How Well Insurance Companies in Macedonia Perform?

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Abstract: - The paper provides overview of performances of insurance sector in the Republic of Macedonia, including SWOT analysis, as well as analysis of determinants of the insurance companies' profitability for the period from 2002 to 2011. According to the main indicators of performances, the insurance sector in Macedonia is undeveloped showing modest signs of improvements, mainly owing to foreign insurance companies' penetration. Despite some weaknesses, this sector has enough strength for further growth and development. The analysis of profitability is performed at the insurance companies' level, with inclusion of macroeconomic factors as determinants of insurers' performance. The findings confirm expense ratio, claims ratio, economic growth and inflation as important factors that determine Macedonian insurance companies' profitability.

Key-Words: - Insurance companies, performance, SWOT analysis, Republic of Macedonia

1 Introduction

As a part of financial system, insurance sector contributes to performance of financial system's functions. They encompass providing mechanism for risk management, pooling resources and subdividing shares, transferring resources across time and space, providing information and dealing with incentive problems (adverse selection and moral hazard) [5]. Providing these functions, insurance companies affect investment, saving and costs of intermediation, contributing to economic growth (for the survey of the empirical literature on insurance-economic growth nexus see Outreville [10]). However, the main prerequisite of insurance sector contribution to performance of financial system' functions and consequently to real economy is its development.

While countries with high level of economic development are characterized by developed insurance industry, emerging economies have been in process of transforming their insurance sector with different stages of reached development. Among them, Macedonian insurance sector has also gone under transformation of ownership, products, regulation, and supervision during the last decade.

Consequently, there is a question of how well the insurance sector performs?

Thus, the main aims of the paper are to analyze performance of the Macedonian insurance sector and get insight into its core strengths and weaknesses, opportunities and threats, as well as to investigate determinants of the insurance companies' profitability.

Findings of the analysis of the insurance sector indicate a low level of its development. On the other side, according to the results of the empirical analysis of the insurance companies' profitability, the important determinants of the insurers' success are claim ratio, expense ratio, economic growth and inflation.

This paper contributes to the relevant literature on performance of insurance industry in emerging markets and according to our best knowledge it is the first that analyses determinants of profitability of insurance companies in the Republic of Macedonia.

The rest of the paper is structured as follows. Section 2 provides analysis of insurance market performance as well as SWOT analysis of Macedonian insurance sector. Section 3 deals with the empirical analysis of the insurance companies' profitability, giving insights into data, methodology and results. Section 4 concludes.

# 2 Analysis of insurance market performance

Taking into consideration the last 10 years of significant changes that have occurred on Macedonian insurance market, it can be described as small and underdeveloped, but with a high potential for further growth and development. Main characteristics of the latest development trends in this industry can be summarize in following: the high level of harmonization of the national insurance regulation with the EU insurance directives and the international insurance core principles and standards, dominantly foreign ownership and control over the domestic insurance undertakings, favourable market concentration, growing competition, accelerated growth rate of life insurance, innovation and design of new products.

In the analysed period, insurance density (the ratio of gross written premiums to total population) was growing, but declined in 2009. The 2009 decline is due to the enforcement of the Government's decision to decrease the motor third party liability insurance (TPL) insurance premium for 30%. Namely, motor TPL insurance premium is

regulated by the Government in Macedonia. Taking into consideration the share of the motor TPL insurance premium that accounted 50% in total market, the Government's decision has a direct impact on general market developments and trends.

A positive trend of insurance density afterwards continues, and the values in Fig 1 indicate that Macedonian citizens spent, on average, 53.72 EUR for insurance in 2011. Insurance penetration (the ratio of gross written premiums to GDP) was mainly decreasing (from 2.21 in 2002 to 1.50 percent in 2011). These main indicators of insurance industry development indicate a low level of its development.

