SCENARIO PLANNING ROLE: THE CASE OF BALTIC NON-LIFE INSURANCE MARKET

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Abstract

The purpose of the research is to investigate the role of the scenario planning methods in the future development of the Baltic non-life insurance market.

In order to achieve the stated objective and with the purpose to study the elements and functions of the scenario planning and critical stress testing, the authors use theoretical and methodological analysis of the scientific literature, analytical methods, expert and priority chart's methods, comparative, statistical and modelling methods.

One of the major problems of the research was to find the correlation between the possible impact of the scenario planning methods and the process of managing the development of the insurance market. The stated problem was solved by using a special tool for scenario planning method that can be used by non-life insurance companies.

The authors have analysed the theoretical basis of scenario planning methods and prepared the financial analysis and scenario planning tool to evaluate the Baltic non-life insurance market's development and to investigate its possible future outcomes with the main aim to demonstrate practical issues of scenario planning. In order to test scenarios discovered in the process of financial analysis using scenario planning tool, the authors have also applied critical scenario testing, which simulates possible future outcomes of an insurance company development.

The rate of the Baltic non-life insurance market's development is considered to be rather high, hence it requires analysing, managing and evaluating its financial stability and solvency. The Baltic insurance market faces many challenges due to the requirements of the Solvency II framework, which will establish new rules of risk evaluation for improving the solvency of insurance companies and protecting the interests of policyholders. Since the implementation of the Solvency II regime requires a stable insurance market establishment, it is important to plan and analyse the possible scenarios of insurance market development. The assessment of the Baltic non-life insurance market can be performed through strategic organizational planning – scenario planning methods. Scenario planning methods help evaluating possible short – term future outcomes of stability and solvency of non-life insurance market's participants' using the means of simulations.

Paper type: *Theoretical article.*

Keywords: *scenario planning methods, the Baltic non-life insurance market, Solvency II Directive, risk management.*

JEL Classification: *G22.*

1. Introduction

The Baltic insurance industry is one of the fastest developing industries given its annual increase in the market volumes. This is mainly connected with the improvement of the economic situation in the Baltics after a recession and with an overall enhancement of citizens' knowledge in the field of insurance. Since the Baltic insurance market is rather young and is still under development, it is critically important to analyse, evaluate, and manage its development.

The Baltic insurance market faces many challenges due to the Solvency II framework that will require more sensitive and sophisticated risk evaluation for ensuring the solvency of insurance companies and protecting the interests of policyholders.

Since the implementation of the Solvency II regime requires a stable insurance market establishment, it is important to plan and analyse the possible scenarios of insurance market development. The authors present the strategic organizational planning tool – scenario planning as one of possible solutions to evaluate and assess possible short-term outcomes of an insurance company activity.

In order to test scenarios discovered in the process of financial analysis using scenario planning tool, the authors have also applied critical scenario testing, which simulates possible future outcomes of an insurance company development.

The Hypothesis of the article comprises the idea that the application of scenario planning tool helps managing the development of an insurance company and the insurance market, as well as evaluating possible future outcomes and eliminating possible risks.

The goal of the research is to investigate the role of scenario planning application in the insurance market development. The object of the paper is the scenario planning tool, while the subject is the correlation between scenario planning and an insurance company's processes.

In order to achieve the stated objective and with the purpose to study the elements and functions of the scenario planning and critical stress testing, the authors use theoretical and methodological analysis of the scientific literature, analytical methods, expert and priority chart's methods, comparative, statistical and modelling methods.

One of the major problems of the research was to find a correlation between the possible impact of the scenario planning methods and the process of managing the development of an insurance market. The article consists of four main sections. The authors investigate and analyse scenario planning, critical stress testing methodology and its theoretical basis in Section 2. In Section 3 an overview of the Baltic non-life insurance market development and its correlation with scenario planning and critical stress testing is presented. The final section summarizes the findings and conclusions of the research and assesses the role of scenario planning in insurance.

2. Method

Scenario planning is an internal strategic vision of possible future outcomes alongside continuously increasing uncertainties that dominating the insurance market. Scenario planning is based on a short–term method which suggests the development of effective scenarios of an insurance company development with the purpose to eliminate its main risk.

Several authors (Lingren & Bandhold, 2009; Tosten *et al.*, 2010; Wulf *et al.*, 2010) investigate concepts, models and techniques of scenario planning as one of possible strategic instruments of effective performance management. The scenario planning is usually used for the companies using 6-8 stages (Bryant & Lempert, 2010; Cherkasova & Fradkina, 2010). The core structure of scenario planning in insurance is presented in Figure 1.

