Methods of Earnings and Risks Management in Insurance Companies

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ABSTRACT

The connection of earnings management with risk management is through in the area of finance. The risk, in general, is the probability that the actual return on the investment will be different than expected. The risk from the perspective of earnings management is perceived as a risk of loss. The insurance company itself is a business entity that seeks to increase its value and earnings. The aim of the paper presented is to analyse methods on how the level of risk could affect certain profit management mechanisms and whether there is a risk of motivation for earnings management. The paper presented consists of four parts. The first part is devoted to the theoretical aspect of insurance risks. They define concepts such as risk, risk sharing, risk portfolios and risk management. The second part of the paper aims at clarifying alternative methods of calculating insurance premiums and risks. Of all the methods that there are paper in more detail dealt with methods such as "Value at Risk", "Expected Shortfall", "Dynamic Financial Analysis", "Asset liability management". The third part of the paper is devoted to the analysis of insurance fraud in the Slovak Republic and the Czech Republic. The analysis has been carried out over a period of 10 years. The fourth part of the paper addressed the conclusions of the issue. A descriptive method, analysis, mathematical-statistical methods, graphic methods, comparison and synthesis was used in the processing of the paper submitted. The result of the paper presented is a comprehensive view of the possibilities of using earnings and risks management in insurance companies.

Keywords: Earnings management, risk management, insurance, risk portfolio, insurance fraud

1. INTRODUCTION

The insurance company itself is a business entity that seeks to increase its value and earnings. Ensuring the desired earnings margin is now becoming more demanding for companies. This often leads to the realisation of projects with disproportionate risk levels. [1] The earnings/loss of such projects has significant consequences for the results of the company's management. Insurance companies must also face this development. Like any other economic subject.

The link earnings management at risk in insurance companies is through the area in finance. Because the risk is the probability that the actual return on the investment will be different than expected. Therefore, the risk from the perspective of earnings management is understood as a risk of loss. The financial theory defines the risk, therefore, as the volatility of the financial quantity around the expected value due to changes in parameters. [2]

Insurance companies in their daily activities face different risks. However, their relationship to risk is much more specific. This is based on the very nature of the insurance business, which is characterised by the taking of risks from other companies and other entities in the economy. The origin of the word itself risk is not entirely clear. The term comes from 17. century and is linked to the sense of earnings/loss. Companies that are willing to undergo greater risk are also more likely to gain greater earnings. But on the other hand, they can also gain more losses if they do not take a greater risk. The risk is therefore perceived as a random event that is likely to arise and entails results/deviations different from the target set. Consequently, it depends on the nature of this deviation, whether positive or negative. Therefore, in general, we can say that this is a risk of loss or earnings quantified in cash units. [3]

Risk management inevitably increases own its importance in the strategic leadership of the Organization. Risk management is a process that examines the risk in its essence, the possibility of influencing it, preventing losses, reducing their scale and the possibility of financial coverage of the risk. [4] They are mainly research for unexpected, sudden, unlikely, but possible changes. It is, therefore, an effort to prevent the manifestation of current and future risks. There is a need to find a risk reduction solution. The ideal result arises in limiting adverse effects and at the same time exploiting those favourable. Risk management is a dynamically evolving discipline. There are a number of views and perspectives on what everything is supposed to contain, what is to be touched. State of the art version is called Enterprise Risk

Management (ERM), which represents the penetration of risk management into the management philosophy of the entire organization. The risk management processes in ERM are not one-off, but repetitive, and associated with every major company operation.

