achieved in the ISS system by the simple process of grossing up the portfolio investment income (premium supplements), when treated as revenue in the production account of the direct insurer, in the ratio of outstanding gross technical provisions to net technical provisions (code 103, pages 93-4 of the Manual). Exactly the same additional amount is included in the direct insurer's intermediate consumption (page 87 of the Manual) so that value added is unaffected, both for individual enterprises and for aggregates of enterprises. The amount of the grossing up is unavoidably based on the assumption that the rate of return on investments achieved by the reinsurer is the same as that achieved by the direct insurer.

9. These processes can be seen in Annex 1, see the 'top-down' approach on page 2 of that Annex.

10. Because of the assumption that reinsurers' rates of return on investments are the same as those of direct insurers, there might be aggregation discrepancies, so far as output is concerned. But, since the grossing up of outputs and inputs would always be identical, any such aggregation discrepancies could not affect value added.

11. Considering initially a closed economy, in which all reinsurers were specialist reinsurers, the amount of the grossing up for direct insurers' investment income might, in aggregate, be different from the actual aggregate of the investment income of the reinsurers. This kind of comparison is not possible when there are reinsurance transactions with non-residents; but it would be possible to compare the average rate of return on investments achieved by the aggregate of resident direct insurers with that achieved on their investments by the aggregate of *resident* reinsurers. If the reinsurers' average rate of return was lower (higher) than the direct insurers' average rate of return, the grossing up of the direct insurers' investment income, representing the reinsurers' investment income (resident plus non-resident), could be adjusted downwards (upwards) *pro rata*, at the macro level.

c. **Investment income on bonds.**

12. Insurance enterprises' accounts are likely to record the amount of the money income receivable from coupon payments in the year, whether or not the corresponding investments are valued at purchase prices or at current market values in the balance sheet. In ESA/SNA, however, property income receivable on dated bonds also includes the amount of 'interest'

accruing each year which is attributable to distributing, over the life of the bond, the difference between the redemption price and the *issue* price - ESA 4.46 b (1). This treatment flows from the extreme case, that of zero coupon bonds. It appears to follow that, in the national accounts, premium supplements (and hence insurance enterprises' output) should include bond interest valued in this way. This adjustment will have to be made at macro level.

13. A fully accurate method would require information on the dates of issue and time to maturity of bonds held as investments by insurance enterprises. Bonds held by life insurance enterprises are likely to have longer to run to redemption than bonds held, e.g., by banks. Unfortunately this information is not provided for, in the EU insurance accounting Directive. Note that there can be further differences between the 'price' of the bond in the year of purchase, interpolated in the sequence of notional changes in 'price' from issue to redemption, and the actual purchase price. Such differences will still be recorded in the national accounts as capital gains; the property income recorded in the national accounts is not on the same basis as the "redemption yield" quoted in stock markets.

d. The treatment of capital gains.

14. This difficult topic is dealt with in detail in the Methodological Manual for the ISS system, in Annex 8, on pages 281-3. This Annex sets out and compares the net treatment required in the national accounts (where output, valued added and operating surplus should all exclude capital gains), with the (partly) gross treatment adopted in the EU Accounting Directive for insurance enterprises; and explains the impact of adopting the same gross treatment in the production account in the ISS system. ESA and SNA are silent about how the netting of capital gains in the national accounts is to be done.

15. There is no problem with linked life business, where all capital gains or losses accrue to the policy-holder. In the case of participating non-linked life contracts, the problem is to identify any capital gains included on the credit side of the profit and loss account which accrue to shareholders, and hence are included in the life technical balance. Since there is a direct relationship between the technical balance and profit, the risk is that these get included in output and in operating surplus, on the national accounts basis.

16. In essence the assumption made has to be that there are no capital gains in the life technical balance - that is, that if capital gains are shown on the credit side of the profit and loss account, they accrue to policy-holders (being reflected in the change in technical provisions) or are transferred to the non-technical account. This might go slightly wrong in the case of realised capital gains. In the case of unrealised gains it appears likely either that they are not included in the profit and loss account ("in life-assurance business MS may permit the disclosure in full or in part .. in the profit and loss account .. of .." *) in which case they would be transferred directly to revaluation reserve, or that they are taken out of balance of the profit and loss account by a transfer to the non-technical account (as a transfer to the "fund for future appropriations").

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* Art. 44.1 of the Accounting Directive

ANNEX 4.

EXAMPLE OF IMPACT OF AN UNEXPECTED INCREASE IN THE FREQUENCY OF CLAIMS

	Year 0	Change to Year 1			Year 1		
		Expected incr. in :-					
		Unit cost of claims	Frequency of claims	Operating costs	Budget	Excess incr.in frequency of claims	Outturn
Premiums earned	100	+ 3	+ 3	- 1	105	--	105
Premium supplements	10	+ 1	--	--	11	--	11
Sub-total	110	+ 4	+ 3	--	116	--	116
less claims incurred (excl. c.m.e.)	90	+ 4	+ 3	--	97	+ 18	115
= Output	20	0	0	- 1	19	- 18	1
less intermediate consumption	5			- ½	4½	--	4½
= Value added	15			- ½	14½	--	- 3½
less labour costs	5			- ½	4½	--	4½
= Operating surplus	10			0	10	- 18	- 8

Recording in national accounts, at current prices

Prem. + prem. suppl.	110	116
Claims due	90	115
Output	20	1
Current transfers :-		
net non-life prem.	90	115
claims	90	115

Changes : year 0 to year 1	Budgeted	Actual
Output	- 1	- 19
of which: - price	- 1	- 1
- volume	0	0 - normal
		- 18 - exceptional
Current transfers	+ 7	+ 25
of which: - price	+ 4	+ 4
- volume	+ 3	+ 3 - normal
		+ 18 - exceptional

On next page : year 2 and change to year 2

Assumption : Outturn = budget in years 0 & 2.

EXAMPLE OF IMPACT OF AN UNEXPECTED INCREASE IN THE FREQUENCY OF CLAIMS - CONTINUATION

	Year 1		Change to Year 2			Year 2
			Expected incr. in :-			
	Budget	Outturn	Unit cost of claims	Frequency of claims	Operating costs	Budget
Premiums earned	105	105	+ 3	+ 12 @	- 1	119
Premium supplements	11	11	+ 1	--	--	12
Sub-total	116	116	+ 4	+ 12	- 1	131
less claims incurred (excl. c.m.e.)	97	115	+ 4	- 6 *	--	113
= Output	19	1	0	+ 18	- 1	18
less intermediate consumption	4½	4½			- ½	4
= Value added	14½	- 3½		+ 18	- ½	14
less labour costs	4½	4½		--	- ½	4
= Operating surplus	10	- 8		+ 18	0	10

Recording in national accounts, at current prices

Prem. + prem. suppl.	116	131
Claims due	115	113
Output	1	18
Current transfers :-		
net non-life prem.	115	113
claims	115	113

Changes : year 1 to year 2	As budgeted (for year 1)	Actual
Output	- 1	+ 17
of which: - price	- 1	- 1
- volume	0	0 - normal
		+ 18 - exceptional
Current transfers	+ 16	- 2
of which: - price	+ 4	+ 4
- volume	+ 3 normal	+ 3 - normal
	+ 9 exceptional	- 9 - exceptional

@ 3% normal, plus half of 18%.

* Normal + 3%, exceptional - 9%.

Re : EURJW 280