

Level of Enterprise Risk Management in SMEs – Case study Czech Republic

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Abstract: Paper is focusing on assessment of the current level of Enterprise risk management (ERM) in SMEs in Czech Republic and evaluates the determinants for implementing the ERM. The primary data was collected by questionnaire survey conducted in 2021, the sample size was 296. The paper employs Latent Class Analysis to segment classes, Tukey's test to identify significant differences across classes with respect to firm size, firm age, and percentage of foreign capital. The results show the relatively low level of ERM in SMEs. The level of ERM is influenced positively by the company's size, the percentage of foreign capital and negatively with firm age. The level of foreign capital in SMEs in the Czech Republic is affected by the post-communist regime. To the best of our knowledge, no similar study in the field of ERM in SMEs has been conducted in Czech Republic and surrounding countries.

Keywords: Enterprise Risk Management, Czech Republic SMEs, Latent Class Analysis, Foreign capital in SMEs

JEL Classification codes: G32, G15

INTRODUCTION

At present, the majority of enterprises are struggling with the situation associated with COVID-19. In contrast to the Great Financial Crisis (2007-2015), when the financial sector was primarily affected, this pandemic crisis has affected all sectors and all types of enterprises. Pandemic risk has long been considered an important area of risk management, although the COVID-19 pandemic showed that the general risk of a pandemic was underestimated. The role of enterprise risk management (hereinafter ERM) is to assess and identify risks that may determine the success of the enterprise in achieving its strategic objectives (Pagach & Wieczorek-Kosmala, 2020). The ERM approach raises risk awareness throughout the enterprise and sets the atmosphere for proactive risk management by identifying, analysing and responding to risks, as well as reporting centralized information to the risk management function (Sax & Torp, 2015). The adoption of an ERM approach can help enterprises prepare for incoming risks and remain competitive.

The relevance of the ERM approach increased during the Great Financial Crisis. Financial institutions became more regulated. For example, Basel regulatory requirements for the supervision of operational risks were implemented along with credit and market risks to determine the capital adequacy of financial institutions (Jabbour & Abdel-Kader, 2016). The implementation of risk management system is associated with many internal changes. Such strategic changes are financially and organizationally demanding, and it sometimes takes several years for an enterprise to comply with the respective standards. Small and medium-sized enterprises (hereinafter SMEs) typically have lowered the budget capacity to implement a comprehensive and formal approach to risk management. Simultaneously, SMEs may not reach

a level of ERM maturity where the benefits outweigh the costs invested (Falkner & Hiebl, 2015). That is one of the explanations why SMEs do not have established international risk management standards or other formal risk management approaches such as ERM or ISO. However, the recent situation increases the pressure to implement holistic risk management such as ERM in SMEs.

The question arises what the current level of implementation in SMEs and what determinants is affect adoption. The research was driven by the global demand for empirical evidence of SMEs. The aim of the research is to determine the current state of implementation of ERM in the Czech Republic in SMEs and to identify factors that affect the implementation.

1. LITERATURE REVIEW

The ERM approach was originally developed for financial institutions in response to the Great Financial Crisis. After that the ERM has spread to large and international non-financial institutions, to listed companies or companies with the highest ratings in a particular country.

Generally, it has been acknowledged that the popularity of ERM has resulted from a response to pressure on organizations to manage risk holistically (Lundqvist, 2014). ERM remains in the centre of attention due to the pandemic situation. The COVID-19 pandemic has drastically changed daily life throughout society (Chakraborty & Maity, 2020). SMEs, which are significantly affected by the pandemic situation, must respond to these disruptive environmental changes. Globally, SMEs are an indispensable and vital part of the national economies; in 2021, SMEs employed almost 84 million people in the EU and contribute considerably to value added (Statista, 2021). However, empirical research on ERM in SMEs is exceptional. Notwithstanding this, SMEs are particularly well-positioned to manage risk. They are in close distance to all aspects of each activity and are aware of the many strengths and weaknesses of their enterprise. At the same time, SMEs are very sensitive to changes in the business environment, which are always reflected in the quantitative characteristics after a certain period of time (Hudáková & Masár, 2018).

Therefore, it is crucial to analyse the level of ERM in SMEs as one of the key instruments that can support SMEs. Deficiencies in risk identification and insufficient implementation of risk management can cause problems for SMEs in terms of competitiveness and sustainability (Oláh et al., 2019). Currently, the ability to compete is increasing in its significance.

