

RISKS ASSESSMENT OF SMALL AND MEDIUM-SIZED ENTERPRISES: THE CASE OF LATVIA

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Abstract. The goal of the research is to study the economic and financial risks impact on small and medium-sized enterprises' development in Latvia. The enterprises need to assess the risk dynamic of financial instability and this risk impact on small and medium-sized enterprises' development, because it is important for enterprises to extend commercial activity and to open a new structural subdivision. The authors have used the own created algorithm of identification, classification and assessment of enterprises' risks. The risks matrix is a quantitative assessment of risks. The authors have arranged risks by their size of possible losses for enterprises. For each type of risk has been assessed its probability of realization. The authors have carried out the questionnaire of representative small and medium-sized enterprises about the economic and financial risks impact on enterprises' development in Latvia. The authors have created classification of Latvian services sector's economic and financial risks in the period from 2011 to 2012. Those risks have included in questionnaire.

Keywords: classification of risks, risks assessment, risks matrixes, questionnaire of small and medium-sized enterprises.

Jel classification: G32.

1. Introduction

In Latvia it is important for small and medium-sized enterprises (SMEs) to create an efficient economic activity in both - economic growth and economic slowdown. Enterprises have to assess marketing activities to attract new and retain existing clients, as well as to create marketing activities that increase client's loyalty to enterprise's brand. Because of reduction in client's solvency, SMEs in Latvia regularly have to make the profit and loss account, so that they operatively keep up with ratio of incomes and expenditures. Decreasing income, enterprise should reconsider expenditures in order to improve financial stability of enterprise.

Micro, small and medium-sized enterprises in accordance with European Commission Regulation No 364/2004 characterizes maximum staff number and annual turnover (or annual balance sheet total). A medium-sized enterprise is defined as an enterprise which employs fewer than 250 persons and whose annual turnover does not exceed EUR 50 million or whose annual balance-sheet total does not exceed EUR 43 million.

Evaluating these aspects, enterprises can develop a business strategy to effectively perform their economic activities. Establishing business strategy enterprises need to classify economic and financial risks as well as assessing their impact on enterprise's development. Assessing the risks in SMEs it is appropriate to use risk matrixes and risk maps. Using the risk matrixes employees of the company can assess possible losses of each risk and its probability of realization. Several parts of the risk map (segments) make it possible to assess each type of the risk separately in its segment. Assessing the zones of the risk levels SMEs can create their own risk management strategies.

2. Characteristic of risks assessment of small and medium-sized enterprises

The purpose of the first International risk management standard ISO 31000:2009 is to provide principles and generic guidelines of risk management. Risk is effect of uncertainty on objectives. Impact of risk could be negative (losses) or positive (profit). If we study negative impact of risks, than risk amount characterizes possible amount of result (losses) and probability of realization. Process of risk assessment includes identification and classification of risk and risk analysis of quality and quantity.

Many researchers study (Felício *et al.*; Nunes *et al.*; Baetens; Rutkauskas) peculiarities of business of SMEs. Felício *et al.* (2012) have identified structures associated with human and social capital in a small country with an open-economy, based on a survey of SMEs across different sectors. The results indicate that the principal factor is highly correlated to the variables of experience, professional proficiency and cognitive ability, which are predominant characteristics of the entrepreneur. Nunes *et al.* (2012) have researched SMEs in Portuguese. The age of enterprises is an important factor of the relationships between determinants and profitability. Age, size, liquidity and long-term debt have greater relative importance for the increased profitability. Rutkauskas (2008) have studied advantages of sustainable competitive enterprise, considering risks and their impact on enterprise's development. The important stage of risk management is risk identification and classification. Rutkauskas and Ginevičius (2011) have studied the risks influencing marketing activity in order to develop enterprise's management strategy. Considering exceptional riskiness of marketing, the solution of marketing efficiency problems is not separable from identification of risks, influencing marketing, and their management strategies development.

Komkova (2008) had researched risk management major problems in Latvian non-financial companies. The most of enterprises doesn't have insight about the need of the risk management implementation. The practical risk management implementation is not possible without relevant risk models adaptation to Latvian economic situation. There is a lack of experience in implementation and adaptation of risk management. Zimecs and Ketners (2009) have researched the importance of risk management for SMEs. Because of the impact of the economic crisis on activi-

ties of Latvian SMEs, it is important for their entrepreneurs to understand and create a system of the risk management. This system of risk management should be integrated into enterprises development strategies and could also be used for increasing the level of enterprise competitiveness. Zimecs and Ketners (2010) had also studied business solution methodologies and their impact on risk management and carried out survey of risk management developments. As shown by the survey results, the entrepreneurs, who use the risk management elements in their daily activities, mainly manage risks by using information of business results.