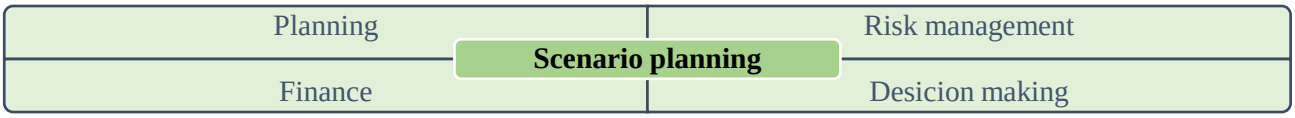

Figure 1. The structure of scenario planning
(based on EIOPA (2008, 2009, 2010 and 2011) publications including the authors' changes)

Scenario planning is based on four components: risk management, decision making, finance and planning which form the basis of each insurance company's organizational structure and financial stability. Firstly, scenario planning has been used in the military: during the World War II, the U.S. Air Force tried to prepare alternatives strategies.

Herman Kahn (1960) was the founder of scenario planning and created the idea of 'thinking the unthinkable', as well as applied scenarios as a tool of business forecasting. Later Shell (1970) also applied scenario as a strategy tool.

As far as qualitative techniques are concerned, their way of operating is to combine

experience intuition and other skills in order to derive relationships between the variables that can applied when making the forecasts. The quantitative techniques operate in a different way; they make use of sets of data to establish trends and patterns useful for projecting quantities into the future (Malins, 1999).

In fact, scenario planning may be based on historical and statistical data and hypothetical scenarios. The main features of the insurance market's historical scenario are the following:

- statistical and actuarial data of the past years as a basis;
- major conservatism and insignificant influence on the part of management;
- insufficient opportunities for sensitive and sophisticated risk evaluation, which restricts the measurement of insurance company's risk tolerance and appetite.

Insurance market's scenario planning based on hypothetical scenarios includes the following features:

- forecast of macro-economic development and significant market events;
- dependence on specialist expertise and management;
- insufficient business support (back-up);
- use of statistical data to identify the correlation between different elements and factors which influence a company's activity and stability.

However, scenario planning has a rather big impact on decision taking, since it requires a deep understanding of the environmental forces and policyholders behaviour.

Scenario planning is a situational dynamical exercise which should be performed on a regular basis which, in its turn, requires a detailed and an adequate documentation of all the processes of development and establishment which is totally in line with the requirements of the Solvency II regime. Factors which influence scenario planning are presented in Figure 2.

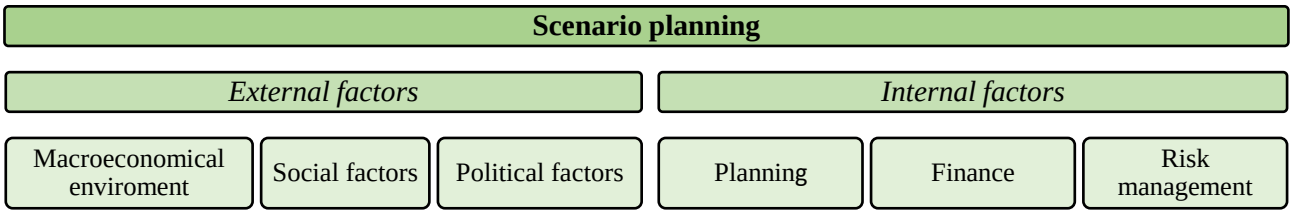

Figure 2. The factors influenced by scenario planning

(based on EIOPA, PricewaterhouseCoopers International Limited, Ernst&Young publications (2008-2012) including the authors changes)

In order to prepare possible scenarios of the future outcomes of insurance company's development, all the internal and external factors should be analysed.

The possible future outcomes of an insurance company activity forecasted using scenario planning should be tested through critical stress testing which allows conducting sensitivity analysis of the external factors' influence on an insurance company's possible development.

Concluding, we see that simulation models give us the opportunity to test different strategies under different assumptions. This can help us to a great extent; by simulating the scenarios already developed. In order, however, to implement them successfully, the guidelines for simulating scenarios should be satisfied (Fahey & Randall, 1998).

3. Results

The Baltic non-life insurance market is rather small and is still under development, therefore, in order to integrate in a proper way the scenario planning into an insurance company's processes, its main indicators should be studied.