Fig. 1 Insurance density and penetration in Macedonia
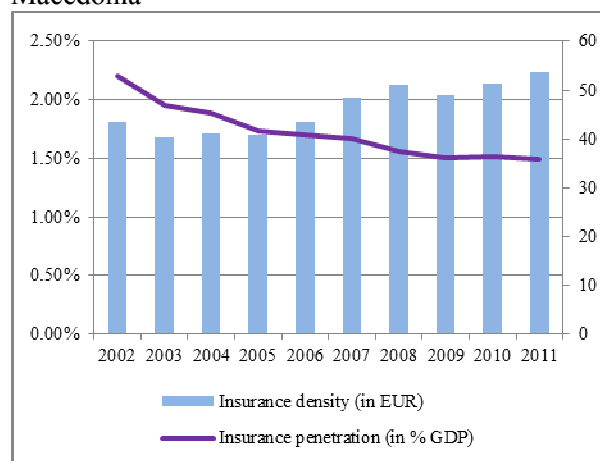
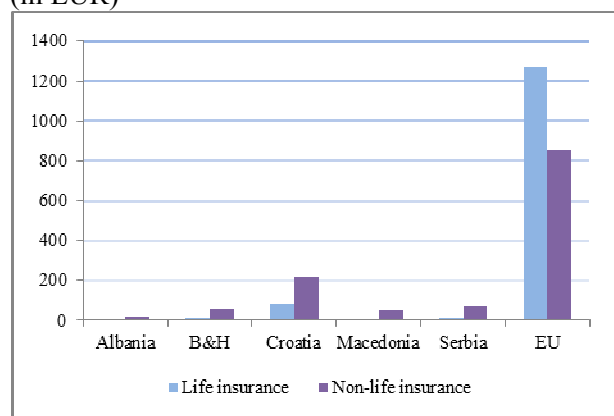Source: Insurance Supervisory Agency of Republic of Macedonia

Figures 2 and 3 compare Macedonian insurance sector development to those of countries in the region and EU according to insurance density and penetration indicators. Only one country (Albania) has lower penetration rate, while other countries in the region have higher rates. With regard to insurance density, only Albania has lower amount of premium per capita. One of the reasons that can explain these values is devastating number of life insurers that were operating during the analysed period. Precisely, only one insurance company operated on the market in the 2002-2004 period and later exited the market in 2004. From 2005 to 2010, there were only two insurance companies offered the life service, with subsequent establishment of two new life insurance companies in 2011 (in total 4 insurance undertakers). Furthermore, the low level of insurance culture, the modest offer of property and casualty, as well as liability insurance products, the absence of private health insurance, the low living standard and the poor corporate risk management practices, all together are considered as

serious limiting factors for Macedonian insurance market development.

Underdevelopment of insurance sector in the Republic of Macedonia is additionally confirmed by the ratio of non-life and life insurance business. The share of non-life in total premiums accounted 92.7 percent meaning that life insurance participated with share of only 7.3 percent in 2011.

Considering the premium structure, compulsory motor TPL insurance dominated with share of almost half of total insurance premiums. It is followed by voluntary vehicle insurance (11.49 percent), other property insurance (11.28 percent), and accident insurance (7.96 percent).

Fig. 2 Life and non-life insurance density in 2011 (in EUR)

Source: National insurance supervisory agencies and Swiss Re

Fig. 3 Life and non-life insurance penetration (in % of GDP) in 2011
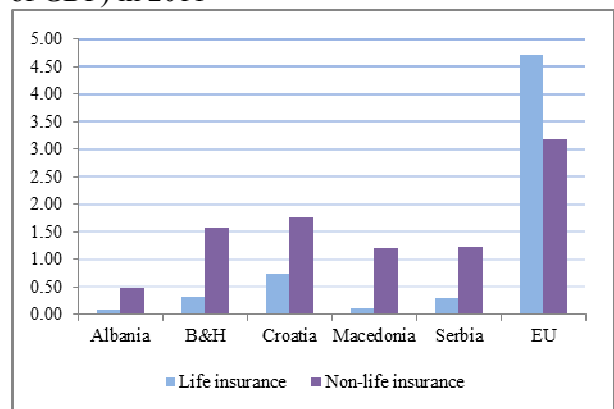
Source: National insurance supervisory agencies, Financial structure database of World Bank and Swiss Re

There were 15 insurance companies operated in the Macedonian insurance market in 2011. Only 4 companies provided life insurance while 11 insurance institutions engaged in non-life business. The market is characterized with moderate market concentration. The Herfindahl-index, calculated in relation to gross written premium (for the industry

as whole) was 997.69 in 2011, progressively decreasing from 4,710.22 in 2002. The analyses for insurance segments in 2011, shows high level of concentration in life insurance (4777.14), due to the small number of life insurance companies, while in non-life insurance segment the Herfindahl-index reached level of 1,135.61.

The insurance industry is dominated by foreign owners who participated in 14 out of 15 insurance companies in 2011. Their share accounted 83.3 percent of total capital of insurance companies. Most of the foreign owners are insurance groups from EU. Foreign insurance penetration increases competition and enhances all aspects of insurance companies' business as well as product development [8].

The importance of insurance companies in financial system of Macedonia is shown on Fig. 4. The share of insurance companies in total assets of financial institutions decreased from 8.72 percent in 2003 to 3.45 in 2011. While the participation of banks of 90 percent remained unchanged over the period, private pension funds, due to the radical pension reforms, leasing companies and investment funds increased their share in total assets of financial intermediaries.