Jansone and Voronova (2010) have studied financial stability problems of Latvian trade sector enterprises. Jansone *et al.* (2010) have researched financial and economic risks impact on Latvian food retail sector. Voronova (2012) have studied financial risks and possibilities to assess them, as well as financial stability models which are adapted for other countries (for circumstances of individual country). For SMEs' is important to regularly assess the risk of insolvency (bankruptcy) in order to perform in time arrangements to increase financial stability of enterprise. The authors have recommended using Altmana E. Model (adapted for Latvia by RTU scientists Sorins R. and Voronova I.).

Didenko *et al.* (2012) have researched of existing tests of the assessment of enterprises insolvency. As for the users of non-financial market models, the authors apply the KISS principle (keep it simple, stupid) to research the development of risk index model, focusing on Kralicek Quick Test involved in this group.

According to the data of research (Marhavišas *et al.* 2011) the risk analysis and assessment techniques are classified into three main categories: (a) the qualitative, (b) the quantitative, and (c) the hybrid techniques (qualitative-quantitative, semi-quantitative). The methods of assessment of economic and financial risks are subdivided into analytical (financial and factor analysis, analysis of documentation and business process), expert (questioning, interview, building up of risk matrix) and statistics (VAR, Stress testing).

Risk matrices are developed with a view to general principles and characteristic for various branches of economics such as medicine, aerospace and etc. Baetens (2008) have studied characteristics influence the way SMEs manage risks in the workplace and how they carry out their risk assessment. Some matrices have been developed for specific applications within the occupational health and safety domain (Cox 2008), as well as the assessment of risks associated with workplace health and safety (Pickering and Cowley 2010). In Ozog's (2009) opinion, the key to risk management is to identify risks that are intolerable and to mitigate them to a tolerable level. Some typical uses for risk ranking are process hazard analyses, facility siting studies, and safety audits.

3. Current situation in Latvia

The authors have researched economic activity of services sector enterprises in Latvia in the period from 2005 to 2011. For Latvian service sector analysis is used NACE Rev. 2 (The Central Statistical Bureau of Latvia 2011) which is statistical classification of information about economic activities. From 2005 to 2008 total turnover indices of Latvian services sector enterprises have increased. The highest value was researched at the first quarter of 2008. From the second quarter of 2008 sector has started to decline, reaching lowest rates in 2009. From 2010 total turnover indices again started to increase.

Including legal norms in Latvian legislation which arises from Directive 2006/123/EC of the European Parliament and of the Council of the 12 December 2006 on services in the internal market have played important role improving service sector environment in Latvia. The Directive aim is to reduce administrative burdens to service enterprises, starting a business and developing it. There is simplification of administrative procedures in the services sector (revision of authorizations, simplification of registration requirements, improvement of accessibility of e-documents and e-procedures, etc.) in Latvia. It is very important for SMEs in order to reduce costs and time which is required starting a business, extending business activities (opening new units).

From year 2006 till year 2009 the authors studied medium financial indices of trade services enterprises in Latvia and made the economic analysis of them (Janšone and Voronova 2011). Based on economic analysis of trade service enterprises medium financial indices is created risk-level dynamics assessment by using special coefficient method. Indices of the special coefficient method are liquidity, profitability, solvency and circulation.

Latvian service sector SWOT analysis is a component of the sector's risks identification and classification. By defining the opportunities and threats of the external environment and the strengths and weaknesses of internal environment, the authors have identified the risks (Voronova 2008). External environment's opportunity is to increase turnover of Latvian services sector, if the country stimulates the economic growth, as well as external environment's opportunity is to choose qualified staff. Latvian services sector external environment's threat is the risk of insufficiency of credit resources, which may lead to decrease of current assets. Latvian services sector internal environment's strength is a possibility to offer assortment of quality services, because level of staff skills has been improved. Latvian services sector internal environment's weakness is deadlines of service extended, because the risk of debtors increase.

One of the world's leading insurance broker and risk management consulting organization Aon Corporation has issued a Global Political Risk map for 2011. Latvia is in group of countries which risk level is ranked as Medium. The major risks are the risk of monetary and the risk of reduction in client's solvency. Based on the

above mentioned the authors have created classification of Latvian services sector's economic and financial risks in the period from 2011 to 2012.