The authors of the paper have investigated the Baltic insurance market through the example of the six leading Baltic non-life insurance companies using concentration index and Herfindahl–Hirschman Index (see Table 1) that measure of market concentration. The concentration index

which is close to 100% is proper to monopoly markets, meanwhile Herfindahl–Hirschman Index between 1000 and 1800 means average concentration of the market, wherein an index which is bigger that 1800 characterizes high level of concentration of the market (Kramaric & Kitic, 2012).

Table 1. The concentration measurement of the Baltic insurance market

Baltic non-life insurance company	Gross written premium, MEUR		Market share		
	2012 12M	2011 12M	2012 12M	2011 12M	2012 12M vs 2011 12M
If	115	115	14%	15%	-6%
BTA	102	88	13%	12%	9%
RSA	179	158	22%	21%	6%
Gjensidige	63	56	8%	7%	6%
ERGO	108	99	13%	13%	1%
Seesam	48	47	6%	6%	-5%
Concentration index			76%	74%	2%
Herfindahl–Hirschman Index			1129	1067	6%

Source: calculations performed by the authors with reference to the non-life insurance companies' reports and Dalton & Stanford (1977).

According to the concentration index and the Herfindahl–Hirschman Index, the authors have come to a conclusion that the market concentration corresponds to the medium competitive level, which, in its turn, allows assessing the solvency of the Baltic non-life insurance market using financial data of the six biggest Baltic non-life insurance companies (see Figure 3).

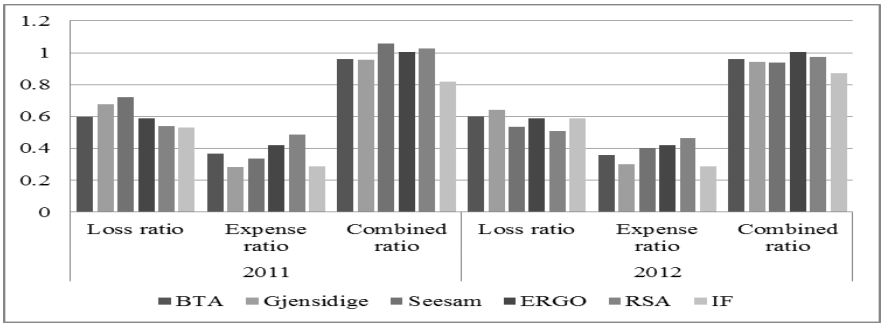

Figure 3. Baltic insurance market's stability and solvency analysis

(calculations performed by the authors based on Baltic non-life insurance companies' annual reports (BTA, Balta, Seesam, IF, Gjensidige, Lietuvos draudimas, Lithuanian Ergo, Latvian Ergo, Estonian Ergo 2011, 2012)

Figure 3 shows that compared with 2011, the Baltic non-life insurance market solvency in 2012 has improved. Accordingly, combined ratio has improved almost in every company, simultaneously, the companies obtained profit from insurance activity. Due to the annual improvement of the solvency, the authors can evaluate the development of the Baltic non-life insurance market as rather stable. The integration of scenario planning into an insurance company's processes should be performed through the establishment of the Solvency II requirements. The Solvency II Directive should establish across all the European Union the economic risk-based solvency requirements based on the three pillar approach within every pillar should fulfil its own function:

- first pillar fulfilling quantitative requirements which mainly involve reserving principles of an insurance company.
- second pillar mainly involving qualitative requirements which present the supervisory function.
- third pillar establishing disclosure requirements which require transparency and directness of an insurance company.

The authors of the article focus their attention on the second pillar due to the fact that scenario planning should be implemented in line with the own risk and solvency assessment document. Own risk and solvency assessment document can be defined as the entirety of the processes and procedures employed to identify, assess, monitor, manage, and report the short and long-term risks

an (re)insurance undertaking faces or may face, as well as to determine the own funds necessary to ensure that the undertaking's overall solvency needs are met at all times (EIOPA, 2010). The key factors of the scenario planning and stress testing in an insurance company according to the Solvency II requirements are presented in Figure 4.

Figure 4. The key factors of the scenario planning in insurance companies
(EIOPA 2008-2012)

According to the own risk and solvency assessment document, all the key factors presented in Figure 4 should be included in the scenario development. However, it should be taken into account that correct identification of the key factors of the scenario planning is the first requirement for the scenario planning in insurance.

Mainly scenario planning should be used for planning where possible outcomes of an insurance company development should be evaluated and estimated. The possible methods of scenario planning integration and implementation into the Baltic non-life insurance market are presented in Figure 5.