1.1. Risk Portfolio

A risk portfolio is a summary of the risks to which the insurance company is exposed. We may divide the risks of commercial insurance into two basic groups. Firstly, this is the risks arising from the company's business activity itself. The second group are specific and unique to the insurance sector. Business-entrepreneurial risks are a group of risks that all market players are exposed to. The characteristic is that it is very difficult to describe them with appropriate probability models. This implies a complexity, sometimes even the impossibility of managing them. Individual types are strategic risk – there is a risk of an improperly chosen, unpromising business area. Legal risks – are related to government legislative and legal action. The implementation of new laws can significantly change the business environment in the economy.[5] Operational risks – This relatively large group of risks is often related to human activity. This is the risk of loss due to insufficiency or failure of internal processes, persons or the system. This includes risks of employee errors, failure of automated systems, communications networks, etc. The risks of trade relations – the simplest example is the failure to comply with contractual obligations by the other party. Specific risks are market risks that are exposed to all operators operating in the economy. The credit risk that we can define in general is the risk that the counterparty fails to meet its financial obligations. We can also find it under the label credit risk. It describes the risk of loss or adverse change in financial situations arising from the fluctuation of credit ratings of issuers of securities. Counterparties and any debtors to whom insurance and reinsurance undertakings are exposed. They are in the form of counterparty failure, credit margin or market risk concentration. Investment Portfolio risk can mainly influence the correct selection of investment in financial markets. We will be interested in our earnings ability and security in this respect. [6] These criteria must be compared with the liquidity of the investment. The risk is intermixed with other types of risks. The actuarial risk depends mainly on income from premiums and investments. We are talking about the risk of insolvency when it is unable to meet longer-term commitments. The source of the risk becomes an inappropriate composition of the assets due to the need to cover the claims, clear the structure of the liabilities. At risk of liquidity, there is a problem where the insurance company does not have the necessary liquid cash at the moment. An initiation factor of problems can be a serious catastrophe that results in a large volume of insurance transactions at one point in time. The insurance company may be forced to transform the liquid assets into an asset under unfavourable conditions, which may entail additional losses. [7]

2. THEORETICAL BACKGROUND

Well-calculated actuarial methods are the basis for optimal management of technical risks. However, even if the best method is chosen, when the assumed risk is correctly valued, a commercial insurance company can get into trouble. Managers in an attempt to attract new clients with attractive low insurance occasionally do not respect the recommendations of insurance mathematicians. Low premiums will be reflected in an insufficient amount of reserves and it is only a matter of time before such an insurance company gets into serious trouble. Belief in a favourable claim's history is very dangerous and is confirmed by another mentioned fact, namely fluctuations in insurance benefits from the expected course. These can be positive but also in the correct chosen method can be negative. The problems of low-set premiums are thus only deepening.

An important tool for managing mainly financial risks is the determination of risk capital for the relevant risks. Venture capital or capital requirements are prescribed capital amounts that are necessary to cover a given type of risk of the considered financial institution. [8] There are usually two methods used to quantify them in the insurance industry. Factor methods - the common essence is the calculation of capital requirements as a product of risk exposures and a coefficient, which is a risk factor equal to the average risk in a given market. The advantage of this method is its simplicity. It is popular with credit rating agencies and will certainly find use in supervisory institutions. The problem is that it does not take into account the specific risks of a given insurance company in its risk portfolio. They derive risks from average values on the market - methods of internal models. They are a response to the generality of factor models and offer a much better assessment of the risk profile of a given commercial insurance company. The most commonly used method is the Value at Risk method.

2.1. Value at Risk

The method was developed in banking. Currently, it is probably the most common way of managing financial risks. It is used to estimate the worst loss that can occur with the prescribed probability in the future. In insurance, this method is used through the function:

$$FL(1) = P(L \leq 1). \qquad (1)$$

Describes the probability distribution of earnings/losses to a given open risk position (portfolio) in a defined time horizon. Next, we have the reliability value $\alpha \in (0,1)$. The Value at Risk (VaR) value from risk portfolio at the reliability value α is given by the quantile of the distribution function:

$$VaR\alpha = q\alpha(FL). \qquad (2)$$

The value thus defined is often called the absolute VaR, which indicates the ratio of the relevant capital to zero. If, with the distance of the quantile from the expected mean, we speak of relative VaR and refer to it as VaR^{MEAN}.

2.2. Expected Shortfall

The Expected Shortfall method as a coherent measure of risk became the response to the reservations against Value at Risk. This method can be understood as the expected loss exceeding given VaR value. Expected Shortfall (ES) is defined at the confidence level α as the expected value exceeding the given VaRα value:

$$ES\alpha = E\left(L|L> = VaR\alpha\right) = \frac{\int_{VaR\alpha}^{\infty} lf(l)dl}{\int_{VaR\alpha}^{\infty} f(l)dl}$$

(3)

The advantage of the EC is that we can use it to obtain information about both the frequency of damage and its expected amount. The information does not end with the determination of the probability that the loss will exceed a certain value. We will also find out the expected amount of this damage. The rest of the paper is organized as follows.

2.3. Dynamic Financial Analysis

This type of financial modelling proves the inseparability of risk management from other aspects of company. This model involves uncertainty, combines insurance and investment activities of the company. DFA is a process of examining and analysing the financial situation of an insurance company over time, taking into account the interrelationships between the various parts. At the same time their stochastic character, which affects their results. Its use in the risk management of a commercial insurance company is possible on several levels. Assessments of financial stability in various scenarios of future development. There is often a connection with stress testing tools, where the effects of extreme situations are examined. Solvency testing and capital adequacy. This activity results in the determination of the required risk capital against the assumed risks. We will also receive an answer to the need for capital adequacy when changing business activities. Liquidity management - will help us prevent problems related to catastrophic events.