4. Risks matrixes - risks assessment tools

Risk matrix and risk maps are one of most common and easiest risk assessment tools. The application of risk matrix does not require the usage of wide knowledge of quantitative risk analysis. It is necessary to develop a range of probability and detailed descriptions of the consequences for each of the possible scenarios. The authors recommend using risk matrix and risk maps in order to assess different types of risks.

4.1. Risks matrix

The authors have researched types of risks, their identification, classification and assessment possibilities in activities of SMEs.

To quantity assess individual risk level use two values – possible amount of risk result (losses) and its probability of realisation. Risk level is multiplication of result of risk (losses) and its probability of realisation.

$$\text{Risk level} = \text{Result (losses)} * \text{Probability} \quad (1)$$

For quantity assessment of risk can use risk matrixes which arrange risks by their possible amount of result (losses). According every type of risk its probability of realisation is assessed also (Vincent 2010).

The authors have created risk matrix where is showed different zones of risk level (Fig. 1). Description of zones of risk level (losses and probability of realization):

- M – small risk level – small losses and probability of realization (0,0–0,2);
- V – medium risk level – small losses and (0,2–0,6), medium losses and (0,0–0,4), big losses and (0,0–0,2);
- L – big risk level – small losses and (0,6–1,0), medium losses and (0,4–0,8), big losses and (0,2–0,6), maximum acceptable losses and (0,0–0,4), critical losses and (0,0–0,2);
- P – maximum acceptable risk level – medium losses and (0,8–1,0), big losses and (0,6–1,0), maximum acceptable losses and (0,4–0,8), critical losses and (0,2–0,6);
- K – critical risk level – maximum acceptable losses and (0,8–1,0), critical losses and (0,6–1,0).

Risk matrix can use to choose enterprise's strategy of risk management. Enterprise's strategy of risk management is developed by analysing zones of risk level (Alexander and Marshall 2006):

- In zone of small risk level and medium risk level, and big risk level for enterprise is recommended to create risk management system;
- In zone of big risk level and maximum acceptable risk level for enterprise is recommended to realise risk insurance;
- In zone of critical risk level for enterprise is recommended business interruption.

0,8 – 1,0	L	P	P	K	K
0,6 - 0,8	L	L	P	P	K
0,4 - 0,6	V	L	L	P	P
0,2 - 0,4	V	V	L	L	P
0,0 - 0,2	M	V	V	L	L
Probability of realization	Small risk	Medium risk	Big risk	Maximum acceptable risk	Critical risk
characteristics of the size of risk (losses)					

Fig. 1. Example risks matrix (Different zone of risk level) (source: the authors have created)

The authors have used their own created algorithm of enterprises' risks identification, classification and assessment (Jansone and Voronova 2012). The important stages of above mentioned algorithm:

- Make the SWOT analysis of services sector;
- Get to know with the surveys of the major risks in the world;
- Create the classification and description of specific services technological process risks;
- Classify and assess risks in order to create risks matrix;
- Assess risks by using the special coefficient method;
- Rank external and internal risks by their impact on sector enterprises' development.

The SMEs can use the authors created algorithms of classification and assessment of the risks to produce their own risk management systems. Enterprises carrying out their sector SWOT analysis and preparing description of technological process risks can identify and classify specific sector's economic, financial and technological process risks.

The financial risk is the possibility of financial resources' losses by its financial default or failure of financial management. The economic risk is the decline of enterprises' competitiveness and the possibility of losses by unforeseen changes in economic situation. The sector is affected by change of national economic policy, by economic crisis and related processes. The financial risks are greatest share of the total package of business risks. They have both objective and subjective nature.

Risk map of four segments is consisting of four risk matrixes (Risk management 2010). In the centre of risk map is point which value is the smallest and probability of risk realisation is the smallest also. Risk map which consists of four segments shows values and probability of realisation of every type of risk.

4.2. Risks matrix: the case of Latvian service sector

For quantity economic and financial risk assessment of Latvian service sector enterprises the authors have created economic and financial risks matrix (Fig. 2). The most of the authors classified Latvian service sector economic, financial risks sizes from medium till maximum acceptable. The probability of risks realization is from 0.2 till 0.6. The maximum acceptable economic risks (with the probability of risks realization is from 0.4 till 0.6) are E2 - The risk of increment of taxes and E4 - The risk of damage to reputation. The maximum acceptable financial risks (with the probability of risks realization is from 0.4 till 0.6) are F1 - The risk of unpaid credit, F3 - The risk of monetary, F5 - The risk of financial instability and F9 - The risk of debtors.

