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VOLUME MEASURES FOR INSURANCE AND PENSION FUNDING

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Introduction

Insurance and pension funding belongs to those service activities in the national accounting where no self-evident method can be found for measuring the output in real terms. Practices differ country by country.

In the national accounting of Finland, the measurement of the insurance output is based on aggregation of volumes of individual insurance branches. However, the method applied has often led to difficulties. Partly the difficulties are due to the definition of insurance output in the present SNA where it is stated that the output does not include incomes from investments. The draft SNA 1993 accepts these incomes into production but, of course, this will solve only a small share of measuring problems.

The purpose of the present paper is to highlight problems in measuring the volume development of insurance and pension funding. The tests are based on the statistics available for annual national accounting.

Insurance business in Finland

In Finland it is a common usage to divide the insurance business into non-life insurance, life assurance and pension insurance. Non-life insurance and life assurance corresponds to usual international practice. As regards the pension insurance, it is organized in Finland differently compared to most other countries. The Finnish system consists of the national pensions scheme and of the employment pensions scheme.

Non-life insurance is transacted by insurance companies (which are limited companies or mutual companies) and insurance associations (which are small local institutions dealing mainly with fire insurance). Insurance companies transacts life assurance and, worth noticing, pension insurance, too. Furthermore pension insurance is transacted by pension funds and pension foundations and some special pension institutions for certain worker groups.

The Social Security Institution, which is classified into the compulsory social security, is responsible for the national pensions insurance and compulsory sickness insurance. The unemployment insurance is arranged via the unemployment funds scheme, where benefits are channelled through The Social Security Institutions.

Output at current prices

When calculating the current production account for the insurance, the aim here was to follow the recommendations of the draft SNA 1993. The calculations cover the years from 1980 until 1987 in which period the base statistics from insurance companies were available in the same form.

There are two output tables at current prices in the appendix. In Table 1 the net income from investments is presented separately for both non-life insurance and life assurance and pensions funds. In Table 2 the income has been distributed to various insurance branches.

Data from the non-life insurance and life assurance was collected by insurance branches. The output of each insurance branch (in Table 2) is obtained from the following formula:

$$PI - CPR - C - CCR + NII$$

where PI = Premium income
 CPR = Change in premium reserve
 C = Claims paid
 CCR = Change in claims reserve
 NII = Net income from investment

Premium income is registered to counting period by subtracting the change in premium reserve from premium income. Claims are registered according to the accounting period the event insured takes place. The net income from investment does not include income from equity capital. Also the increases and decreases in value on investments are excluded.

The output of the pension funds ('Statutory employment pension insurance' and 'Voluntary pension insurance') are accounted as a sum of administration costs of these insurance companies, pension funds and foundations. Figures do not include the national pension which belongs to the social security funds.

The item 'Other' is mainly composed of minor foundations which are supplementary to the pension funds (compiled as a sum of administration costs) and insurance associations (compiled in the 'normal' way by subtracting claims from premiums).

Intermediate consumption consists of two parts, out-going reinsurance premiums minus claims and other intermediate consumption.

Measuring the output at constant prices

In most countries the output of insurance and pension funds in real terms is measured by deflating the current accounts by an appropriate index or indices. What indices are chosen or how they are applied (single deflation, double deflation, deflation of costs, etc.) differ greatly. Results based on the use of these methods can hardly be interpreted to reflect "real volumes" of the insurance output.

It is obvious that the only way to approach the real output of insurance services is to base the calculation on detailed types of insurance services. In other words, the volume is calculated for each insurance branch and then the results are aggregated. For the pension funding the deflation of the administration costs seems to be a natural alternative having in mind the recommendation of the draft SNA to calculate the current output on the basis of costs.

Calculation of volumes for the insurance branches

A crucial question in the analysis by detailed insurance branches is whether the volumes of the insurance branches should be based on the number of policies (or some other volume indicator) when this information is available or should we use an appropriate price index for each branch.

The main problem in using volume indicators, is well-known. Can we assume that the insurance policies are homogeneous enough to be applicable for a volume indicator?

The application of the deflation method means that the sum $PI-CPR+NII$ is deflated by a feasible price index. By this solution, as can be concluded from the formula of the gross output, increase or decrease of claims has influence on the price of output, not on volume. In other words, the implicit deflator of the output consists of two components, an appropriate price index and change in the share of claims of premiums (or in fact 'premiums minus claims' to 'premiums').

The volume indicators and deflators applied in this exercise are described in the annex as well as the numerical results. The results are presented also graphically.

There is no self-evident solution for each insurance branch. The results of Table 3 represent a solution, where a volume indicator has been chosen, whenever the homogeneity seems to be high enough. The indicator is in most cases the number of insurance policies but also indicators based on deflation of sum of insurance have been included in this group.

The Table 4 represent a solution where only deflation methods has been applied for insurance branches.

Table 5 is a combination of the results of the tables 3 and 4. In fact, in this base alternative, the volume indicator was accepted for each insurance branch with only one exception. The deflation method is perhaps more appropriate for the statutory accident insurance. The premiums are paid by all employees as a fixed percentage of wages and salaries.

Volume based on chaining

The insurance activity is a fast changing production sector. The output of certain branches may even be negative in some years. Therefore it is interesting to test the dependency of results on the base year of the calculation. The tests were made in two ways, by carrying out the calculations by having other base years (1984 and 1986), and by applying the chaining method.

The tests revealed that the change of the fixed base year to 1984 or 1986 (results not presented here) did not have much impact on results, but the same was not true for the chaining method.

The chaining was done by accepting in the calculation only the growth rates of those insurance branches where the output was positive in the former year. The results are presented in Table 6 where it can be seen that the growth rate by this method is very low resulting a negative average growth for the value added.

Conclusions

The tests made are yet preliminary by nature. However, the results clearly indicate that this kind of analysis is worthwhile to be continued. On the other hand, one can not be too optimistic and expect finding a volume measure which could be held unchanged a long time.

