

# DEVELOPMENT OF KEY MACROECONOMIC INDICATORS AND COMMERCIAL INSURANCE IN V4 COUNTRIES IN 1995 – 2004

## Part 2 SLOVAK REPUBLIC

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### 2. Selected Insurance Industry Indicators

For insurance companies written premiums due in an agreed insurance period is a major performance indicator (Table 6).

respectively.

Since GDP volume and dynamics are the most critical macroeconomic factors behind insurance industry growth, we have analyzed its correlation with written premiums. The correlation analyses study the strength of

Table 6 Development in written premiums

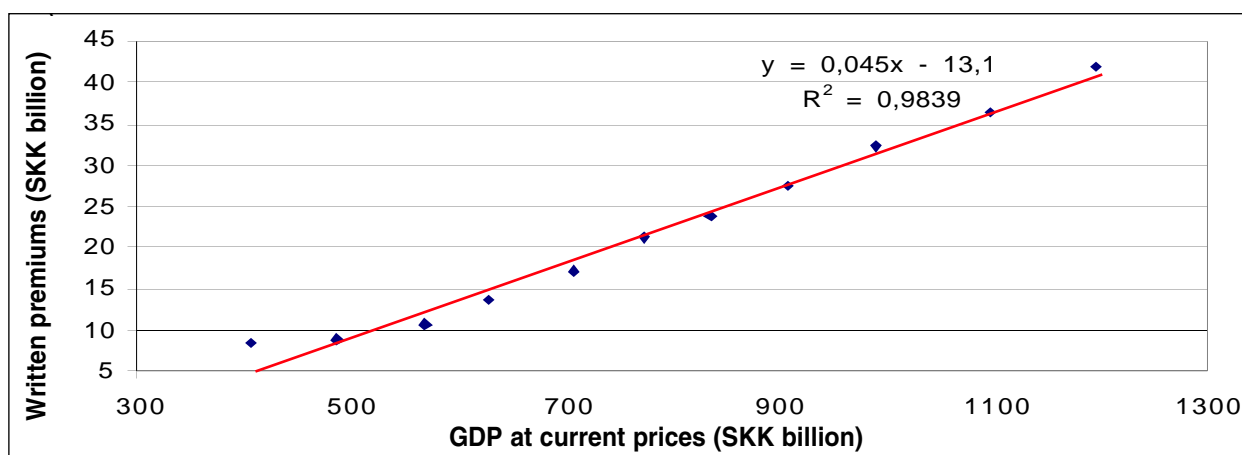
Indicator	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	*2005
<i>Written premiums in SKK billion</i>											
Total	10.72	14.04	17.09	21.42	23.73	27.48	31.86	36.28	37.58	41.50	45.27
Life (SKK bn)	2.55	3.54	4.60	6.30	7.86	11.21	13.87	15.67	15.75	17.93	20.10
Non-life (SKK bn)	8.17	10.50	12.48	15.13	15.87	16.28	17.98	20.61	21.83	23.58	25.16
<i>Written premiums per capita in SKK</i>											
Total	1999	2613	3174	3974	4397	5089	5970	6710	7042	7832	8475
Life (SKK)	476	658	855	1168	1457	2076	2561	3178	3023	3450	3882
Non-life (SKK)	1524	1954	2319	2806	2941	3014	3408	3531	3950	4251	4519

Source: SAP annual reports 1995 – 2004 and own calculations. Note: 2005 figure is a linear trend forecast

Table 6 reveals an uptrend in all indicators throughout the period under review. Total written premiums rose 447 percentage points from 1995 to 2004, with life and non-life policies going up to 799 and 339 percentage points,

relationship between a dependent variable (i.e. written premiums) and an explanatory variable (GDP at current prices). As the correlation coefficient measures dependence in either way, it can range within  $<1, -1>$ . If variab-

Chart 1 Correlation between written premiums and GDP in the Slovak insurance market



Source: SAP annual reports 1993 – 2004 and own calculations



les are linearly independent, the correlation coefficient equals zero. The closer it is to 1, the stronger the correlation.

In our case, the absolute value of the correlation coefficient came out at 0.9919 implying strong correlation between written premiums and gross domestic product at current prices.

A statistically significant regressive coefficient  $b_1$  ( $p < 0.001$ ) indicates the increment in written premiums given a SKK 1 billion rise in GDP. The model match is also demonstrated by a high value of the determination coefficient – 98.22%, meaning that a mere 1.78% of the value of written premiums cannot be related to changes in GDP.

