

# **Marketing tools in managing economic risks in SMEs in Czech Republic**

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### Zásady pro vypracování

#### Introduction

Define the objectives and the application methods used in the Master thesis

#### I. Theoretical part

- Prepare literature review of marketing tools, and economic as well as non-economic risks and the relation between them.

#### II. Practical part

- Analyze marketing tools in SMEs in CZ
- Analyze the perception of selected economic risks in the business environment in the Czech Republic according to the entrepreneurs' small and medium-sized businesses.
- Submit supportive marketing tools to increase the quality of the business environment in the sector of small and medium-sized enterprises in the Czech Republic.

#### Conclusion

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- HILLSON David. Kogan Page; 1<sup>st</sup> edition (2016). *A Practical guide to managing multiple dimensions of risk, book of The Risk Management Handbook*, 336p. ISBN9780749478827
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## **ABSTRAKT**

Na jakémkoli trhu můžeme najít některé fluktuující prvky, které poškozují společnosti a podniky, a to jsou obchodní podmínky. Tyto podmínky mohou být ve prospěch některých subjektů před ostatními, které by mohly být katastroficky ovlivněny. Tyto podmínky jsou takzvaným ekonomickým rizikem.

Rizikový prvek se obvykle používá spolu s investováním peněz nebo obchodováním. Tento typ rizika je považován za nejobtížnější riziko předvídat a řídit. U velkých společností (250 a více zaměstnanců) nemusí být tyto druhy rizik jejich hlavním zájmem, protože jsou dostatečně silné a flexibilní, aby je snadno překonaly. Na druhou stranu pro malé a střední podniky může být těžší se s těmito riziky vypořádat, k nedostatku zdrojů a špatné finanční síle. Všechny podniky si jsou však těchto nežádoucích rizik vědomy a snaží se jejich účinek řídit, překonávat a minimalizovat.

Cílem mé diplomové práce je zabývat se aspekty řízení ekonomických rizik, zejména v malých a středních podnicích v České republice, které jsou ve srovnání s velkými podniky považovány za zranitelnější vůči rizikům.

Teoretická část obsahuje přehled literatury z pohledu autorů a vědců definujících základní pojmy ekonomického rizika. Analytická část se skládá z aktuálních informací o českém podnikatelském prostředí, následovaných výsledky průzkumu provedeného mezi různými českými subjekty. Závěry získané z analytické části práce pak poslouží jako základ pro vytvoření strategií a nástrojů k vytvoření silného systému proti ekonomickému riziku.

**Klíčová slova:** Řízení rizik, aspekty řízení rizik, malé a střední podniky, strategie řízení rizik, ekonomická rizika.

## **ABSTRACT**

In any market, we can find some fluctuating elements that harm companies and enterprises and those are the business conditions. Those conditions might be in favor of some entities over others That might be affected catastrophically. Those conditions are what so-called economic risk. The element of risk is usually used along with investing money or doing business. This type of risk is considered as the most difficult risk to forecast and to manage. For large companies (250 or more employee) those kinds of risks may not be their main concern as they are strong and flexible enough to overcome them easily, In the other hand, For SME's might it be harder to deal with those risks, mainly due to the lack of resources and poor financial power. However, all enterprises are aware of those unwanted risks and trying to manage, overcome and minimize their effect. The objective of my diploma thesis is to dig into economic risk management aspects, especially in in the small and medium-sized enterprises Czech Republic as they are considered more vulnerable to risks compared to large enterprises. The theoretical part includes literature overview from the perspective of authors and scholars defining the basic concepts of economic risk. The analytical part consists of the current information about Czech business environment, followed by the results of the survey conducted among Czech's different entities. The conclusions obtained from the analytical part of the work then will serve as a basis of creating strategies and tools to establish strong system against the economic risk.

**Key words:** Risk management, risk management aspects, small and medium-sized enterprises (SMEs), risk management strategies, Economic risk.

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I hereby declare that the print version of my Bachelor's/Master's thesis and the electronic version of my thesis deposited in the IS/STAG system are identical.

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## INTRODUCTION

Risk is an essential component of living. In fact, all the creatures of this planet must continuously examine, evaluate and assess the environment in which they live, Adaptation with any environment needs information processing and analyzing than adapting to changing conditions.

Thus, life advances and progress. For example, when people moved from small towns to bigger cities during the industrial revolution, they had to adapt to a new risk environment. However, the ensuing sophistication of exchange cause the appearance of new opportunities and people were able to improve their standard of living. The majority of people are considered as risk-averse, by nature they mainly tend to be pessimists and look at the negative part of risk. Subsequently, forget about the positive side and opportunities represented by a well-considered risk management program.

In business, it is not wrong if the organization incurs some of losses, as long as the company is properly anticipated, managed, and generated profit from its activities is compensating for the losses, generally known, companies operate in progressively dynamic, complex, and unpredictable standards (McMullen and Shepherd, 2006). Thus, it is primordial to explore and manage related risks (Alchian, 1950).

Organizations are exposed to wide range of risks from their internal and external environments. For the long-term survival, managers should establish strategies to manage risks. Risk management strategies are improved by the culture of the organization, and this can be maintained by implanting a culture of good values, believes, norms and attitudes. Risk management has important impact on competitiveness and business; it allows the development of a strategy to reduce potential losses while considering potential opportunities (Radner and Shepp, 1996).

The global markets today witness changes that create enormous risk to organizations, and this require them to have mechanisms to solve their problems in a professional manner. Thus, risk management is a primordial aspect of any organization. However, proper strategies need to be created and established to ensure the survival of organizations in the unstable market environments (Jafari, Rezaeenour, Mazdeh, & Hooshmandi, 2011). Therefore, risk management involves setting goals and objectives and ensuring that they are achieved in the most effective manner, managing change that is brought by the

introduction of new strategies, managing cultural and technological diversity among other tasks. Risk management covers various activities and aims at establishing better strategies of promoting the success of an organization.