Human Recources	•Find appropriate employees with suitable knowledge of Solvency II requirements. •Define roles and responsibilities in organisation
Definition of vision	•Define object and scope of scenarios •Define key factors
Database formation	•Collect historical statistical information about insurance companies' activity •Collect analytical information about macroeconomics and the Baltic non-life insurance market
Develop-ment of scenarios	•Vision creation based on historical and analytical information •Development of a base scenario
Critical testing testing	•Testing of a base scenario on more positive trends •Testing of a base scenario on more negative trends
Approve-ment of basic scenario	•Possible changes of a base scenario due to critical stress testing •Management approval of a basic scenario

Figure 5. Implementation of scenario planning in the Baltic non-life insurance company's processes
(created by the authors, based on Cherlkasova & Fadeeva (2010), Bokans (2011), Bryant & Lempert (2009), Kalinina & Voronova (2012), Lindgren & Bandhold (2009), Malins Morag (1999), Pfeifer & Strassburger (2008), Torsten, Brands & Meissner (2010), Wulf, Meißner & Stubner (2010))

From Figure 5 the authors can conclude that scenario planning should be interconnected almost with all insurance processes and the outside processes, for example, the economic, political, or social situation in the Baltics. However, integrating the analysis of the macroeconomic situation in the Baltics into the scenario planning is rather challenging, since the Baltic economy is entirely dependent on the global economy development.

Moreover, it is also significant to investigate the main functions of the Baltic non-life insurance company which can be covered by means of scenario testing and according to the Solvency II methodology. Scenario planning covers almost all the key functions of the Second pillar, since it is responsible for managing business risks of non-life insurance company. The research of the key functions of scenario planning is presented in Figure 6.

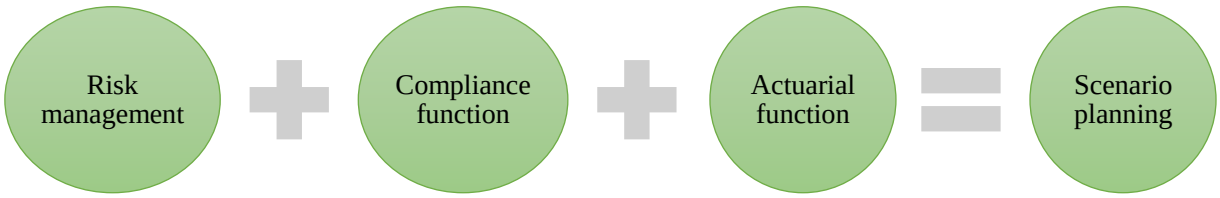

Figure 6. Key functions involved in scenario development
(EIOPA, 2010)

On the basis of Figure 6 the authors can conclude that in order to prepare a suitable and trustworthy scenario of the possible future development of a company, the competence of risk management, control and actuarial functions should correspond with the Solvency II requirements.

The authors can conclude that scenario planning is a structured process which helps developing a business strategy of an insurance company and improving its solvency by choosing a correct decision using possible future outcomes.

4. Discussion

Scenario planning is a multifunctional and detailed process of possible future short-term outcomes development of an insurance company's activity without claiming to forecast the future. Scenario planning allows investigating the future uncertainties and possible driving forces which have the impact on future, as well as it improves decision-making in an insurance company.

The Baltic non-life insurance market is rather young and still continues to evolve. The biggest insurance companies act with combined ratio which is less than 100%, which means that market has been working with the profit from insurance activity.

The Solvency II Directive's requirements should establish new rules for a more sensitive and a more sophisticated identification, analysis and measurement of risks, as well as ensure the solvency of every insurance company to protect policyholders' interests in the European Union. The implementation of the Solvency II framework in the activity of the Baltic insurance companies is challenging, since it requires major human, IT and financial resources.

Scenario planning plays special role in Solvency II Directive's requirements implementation, since it is a part of new regime – Own Risk and Solvency Assessment. The objective of the scenario planning in the Baltics is to examine possible future development outcomes of the non-life insurance companies and to suggest solutions which will help benefit as much as possible, no matter how the future unfolds.

The analytical analysis of scenario planning takes into account many forces driving changes in the current business environment: politics, economic volatility, changing demographics, the integration of technology, sustainability.

The authors of the publication have come to a conclusion that scenario planning should be integrated into all the processes of the Baltic non-life insurance industry, in particular, in its development should be involved actuarial, risk management and compliance functions.

The scenario planning integration into the processes of the Baltic non-life insurance companies, presented by the authors, allows creating a qualitative scenario using critical stress testing method.

The suggested approach of the scenario planning integration into the processes of the Baltic non-life insurance companies can help improve risk management and enable to control trends within its development towards the solvency.

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