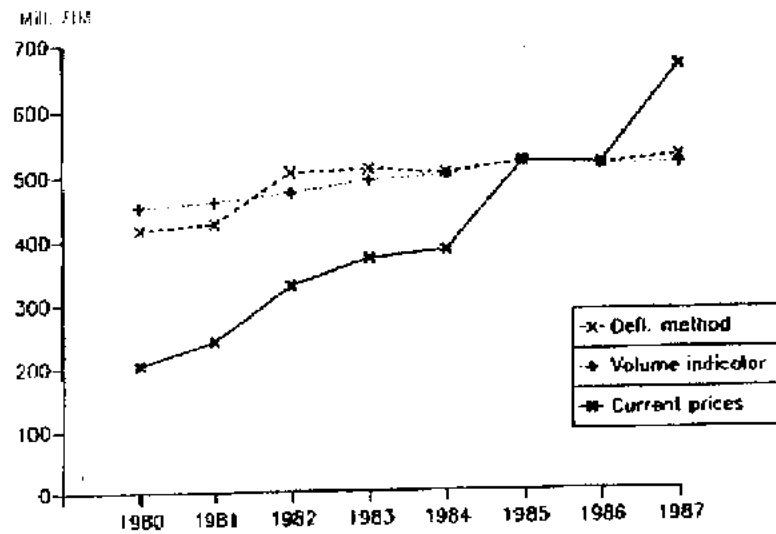
ANNEX

Measurement of volume for insurance branches

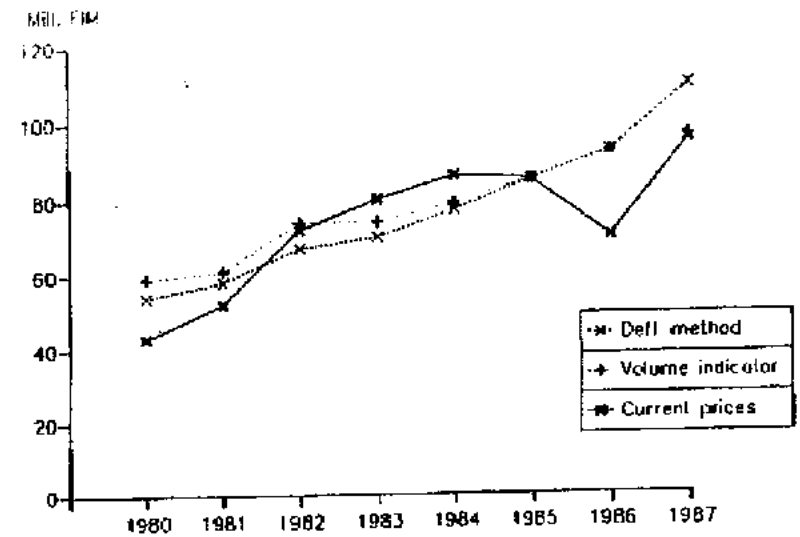
<u>Branch</u>	<u>Deflator</u>	<u>Volume indicator</u>
1. Statutory accident insurance	wage and salary index of all w. and s. earners	sum of wages and salaries in the economy deflated by the w. and s. index of all w. and s. earners
2. Other accident insurance	same as (1)	number of ins. policies by sub-branches, weighted by premium income
3. Compulsory motor vehicle insurance	index of car repair costs	number of ins. policies, weighted by the average price of various types of vehicles
4. Other motor vehicle insurance	same as (3)	same as (3)
5. Hull insurance	price index for ships and boats	number of ins. policies by sub-branches, weighted by premium income
6. Cargo insurance	wholesale price index	none
7. Fire insurance	building cost index	number of ins. pol. by sub-branches, weighted by premium income
8. Combined fire insurance	same as (7)	same as (7)

9. Loss of profit insurance	wholesale price index	sum insured deflated by wholesale index
10. Forest insurance	price index for timber	number of ins. pol. by sub-branches, weighted by premium income
11. Third party insurance	wholesale price index	none
12. Credit insurance	wholesale price index	sum insured deflated by wholesale index
13. Live stock insurance	index for slaughter value	sum insured deflated by slaughter value index
14. Other insurance	wholesale price index	number of ins. pol. by sub-branches, weighted by premium income
15. Reinsurance	wholesale price index	none
16. Life assurance	cost index: weighted average of wage and salary index for insurance and index for intermediate consumption	sum insured deflated by consumer price index
17. Employee's group life assurance	same as (16)	same as (16)
18. Statutory employment pension insurance	same as (16)	none
19. Voluntary employment pension insurance	same as (16)	none
20. Reinsurance	wholesale price index	none
21. Other	same as (16)	none