Fig. 4 Value of insurance companies' assets and its share in total assets of financial institutions in Macedonia
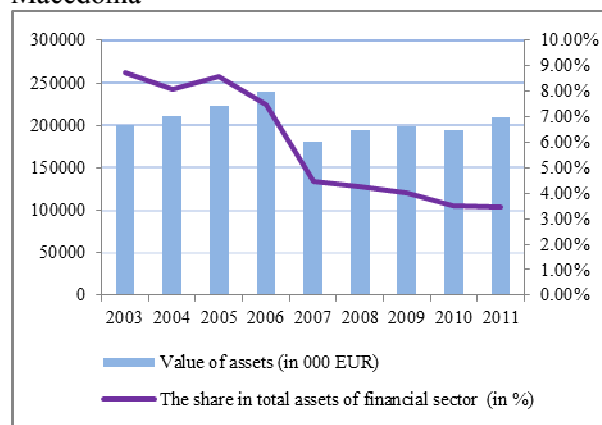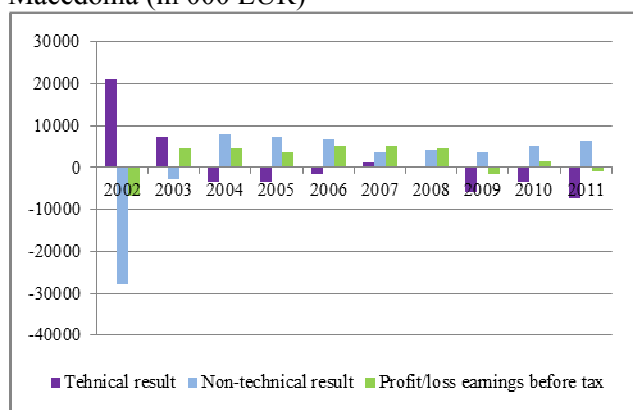

Source: Insurance Supervisory Agency of Republic of Macedonia
* Data for 2002 were not available.

Considering financial result of insurance companies at aggregate level (Fig. 5), there were fluctuating over the 2002-2011 period. Some of the main reasons for the financial losses, in particular the negative technical account results, were: 1) the absence of efficient supervision (Insurance Supervision Authority became operational in 2009); 2) strong, and unfair competition in the non-life sector; 3) weak corporate governance and poor underwriting policies; 4) inadequate investment

policies and underestimation of technical provisions; 5) large market portfolio of motor TPL line of business (over 50%), with state regulated tariffs which has direct negative effect of the profitability; 6) last but not least, the financial crises also left its mark on the performance of insurance companies in Macedonia. Insurance companies were required to write-off large amounts of financial investments, receivables (non-paid premiums) from policyholders, to increase the technical provisions, and to improve their reinsurance programs, all together resulting in unfavourable claims ratio. On the other hand, the increased market competition had continuous pressure on operating expenses, including administration expenses, marketing, and acquisition costs.

Fig. 5 Financial result of insurance companies in Macedonia (in 000 EUR)

Source: Insurance Supervisory Agency of Republic of Macedonia

SWOT analysis of Macedonian insurance sector follows.

Strengths
- Macroeconomic stability and high level of predictability of macroeconomic parameters
- Stable financial system
- Complete insurance legal framework (laws and by-laws) harmonized with the international insurance core principles and standards
- Increase in numbers of highly educated insurance specialists (insurance professionals)
- Dynamical development of established insurance products
- Increased transparency of operations of the insurance undertakings
- Increase in numbers and market share of foreign insurance groups
- Low levels of exposure in complex high-risk financial instruments
- Continued development of actuarial profession

Weaknesses
- Low public awareness for insurance
- Low financial literacy
- Low level of trust in the insurance companies
- Lack of alternative distribution channels
- Insufficient application of tools for early warning of risks from the insurance companies
- Poorly developed capital market and hampered opportunities for investing in different financial instruments and establishing the fair value
- Stalling the liabilities for claims payment
- Poorly developed corporate governance for risk management and underwriting functions
- Unfair competition expressed through breach of the existent tariffs of insurance premium with a goal of increasing the sale and market share

Opportunities
- An emerging economy
- Recent pension and health insurance reforms
- Cooperation and participation in projects with international organizations in the field of insurance
- Continuous educational programs towards better understanding of the insurance products among the public
- Reduced market concentration
- Low level of life insurance penetration
- Low range of risks offered for underwriting
- Increased awareness among insurance companies for financial education of the clients