Within large organizations, it is much easier to manage risk through expert board of directors (Watt, 2007). In the other hand, for small and medium-sized enterprises, the lack of dependable mechanisms and the limited resources to improve risk management activity is a crucial challenge for them.

The task of managing risk in SME's is more often done by the owner of the company and could have some help from small management team which makes it very difficult to deal with economic risk. Furthermore, our focus on this thesis will be on small and medium-sized enterprises (SMEs), as we know its vital role in the economic development of all nations worldwide. It is also considered as the engine of economic growth.

The master thesis aims to concentrate on economic risk management in small and medium-sized enterprises in the Czech Republic. According to the topic, the theoretical part will cover the main aspects of risks and risk management in SMEs, and its importance in today's business environment, also the thesis will evaluate and assess the most significant problems that occur in SMEs in dealing with such risks.

Moreover, the research will include the literature overview on how risk management is handled in SMEs in the Czech Republic.

The analytical part consists of the current information about Czech business environment, followed by the results of the survey conducted among Czech's different SMEs. The questionnaire will cover questions related to risk management and risk assessment for SMEs that will be answered and based on it there will be a conclusion gathered from the empirical part of the thesis that will technically serve to elaborate and come up with solutions and recommendations to fix the problems or minimize their effect faced by SMEs in the Czech Republic.

## OBJECTIVES AND METHODOLOGY

Risk management has been always the core attention of all the time economists. However, there is a lack of attention to the risk management in SME's, this category of enterprises is treated same as large enterprises, regardless the financial and structural differences which create confusion in understanding and dealing with risk management concepts.

In order to dig into Risk management in SME's the key research questions to be answered are:

RQ1: What are the key factors that have influenced risk management practices in the main Industries of Czech Republic SME's?

RQ2: What are the methods and techniques used in the various steps of the risk management process?

RQ3: How is risk management incorporated into the company's organisational structure?

Thus, the main objectives of the diploma thesis are:

- To perform Literature review defining the basic aspects of risk management, and small and medium-sized enterprises (SME's)
- To define methods and techniques used in the various steps of the risk management process
- To compare the current supportive tools for SMEs in Czech Republic and the ones abroad
- To identify the level of implementation of risk management tools in small and medium-sized enterprises.
- To conduct the survey among SMEs in the Czech Republic.
- To create recommendations for helping small and medium-sized enterprises after corona crisis.

Considering the discussed objectives above, we conclude that by the end of this master thesis there will be a created project and plan to support and orientate SMEs in Czech Republic on how to manage risks and overcome it.

The theoretical part of the thesis will aim to get more in depth in understanding the insights and areas of risk, its types and ways to manage it. Also, it will focus on marketing aspects in term of facing risk within SMEs in Czech Republic, thus, analysis of scientific literature

will be performed. In the practical part, the qualitative research technique will be used for this study, with its carefully selected data gathering methods. As a result of the survey's nature, primary data will be collected. The purpose of the questionnaire among SMEs in the Czech Republic is to examine the present situation from the perspective of SMEs in the Czech Republic, as well as to disclose their attitudes toward financial and market risk, risk perception, and knowledge and interest in risk management programs. The survey will be conducted online using Google forms and sent to companies (SMEs) in the Czech Republic via email. Moreover, the differences and similarities between current supportive tools for managing Legal and operational risk among small and medium sized enterprises in the Czech Republic will be defined using best practices analysis and SWOT analysis.

At the end, this will allow the research process to be approached systematically in order to draw the right Recommendations and conclusion.

The project part will be developed to introduce a helpful tool for developing and expanding SMEs' resistance against different possible risks that harm them.

## **I. THEORY**

# 1. RISK MANAGEMENT

## 1.1 Definition of risk

Risk is a many-sided concept (Janney and Dess, 2006) clouded by various meanings, among which there is limited agreement. This may be due to different measures seeking to deal with different phenomena that all carry the same name: risk. Usually, Risk is associated with expected unfavorable effects; Also, the concept embraces expected positive effects and can be considered as possible gain.

In classical decision theory, risk is the probabilistic uncertainty of outcomes stemming from a choice and regarded as reflecting variation in the distribution of potential outcomes, their probabilities, and subjective values (Dickson and Giglierano, 1986; March and Shapira, 1987). Risk is defined as the probability of damaging and harmful consequences, or expected losses (deaths, injuries, decrease in value of resources, expenses with no benefits, disruption of economic activity or environment damaged) resulting from interactions between natural or man-made disasters and vulnerable conditions (UN-ISDR, 2009, EC, 2011).

Risk management is defined as "the effect of uncertainty on objectives," according to ISO Guide 73:2009, which defines generic terms related to risk management and encourages a mutual and consistent understanding of the description of risk management activities as "the effect of uncertainty on objectives."

The following terms are related with risk, according to the guide:

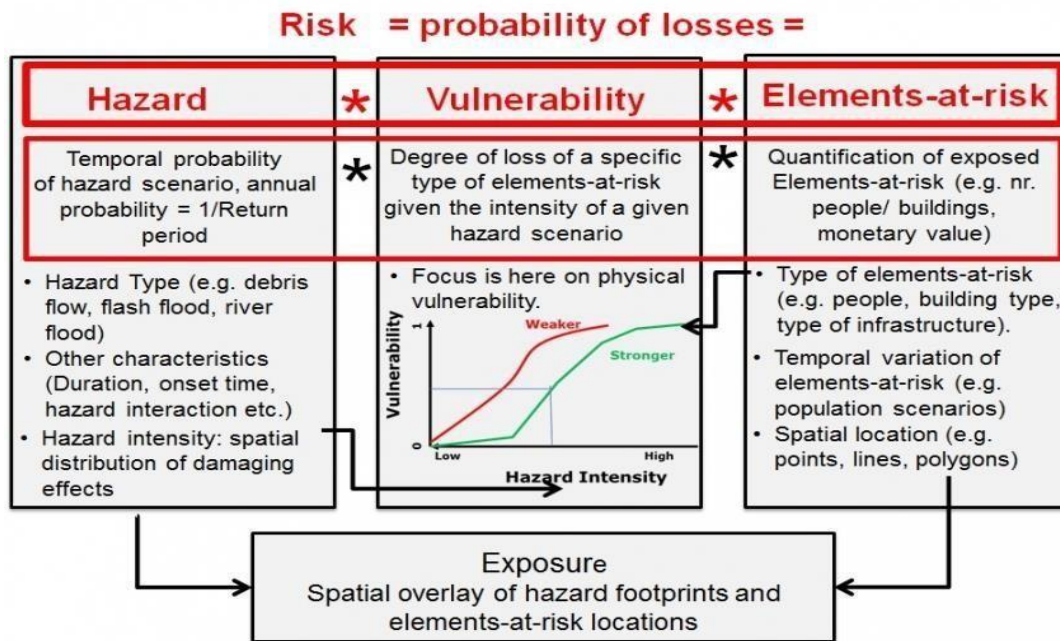
- Objectives will have completely different aspects (such as monetary, health and safety, and environmental goals) and might apply at completely different levels (such as strategic, organization- wide, project, product, and process).
- Risk is usually characterized by relevancy potential events and consequences, or a mix of those.
- Risk is usually expressed in terms of a mix of the implications of an {occurrence} (including changes in circumstances) and also the associated probability of occurrence.
- Uncertainty is a state of lack of information, understanding, or knowledge about an event, its consequences, or likelihood, even if it is only partial.



In this concept, uncertainty arises from ignorance and lack of information or understanding associated with an event and its consequences. So, the term "uncertainty" refers to the unpredictability of external or internal variables that impact corporate performance (R. E. Miles and C. C. Snow) (Pfeffer and G. R. Salancik) or the lack of information about these variables (R. B. Duncan) (J. R. Galbraith).

Below, Schematic representation of risk as the multiplication of hazard, vulnerability, and quantification of the exposed elements-at-risk. Hazards, vulnerability, and elements-at-risk, as well as their interactions, are all mentioned. Using physical vulnerability data, this framework focuses on the analysis of physical losses.

Figure 1. risk as a multiplication



Source: UN-ISDR, 2009, EC, 2011

## 1.2 Risk types

According to Risk realization impacts on a business and its environment it can be divided into different types, in the following we will summarize and combines some of various authors' work:

- *Strategic risks*: are those that affect business strategy implementation, they arise from the fundamental decisions that directors take concerning an organization's objectives. Moreover, strategic risks are the risks of failing to achieve these business objectives. (simons 1999)
- *Supply risks*: The possibility that a company will lose money due to a lack of raw materials to manufacture its products. In other words, it obstructs the inflow of any type of resource needed to carry out operations; it's also known as "input risk" (Meulbrook, 2000)
- *Operational risk*: "the risk of a change in value due to actual losses suffered as a consequence of insufficient or failing internal processes, people, and systems, or as a consequence of external events (including legal risk) that differ from predicted losses." Has an effect on a company's capacity to develop and provide goods and services internally. Has an effect on a company's capacity to create produce goods internally.
- *Customer risk*: Smallman categorized it. Human technological and organizational risks are referred to as "direct risks." Customer risk is grouped with factors like product obsolescence in the 'product/market risk' category and affects the likelihood of customers placing orders (smallman 1996)
- *Asset impairment risk*: Reduces utilization of an asset and can arise when the ability of the asset to generate income is reduced(simons1999)
- *Competition risk*: the risk posed by the fact that there are frequently competing companies on the market, each vying for the best position and consumer ratings in order to gain the most benefits for themselves.
- *Reputation risk*: refers to the possibility that negative publicity, public perception, or uncontrollable events will have a negative impact on a company's reputation, affecting revenue. Due to a loss of confidence, the entire business loses value. The issue with Nestle's baby milk and Shell's Brent Spar oil platform disposal are two examples. (Shwartz and Gibb, 1999)
- *Financial risk*: is the risk of losing money on a business or investment venture. Credit risk, liquidity risk, and operational risk are some of the more common and distinct financial risks. Changes in financial markets can expose a company

to potential loss; it can also happen when specific debtors default. (Meulbrook 2000)

- *Regulatory risk*: Changes in regulations affecting the firm's business, such as environmental regulations, expose the firm. Smallman classifies these risks as "indirect risks."
- *Legal risk*: Exposes the firm to litigation with action arising from customers, suppliers, shareholders, or employees (Bown et al. (1998), smallman(1996) Meulbrook (2000)
- *Fiscal risk*: This arises as a result of changes in taxation (Meulbrook 2000)

Clearly all kinds of risk need to be assessed and treated. However, the priority for managing with special form of risks could vary respect to size and sector of companies.

### 1.3 Risk management

All measures and activities taken to manage risk are referred to as risk management. On the one hand, RM deals with balancing the conflicts that arise from exploring opportunities and, on the other hand, avoiding losses, accidents, and disasters. (Men and Vinnem 2007). Risk management is concerned with all activities, conditions, and events that may have an impact on the organization's ability to achieve its goals and vision. For example, determining which activities, conditions, and events are important will be determined by the company's goals and vision.

Risk management is divided into three categories in many businesses: strategic risk, financial risk, and operational risk.

Mergers and acquisitions, technology, competition, political conditions, laws and regulations, the labor market, and other factors can all have an impact on strategic risk.