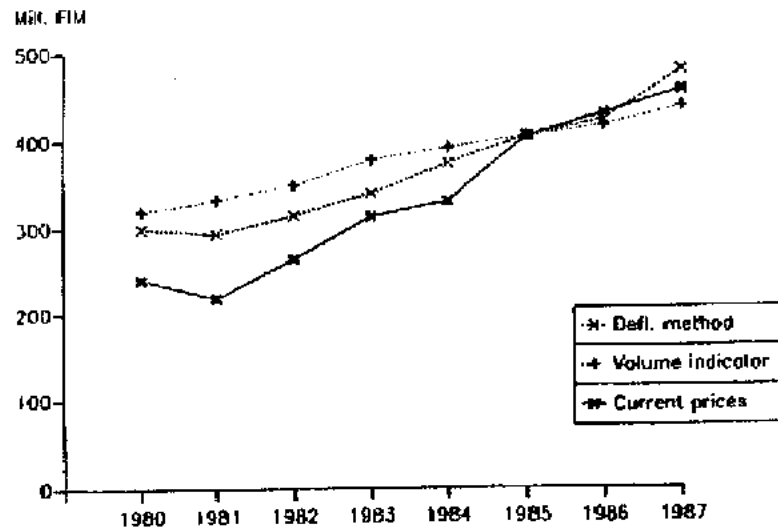
Statutory accident insurance



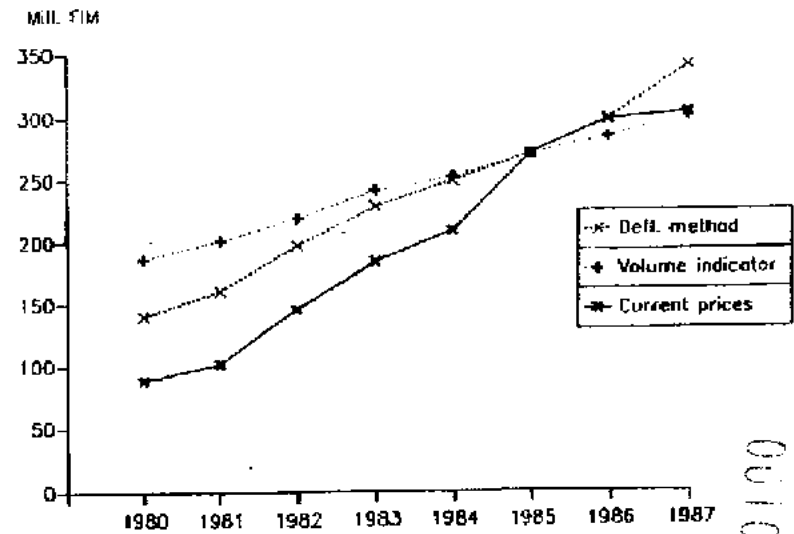
Other accident insurance



Compulsory motor vehicle insurance

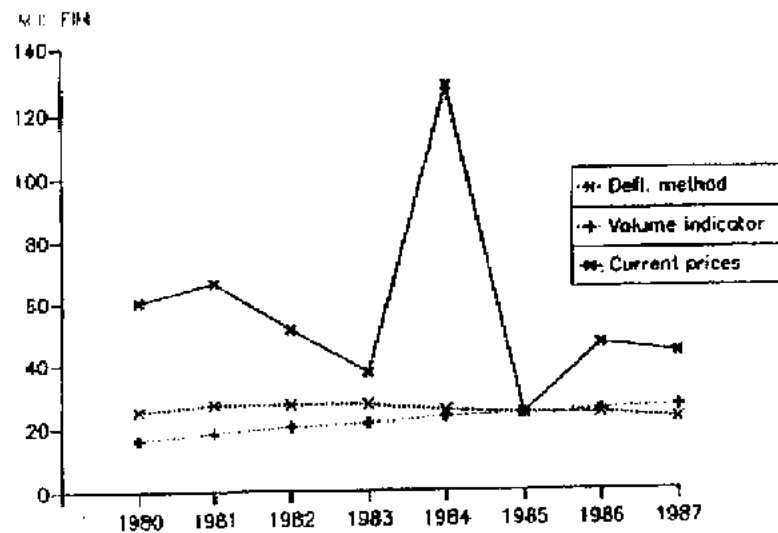


Other motor vehicle insurance

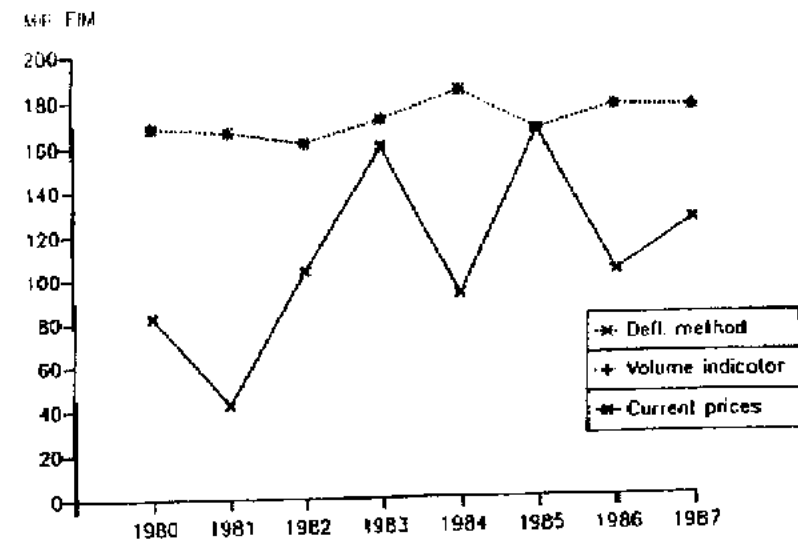


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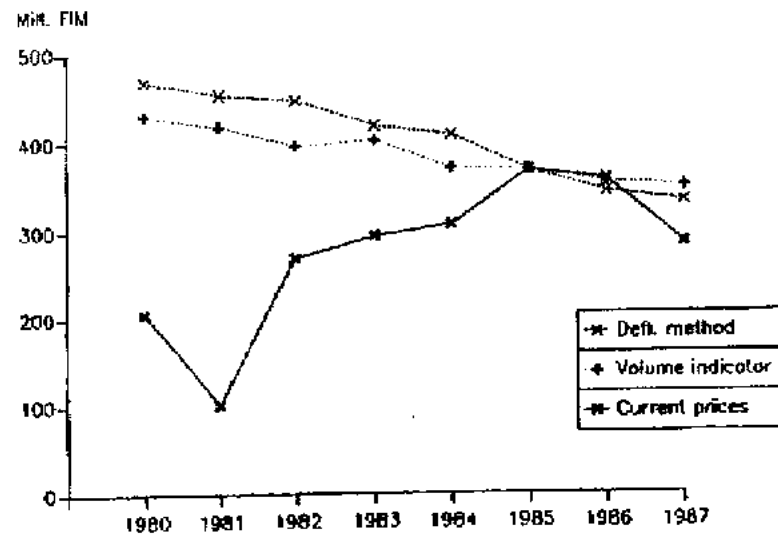
Hull insurance



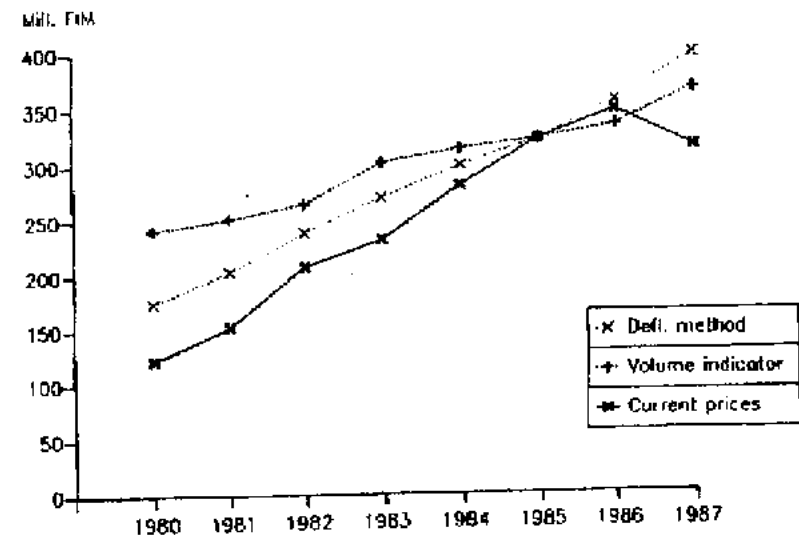
Cargo insurance

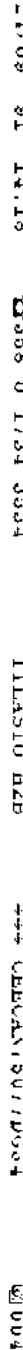
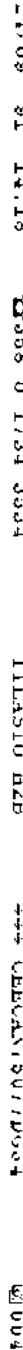


Fire insurance

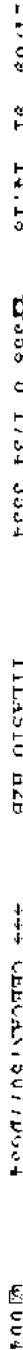
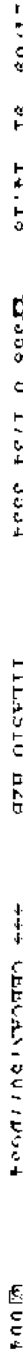


Combined fire insurance

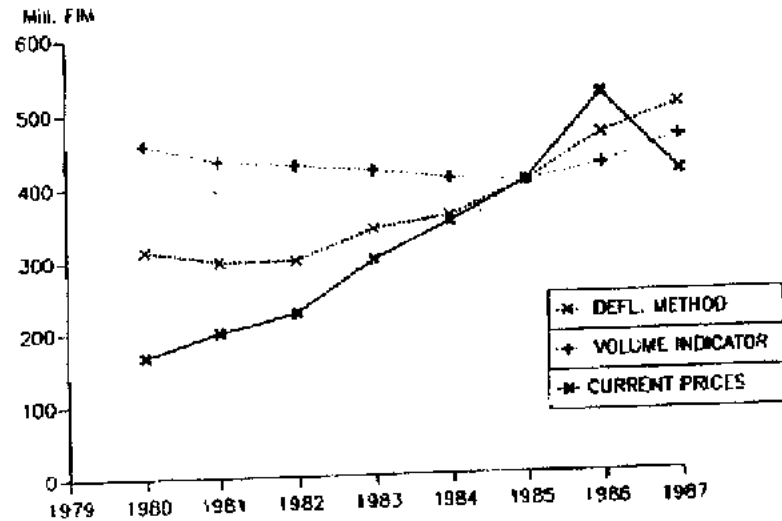


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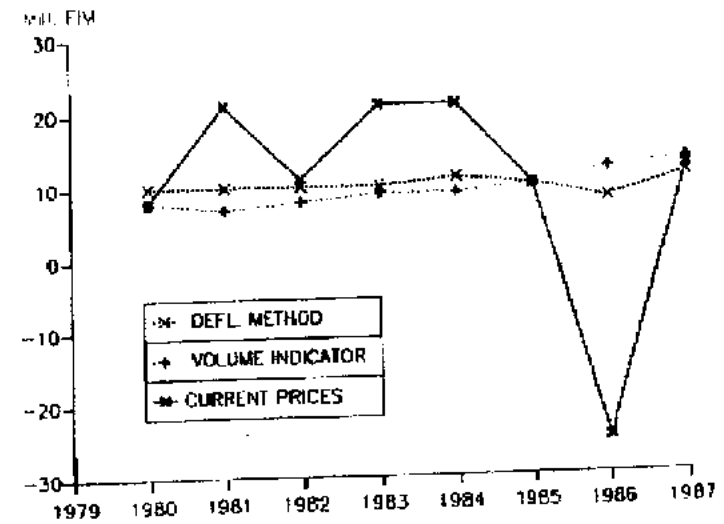
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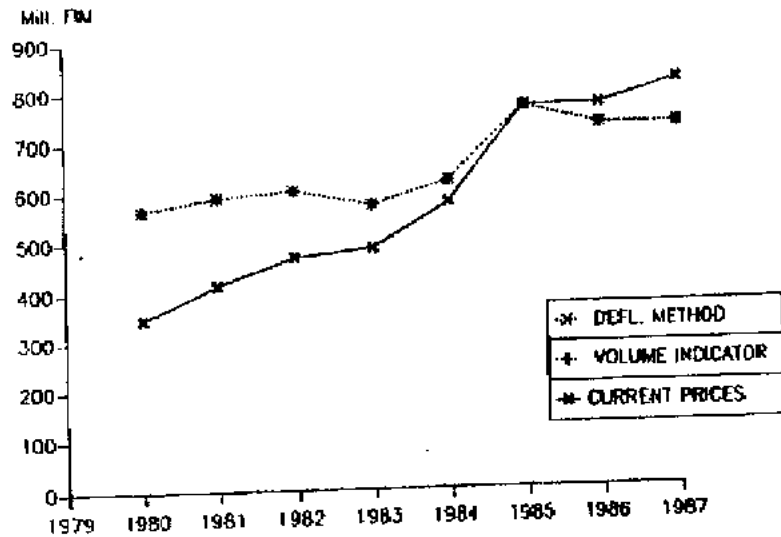
Life assurance



Employees' group life assurance



Statutory employment pension ins.



Voluntary employment pension ins.