In the EU, there is a specific group of countries, the so-called post-communist countries (these include Poland, the former East Germany, the Czech Republic, the Slovak Republic, and Hungary). Since the early 1990s, post-communist European countries have achieved development goals in the areas of democratization, integration into the European Union (EU), the development of bilateral and multilateral relations, and the economic and political transformation of financial systems, especially banking (Bilenko, 2013). In the post-communist countries, the process of legal, moral and historical settlement with the previous regimes was underway and the remnants of the political regimes are still noticeable. The post-communist political era has left characteristics in companies that are apparent, such as the way foreign capital is managed and the proper allocation of both labor and capital. The incorrect way of capital allocation is difficult to correct and interferes with the typical export-oriented development strategy. Such a strategy involves attracting foreign capital, which leads to higher productivity and higher wages. The biggest benefits are achieved when goods are produced for export, where they can be sold at the highest prices. By contrast, the former communist countries already had capital-intensive economies, only capital was massively misallocated. This meant that a foreign investor often bought, for example, an existing factory, only to simply decommission it and sell it for scrap (and lay off most of the workers) (Tarko, 2020).

For this reason, multi-generational enterprises have also disappeared. Enterprises started to re-emerge after the change of political regime from 1990 onwards, but with a loss of continuity in the way they were managed.

A study conducted by SME in the V4 countries examined key entrepreneurship risks. The study highlighted the greatest threat of market risk associated with the positioning of goods and services in domestic and foreign markets. Financial, personnel and economic risks were identified as the second, third and fourth most serious risks. The results show the importance and relevance of evaluating the most important risks and their sources in SMEs (Hudáková & Masár, 2018). A survey carried out in Poland to identify the main enterprise risks focused on SMEs (n = 332) and the results show that most entrepreneurs identify and assess risks in their business spontaneously and do not manage risks in a formal way (Dankiewicz et al., 2020). Another study conducted in Slovakia found that ERM is not formally managed in SMEs. Due to the circumstances of the transforming post-socialist economy, managers had to implement risk into their management decisions. As research shows, risk management has been rather intuitive, without data support and without appropriate methods, know-how and trained employees to provide input for managerial decisions (Klučka & Grünbichler, 2020). The findings are supported by a study (Virglerova, 2019) where one of the main issues is the lack of financial risk management professionals. Shareholders are forced to take responsibility for risk management themselves. A study conducted in Poland, investigated the level of risk management in SMEs. The results of the study show a low level of risk management knowledge among entrepreneurs in SMEs regardless of the size of the business and the financial situation (Iwona, 2016). Managers responsible for risk management are primarily based on their knowledge of past data (Hudáková et al., 2017). Based on the literature, the determinants of ERM implementation in SMEs were identified - firm size, firm age and percentage of foreign capital.

2. METHODOLOGY

A quantitative questionnaire survey was conducted in 2021 to assess the level of ERM implementation in SMEs in the Czech Republic. The research was conducted using a questionnaire survey (n=300). Respondents were primarily directors, business owners and top - management. The total number of respondents was n=296 (4 respondents removed based on low response variability). The questionnaire survey consisted of 3 parts - identification part (legal form of the firm, role or job classification of the respondent, classification in CZ NACE), control variables (% of foreign capital, firm size by number of employees and firm age) and the level of ERM. The level of ERM was measured based on a standardized questionnaire survey by Sprčić et al. (2017), where respondents answered 14 statements with a binary variable (1-statement is valid for the firm, 0-statement is not valid for the firm).

To assess the current state, the Latent Class Analysis (hereinafter LCA) method was employed. LCA is a statistical procedure used to identify qualitatively different subgroups within populations that share certain external characteristics. The basic assumption of LCA is that membership in unobserved groups (or classes) can be explained by patterns of scores in survey questions, rating indicators, or scales (Weller et al., 2020). The significance of the determinants of ERM was performed based on ANOVA and contingency table. Maintaining all statistical assumptions, Tukey's test was used to analyze the significance of differences between classes. Between-class significance for the control variable of firm size was analysed using Chi-squared tests.

3. RESULTS AND DISCUSSION

All analyses were performed in Jamovi software. Table 1 shows the LCA analysis and the resulting optimum number of 3 classes.

Tab. 1 Latent class analysis - results

	1 class	2 classes	3 classes	4 classes	5 classes	6 classes
Number of Cases	296	296	296	296	296	296
Number of Complete Cases	296	296	296	296	296	296
Number of Parameters Estimated	14	29	44	59	74	89
Residual D. F	282	267	252	237	222	207
Maximum Log-Likelihood	-2670.954	-2131.698	-2001.254	-1983.850	-1968.073	-1954.111
AIC	5369.908	4321.395	4090.508	4085.701	4084.146	4086.222
BIC	5421.573	4428.416	4252.884	4303.432	4357.233	4414.664
LR/Deviance	2568.513	1490.001	1229.113	1194.306	1162.751	1134.827
Chi-squared	230797.043	23656.852	18989.869	20714.037	19885.319	14450.882
Number of repetitions	80	80	80	80	80	80

Source: Author

Based on the Estimated Class Conditional Probabilities, the individual classes were assessed as follows.