Threats
- Management's short-term financial results objectives prevail
- Low level of liquidity in the national economy
- Low level of living standard
- Solvency I rules are still applied for calculation of the required solvency margin and available solvency margin (Capital) – It is not clear when transition to Solvency II shall begin
- Insurance fraud prevention system has been considered as insufficient

- Consumer (insurance policyholders and beneficiaries) protection system has not been adequately developed
- Internal controls in the insurance undertakings are insufficient
- Lack of rules for determination and disclosure of the life insurance contracts maximum guaranteed interest rate

3 Performance of insurance companies

In previous sections, insurance industry in Macedonia has been extensively presented from different kind of aspects. Its strengths and weaknesses were highlight as well as its position in relation to the countries in the region and EU. However, all presented characteristics together with displayed key insurance indicators such as 1) insurance density rate and 2) insurance penetration rate were referring to the insurance *industry* and although they may give valuable insight into some main aspects of this industry they provide no information about how well perform insurance *companies.*

Companies may use different methods and indicators in order to evaluate their business success, but one of the most widely applied methods refers to financial analyses that use profitability ratios as the key measures of company's overall efficiency and performance.

Fig. 6 shows average profitability (expressed in term of ROA indicator) of insurance companies that were operating in Macedonia during the period covered with this analysis i.e. 2002-2011.

Fig. 6 Average profitability of insurers in Macedonia

Source: Insurance Supervision Agency of Republic of Macedonia

As it can be seen from Fig. 6, significant changes in profitability occurred when analysis is observed on annual basis. A closer look into companies' financial reports and market situation during the

years 2004, 2007, 2009, and 2011 (when lowest values of ROA were achieved) indicated that, beside previously explained reasons for poor financial results, the average insurers' profitability was additionally influenced by start-up losses of the new companies entered the market.

3.1 Model of insurance profitability

In order to detect and assess the impact of different factors that might influence insurers' profitability, a following model is formulated:

$$\text{ROA}_{it} = \alpha + \delta \text{ROA}_{i,t-1} + \sum \beta_j X_j + \varepsilon_{it} \quad (1)$$

$$\varepsilon_{it} = v_i + u_{it}$$

where ROA_{it} (return on asset) is the measure of profitability of insurer i at time t, with $i=1, \ldots, N$, $t=1, \ldots, T$; α is a constant term, $\text{ROA}_{i,t-1}$ is the one-period lagged profitability, δ is the speed of adjustment to equilibrium, vector of j independent variables accounts for *insurance specific* (Expense ratio, Claims ratio and Size of the company) and *macroeconomics* variables (GDP growth and Inflation), ε_{it} is the disturbance, with v_i the unobserved insurance-specific effect and u_{it} the idiosyncratic error.

Brief description of each variable used in this research along with the motivation for its inclusion is explained in the following sections.

As a measure of insurer's performance (dependent variable), we employ one of the most commonly used measures of profitability i.e. return on assets (ROA) which is calculated by dividing a company's after tax annual profits by its total assets. This indicator gives information of how effectively the company is converting the money it has to invest into net income.

Three variables that were used in this research as *insurance specific* are respectively, Expense ratio, Claims ratio and Size of the insurer. *Expense ratio (ER)* is calculated as ratio of sum of operating expenses (acquisition cost and administrative costs), other technical charges, income from commissions and fees and to insurance premiums earned (multiplied by 100), with net value of reinsurance being included into the calculation. Higher values of operating (and other) expenses have direct impact on companies' i.e. insurers' profit and therefore each insurer seeks to reduce its expenses as much as possible [2]. Since inverse relationship exists between this variable and profitability measure, negative sign of ER variable is expected. Similar explanation regarding the expected sign can also be given to the variable *Claims ratio (Claims_R)* which is the ratio of the sum of claims paid, changes in

claim provisions and changes in other technical provisions to insurance premiums earned (multiplied by 100), with net value of reinsurance being included into the calculation.

Regarding the variable *Size of the insurer (Size)* it can be state following. It is much harder for smaller companies to write insurance premiums than for bigger ones since smaller company cannot secure their clients in the cases of aggregate uncertainty or big catastrophe event [7]. Larger insurers can achieve operating cost efficiencies through increasing output [6, 11, 9] i.e. they are able to realize economies of scale especially in terms of labour costs, which is the most important factor for delivering insurance services [13]. Taking into account earlier statements, it is predicted a positive influence of this variable on the insurers' profitability. *Size* variable is measured as the natural logarithm of total assets.