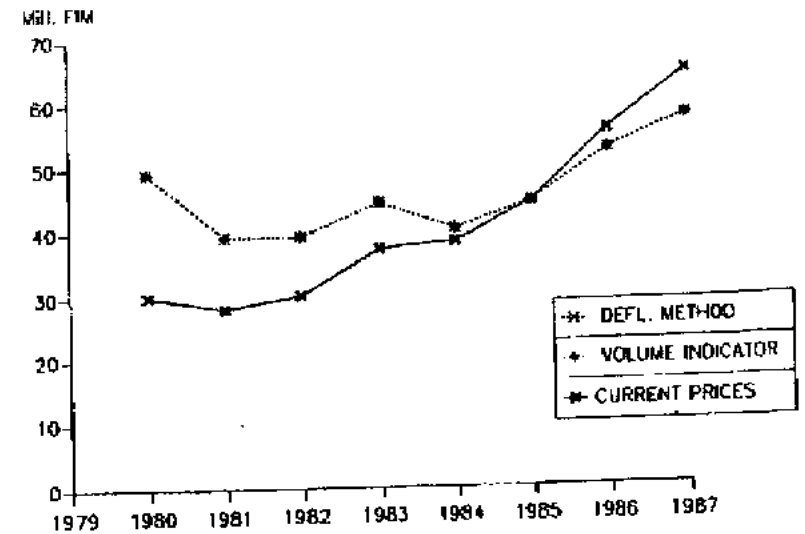


TABLE 1. INSURANCE ENTERPRISES. OUTPUT AT CURRENT PRICES. 1 000 000 FMK.
NET INCOME FROM INVESTMENTS PRESENTED SEPARATELY.

TIME SERIES	1980	1981	1982	1983	1984	1985	1986	1987
Statutory accident insurance.....	46	65	113	135	126	235	214	302
Other accident insurance.....	28	34	51	58	63	62	43	63
Compulsory motor vehicle insurance....	72	44	69	101	94	138	162	148
Other motor vehicle insurance.....	61	69	103	132	143	202	220	206
Hull insurance.....	52	57	40	26	115	11	33	29
Cargo insurance.....	67	22	79	129	56	132	62	75
Fire insurance.....	141	27	182	198	208	280	262	176
Combined fire insurance.....	101	125	172	185	222	261	277	229
Loss of profit insurance.....	-1	-28	67	54	65	17	62	48
Forest insurance.....	3	2	-8	-10	1	-46	-18	11
Third party insurance.....	22	24	23	-23	36	-3	79	87
Credit insurance.....	2	2	-9	-39	20	25	24	9
Live stock insurance.....	1	1	1	0	-2	-2	-1	3
Other insurance.....	15	16	22	23	27	38	45	25
Reinsurance.....	-81	-163	-371	-739	-1001	-922	-715	-380
Net income from investments.....	554	622	740	829	920	976	979	1199
NON-LIFE INSURANCE, TOTAL.....	1082	917	1276	1057	1092	1403	1726	2229
Life assurance.....	-123	-140	-144	-190	-250	-213	-170	-291
Employees' group life assurance.....	3	15	4	10	8	-3	-35	1
Statutory employment pension insurance	346	415	468	483	571	762	764	811
Voluntary employment pension insurance	30	28	30	37	38	44	55	64
Reinsurance.....	19	-56	-12	-9	-12	22	-141	2
Net income from investments.....	303	352	382	508	626	644	729	729
LIFE INSURANCE AND PENSION FUNDS, TOTAL	577	613	728	839	980	1256	1201	1316
OTHER.....	226	263	298	342	346	320	394	456
GROSS OUTPUT.....	1685	1793	2302	2238	2418	2979	3322	4002
Intermediate consumption.....	966	922	1216	1364	1532	1738	1943	1906
- reinsurance.....	284	142	272	296	237	261	396	227
- other intermediate consumption.....	683	780	944	1068	1295	1477	1552	1679
VALUE ADDED.....	919	871	1086	874	886	1241	1374	2096
EMPLOYED PERSONS (1 000 persons)	11.9	12.1	12.4	12.6	12.8	12.5	12.8	13.0
PERFORMED WORKING HOURS (1 000 000 h.)	21.5	21.6	22.3	22.8	23.0	22.5	23.1	23.8

ANNUAL CHANGES, %	1981	1982	1983	1984	1985	1986	1987	AVERAGE
Statutory accident insurance.....	41.3	73.8	19.5	-6.7	86.3	-8.9	41.1	30.8
Other accident insurance.....	21.4	50.0	13.7	8.6	-1.6	-30.6	46.5	12.3
Compulsory motor vehicle insurance....	-38.9	56.8	46.4	-6.9	46.8	17.4	-0.6	10.8
Other motor vehicle insurance.....	13.1	49.3	28.2	8.3	41.3	8.9	-6.4	19.0
Hull insurance.....	9.6	-29.8	-35.0	342.3	-90.4	290.0	-12.1	-8.0
Cargo insurance.....	-67.2	259.1	63.3	-86.6	135.7	-53.0	21.0	1.6
Fire insurance.....	-80.9	574.1	8.8	5.1	34.6	-6.4	-32.8	3.2
Combined fire insurance.....	23.8	37.6	7.6	20.0	17.6	6.1	-17.3	12.4
Loss of profit insurance.....	2700.0	-	-19.4	20.4	-73.8	264.7	-22.6	-
Forest insurance.....	-33.3	-500.0	25.0	-	-4700.0	-60.9	-	20.4
Third party insurance.....	9.1	-4.2	-200.0	-	-108.3	-	10.1	21.7
Credit insurance.....	0.0	-550.0	333.3	-	25.0	-4.0	-62.5	24.0
Live stock insurance.....	0.0	0.0	0.0	-	0.0	-50.0	-	17.0
Other insurance.....	6.7	37.5	4.5	17.4	40.7	38.4	-44.4	7.6
Reinsurance.....	101.2	127.6	99.2	35.5	-7.9	-22.5	-46.9	-
Net income from investments.....	12.3	19.0	12.0	11.0	6.1	0.3	22.5	11.7
NON-LIFE INSURANCE, TOTAL.....	-15.2	39.1	-17.2	3.3	28.5	23.0	29.1	10.9
Life assurance.....	13.8	2.9	31.9	31.6	-14.8	-20.2	71.2	-
Employees' group life assurance.....	400.0	-73.3	150.0	-20.0	-137.5	1066.7	-	-14.5
Statutory employment pension insurance	19.9	12.9	3.2	18.2	33.5	0.3	6.2	12.9
Voluntary employment pension insurance	-6.7	7.1	23.3	2.7	15.8	25.0	16.4	11.4
Reinsurance.....	-394.7	-78.6	-25.0	33.3	-	-740.9	-	-27.5
Net income from investments.....	16.2	8.5	33.0	23.2	2.9	13.2	0.0	13.4
LIFE INSURANCE AND PENSION FUNDS, TOTAL	6.2	18.8	15.2	16.8	28.2	-4.4	9.6	12.5
OTHER.....	16.4	13.3	14.8	1.2	-7.5	23.1	15.7	10.5
GROSS OUTPUT.....	-4.9	28.4	-2.8	8.0	23.2	11.5	20.5	11.4
Intermediate consumption.....	-4.6	31.9	12.2	12.3	13.4	12.1	-2.2	10.2
- reinsurance.....	-50.0	91.5	8.8	-19.9	10.1	51.7	-42.7	-3.1
- other intermediate consumption.....	14.2	21.0	13.1	21.3	14.1	5.1	8.2	13.7
VALUE ADDED.....	-5.2	24.7	-19.5	1.4	40.1	10.7	52.5	12.5
EMPLOYED PERSONS	1.7	2.5	1.6	1.6	-2.3	2.4	1.6	1.3
PERFORMED WORKING HOURS	0.5	3.2	2.2	0.9	-2.2	2.7	3.0	1.5

TABLE 2. INSURANCE ENTERPRISES. OUTPUT AT CURRENT PRICES. 1 000 000 FMK
NET INCOME FROM INVESTMENTS DISTRIBUTED BY INSURANCE POLICIES.