Insurance penetration is the basic aggregate indicator showing how developed an insurance industry is. Measured in terms of written premiums as a share of GDP (in current prices), insurance penetration has recorded a steady rise apart from a slight slip in 1999. However, at 3.85 in 2004 it is still less than half the EU average.

The average insurance penetration in EU countries

competition grows at a rate equal to the square of market share. The maximum value of 10,000 occurs if the industry consists of a single firm. The resulting index is assigned to one of three ranges:

1. high industry concentration if  $HHI > 1800$ ,
2. medium industry concentration if  $1,000 < HHI < 1,800$ ,
3. low industry concentration if  $HHI < 1,000$ .

The Herfindahl – Hirschman index measures the degree of concentration in the industry. If the index value is 1,800 or lower, there must be no strong leader in the insurance industry with a market value of 40%.

If HHI ranges from 1,000 to 1,800, the industry has good fragmentation. In that case, no firm holds a dominant position and the conditions for competition are sound.

A fragmented industry consists of a large number of businesses holding relatively small and relatively equal market shares.

The number of insurance companies operating in the Slovak insurance market in 1995-2004 increased from 8 in 1993 to an entire 26 in 2004. The range and quality of

**Table 7 Development in insurance penetration**

Indicator	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Insurance penetration (%)	2.07	2.42	2.61	2.99	3.04	3.10	3.33	3.46	3.50	3.85	*4.02

Source: SAP annual reports 1995 – 2004

reached 8.7%, with Luxembourg reporting 32%, the United Kingdom 14.1% and the Netherlands 9.9%. Among the EU15, Greece had the lowest insurance penetration in 2002 with no more than 2.1%.<sup>5</sup>

### Slovak Insurance Market Concentration

The most frequent method for gauging industry concentration in practice is the Herfindahl – Hirschman index (HHI)<sup>6</sup>:

$$HHI = \sum x_i^2,$$

where  $n$  is the number of all firms in an industry and  $x_i$  is the share of  $i$ -th firm in total industry sales. The Herfindahl – Hirschman index is based on the assumption that

insurance products offered has grown in the process.

In 2004, insurers were selling an array of some 200 products covering virtually all major risks faced by households and businesses. From the trend in the number of insurance companies it is apparent that the HHI will decrease in the period reviewed.

The increase in the number of insurance companies over the 1995-2004 period, as well as in written premiums on life and non-life policies, paved the way to a decline in the insurance market HHI, as shown in table 6.

As data in table 8 indicates, HHI decreased between 1995 and 2003, recording a sharp fall in 1996 due to foreign corporations entering the Slovak insurance market.

In 2002, the industry first entered the medium concentration range. This positive development can be attributed to a major step in the process of harmonising Slovakia's

**Table 8 Herfindahl-Hirschman index in the Slovak insurance industry**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
HHI	6,300.4	4,750.0	4,062.4	3,615.2	2,994.3	2,575.4	2,471.0	1,763.5	1,849.6	2,196.8

Source: SAP annual reports 1995 – 2004 and own calculations

<sup>5</sup> European Insurance in figures. June 2004 CEA.

<sup>6</sup> Brezina, I.: Evaluating industry concentration, Ekonomický časopis, Bratislava, SAV 1994/3

insurance sector with Europe's – the transformation of the last statutory product, motor hull insurance, into motor third party insurance. In 2003, HHI rose to 1,849.6,

bringing the market back to the high concentration range, to increase further to 2,196.8 in 2004 largely influenced by the merger of Slovenská poisťovňa, a. s., and Allianz, a. s.

### Indemnification and Damage Rate

Indemnification is the compensation provided by an insurer if an insured event occurs. The compensation is usually pecuniary, sometimes in kind.<sup>7</sup> In non-life insurance, the insurer assesses and compensates a portion of damages to the policyholder's property, in life-insurance the indemnification is a pre-agreed sum. The insurance company is obliged to provide such indemnification to the policyholder or the damaged party for damages incurred by an insured event covered by the terms and conditions of the insurance policy or laid down by law.

**Table 9 Indemnification expenses in Slovakia**

Indicator (SKK bn)	1995	1996	1997	1998	1999	2001	2003	2004	Index <sub>2004/95</sub>
Total	6.50	7.22	9.62	11.36	13.20	14.39	15.75	17.31	266.31
Life insurance	2.12	2.25	2.61	3.20	3.70	4.87	5.79	6.59	310.85
Non-life insurance	4.38	4.97	7.01	8.16	9.50	9.52	9.96	10.72	244.75

Source: SAP annual reports 1993 – 2004

Industry-wide indemnification expenses grew by 266.31% over the period. Life insurance claims outpaced non-life insurance, surging by 310.85%.