Class 1 (31.8% of firms). These firms do not have a dedicated risk manager or a dedicated risk management department or division. Firms do not have written limits for the maximum loss they would be willing to accept. The firms also do not have formally defined policies/guidelines or procedures for risk management. It is obvious, accordingly, that this group of firms have not implemented formal risk management frameworks such as COSO or ISO 31 000. Risks in the firm are not managed in an integrated manner and across all categories and levels of enterprise risk. The impact of the interdependence of individual risks on the overall portfolio is not identified or quantitatively assessed in relation to key performance indicators. Firms do not conduct any workshops on the firm's risk exposure or risk management strategy. Firms do not have risk management maps or contingency plans for responding to significant risks.

Class 2 (29.4% of firms). These firms have a dedicated risk manager, or a separate department/division dedicated to risk management. Firms have a written risk appetite and formal risk management policies/policies/guidelines and procedures. Most firms in this class have implemented a formal risk management framework in the form of a COSO framework or ISO 31,000 certification. Risks are managed in an integrated manner and across all categories and levels of corporate risk. Firms identify the impact of interdependencies of individual risks on the overall risk portfolio, have risk maps and response plans in place for all significant risks, quantitatively assess the impact of risks on key performance indicators of the firm, and hold risk management strategy workshops. Firms track key risk indicators and information focused on emerging risks. A formal report on risks and risk management is presented to owners or the board of directors at least annually.

Class 3 (38.8% of firms). Firms in Class 3 do not have a dedicated risk manager or a dedicated risk management department. They do not have a formalized risk management framework (COSO, ISO 31 000) implemented or a written risk appetite. However, these firms typically have formal policies/policies/guidelines and procedures in place to manage risk in an integrated manner across all categories and levels of enterprise risk. Firms do not calculate the impact of risk on key performance indicators of the enterprise and typically do not identify the impact of interdependencies of individual risks on the overall asset portfolio or create risk maps. These firms do not conduct risk management strategy workshops, and most firms do not have a plan to respond to significant risks. However, formal risk and risk management reports are presented to owners or the board of directors on a regular basis, at least once a year, monitoring key information focused on emerging risks.

The descriptions of the qualitative characteristics of the classes highlight the different levels of ERM implementation in the Czech Republic. Risk management in firms in Class 1 is not formally conducted and neither owner or the board of directors require a report on risks and their governance. The level of ERM in Class 1 is therefore at a very low level. Overall, firms in Class 2 can be described as the opposite of firms in Class 1, as the level of ERM in Class 2 is at a high level. Thus, firms in Class 3 have the beginnings of a formal risk management system in the form of policies and procedures but manage risks mainly qualitatively with an emphasis on emerging risks. This concept is close to informal qualitative scenario planning.

Additionally, the author analyzed the determinants, which are affecting the implementation of ERM. Ensuring all the assumptions for the calculation of the Tukey HSD test (homogeneity of variances test, equality of means, ANOVA), the significance (of the differences between classes with respect to the firm's age and % of foreign capital (Table 2) and firm size (Table 3) was computed. Confidence interval with a significance level of 0.05.

Tab. 2 Tukey HSD test – firm age and percentage of foreign capital

		firm age			percentage of foreign capital		
		Mean Difference (I-J)	Std. Error	Sig.	Mean Difference (I-J)	Std. Error	Sig.
Class 1	Class 3	1.770	1.586	0.505	-7.728	3.823	0.109
	Class 2	4.847*	1.691	0.012	-29.042*	4.060	0.000
Class 3	Class 1	-1.770	1.586	0.505	7.728	3.823	0.109
	Class 2	3.077	1.631	0.144	-21.313*	3.995	0.000
Class 2	Class 1	-4.847*	1.691	0.012	29.042*	4.060	0.000
	Class 3	-3.077	1.631	0.144	21.313*	3.995	0.000

* The mean difference is significant at the 0.05 level.

Source: Author

The statistically significant differences of the firm's age between the classes were found. Significant differences exist between the class with a low level of ERM (class 1) and the class with a high level of ERM (class 2), where the average age of low level ERM enterprises (20.4 years) is higher than the average age of high level ERM firms (15.6 years). Statistically significant differences in the share of foreign capital between the classes of firms by ERM level were found. Significant differences exist between the low/medium and high level ERM classes, with the average share of foreign capital for high level ERM firms being higher (35.1 %) than for low (6%) and medium level ERM firms (13.8%).