TIME SERIE	1980	1981	1982	1983	1984	1985	1986	1987
Statutory accident insurance.....	203	240	328	370	382	519	514	661
Other accident insurance.....	43	52	72	80	86	85	70	95
Compulsory motor vehicle insurance....	240	218	263	311	328	402	420	454
Other motor vehicle insurance.....	89	101	145	183	207	268	295	300
Hull insurance.....	60	66	51	37	128	24	46	43
Cargo insurance.....	82	42	103	159	92	166	102	125
Fire insurance.....	205	101	269	294	307	366	357	285
Combined fire insurance.....	122	152	207	231	279	320	345	312
Loss of profit insurance.....	2	-24	73	62	74	28	75	63
Forest insurance.....	8	8	-2	-3	8	-38	-11	18
Third party insurance.....	31	33	35	-9	51	15	102	117
Credit insurance.....	10	11	2	-27	34	37	39	31
Live stock insurance.....	2	2	2	1	0	0	2	8
Other insurance.....	21	25	32	33	38	49	57	41
Reinsurance.....	-36	-110	-306	-664	-923	-840	-694	-322
Net income from investments.....	0	0	0	0	0	0	0	0
NON-LIFE INSURANCE, TOTAL.....	1082	917	1276	1057	1092	1403	1726	2229
Life assurance.....	167	199	224	297	347	401	517	411
Employees' group life assurance.....	8	21	11	21	21	10	-25	12
Statutory employment pension insurance	346	415	468	483	571	762	764	811
Voluntary employment pension insurance	30	28	30	37	38	44	55	64
Reinsurance.....	27	-49	-5	1	4	40	-110	17
Net income from investments.....	0	0	0	0	0	0	0	0
LIFE INSURANCE AND PENSION FUNDS, TOTAL	577	613	728	839	980	1256	1201	1316
OTHER.....	226	263	298	342	346	320	394	456
GROSS OUTPUT.....	1885	1793	2302	2238	2418	2979	3322	4002
Intermediate consumption.....	966	922	1216	1364	1532	1738	1946	1906
- reinsurance.....	284	142	272	296	237	261	396	227
- other intermediate consumption.....	683	780	944	1068	1295	1477	1552	1679
VALUE ADDED.....	319	871	1086	874	886	1241	1374	2096

ANNUAL CHANGES, %	1981	1982	1983	1984	1985	1986	1987	AVERAGE
Statutory accident insurance.....	17.9	36.9	12.8	3.1	36.1	-1.0	28.6	18.3
Other accident insurance.....	19.9	39.8	10.4	7.9	-1.3	-17.7	36.6	12.0
Compulsory motor vehicle insurance....	-9.0	20.6	18.0	5.7	22.5	6.5	6.0	9.6
Other motor vehicle insurance.....	14.2	43.3	26.4	13.2	29.3	10.0	1.8	19.1
Hull insurance.....	9.9	-22.3	-27.3	243.9	-81.5	94.5	-7.2	-4.6
Cargo insurance.....	-48.7	146.5	54.3	-42.1	79.8	-38.4	21.8	6.2
Fire insurance.....	-50.7	165.9	9.2	4.5	20.0	-3.2	-20.1	4.8
Combined fire insurance.....	24.0	36.6	11.3	21.0	14.4	8.0	-9.6	14.3
Loss of profit insurance.....	-1208.4	-	-15.3	19.8	-62.4	168.9	-15.9	61.8
Forest insurance.....	-2.9	-120.9	107.0	-	-550.9	-70.7	-	12.8
Third party insurance.....	10.4	2.0	-124.9	-	-70.2	563.4	15.2	20.7
Credit insurance.....	13.3	-79.5	-1284.3	-	10.1	6.0	-20.4	17.5
Live stock insurance.....	-6.8	33.4	-50.0	-139.5	-	1740.0	293.5	24.9
Other insurance.....	16.4	31.0	3.1	16.2	28.0	17.7	-29.1	9.8
Reinsurance.....	205.1	178.8	117.0	39.0	-9.0	-17.3	-53.6	-
Net income from investments.....	-	-	-	-	-	-	-	-
NON-LIFE INSURANCE, TOTAL.....	-15.3	39.2	-17.2	3.3	28.5	23.0	29.1	10.9
Life assurance.....	19.4	12.4	32.8	16.7	15.7	28.9	-20.4	13.8
Employees' group life assurance.....	185.7	-47.6	90.7	2.4	-55.3	-359.0	-	6.3
Statutory employment pension insurance	19.9	12.9	3.2	18.3	33.4	0.3	6.1	13.0
Voluntary employment pension insurance	-7.0	9.0	23.8	0.3	16.0	25.5	17.4	11.6
Reinsurance.....	-280.3	-90.5	-	174.1	1041.7	-373.9	-	-6.1
Net income from investments.....	-	-	-	-	-	-	-	-
LIFE INSURANCE AND PENSION FUNDS, TOTAL	6.3	18.7	15.3	16.8	28.1	-4.4	9.6	12.5
OTHER.....	16.2	13.4	14.8	1.2	-7.5	23.2	15.7	10.5
GROSS OUTPUT.....	-4.9	28.4	-2.8	8.0	23.2	11.5	20.5	11.4
Intermediate consumption.....	-4.6	31.9	12.2	12.9	13.4	12.1	-2.2	10.2
- reinsurance.....	-49.9	91.9	8.7	-19.9	9.9	52.0	-42.7	-3.1
- other intermediate consumption.....	14.3	21.0	13.2	21.2	14.1	5.0	8.2	13.7
VALUE ADDED.....	-5.2	24.7	-19.5	1.3	40.1	10.7	52.6	12.5

TABLE 3. INSURANCE ENTERPRISES. OUTPUT AT 1985 PRICES.
VOLUME INDICATOR APPLIED WHENEVER POSSIBLE.