Financial risk is a form of risk in which the market has an effect on the business's outcomes (associated with changes in the value of an investment due to movements in market factors: the stock prices. interest rates, foreign exchange rates and commodity prices), Credit problems (associated with a debtor's inability to fulfill agreed-upon obligations) and liquidity issues (reflecting a lack of cash); the challenge of selling an asset in a timely manner, that is, quickly enough to avoid a loss (or make the required profit).

Operational risk is a type of risk in which the effects for the company are caused by problems with safety or protection (accidental events, intentional acts, etc.). Top management must be active in risk management implementation for an organization to be competitive, and practices must be implemented on several levels. The following are some critical considerations for success: (T.Aven 2002)

- Establishment of a risk management policy, that is, the concepts under which the company identifies and manages risk.
- Establishing a risk management process for the company, that is, formal processes and routines that the company must adhere to.
- Establishment of management systems, including functions and duties, to incorporate the risk identification process into the organization.
- For the occurrence of different types of incidents, risk identification software and recording systems are available.
- Communication, preparation, and the creation of a risk management culture to improve organizational maturity, awareness, and inspiration.

All economic entities face the risk of unexpected, harmful, and damaging events that can cause losses to the company or even conclude to shut it down. Risk management is the key factor to minimize losses that comes from risks and the element that can prepare the organizations for unexpected unfavorable situations.

The secret behind to good risk management is not just to understand whether a specific event may occur or not but also, to understand the extent and roots of damage to the critical processes of the organization.

#### **1.4 Risk assessment**

Risk assessment is a method of calculating the likelihood of damages by analyzing possible threats and assessing actual vulnerabilities that could endanger land, individuals, livelihoods, and the environment on which they depend. (UN-ISDR, 2009).

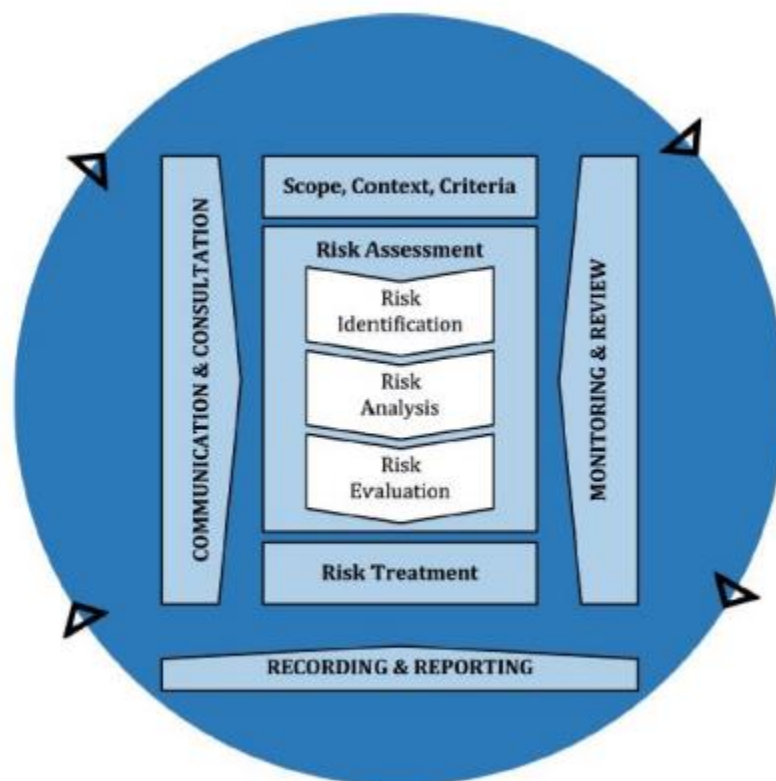
The overall process of risk assessment, risk interpretation, and risk management, according to ISO 31000 (2009), which is a Guidelines, offers standards, a structure, and a process for assessing risk assessment.

Risk assessment can be performed in a comprehensive, iterative, and inclusive manner, including stakeholders' expertise and perspectives. It should depend on the most up-to-date knowledge available, augmented if required by additional research.

### 1.5 Risk management process

The risk management method entails applying rules, protocols, and strategies to tasks such as networking and advising, defining the context, and evaluating, handling, measuring, updating, documenting, and disclosing risk. This process is illustrated in Figure and explained in the following:

Figure 2. Risk management process



Source: ISO31000

*Risk identification*: the procedure for identifying, recognizing, and describing the risk that may jeopardize the achievement of goals. The goal of risk identification is to identify,

recognize, and define threats that could aid or hinder an organization's ability to achieve its goals. When it comes to assessing threats, having relevant, accurate, and up-to-date information is critical.

*Risk analysis*: the process for determining the type, origins, and causes of known threats, as well as estimating the extent of risk. It's also used to look at the effects and implications, as well as the new controls. The aim of risk analysis is to understand the essence of risk and its features, including the level of risk when necessary. Uncertainties, risk sources, effects, probability, incidents, situations, controls, and their efficacy are all considered in depth during risk analysis. An event may have a variety of causes and effects, as well as effect a variety of goals.

*Risk evaluation*: the process of comparing risk analysis outcomes to risk thresholds in order to assess whether a certain level of risk is reasonable or tolerable. The aim of risk assessment is to aid in decision-making. Comparing the findings of the risk analysis against the defined risk guidelines to decide where further intervention is needed is known as risk assessment.

*Risk treatment*: To gain a net increase in profit, change the severity and probability of both positive and negative outcomes.

*Establishing the context*: The complexity of the risk management process, the organization's priorities, and the risk assessment parameters are all described in this activity, which was not included in previous risk management process definitions. The context contains each external components (regulatory surroundings, market conditions, neutral expectations) and internal components (the organization's governance, culture, standards and rules, capabilities, existing contracts, employee expectations, info systems, etc.).