As macroeconomics indicators, two variables were included into analysis, *GDP growth (GDPg) and Inflation (INF)*. Growth rate of GDP reflects economic activity as well as level of economic development and as such affect the various factors related to the supply and demand for insurance products and services. If GDP grows, the likelihood of selling insurance policies also grows and insurers are likely to benefit from that in form of higher profits. Thus, a positive influence of this variable on insurer profitability is anticipated.

Considering *inflation*, there is expectation of its negative effect on insurer profitability. The inflation could affect insurance companies' performance influencing both their liabilities and assets. In expectation of inflation claim payments increases as well as reserves that are required in anticipation of the higher claims, consequently reducing technical result and profitability. Taking into consideration that inflation affects assets side of the balance sheet, as the bond markets adjust to the higher level of inflation, interest rates begin to rise. This result in bond prices fall, negatively affecting value of investment portfolio. Negative influence of inflation on the profitability is confirmed in empirical studies by Browne, et al. [3], Shiu, [13], Pervan and Pavić Kramarić, [12] Ćurak et al. [4]

3.2 Results of the analysis
Descriptive statistics for all variables used in the analysis is shown in Table 1, while Table 2 presents the results of the dynamic panel analysis based on 69 insurer-year observations and estimated using two-step General Method of Moments (GMM) Arellano-Bond [1].

As it is possible to perceive form Table 2 first-order and second-order serial correlation in the first-differenced residuals is tested using m_1 and m_2 Arellano and Bond [1] test statistics. Even though the results in Table 2 indicate that (at 10% of significance) first-order autocorrelation is present, the GMM system estimator is still consistent since no second-order autocorrelation is present in model.

Table 1 Descriptive statistics

Variable	Mean	Std.Dev.	Min	Max
ROA	1.640	10.0246	-47.8885	20.5076
ER	57.3652	48.3368	0	430.182
Claims_R	48.0241	18.0353	0	87.3771
SIZE	20.2910	1.1284	17.8913	22.9827
GDPg	3.3783	2.0981	-0.9202	6.1488
INF	3.6571	2.2765	0.6851	7.4851

In order to test for overall validity of instruments a Sargan test is applied and the result of this test shows no evidence of over-identifying restrictions.

Table 2 Estimation results (GMM system estimator)

Dependent variable: Return on assets	
Explanatory variables	Coefficients (Standard errors)[a]
Constant	-0.01022 (0.01254)
ROA $_{(t-1)}$	0.12633* (0.06665)
ER	-0.18266*** (0.02846)
Claims_R	-0.40469*** (0.09893)
SIZE	0.10483 (0.08161)
GDPg	0.01157** (0.00489)
INF	-0.00896*** (0.00217)
Sargan test (p-value)	0.9704
First-order correlation (m_1) (p-value)	0.0954
Second-order correlation (m_2) (p-value)	0.7487

[a] ***, ** and * indicate significance at the 1, 5 and 10 percent levels respectively.
Source: Authors' calculations

Significance of the coefficient on the lagged ROA confirms the dynamic nature of the model.

Expense ratio (ER) as well as *Claims ratio (Claims_R)* have negative and statistically significant influence on insures' profitability. This is in accordance with (micro)economic theory, that stresses inverse relationship between these two variables on one side and profitability on the other side i.e. higher value of the expenses directly reduce insurer's profit. Although the sign of the variable *SIZE* is positive and in accordance with our expectations this variable doesn't have statistically significant influence on insurer's profitability. According to the results, variable *GDP growth* positively affects insurers profitability i.e. growth of overall economic activity encourage demand for insurers services and indirectly result in higher insurers income. Finally, influence of variable *inflation (INF)* on profitability is statistically significant and negative, suggesting that higher levels of inflation cause higher interest rates and lower bond prices which in turn reduce portfolio returns.

4 Conclusion

This paper analyses performance of insurance sector in Macedonia and determinants of the insurance companies' profitability. The main indicators of insurance market development show that this market is still undeveloped. Comparative analysis also indicates that Macedonian insurance sector have lower performance comparing to some other relevant countries in the region. However, SWOT analysis indicates opportunities for growth and development.

According to the findings of panel analysis regarding the determinants of profitability, it is revealed that expense ratio, claim ratio, economic growth, and inflation have statistically significant influence on insurers' performance.

The results have implications on both macroeconomic and insurance companies' level decision makers. The first ones should ensure economic and institutional development as important prerequisites of insurance sector development. On the other hand, insurance companies should consider possibilities for increasing innovation by expanding the offer, launching new products with better risk coverage, using the advantage of alternative distribution channels, especially the bancassurance sales model. Additionally, more efforts should be paid on improving the loss adjusting activities, better corporate governance, improvements in internal controls and effective investment portfolio management.

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