TIME SERIE		1980	1981	1982	1983	1984	1985	1986	1987
Statutory accident insurance..... (V)		452	459	473	491	499	519	512	513
Other accident insurance..... (V)		59	61	74	74	79	85	92	96
Compulsory motor vehicle insurance.... (V)		319	332	348	376	389	402	414	436
Other motor vehicle insurance..... (V)		186	200	218	240	250	268	281	298
Hull insurance..... (V)		16	18	20	21	23	24	25	26
Cargo insurance..... (V)		168	166	161	171	183	166	176	175
Fire insurance..... (V)		430	418	396	402	371	368	354	349
Combined fire insurance..... (V)		241	251	264	300	312	320	332	363
Loss of profit insurance..... (V)		14	13	13	20	25	28	37	42
Forest insurance..... (V)		-32	-33	-35	-37	-37	-38	-37	-39
Third party insurance..... (V)		10	10	10	12	13	15	22	27
Credit insurance..... (V)		22	26	28	31	34	37	44	50
Live stock insurance..... (V)		0	0	0	0	0	0	0	0
Other insurance..... (V)		23	24	38	43	45	49	38	39
Reinsurance..... (V)		-641	-658	-762	-877	-976	-840	-934	-761
NON-LIFE INSURANCE, TOTAL..... (V)		1268	1287	1240	1267	1209	1403	1358	1616
Life assurance..... (V)		457	434	427	418	406	401	422	458
Employees' group life assurance..... (V)		8	7	8	9	9	10	12	13
Statutory employment pension insurance		563	588	600	569	615	762	724	723
Voluntary employment pension insurance		49	39	39	44	40	44	52	57
Reinsurance..... (V)		18	1	7	16	33	40	26	10
LIFE INSURANCE AND PENSION FUNDS, TOTAL		1095	1070	1081	1055	1103	1256	1238	1261
OTHER..... (V)		371	376	379	405	375	320	374	407
TOTAL..... (V)		2734	2733	2709	2727	2687	2979	2967	3284
GROSS OUTPUT..... (V)		2734	2733	2709	2727	2687	2979	2967	3284
Intermediate consumption..... (V)		1363	1356	1468	1540	1668	1738	1859	1817
- reinsurance..... (V)		251	269	276	285	279	261	372	293
- other intermediate consumption..... (V)		1112	1086	1191	1255	1388	1477	1487	1524
VALUE ADDED..... (V)		1371	1377	1241	1187	1019	1241	1108	1466
EMPLOYED PERSONS (1 000 persons)		11.9	12.1	12.4	12.6	12.8	12.5	12.8	13.0
PERFORMED WORKING HOURS (1 000 000 h.)		21.5	21.6	22.3	22.8	23.0	22.5	23.1	23.8
PRODUCTIVITY INDEX (Value added/w.h.)		100.0	99.9	87.3	81.7	69.5	86.5	75.2	96.6
ANNUAL CHANGES, %			1981	1982	1983	1984	1985	1986	1987
Statutory accident insurance..... (V)		1.5	3.1	3.8	1.6	4.0	-1.3	0.2	1.8
Other accident insurance..... (V)		3.4	21.3	0.0	6.8	7.6	8.2	4.3	7.2
Compulsory motor vehicle insurance.... (V)		4.1	4.8	8.0	3.5	3.3	3.0	5.3	4.6
Other motor vehicle insurance..... (V)		7.8	9.0	10.1	4.2	7.2	4.9	6.0	7.0
Hull insurance..... (V)		12.5	11.1	5.0	9.5	4.3	4.2	4.0	7.3
Cargo insurance..... (V)		-1.2	-3.0	6.2	7.0	-9.3	6.0	-6	0.6
Fire insurance..... (V)		-2.8	-5.3	1.5	-7.7	-8	-3.8	-1.4	-2.9
Combined fire insurance..... (V)		4.1	5.2	13.6	4.0	2.6	3.8	9.3	6.0
Loss of profit insurance..... (V)		-7.1	15.4	33.3	25.0	12.0	32.1	13.5	17.0
Forest insurance..... (V)		3.1	6.1	5.7	0.0	2.7	-2.6	5.4	-
Third party insurance..... (V)		0.0	0.0	20.0	8.3	15.4	46.7	22.7	15.2
Credit insurance..... (V)		13.6	12.0	10.7	9.7	8.8	18.9	13.6	12.4
Live stock insurance..... (V)		-	-	-	-	-	-	-	-
Other insurance..... (V)		4.3	58.3	13.2	4.7	8.9	-22.4	2.6	7.8
Reinsurance..... (V)		2.7	15.8	18.1	11.3	-13.9	11.2	-18.5	-
NON-LIFE INSURANCE, TOTAL..... (V)		1.5	-3.0	1.5	-4.6	16.0	-3.2	19.0	3.5
Life assurance..... (V)		-3.0	-1.6	-2.1	-2.9	-1.2	5.2	8.5	0.0
Employees' group life assurance..... (V)		-12.5	14.3	12.5	0.0	11.1	20.0	8.3	7.2
Statutory employment pension insurance		4.4	2.0	-5.2	8.1	23.9	-5.0	-1	3.6
Voluntary employment pension insurance		-20.4	0.0	12.8	-9.1	10.0	18.7	9.6	2.2
Reinsurance..... (V)		-94.4	600.0	128.6	106.3	21.2	-35.0	-61.5	-8.1
LIFE INSURANCE AND PENSION FUNDS, TOTAL		-2.3	1.0	-2.4	4.5	13.9	-1.7	3.1	2.0
OTHER..... (V)		1.3	0.8	6.9	-7.4	-14.7	16.9	8.8	1.3
TOTAL..... (V)		0.0	-9	0.7	-1.5	10.9	-4	10.7	2.7
GROSS OUTPUT..... (V)		0.0	-9	0.7	-1.5	10.9	-4	10.7	2.7
Intermediate consumption..... (V)		-5	8.3	4.9	8.9	4.2	7.0	-2.3	4.2
- reinsurance..... (V)		7.2	2.6	3.3	-2.1	-6.5	42.5	-21.2	2.2
- other intermediate consumption..... (V)		-2.2	9.5	5.4	10.6	6.4	0.7	2.5	4.6
VALUE ADDED..... (V)		0.4	-9.9	-4.4	-14.2	21.8	-10.7	32.3	1.0
EMPLOYED PERSONS		1.7	2.5	1.6	1.6	-2.3	2.4	1.6	1.3
PERFORMED WORKING HOURS		0.5	3.2	2.2	0.9	-2.2	2.7	3.0	1.5
PRODUCTIVITY INDEX		-1	-12.7	-6.4	-14.9	24.4	-13.0	28.4	-1.8

(V) - The calculation is based on a volume indicator.

TABLE 4. INSURANCE ENTERPRISES. OUTPUT AT 1985 PRICES.
DEFATION METHOD APPLIED FOR EACH INSURANCE BRANCH.

TIME SERIES	1980	1981	1982	1983	1984	1985	1986	1987
Statutory accident insurance.....	417	426	504	509	502	519	513	524
Other accident insurance.....	54	58	67	70	77	85	92	109
Compulsory motor vehicle insurance....	299	293	313	338	372	402	421	476
Other motor vehicle insurance.....	140	160	196	227	247	268	295	337
Hull insurance.....	25	27	27	27	25	24	24	22
Cargo insurance.....	168	166	161	171	183	166	176	175
Fire insurance.....	468	453	447	419	408	368	343	332
Combined fire insurance.....	174	203	238	269	297	320	353	394
Loss of profit insurance.....	25	27	25	25	26	28	29	32
Forest insurance.....	-32	-32	-33	-36	-38	-38	-42	-48
Third party insurance.....	10	10	10	12	13	15	22	27
Credit insurance.....	22	23	26	22	33	37	45	63
Live stock insurance.....	0	0	0	0	0	0	0	0
Other insurance.....	33	34	38	41	44	49	59	72
Reinsurance.....	-641	-658	-762	-877	-976	-840	-934	-761
NON-LIFE INSURANCE, TOTAL.....	1161	1191	1258	1218	1213	1403	1399	1755
Life assurance.....	313	297	298	339	355	401	463	501
Employees' group life assurance.....	10	10	10	10	11	10	8	11
Statutory employment pension insurance	563	588	600	569	615	762	724	723
Voluntary employment pension insurance	49	39	39	44	40	44	52	57
Reinsurance.....	18	1	7	16	33	40	26	10
LIFE INSURANCE AND PENSION FUNDS, TOTAL	954	935	955	978	1055	1256	1273	1301
OTHER.....	371	376	379	405	375	320	374	407
TOTAL.....	2486	2502	2592	2601	2643	2979	3046	3464
GROSS OUTPUT.....	2486	2502	2592	2601	2643	2979	3046	3464
Intermediate consumption.....	1363	1356	1468	1540	1668	1738	1859	1817
- reinsurance.....	251	269	276	285	279	261	372	293
- other intermediate consumption.....	1112	1088	1191	1255	1388	1477	1487	1524
VALUE ADDED.....	1123	1145	1124	1061	975	1241	1167	1647
EMPLOYED PERSONS (1 000 persons)	11.9	12.1	12.4	12.6	12.8	12.5	12.8	13.0
PERFORMED WORKING HOURS (1 000 000 h.)	21.5	21.6	22.3	22.8	23.0	22.5	23.1	23.8
PRODUCTIVITY INDEX (Value added/W.H.)	100.0	101.5	96.5	89.1	81.2	105.6	98.4	132.5