The damage rate is the ratio of indemnification paid to written premiums or core premiums.<sup>8</sup> It is a percentage and should be lower than net premiums. If it is higher than net, or even gross premiums, the insurance product in question is economically out of balance and generates losses.

In 1995 and 1997 the damage rate slightly exceeded net premiums (net premiums are around 60%). Since 1999, the damage rate in life insurance tends to fall. As regards non-life insurance, the year 1999 came down as a critical year with the damage rate hitting 62.8%.

### Technical Reserves

Since 1996 the formation, allocation and use of technical reserves have been regulated by the Ministry of Finance Act No 136/1996 Coll. as amended. J. Daňhel understands technical reserves primarily as the reserve system laid down by a legislative and economical framework in order to eliminate the time mismatch between

<sup>7</sup> Ducháčková, E.: Principles of insurance and the insurance industry. Praha: Ekopress, spol. s r.o., 2003, p. 37.

<sup>8</sup> Chovan, P., Čejková, V.: Small insurance encyclopedia with foreign language equivalents.

**Table 10 Damage rate**

Damage rate (%)	1995	1997	1999	2001	2003	Index <sub>03/95</sub>
Life insurance	67.2	64.5	43.4	37.1	34.9	51.9
Non-life insurance	50.8	57.6	62.8	59.5	54.2	106.7

Source: SAP annual reports 1993 – 2003

premium income and delayed payment of insurance claims and to cover contingent swings in the damage process (fluctuation of a random variable around an average), plus a so-called insurance reserve in respect of life and pension insurance policies designed to cover future liabilities of an insurance company when policies mature. The subsequent allocation of technical reserve funds depends in particular on the insurer's damage rate, divided into life and non-life products and then broken down into individual risk categories which now comply with the

insurance classification as defined by a relevant EU directive.

The development in the volume of technical reserves, both in aggregate terms and by individual branches, is shown in table 11.

**Table 11 Volume of technical reserves held by insurance companies in Slovakia**

Year	Total SKK bn	Life insurance		Non-life insurance	
		SKK bn	Share (%)	SKK bn	Share (%)
1997	29.92	23.75	79.39	6.17	20.61
1998	33.05	25.61	77.48	7.44	22.52
1999	34.73	25.80	74.28	8.93	25.72
2000	39.02	30.32	77.69	8.70	22.31
2001	46.14	36.36	78.81	9.78	21.19
2002	51.38	41.39	80.56	9.99	19.44
2003	60.95	46.89	76.93	13.15	23.07
2004	72.97	55.90	76.61	17.07	23.40
Index <sub>2004/1997</sub>	243.88	235.37	x	276.66	x

Source: www.uft.sk, www.slaspo.sk

The total volume of technical reserves held by commercial insurers for both life and non-life policies has grown throughout the period. Life insurance reserves amounted to SKK 55.90 billion in 2004, which was 76.61% of total technical reserves. In 2004 technical reserve funds were 243.88 percentage points higher than in 1997, as life insurance and non-life insurance reserves



went up by 235.37 and 276.66 percentage points, respectively.

### Investment Activity in Insurance Companies

As an integral part of their business activities, insurance companies make financial investments. Spare technical reserve funds (resulting from the delay between premium collection and the occurrence of insurance claims and indemnification) are placed in the financial market in compliance with applicable legislation.

A considerable portion of insurers' investments comes from life insurance technical reserves. By their nature and accrual, this so-called "long" money is much sought-after as a high-quality credit resource for long-term investments.

Investment activity is an important indicator of the quality of commercial insurers' investments. It is defined as a ratio of investments to technical reserves in percentage terms. Standard & Poor's recommends a minimum value of 100%, claiming that investments should at least equal technical reserves. The trend in investment activity is shown over a period comparable with that reviewed in technical reserves generation (1997 – 2004).

The data reveals that the insurance market achieved

Table 13 Investments/GDP ratio

Indicator	1997	1998	1999	2000	2001	2002	2003	2004
GDP at current prices	708.60	775.00	835.70	908.80	989.30	1096.40	1195.80	1325.49
Investments	30.84	34.75	38.22	42.95	45.14	48.87	49.21	69.99
Investments/GDP (%)	4.35	4.48	4.57	4.73	4.56	4.46	4.12	5.28

ratio of investments to GDP in Slovakia was not even one-tenth of the CEA average in a comparable period (1997 – 2002).