0,6 - 0,8				F7						
0,4 - 0,6		E3		E1 E6 F4 F12 F10		E4 F1 F3	E2 F5 F9			
0,2 - 0,4			F13	E7 F2 F6 F11		E5 F8	F14			
Scale α_i	1	2	3	4	5	6	7	8	9	10
Probability of realization	Small risk		Medium risk		Big risk		Maximum acceptable risk		Critical risk	

Fig. 2. Latvian service sector economic and financial risks matrix (source: the authors have created)

The maximum acceptable economic risks (with the probability of risks realization is from 0.2 till 0.4) is E5 - The risk of reduction in client’s solvency. The maximum acceptable financial risks (with the probability of risks realization is from 0.2 till 0.4) are F8 - The risk of insufficiency of current assets and F14 - The risk of insolvency (bankruptcy).

The authors recommend for SMEs to use method of risk ranking assessing external and internal risks by their effect on enterprises’ development (Jansone and Voronova 2012). Internal and external risks effect coefficient values show which of these two risks (internal or external) has bigger impact on sector enterprises’ development.

5. Questionnaire for small and medium-sized enterprises

The authors have become acquainted with questionnaires of enterprises about risks (questionnaires are from different countries).

Henschel (2010) have studied German SMEs' risk management problems, and carried out questionnaire of enterprises about it. Level of risk management is different in enterprises. In first variant there is risk identification and their documentation. In second variant staff of enterprise additionally are forming risk classification and risk assessment. In third variant enterprises do above mentioned two methods and additionally perform risk management systems. According to questionnaire results if you perform risk management system than size of enterprise is uppermost factor. The bigger enterprise, the detailed and completed is risk management system. According to questionnaire of German small and medium-sized enterprises results budget planning mainly was made in time period from two to three years. Most of small and medium-sized enterprises risk identification and assessment was doing once in a three months. Korombela (2012) have studied risk management problems of Polish SMEs and carried out questionnaire about it. Representatives of small and medium-sized enterprises (there was fully completed 101 inquiry form) arranged risk by their importance. The most important risks were F5 -The risk of financial instability, E7 -The risk of increasing competition and E1 -The risk of legislative changes.

The authors have prepared questionnaire about enterprise's activity and economic and financial risk assessment about possible amount of losses. The authors have carried out questionnaire where representatives of small and medium-sized enterprises gave information about economical and financial risk impact on enterprise's development in 2012.

The authors sent inquiry forms to representatives of small and medium-sized enterprises and received fully completed inquiry forms from 35 representatives of small and medium-sized enterprises. 23 enterprises works in service sector (65.7% of all representatives who send back fully completed inquiry form), 7 enterprises work in industry sector and 5 enterprises works in civil engineering sector.

Representatives of questionnaire had assessed economical and financial risks possible amount of losses (value 5 mean maximum losses). Average results of questionnaire are showed in figures (Fig. 3 and Fig. 4). From enterprises which participated in questionnaire there were medium-sized enterprises (48.6%), small enterprises (40.0%) and micro enterprises (11.4%).

Questionnaire participants' assessed economical and financial risks had ranked as possible amount of losses (Fig. 3 and Fig. 4).

Representatives of questionnaire answered to a question – Who does budget planning in your enterprise? Questionnaire results were that in small and medium-sized enterprises budget planning does: Member of the Boar–25.7%; Director – 25.7%; Finance Department manager –48.6%.

Representatives of questionnaire answered to a question – For what time of period you make budget planning? Questionnaire results were that in small and medium-sized enterprises budget planning was made in period of time: Till 1 year – 34.3%; Till 3 years –45.7%; Till 5 years – 20.0%.

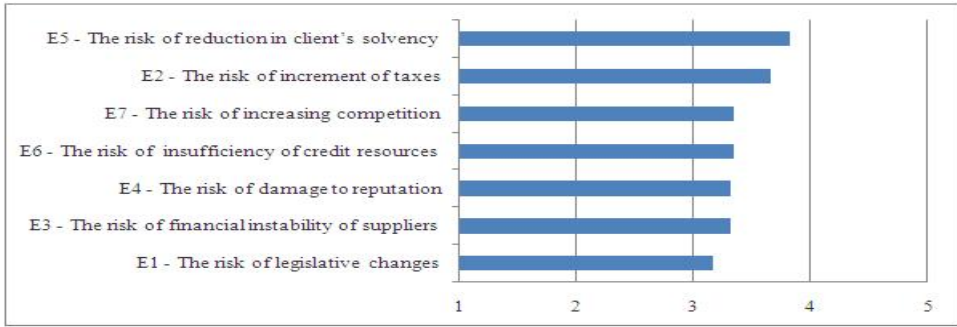


Fig. 3. Questionnaire participants' average assessment about economic risk impact on enterprise's development in 2012 (Source: own study)