ANNUAL CHANGES, %	1981	1982	1983	1984	1985	1986	1987	AVERAGE
Statutory accident insurance.....	2.2	18.3	1.0	-1.4	3.4	-1.2	2.1	3.3
Other accident insurance.....	7.4	15.5	4.5	10.0	10.4	3.2	18.3	10.6
Compulsory motor vehicle insurance....	-2.0	6.8	8.0	10.1	8.1	4.7	13.1	6.9
Other motor vehicle insurance.....	14.3	22.5	15.8	8.8	8.8	10.1	14.2	13.4
Hull insurance.....	8.0	0.0	0.0	-7.4	-4.0	0.0	-8.3	-1.8
Cargo insurance.....	-1.2	-3.0	6.2	7.0	-9.3	6.0	-6	0.6
Fire insurance.....	-3.2	-1.3	-6.3	-2.6	-9.8	-6.8	-3.2	-4.8
Combined fire insurance.....	16.7	17.2	13.0	10.4	7.7	10.3	11.6	12.4
Loss of profit insurance.....	8.0	-7.4	0.0	4.0	7.7	3.6	10.3	3.6
Forest insurance.....	0.0	3.1	9.1	5.6	0.0	10.5	14.3	-
Third party insurance.....	0.0	0.0	20.0	8.2	15.4	46.7	22.7	15.2
Credit insurance.....	4.5	13.0	-15.4	50.0	12.1	21.6	40.0	18.2
Live stock insurance.....	-	-	-	-	-	-	-	-
Other insurance.....	3.0	11.8	7.9	7.3	11.4	20.4	22.0	11.8
Reinsurance.....	2.7	15.8	15.1	11.3	-13.9	11.2	-18.5	-
NON-LIFE INSURANCE, TOTAL.....	2.6	5.6	-3.2	-4	15.7	-3	25.4	6.1
Life assurance.....	-5.1	0.3	13.8	4.7	13.0	15.5	8.2	7.0
Employees' group life assurance.....	0.0	0.0	0.0	10.0	-9.1	-20.0	37.8	1.4
Statutory employment pension insurance	4.4	2.0	-5.2	8.1	23.9	-5.0	-1.1	3.6
Voluntary employment pension insurance	-20.4	0.0	12.8	-9.1	10.0	18.2	9.6	2.2
Reinsurance.....	-94.4	600.0	128.6	106.3	21.2	-35.0	-61.5	-8.1
LIFE INSURANCE AND PENSION FUNDS, TOTAL	-2.0	2.1	2.4	7.9	19.1	1.4	2.2	4.5
OTHER.....	1.3	0.8	6.9	-7.4	-14.7	16.9	8.8	1.3
TOTAL.....	0.6	3.6	0.3	1.6	12.7	2.2	13.7	4.9
GROSS OUTPUT.....	0.6	3.6	0.3	1.6	12.7	2.2	13.7	4.9
Intermediate consumption.....	-1.5	8.3	4.9	8.3	4.2	7.0	-2.3	4.2
- reinsurance.....	7.2	2.6	3.3	-2.1	-6.5	42.5	-21.2	2.2
- other intermediate consumption.....	-2.2	9.5	5.4	10.6	6.4	0.7	2.5	4.6
VALUE ADDED.....	2.0	-1.8	-5.6	-8.1	27.3	-4.4	38.8	5.6
EMPLOYED PERSONS	1.7	2.5	1.6	1.6	-2.3	2.4	1.6	1.3
PERFORMED WORKING HOURS	0.5	3.2	2.2	0.9	-2.2	2.7	3.0	1.5
PRODUCTIVITY INDEX	1.5	-4.9	-7.7	-8.9	30.1	-6.8	34.7	4.1

TABLE 5. INSURANCE ENTERPRISES. OUTPUT AT 1985 PRICES.
BASE ALTERNATIVE.

TIME SERIE	1980	1981	1982	1983	1984	1985	1986	1987
Statutory accident insurance.....	417	426	504	509	502	519	513	524
Other accident insurance..... (V)	59	61	74	74	79	85	92	96
Compulsory motor vehicle insurance.... (V)	319	332	348	376	389	402	414	436
Other motor vehicle insurance..... (V)	186	200	218	240	250	268	281	290
Hull insurance..... (V)	16	18	20	21	23	24	25	26
Cargo insurance.....	166	166	161	171	183	186	176	175
Fire insurance..... (V)	430	418	396	402	371	368	354	349
Combined fire insurance..... (V)	241	251	264	300	312	320	332	363
Loss of profit insurance..... (V)	14	13	15	20	25	28	37	42
Forest insurance..... (V)	-32	-33	-35	-37	-37	-38	-37	-39
Third party insurance.....	10	10	10	12	13	15	22	27
Credit insurance..... (V)	22	25	28	31	34	37	44	50
Live stock insurance..... (V)	0	0	0	0	0	0	0	0
Other insurance..... (V)	23	24	38	43	45	49	30	39
Reinsurance.....	-641	-658	-762	-877	-976	-840	-934	-761
NON-LIFE INSURANCE, TOTAL.....	1233	1253	1279	1285	1213	1403	1359	1627
Life insurance..... (V)	457	434	427	418	406	401	422	458
Employees' group life insurance..... (V)	8	7	8	9	9	10	12	13
Statutory employment pension insurance	563	588	600	569	615	762	724	723
Voluntary employment pension insurance	49	39	39	44	40	44	52	57
Reinsurance.....	18	1	7	16	33	40	26	10
LIFE INSURANCE AND PENSION FUNDS, TOTAL	1095	1070	1081	1053	1103	1256	1235	1261
OTHER.....	371	376	379	405	375	320	374	407
TOTAL.....	2699	2700	2739	2746	2690	2979	2968	3294
GROSS OUTPUT.....	2699	2700	2739	2746	2690	2979	2968	3294
Intermediate consumption.....	1363	1356	1468	1540	1668	1738	1859	1817
- reinsurance.....	251	269	278	285	279	261	372	293
- other intermediate consumption.....	1112	1088	1191	1256	1388	1477	1487	1524
VALUE ADDED.....	1336	1343	1272	1206	1023	1241	1109	1477
EMPLOYED PERSONS (1 000 persons)	11.9	12.1	12.4	12.6	12.8	12.5	12.8	13.0
PERFORMED WORKING HOURS (1 000 000 h.)	21.5	21.6	22.3	22.8	23.0	22.5	23.1	23.6
PRODUCTIVITY INDEX (Value added/W.N.)	100.0	100.1	91.8	85.1	71.6	88.8	77.3	99.9

ANNUAL CHANGES, %	1981	1982	1983	1984	1985	1986	1987	AVERAGE
Statutory accident insurance.....	2.2	18.3	1.0	-1.4	3.4	-1.2	2.1	3.3
Other accident insurance..... (V)	3.4	21.3	0.0	6.8	7.6	8.2	4.3	7.2
Compulsory motor vehicle insurance.... (V)	4.1	4.8	8.0	3.5	3.3	3.0	5.3	4.6
Other motor vehicle insurance..... (V)	7.5	9.0	10.1	4.2	7.2	4.9	6.0	7.0
Hull insurance..... (V)	12.5	11.1	5.0	9.5	4.3	4.2	4.0	7.2
Cargo insurance.....	-1.2	-3.0	6.2	7.0	-9.3	6.0	-6	0.6
Fire insurance..... (V)	-2.8	-5.3	1.6	-7.7	-8	-3.8	-1.4	-2.9
Combined fire insurance..... (V)	4.1	5.2	13.6	4.0	2.6	3.8	9.3	6.0
Loss of profit insurance..... (V)	-7.1	15.4	33.3	25.0	12.0	32.1	13.5	17.0
Forest insurance..... (V)	3.1	6.1	3.7	0.0	2.7	-2.6	5.4	-
Third party insurance.....	0.0	0.0	20.0	8.3	15.4	46.7	22.7	15.2
Credit insurance..... (V)	13.6	12.0	10.7	9.7	8.8	18.9	13.6	12.4
Live stock insurance..... (V)	-	-	-	-	-	-	-	-
Other insurance..... (V)	4.3	58.3	13.2	4.7	8.9	-22.4	2.6	7.8
Reinsurance.....	2.7	15.8	15.1	11.3	-13.9	11.2	-18.5	-
NON-LIFE INSURANCE, TOTAL.....	1.6	2.1	0.8	-5.6	15.7	-3.1	19.7	4.0
Life insurance..... (V)	-5.0	-1.6	-2.1	-2.8	-1.2	5.2	8.5	0.0
Employees' group life insurance..... (V)	-12.5	14.3	12.8	0.0	11.1	20.0	8.3	7.2
Statutory employment pension insurance	4.4	2.0	-3.2	8.1	23.9	-5.0	-1	3.6
Voluntary employment pension insurance	-20.4	0.0	12.8	-9.1	10.0	18.2	9.8	2.2
Reinsurance.....	-94.4	600.0	128.6	106.3	21.2	-35.0	-61.5	-8.1
LIFE INSURANCE AND PENSION FUNDS, TOTAL	-2.3	1.0	-2.4	4.6	13.9	-1.7	2.1	2.0
OTHER.....	1.3	0.8	6.9	-7.4	-14.7	16.9	8.8	1.3
TOTAL.....	0.0	1.4	0.3	-2.0	10.7	-4	11.0	2.9
GROSS OUTPUT.....	0.0	1.4	0.3	-2.0	10.7	-4	11.0	2.9
Intermediate consumption.....	-1.5	8.3	4.9	8.3	4.2	7.0	-2.3	4.2
- reinsurance.....	7.2	2.6	3.3	-2.1	-6.5	42.5	-21.2	2.2
- other intermediate consumption.....	-2.2	9.5	5.4	10.6	6.4	0.7	2.5	4.6
VALUE ADDED.....	0.5	-5.3	-5.2	-15.2	21.3	-10.6	33.2	1.4
EMPLOYED PERSONS	1.7	2.3	1.6	1.6	-2.3	2.4	1.6	1.3
PERFORMED WORKING HOURS	0.5	3.2	2.2	0.9	-2.2	2.7	3.0	1.5
PRODUCTIVITY INDEX	0.1	-8.3	-7.3	-13.9	24.0	-12.9	29.3	0.0