Tab. 3 Contingency table – firm size

		Class 1	Class 3	Class 2	Total	
Number of employees	4–49	Count	64	69	26	159
		% within Number of employees	40.3%	43.4%	16.4%	100.0%
		% of Total	21.6%	23.3%	8.8%	53.7%
		Adjusted Residual	2.8	2.3	-5.3	X
	50–99	Count	22	24	31	77
		% within % within Number of employees	28.6%	31.2%	40.3%	100.0%
		% of Total	7.4%	8.1%	10.5%	26.0%
		Adjusted Residual	-1.0	-1.3	2.4	X
	100–249	Count	12	18	30	60
		% within % within Number of employees	20.0%	30.0%	50.0%	100.0%
		% of Total	4.1%	6.1%	10.1%	20.3%
		Adjusted Residual	-2.4	-1.3	3.9	X

Source: Author

The proportion of firms with a high level of ERM (16.4%) was found to be significantly lower in the group of small enterprises. In contrast, the group of larger medium-sized enterprises has a significantly higher proportion of enterprises with a higher level of ERM (50%). Thus, there is an association between the firm size according to the number of employees interval and the level of ERM.

Results identified that SMEs in the Czech Republic do not use the ERM approach to a large extent, i.e. 70.6% of the participating SMEs. The remaining SMEs (29.4%) already have a dedicated risk management role in place, with the majority of the group having a formal COSO or ISO 31 000 framework in place. Class 3 has already established the beginnings for the development of an ERM approach, at the moment it is more of an informal and qualitative risk management approach.

The results also show that there are statistically significant differences by firm age and between classes of firms by ERM level. While on average older firms have a lower level of ERM

implementation. This may be due to the consistency of managers or directors during the transition from the communist regime, as supported by Klučka and Grünbichler (2020). Similarly, the level of ERM implementation is influenced by the percentage of foreign capital in the firm, with results showing that a higher percentage of foreign capital is present in firms with a higher level of ERM implementation (Class 2). The largest representation of firms is in the classes with relatively low levels of ERM and at the same time with a relatively low percentage of foreign capital. The results of the research support Tarko (2020), who states that the post-communist political era left characteristics in firms that are still evident today, such as mismanagement of foreign capital, misallocation of labour and capital, and fear of foreign capital exploitation. Foreign direct investments has a positive impact on the adoption of modern production methods (Žd'árek, 2009), firms' innovation activity (Ramadani et al., 2017) and firms' productivity (Hampl et al., 2020). The inflow of foreign capital into firms implies not only the strengthening of capital, but also control by foreign investors and the adoption of new managerial practices. Risk management in the Czech Republic is limited to companies that are required by their parent company abroad to follow formalised procedures, a similar result to neighbouring Slovakia (Klučka & Grünbichler, 2020). Foreign direct investment is risky and investors are interested in controlling the risks associated with the investment. In practice, this reinforces the control and influence of the foreign investor over the enterprise (Yin et al., 2019). Consequently, the introduction of ERM will improve the quality of investment decisions - the higher the maturity of ERM, the better the company's ability to identify, manage and mitigate potential risks arising from investment decisions (Faisal et al., 2021).

The firm's size as measured by the number of employees also has an impact on the implementation of ERM. The results show that the group of larger and medium-sized enterprises has a significantly higher proportion of enterprises with a higher level of ERM (50%). This may be due to the fact that if a company grows in number of employees, it is necessary to manage risks in a more sophisticated and formal way. The intuitive level of risk management that is common in micro-enterprises becomes insufficient. This finding supports the economies of scale argument that larger companies have a more developed risk management process due to their greater exposure to risk and high implementation costs. Accordingly, most studies show that larger companies are more likely to implement ERM activities (Sprčić et al., 2017).

CONCLUSION

The results show a relatively low level of ERM implementation in SMEs, which opens up opportunities for further qualitative research to identify the causes and barriers to ERM implementation. The results show a positive effect of foreign capital and firm size on ERM implementation and a negative effect of firm age. On the one hand, the implementation of ERM strengthens control over the invested capital and, on the other hand, helps to improve the company's investment decision-making in the future. There is therefore no need to worry about foreign capital. In addition to the acquisition of an equity share, foreign direct investment is usually associated with the transfer of know-how, the exploitation of cost effects in the target country for the investor and also with investments in the modernisation of existing assets of the acquired companies or in new investments. Arguments of Czech owners referring to tradition and "family silver" are not always beneficial for the company from a long-term strategic point of view and often express rather a hidden fear for their own career and fear of losing control over the company.

A limitation of the research may be the questionnaire survey, which is a subjective assessment and therefore may be biased by respondents who may overestimate responses.

The research findings can be pilot research for other V4 countries that have similar historical context. The research results also have wider implications beyond the V4 countries, generally for SMEs with regard to ERM implementation. The research shows important determinants of ERM for SMEs. The opportunity for further research is a comparison with "southern wing" of the EU, such as Portugal, Italy, Greece and Cyprus. Another opportunity for the future is a detailed examination of the impact of foreign capital in SMEs and the implications for other firm functions. The research provides quantitative findings, the recommendation for further research is to identify through qualitative research the barriers to ERM implementation in SMEs.

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