*Monitoring and review*: this activity entails evaluating risk management performance against indicators that are reviewed for appropriateness on a regular basis. It includes understanding deviations from the risk management plan, determining whether the risk management framework, policy, and plan are still appropriate in light of the organization's external and internal context, reporting on risk, progress with the risk management plan,

and how well the risk management policy is being followed, and assessing the risk management framework's effectiveness.

*Communication and consultation:* This task aids in understanding stakeholders' concerns and interests, as well as ensuring that the risk management process is focusing on the right elements and explaining the rationale for decisions and risk treatment options.

Risk management practices and strategies play a significant role in success and growth. It is important because it tells businesses about the threats that harms their enterprises and allow them to predict and if possible, to avoid those risks.

## **2. SMALL AND MEDIUM-SIZED ENTERPRISES**

### **2.1 Definition of SMEs**

Any company engaged in economic activity, regardless of its legal form, is called an enterprise. This involves, for example, self-employed people and family enterprises that participate in craft or other hobbies, as well as alliances or organizations that engage in economic activity on a regular basis. (EU commission)

Small and medium-sized enterprises (SMEs) are the backbone of the European economy, driving job development, economic growth, and social stability. According to the European Commission, over 21 million SMEs in the EU created 88.8 million jobs in 2013. SME's account for nine out of ten businesses, and they account for two out of every three employees.

SMEs are also important for fostering competition and jobs in the EU because they encourage entrepreneurial spirit and innovation.

Small businesses are described as those with less than 250 employees, a turnover of less than EUR 50 million, and/or a balance sheet total of less than EUR 43 million. They are divided into three types of businesses: micro, small, and medium-sized businesses.

The following are the key factors that determine whether a company is a small or medium-sized business:

- *Staff headcount:* The headcount corresponds to the quantity of annual work units (AWU), i.e., the quantity of persons World Health Organization worked full-time among the enterprise in question or on its behalf throughout the whole reference year into account. The work of persons World Health Organization have not worked

the total year, the work of these World Health Organization has worked part-time, in spite of period, and therefore the work of seasonal staff square measure counted as fractions of AWU (EU recommendation 2003/361).

- *Turnover or balance sheet total*

The table below simplifies the process of classing enterprises by size:

Table 1. Small and medium enterprise classification

<b>Company category</b>	<b>Staff headcount</b>	<b>Turnover</b>	<b>or</b>	<b>Balance sheet total</b>
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Source: EU subclass

The SME Concept defines three types of businesses. Each category represents a different form of partnership that a company might have with another. This distinction is important in order to get a better picture of a company's financial status and to rule out those who are not true SMEs. The categories are:

Autonomous: whether the company is entirely self-contained or has one or more minority partnerships (each with a stake of less than 25%) with other companies.

Partner: If a company's holdings with other companies total at least 25% but not more than 50%, the partnership is considered to be between partner companies.

Linked enterprise: If a company's shares in other companies surpass 50%, they are referred to as related companies.

Small and medium-sized businesses (SMEs) play a critical role in domestic economic development. In comparison to large corporations, SMEs have greater adaptability and flexibility.



## 2.2 Entrepreneurship

An entrepreneur could be a one who starts a replacement company while taking all of the risks and reaping all of the advantages. The entrepreneur is taken into account as interesting innovator, inspirational person, source of latest ideas, goods, services, and business/or procedures. The term "entrepreneur" comes from the French word "entreprendre," which implies "to tackle." It means to start out an organization within the sense of business. An entrepreneur is defined as the one who manages, organizes, and handle the risks of a business or enterprise (Merriam-Webster).

“An entrepreneur is someone who is constantly on the lookout for change, reacts to it, and views it as a chance,” states Peter F. Drucker. Entrepreneurs use innovation as a way to leverage change as a chance to start out a brand-new company or provide a brand-new service. According to Richard Cantillon, an entrepreneur as “a person who buys elements of output at certain prices in order to mix them into a commodity with the goal of selling it at unknown values in the future.”

The entrepreneur is defined as an individual who desires to determine and run and achieve creating his own business. Subsequently, generating profits regardless all the obstacles and challenges. Moreover, admires to require risks. With such diversity, entrepreneurship term has many definitions as there are lots of writers on the topic. the subsequent table provides a brief selection of definitions that are offered:

Table2. Entrepreneurship definitions

Source	Definition
Knight (1921)	Profits by taking on risk and ambiguity
Schumpeter (1934)	Execution of different combinations of firm organization—new goods, new facilities, alternative raw material sources, new manufacturing methods, emerging markets, and modern organizational modes

Hoselitz (1952)	Uncertainty bearing...coordination of economic resources...innovation implementation and capital provision
Cole (1959)	Purposeful operation aimed at starting and growing a profitable enterprise.
McClelland (1961)	Taking a moderate amount of risk
Casson (1982)	Decisions and assessments on the use of limited capital
Gartner (1985)	Forming new organizations
Stevenson, Roberts, & Grousbeck (1989); Barringer & Ireland (2006)	The search of opportunity regardless of present ownership of capital
Shane & Venkataraman (2000)	A branch of studies seeks to understand how opportunities create something new
Allen (2006)	A attitude or way of thought that is growth-oriented, creative, and based on opportunities. Big companies and socially conscious non-profits are examples.
Kuratko & Hodgetts (2004)	Outlined as A dynamic method of vision, amendment, and creation

Source: Own Collection

The following elements and characteristics can be found in these definitions:

- Innovation and creativity
- Identifying, acquiring, and marshalling resources
- Organization of the economy
- Benefit (or increase) potential in the face of risk and uncertainty

Finally, entrepreneurship is the management and deployment of capital to establish a creative economic organization (or network of organizations) for the purpose of profit or development under risky and unpredictable conditions.

### **2.3 SMEs in Czech Republic**

SMEs make a major contribution to the Czech 'non-financial market economy,' as they do across the EU. SMEs in the Czech Republic produce 54.7 percent of total value added,

slightly less than the EU average of 56.8%, and 67.2 percent of total jobs, slightly more than the EU average of 66.4 percent.