An overview of the investment portfolio held by SAP member insurance companies, indicating the shares of individual categories in total investments, can be found in table 14.

As investment activity of insurance companies has been reported in a different structure since 2003, only aggregate life and non-life insurance figures are given for that period.

Compared with advanced economies, the investment portfolios held by SAP member insurance companies are inappropriate. As the largest flaws, we would point out two asset categories – debt securities and fixed-income securities which, despite ongoing growth, fall short of the European average of 38 – 40%. A sharp difference is also apparent in another asset group – deposits in credit institutions. Although their share declined from 58.03% in

Table 12 Investment activity in insurance companies

Indicator	1997	1998	1998	1999	2001	2002	2003	2004	Index 2004/96
Investment activity (SKK bn)	30.84	34.75	38.22	42.95	45.14	48.87	49.21	69.99	226.9
Technical reserves (SKK bn)	30.13	33.21	34.86	39.46	46.09	51.38	60.95	72.97	242.2
IČ/TR . 100 (%)	102.36	104.65	109.67	108.85	97.95	95.11	80.74	95.12	93.69

Source: SAP annual reports 1997-2004 and own calculations

Note: investment activity is stated for all insurance companies together

the recommended indicator value in 1997 – 2000 only. In 2001-2004 investment activity lagged behind the recommended rate, even recording a significant slump in 2003 by 21.12 percentage points against the base year 1997. This undesirable situation was partly the consequence of a failure by several insurance companies to comply with the new forms applied, limits and rules for investment of technical reserve funds in the financial market.

The 31 countries of the Comité Européen des Assurances, a voluntary grouping of national insurance associations, follow another important indicator – the ratio of commercial insurers' investments to GDP. According to the European Insurance in Figures, the investments/GDP ratio in CEA countries reached 48.8%. Luxembourg recorded the highest ratio with 127.8% of GDP, Turkey the lowest with 1.5%.

As a result of the data presented in the table above, the

1996 to 38.64% in 2002, the European average for remunerated deposits is a mere 1.7% of total investments.

The unsound investment portfolios held by SAP members in 1997 – 2004 can be explained by several factors, in particular:

- shortcomings in former legislation on allocation of technical reserve funds, which restricted the number of different types of assets to 8;
- underdeveloped capital market in Slovakia;
- insufficient experience of investment managers in investment of technical reserves in the financial market;
- inconsistent compliance with the principles of profitability, diversification, security and liquidity in the allocation of technical reserve funds;
- economic and political interests of government agencies in decisions on investments in unprofitable enterprises;

Table 14 Investments by SAP member insurance companies

Investments (SKK bn)	1997	1998	1999	2000	2001	2002	2003	2004	Index <sub>2002/2001</sub>
Total investments on December 31	30.84	34.75	38.22	42.95	45.14	48.87	49.21	69.99	108.3
there of:									
Land and buildings	3.37	3.90	3.68	4.94	3.19	2.22	x	x	69.6
Interests in subsidiaries	2.19	5.59	3.08	2.02	2.00	0.37	x	x	18.50
Shares, bonds and other securities	6.87	8.02	9.24	10.38	12.06	0.03	x	x	0.3
Debt securities and fixed-income securities	0.40	1.79	2.57	2.43	10.00	33.19	x	x	332.0
Mortgages and loans	2.14	0.13	2.49	0.15	0.12	1.91	x	x	1591.6
Deposits with credit institutions	14.91	12.60	16.76	22.67	17.44	10.71	x	x	61.4
Other investments	0.96	2.72	0.40	0.36	0.33	0.46	x	x	139.4

Source: www.slaspo.sk and own calculations

Note: x – different annual report structure

• the absence of mathematical and statistical methods for the calculation of technical reserves for insurance claims.

Due to the origin of their funds, insurers' investment activities are regulated and scrutinised by the supervisor – the Financial Market Authority. The primary objective of its regulation and supervision is to protect the consumer against default on obligations arising from insurance policies. To that end, it stipulates the types of technical reserves as well as the forms and limits to their allocation. The main aim of investments is to achieve an optimum return on technical reserves and generate additional resources while adhering to the principles of security, profitability, diversification and liquidity.

The transformation process has been directed by Slovakia's EU Accession Treaty. As a result of the implementation of some 70 directives addressing the insurance industry, the Slovak insurance market attained the required level of compatibility with the EU insurance market, fulfilling the conditions for insurance market integration in May 2004.

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