(V) - The calculation is based on a volume indicator.

TABLE 6. INSURANCE ENTERPRISES, OUTPUT AT 1985 PRICES BY CHAIN METHOD.

TIME SERIE	1980	1981	1982	1983	1984	1985	1986	1987
Statutory accident insurance.....	417	426	504	509	502	519	513	524
Other accident insurance..... (V)	59	61	74	74	79	65	92	96
Compulsory motor vehicle insurance.... (V)	319	332	348	376	389	402	414	436
Other motor vehicle insurance..... (V)	186	200	218	240	260	268	261	298
Hull insurance..... (V)	16	18	20	21	23	24	25	26
Cargo insurance.....	168	166	161	171	183	166	176	175
Fire insurance..... (V)	430	418	396	402	371	368	354	349
Combined fire insurance..... (V)	241	251	264	300	312	320	332	363
Loss of profit insurance..... (V)	14	13	15	20	25	28	37	42
Forest insurance..... (V)	-32	-33	-35	-37	-37	-38	-37	-39
Third party insurance.....	10	10	10	12	13	15	22	27
Credit insurance..... (V)	22	25	28	31	34	37	44	50
Live stock insurance..... (V)	0	0	0	0	0	0	0	0
Other insurance..... (V)	23	24	38	43	45	49	38	39
Reinsurance.....	-641	-658	-762	-877	-976	-840	-934	-761
NON-LIFE INSURANCE, TOTAL.....	1233	1253	1279	1265	1213	1403	1359	1627
Life assurance..... (V)	457	434	427	418	406	401	422	458
Employees' group life assurance..... (V)	8	7	8	9	9	10	12	13
Statutory employment pension insurance	563	588	600	569	615	762	724	723
Voluntary employment pension insurance	49	39	39	44	40	44	52	57
Reinsurance.....	18	1	7	16	33	40	26	10
LIFE INSURANCE AND PENSION FUNDS, TOTAL	1095	1070	1081	1055	1103	1256	1235	1261
OTHER.....	371	376	379	405	375	320	374	407
TOTAL.....	2699	2700	2739	2746	2690	2979	2968	3254
GROSS OUTPUT.....	2853	2863	3002	2966	2885	2979	2907	2986
Intermediate consumption.....	1363	1356	1468	1540	1668	1730	1859	1817
- reinsurance.....	251	269	276	285	279	261	372	293
- other intermediate consumption.....	1112	1088	1191	1255	1388	1477	1487	1524
VALUE ADDED.....	1489	1506	1534	1426	1217	1241	1047	1169
EMPLOYED PERSONS (1 000 persons)	11.9	12.1	12.4	12.6	12.8	12.5	12.8	13.0
PERFORMED WORKING HOURS (1 000 000 h.)	21.5	21.6	22.3	22.8	23.0	22.5	23.1	23.8
PRODUCTIVITY INDEX (Value added/W.B.)	100.0	100.7	99.3	90.3	76.4	79.6	65.5	70.9

ANNUAL CHANGES, %	1981	1982	1983	1984	1985	1986	1987	AVERAGE
Statutory accident insurance.....	2.2	18.3	1.0	-1.4	3.4	-1.2	2.1	3.3
Other accident insurance..... (V)	3.4	21.3	0.0	6.6	7.6	8.2	4.3	7.2
Compulsory motor vehicle insurance.... (V)	4.1	4.8	8.0	3.5	3.3	3.0	5.3	4.6
Other motor vehicle insurance..... (V)	7.5	9.0	10.1	4.2	7.2	4.9	6.0	7.0
Hull insurance..... (V)	12.5	11.1	5.0	9.5	4.3	4.2	4.0	7.2
Cargo insurance.....	-1.2	-3.0	6.2	7.0	-9.3	6.0	-6	0.6
Fire insurance..... (V)	-2.8	-5.3	1.5	-7.7	-6	-3.8	-1.4	-2.9
Combined fire insurance..... (V)	4.1	5.2	13.6	4.0	2.6	3.8	9.3	6.0
Loss of profit insurance..... (V)	-7.1	15.4	33.3	25.0	12.0	32.1	13.5	17.0
Forest insurance..... (V)	3.1	6.1	5.7	0.0	2.7	-2.6	5.4	-
Third party insurance.....	0.0	0.0	20.0	8.3	15.4	46.7	22.7	15.2
Credit insurance..... (V)	13.6	12.0	10.7	9.7	8.8	18.9	13.6	12.4
Live stock insurance..... (V)	-	-	-	-	-	-	-	-
Other insurance..... (V)	4.3	58.3	13.2	4.7	8.9	-22.4	2.6	7.6
Reinsurance.....	2.7	15.8	15.1	11.3	-13.9	11.2	-18.5	-
NON-LIFE INSURANCE, TOTAL.....	1.6	2.1	0.5	-5.6	15.7	-3.1	19.7	4.0
Life assurance..... (V)	-5.0	-1.6	-2.1	-2.9	-1.2	5.2	8.5	0.0
Employees' group life assurance..... (V)	-12.5	14.3	12.5	0.0	11.1	20.0	8.3	7.2
Statutory employment pension insurance	4.4	2.0	-5.2	8.1	23.9	-5.0	-1	3.6
Voluntary employment pension insurance	-20.4	0.0	12.8	-9.1	10.0	18.2	9.6	2.2
Reinsurance.....	-94.4	600.0	128.6	106.3	21.2	-35.0	-61.5	-5.1
LIFE INSURANCE AND PENSION FUNDS, TOTAL	-2.3	1.0	-2.4	4.8	13.9	-1.7	2.1	2.0
OTHER.....	1.3	0.8	6.9	-7.4	-14.7	16.9	8.8	1.3
TOTAL.....	0.0	1.4	0.3	-2.0	10.7	-4	11.0	2.9
GROSS OUTPUT.....	0.4	4.9	-1.2	-2.7	3.3	-2.4	2.7	0.7
Intermediate consumption.....	-5	8.3	4.9	8.3	4.2	7.0	-2.3	4.2
- reinsurance.....	7.2	2.6	3.3	-2.1	-6.5	42.6	-21.2	2.2
- other intermediate consumption.....	-2.2	9.5	5.4	10.6	6.4	0.7	2.5	4.6
VALUE ADDED.....	1.1	1.9	-7.0	-14.7	2.0	-16.6	11.7	-3.4
EMPLOYED PERSONS	1.7	2.5	1.6	1.6	-2.3	2.4	1.6	1.3
PERFORMED WORKING HOURS	0.5	3.2	2.2	0.9	-2.2	2.7	3.0	1.5
PRODUCTIVITY INDEX	0.7	-1.4	-9.1	-15.4	4.2	-17.8	8.3	-4.8

(V) - The calculation is based on a volume indicator.