Czech SMEs have a productivity of around EUR 22 800 per person working, which is slightly more than half of the EU average of EUR 43 900.

In the period 2013-2017, SME value added increased by 22.1 percent, roughly in line with large firms.

Over the same time span, however, the growth in SME jobs was just 1.8 percent. SME value added increased by 7.7% and SME jobs increased by 1.1 percent in 2016-2017. SME value added is forecast to rise by 15.7 percent between 2017 and 2019. At the same time, SME employment is expected to remain flat, with just a 0.4 percent increase expected. (2018 SBA fact sheet)

The following are DIW Econ's 2017 estimates, based on data from the Structural Business Statistics Database from 2008 to 2015 (Eurostat). The data related to the 'non-financial business economy,' which comprises manufacturing, construction, commerce, and service industries (NACE Rev. 2 sections B to J, L, M and N), but not enterprises in , forestry, agriculture and Fisheries, as well as essentially non-market service industries like education and health, are examples. Micro firms (0-9 employees), small companies (10-49 people employee), medium-sized companies (50-249 employees), and big, large companies (250+ employees) are the size-class classifications used. The use of Eurostat data has the advantage of being harmonized and comparable across nations. The drawback is that the statistics for some nations may differ from what national authorities have reported.

Table 3. Non-financial business economy

Class size	Number of enterprises			Number of persons employed			Value added		
	Czech Republic		EU-28	Czech Republic		EU-28	Czech Republic		EU-28
	Number	Share	Share	Number	Share	Share	Billion €	Share	Share
Micro	991 130	96.1%	93.1%	1 132 935	31.1%	29.4%	20.2	19.9%	20.7%
Small	32 211	3.1%	5.8%	632 430	17.4%	20.0%	14.5	14.3%	17.8%
Medium-sized	6 802	0.7%	0.9%	680 317	18.7%	17.0%	20.9	20.6%	18.3%

SMEs	1 030 143	99.8%	99.8%	2 445 682	67.2%	66.4%	55.7%	54.7%	56.8%
Large	1 619	0.2%	0.2%	1 193 619	32.8%	33.6%	46.1	45.3%	43.2%
Total	1 031 762	100%	100%	3 639 301	100%	100%	101.7	100%	100%

Source: the Structural Business Statistics Database (Eurostat).

## 2.4 Business environment and its relation the SMEs

The study of business environment is complex, particularly when it comes to regulation, the success of firms depends more on the restrictions they face.

The effects of regulation and its impact on aggregate economic performance have attracted increasing attention in recent years. Loayza, Oviedo, & Servén (2010). Regulations can be defined as a set of rules that compel the actions of economic agents in order to meet social goals.

Researchers affirmed that issues such as informational asymmetries, economies of scale in production, incomplete markets, and externalities may contribute to the existence of market failures such as the “missing middle”.

Meyer-Stamer & Haar (2008) pointed out that; for example, the “structural adjustment approach of the 1980s and 1990s tended to look at macroeconomic factors while neglecting microeconomic issues, such as “How do markets work?”

However, since the authors do not internalize social costs and benefits, the process of increasing social welfare and promoting the private sector through regulation is slowed.

According to Schleifer (2005) there are three theories of economic regulation:

- *The public interest theory*: associated with the work of Pigou in 1938, claims that markets often fail; consequently, benign governments could correct those market failures through regulation.
- *The contracting theory*: based on the work of Coase in 1960, states that impartial courts through the enforcing of contracts could solve discrepancies when competition cannot successfully address market failures.
- *The capture theory*: grounded on the research made by Stigler in 1971, points out that the process of regulation design is captured by the industry sector (so that, for example, the regulation enforced by the state ends up supporting monopolies).

As expected, the three theories have received different criticisms. For example, the public interest theory was strongly criticized by the Chicago School of Law and Economics.

In response, Schleifer (2005) stated that these critics, in addition to implying that courts could fix market problems, also illustrate the incompetence, corruption, and capture of government regulators.

On the other hand, Djankov et al. (2003) states that courts around the world are often highly inefficient, politically motivated, slow, and even corrupt as well.

Based on the above, it seems that the quality of the people behind those institutional arrangements is what makes the difference.

## **2.5 Risk management in SMEs**

Hollman and Mohammad-Zadek (1984) state that risk management could be a systematic technique of employing a firm's physical, financial, and human resources to achieve bound objectives regarding most pure loss exposures they added a pure loss exposure solely provides 2 prospective outcomes loss or no loss, there's no chance of a gain. In smaller companies, owner is probably going in contact the responsibility for management, maybe in conjunction with a high commissioned officer United Nations agency is assigned the duty on a part-time basis.

It is known and understood that risks are not just threats to be avoided. Moreover, risks are being considered as opportunities to be embraced instead of evaluating risks from a negative point of view or an individual perspective. (Beasley et al., 2005; Liebenberg and Hoyt, 2003).

SMEs are companies with limited resources and with more difficulties in their attempts to manage risks. The tools used by large firms are usually not suitable nor compatible to SMEs because they are either too expensive or too complex . Resources to support RM application are incompatible, unrealistic for SMEs and are beyond their capability and affordability (Association for Project Management, 2013).

Using constant tools and tips outlined for big enterprises within the adoption of RM in SMEs would push them to require up intensive efforts and time. in step with the particular characteristics of the corporations, SMEs managers consider and say that those tips square measure irrelevant. Moreover, for the risk exposure, SMEs square measure additional liable

to it than massive firms, so that they ought to be additionally engaged into RM. Furthermore, they're additionally challenged in terms of access to resources, square measure less wide-ranging in their economic activities, have a weaker money structure and have additional difficulties retrenchment just in case of a crisis, as they're already tiny.