2.4. Asset Liability Management

The mutual conditionality of the insurance technical and investment activities of a commercial insurance company forced the use of asset-liability management. Originally, it was mainly about managing interest rate risk in life insurance. Specific methods are: cash-flow testing, cash-flow matching, portfolio immunization. The simpler application of ALM for risk management is definitely in the area of life insurance, where it is it is much easier to estimate future cash flows. For non-life insurance, it is necessary to look at the portfolio of liabilities more comprehensively and make more use of stochastic methods simulations. A functioning ALM is a primary prerequisite for understanding and managing risks at the level of the whole company. It is a basic tool of risk management. We can consider coordinated decision-making as the basic benefits. Coordinated decision-making on insurance assets and liabilities, taking into account all different factors and constraints (risk portfolio, competition, regulation, different time horizons considered, etc.). [9, 10] It makes it possible to identify key risk factors and quantify their impact on the insurance company's management. Strategic portfolio allocation - determination of investment mix and reinvestment rules. It helps manage financial stability in the long run.

3. RESULTS

In this paper, an analysis was performed aimed at comparing insurance fraud. The analysis was performed within the whole Slovak Republic and the whole Czech Republic. Insurance fraud investigation period it was for the last 10 years. A graphical representation of the comparison is shown in Figure 1.
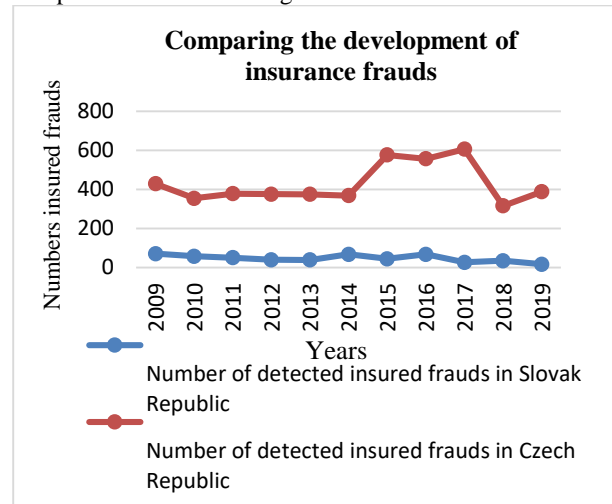

Figure 1 Comparing the development of insurance frauds, (Source: Own processing according to criminality statistics of the Czech Republic and Slovak Republic)

Figure 1 shows the number of insurance frauds in thousands of €. The comparison is made for the countries of the Slovak Republic and the Czech Republic for the period from 2009 to 2019. It is clear from the graph that the number of detected insurance frauds in the Czech Republic is much more than in the Slovak Republic. In 2009, 70 insurance frauds were detected in the Slovak Republic. In the Czech Republic was 429 insurance frauds. In the years 2010 - 2014, the number of detected insurance frauds in the Czech Republic averaged around 350. In the Slovak Republic on average 40. In the years 2015 - 2017, the number of detected frauds in the Czech Republic increased on average. In Slovakia, 67 frauds were detected in 2016 and in 2017 it dropped to 26 detected frauds. In 2018 and 2019, the number of detected frauds in the Czech Republic dropped again to 350. In the Slovak Republic, in

2018, 34 frauds were detected and in 2019, even only 16 frauds were detected.

4. CONCLUSION

Ignoring risk is not and must not be modern. However, we can still see varying degrees of underestimation of risks in economic agents. Even at a time when there are enough tools and methods to eliminate the impact and emergence of adverse situations. If the company's management wants to increase earnings and improve its market position, it must implement the principles of risk management. Another problem that companies should address in the future is to be satisfied with the current situation. When managing risks, you need to look ahead and be open to change. The market situation is changing rapidly. It is important that companies' risk management systems are able to perceive threats and opportunities that are new and have not yet occurred. Therefore, it is definitely the right approach for earnings management, who perceive risk management as an iterative process and not a one-time solution. This method increases the likelihood of identifying new threats. It is essential that risk management is involved in the decision-making process. Because taking more risks will bring companies more earnings in the future. The ideal situation occurs when risk management becomes a permanent part of management processes in the company. It will systematically cover all past, current and future activities of the company. However, best practices may vary according to the type of risk.

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