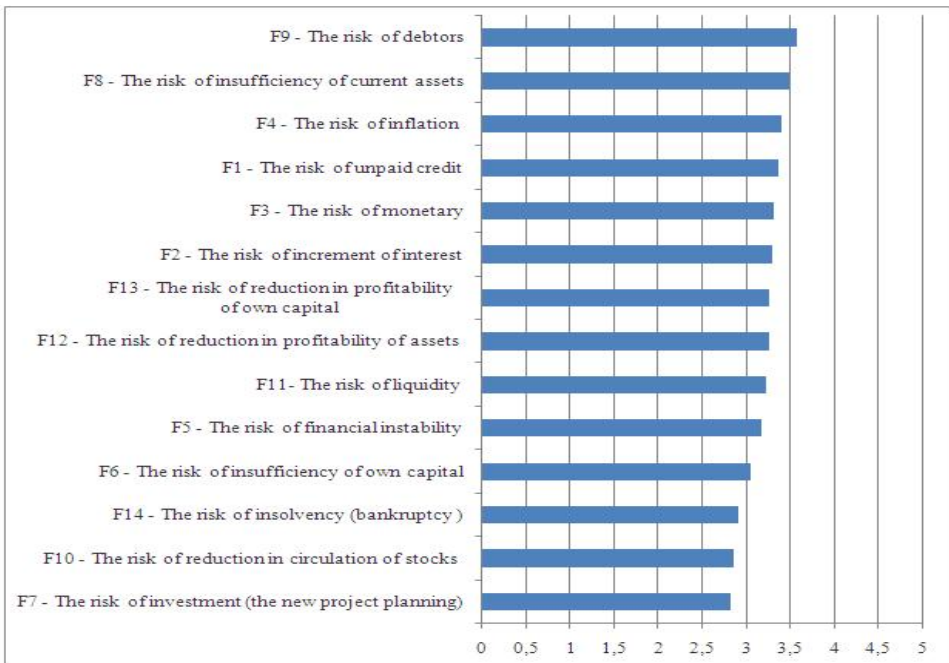


Fig. 4. Questionnaire participants' average assessment about financial risk impact on enterprise's development in 2012 (Source: own study)

Representatives of questionnaire answered to a question – Who does in your enterprise economical and financial risks identification and assessment? Questionnaire results were that in SMEs economical and financial risks identification and assessment does: Member of the Board – 8.6%; Director –22.9%; Finance Department manager –68.6%.

6. Conclusions

1. The SMEs can use the authors created algorithms of classification and assessment of the risks to produce their own risk management systems. Enterprises carrying out their sector SWOT analysis and preparing description of technological process risks can identify and classify specific sector's economic, financial and technological process risks.
2. For risk quantity assessment SMEs can use risk matrix, which arrange risks by their possible amount of losses. According to each type of risk it is possible to assess its probability of realisation.
3. Risk matrix can use to choose SMEs' strategy of risk management. Enterprise's strategy of risk management is developed by analysing zones of risk level. Risk map which consists of four segments shows values and probability of realisation of every type of risk.
4. Risk matrix and risk maps are one of most common and easiest risk assessment tools. The authors have recommended SMEs using risk matrix and risk maps in order to assess different types of risks.
5. Results of the questionnaire which authors have carried out show those SMEs mainly do budget planning for period of time till three years.
6. Budget planning does Financial Department manager in majority of SMEs. Also economical and financial risks identification and assessment does Financial Department manager in majority of SMEs.
7. Questionnaire participants' assessed economic risks had ranked as possible amount of losses from them. The biggest losses is possible from impact of these risks –The risk of reduction in client's solvency (E5), The risk of increment of taxes (E2) and The risk of increasing competition (E7). Questionnaire participants' assessed financial risks had ranked as possible amount of losses from them. The biggest losses is possible from impact of these risks – The risk of debtors (F9), The risk of insufficiency of current assets (F8), The risk of inflation (F4), The risk of unpaid credit (F1) and The risk of monetary (F3).

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