Several authors and associations that study RM have projected completely different frameworks to handle the theme, however they regard principally giant firms and not all sectors.

There are only a few studies regarding RM in SMEs, notwithstanding the actual fact that it's a developing topic; especially, the final understanding of RM in SMEs isn't unambiguous and also the analysis on implementations, ways and apply is scant. The possibility of implementing and sustaining RM in SMEs is debated in the literature – especially regarding the development of a holistic approach. Moreover, there are no industry-wide requirements or guidelines outlining how to implement a systematic RM strategy in SMEs (Crema, 2017, Troßmann and Baumeister, 2004). Furthermore, depending on the size of the company, RM may be used in a variety of ways.

There are many managerial reports and articles that provide an overview of realistic experiences with RM in SMEs (Crema, 2017), but systematic synthesis that organize the information and experiences gained in that field is more difficult to come by. There is only a literature review that synthesizes the previous studies investigating the RM process, the tools adopted, and the risks managed in SMEs.

## **2.6 SME's Risks**

### **2.6.1 Interest rate risk**

SMEs are being highly dependent on external finance. Based on that, a loan is usually the main source of financing available (Altman et al., 2010; Mutezo, 2013; Gama and Geraldes, 2012). Subsequently, creating the risk that interest rates on the loans may change (i.e., interest rate risk).

### **2.6.2 Raw material prices risk**

For large companies, huge investments are realized in technologies, for that, it is relatively easy to change to cheaper resources when prices are rising. However, Many SMEs are

more exposed to raw material price risk because of the inability to afford these investments. Moore et al. (2000)

### **2.6.3 E-business and technological risks**

The most dangerous risk in e-business is online safety. Identity theft, credit card fraud, e-mail assault, and cyber-attacks are all risks that SMEs face online. Also, the most important factor in online business is consumer confidence. However, for SMEs managers it is very difficult to build such confidence due their limited number of transactions and their reputation comparing to large enterprises. Sukumar et al. (2011),

### **2.6.4 Supply chain risks**

To meet customers' needs SMEs needs offer various range of products. However, due to this, higher dependence of the SMEs on their supply chains due to increased complexity. In addition, SMEs are often no longer able to concentrate only on local markets, which again leads to increased complexity and higher levels of supply chain risks. This increase might result in higher levels of trade debt, which in turn may pose considerable risks to SME survival. Thun et al. (2011)

### **2.6.5 Growth risks**

SME growth is mainly accomplished through projects, the side effect of this growth is SMEs do not know how and do not have techniques required do run such growth effectively. growing from a small or medium firm into larger one involves higher risk of being unable to cover the new cost charts. Marcelino-Sádaba et al. (2014)

### **2.6.6 Management and employees**

The majority of business organizations are exposed to loss of knowledge when experienced employees with valuable information and knowledge and/or contacts leave the organization and quit his/her position. Thus, the loss of long-term employees and managers may be especially risky for SMEs because often no other employees or managers in the firm possess similar knowledge. In line with this notion. Gilmore et al. (2004)

### **2.6.7 Technique selection**

In the following some techniques to be used in order to handle identified and analyzed risks are:

- *Insurance*: insurance is the primary tool for risk management to cover all unexpected risks and events. Cioccio and Michael (2007)
- *Weather derivatives*: weather conditions obliged many SMEs to protect their assets from natural disasters like floods, tornados, and droughts with the help of weather derivatives. SMEs may use these financial instruments to pass weather risk to a third party. The business owner signs a contract with the contractor and reserves the right to cancel if environmental conditions are unfavorable. Leggio (2007)
- *Selection of suppliers*: To influence supplier behavior SMEs can sign contracts with individual suppliers. This can be considered as a guarantee of performance that requires constant quality of the products supplied.

### **3. ENTERPRISE RISK MANAGEMENT (ERM)**

#### **3.1 Enterprise risk management aspects**

ERM is an emerging mechanism that involves the board of directors, management, and other staff of an organisation, implemented in the setting of strategy and in the business, aimed at recognizing possible incidents that may impact the entity and managing the risk of being within its risk appetite, Provide fair assurance about the accomplishment of the goals of the entity (COSO, 2004).

ERM encourages improved understanding of risk management and promotes a company-wide approach to risk management, translating into mature organizational and strategic management decisions (Nocco and Stulz, 2006) and thereby offering a competitive advantage (Meulbroek, 2002; Stroh, 2005). Therefore, ERM encourages the development of a market plan to reduce possible risks and maximize opportunities windows (Hoyt and Liebenberg, 2011).

To provide broad guidance, the ERM structure draws from theoretical risk definitions, indicating core principles while leaving the adopting firms with information. Although theoretical guidelines are helpful for SMEs, there still many face open-ended questions with little clear guidance at the organizational and instrumental level when implementing ERM. Consequently, ERM tactics vary across such organizations. (Beasley et al., 2005). In practice, although different methods are applied, the latest literature studies ERM are at a significant level of aggregation.



The selection of a Chief Risk Officer (CRO) as their sole predictor for the implementation of the ERM is done based on several studies. Others use ordinal scales ranging from 'there are no plans to implement ERM' to 'there are full ERM is in place' to capture implemented ERM approaches (Beasley et al., 2005; Paape and Speklé, 2012).

### 3.2 ERM Frameworks

A framework, by definition acts as a reference and offers an outline of various integrated processes within an entity in order to achieve its objectives. (COSO)

#### 3.2.1 COSO ERM Framework

The *Committee of Sponsoring Organizations of the Treadway Commission (COSO)* In 2001, Built a system that management can easily use to assess and optimize the business risk management capacity of their organizations. COSO released descriptions of the integrated ERM framework in 2004, which is still the most widely used ERM framework globally (COSO, 2004).

Figure 3. COSO's ERM Framework



Source: COSO, 2004

This COSO ERM framework identifies key components, proposes a common language, and offers consistent guidance and direction for enterprise risk management.

As part of one model dimension, the first dimension consists of eight horizontal rows or risk components. These elements are derived from the methods by which management manages a business and are incorporated into the management system. They are:

- *Internal Environment*: It consists of the organization's overall environment and sets the basis for how the individuals of an organisation perceive and handle risk, including risk management philosophy and risk appetite, integrity and ethical principles, and the environment in which they work.
- *Objective Setting*: Until management recognizes possible incidents impacting their accomplishment, the overall goals must be set. ERM ensures that management has in place a process to set objectives and that the selected goals support and comply with the purpose of the company and are aligned with its risk appetite.
- *Event Identification*: It is important to recognize internal and external events influencing the achievement of the goals of an organization, differentiating between threats and opportunities.
- *Risk Assessment*: Risks are measured as a basis for determining how to deal with them (in view of probability and impact). Risks are often calculated on an intrinsic and residual foundation.
- *Risk Response*: Management defines and chooses risk responses (avoiding, embracing, minimizing, or sharing risk) and establishes a set of risk aligned with the risk tolerances and risk appetite of the company.
- *Control Activities*: To ensure that risk responses are carried out efficiently, policies and procedures are developed and enforced.
- *Information and Communication*: In a way and timeline that enables individuals to carry out their duties, relevant information is identified, captured, and shared.
- *Monitoring*: The entire risk management of organizations is tracked, and changes made as required. Monitoring is carried out by ongoing leadership exercises, separate evaluations, or both. (COSO, 2004).

In Figure, the second dimension shown as four vertical columns reflects the corporate risk strategic goals. These include:

- Strategic: high-level priorities that are consistent with and support the mission and vision of the organization
- Operations: the most productive and efficient use of its capital, both physical and human,
- Reporting: Data Accuracy and Enforcement
- Compliance: with the right laws and regulations, as well as industry requirements

Finally, the risk system's organizational units are defined in the third dimension. (COSO, 2004).

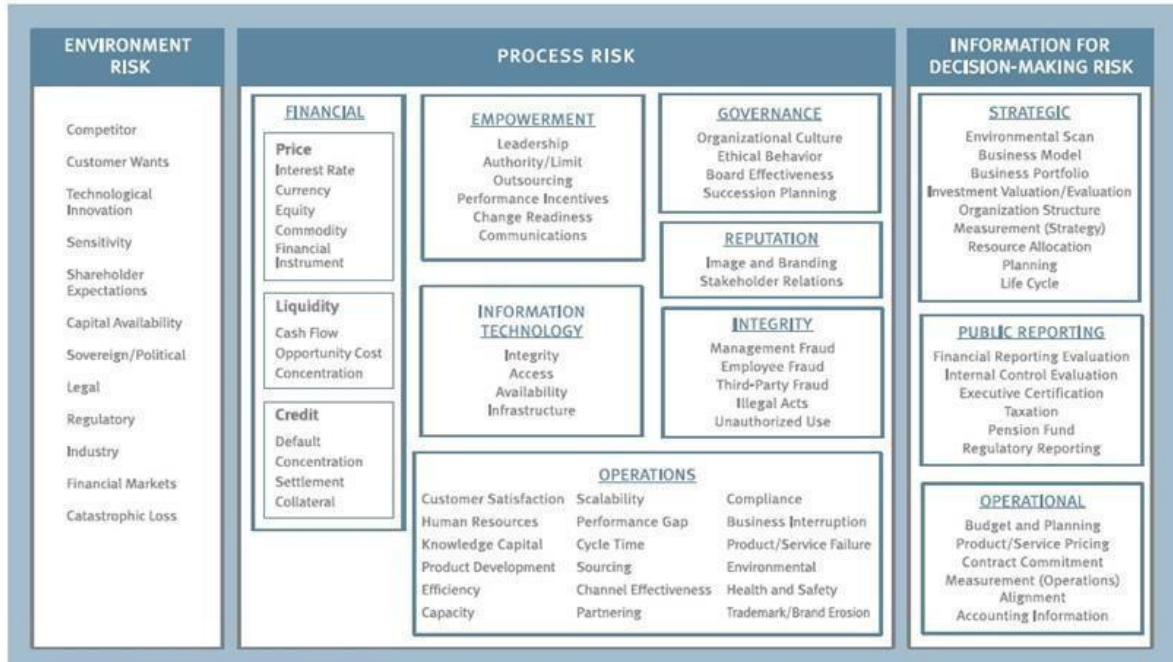
COSO claimed that the ERM system offered a clearly defined interrelationship between the components and goals of risk management of an organization that met the requirements of new laws, regulations and listing criteria and expected it to be generally adopted by companies and other organizations and stakeholders (COSO, 2004).

### **3.2.2 Protiviti Risk Model**

Protiviti, a multinational consulting company that helps businesses address issues in finance, technology, logistics, governance, risk and internal audit, has developed the Protiviti Risk Model. (Protiviti, 2005). Their ERM model is a systematic structure within the organization for identifying, understanding, and communicating possible business risks.

The model divide business risks into three main areas: *Business Environment Risk*, *Process Risk*, and *Information for Decision-Making Risk*.

Figure 4. Protiviti Risk Model



Source: Protiviti, 2005

The models' elements are:

*Business Environment Risk:* Embraces the external factors that affect the overall success of the company in terms of policies, events, relationships with customers and suppliers, organizational structure etc. These are the elements beyond the capacity of management to monitor and cover competitor risk, consumer needs risk, risk of technical advancement, risk of sensitivity, risk of shareholder expectations, risk of capital availability, sovereign/political risk, legal risk, regulatory risk, business risk, risk of financial market, and risk of catastrophic loss (Protiviti, 2005).

*Process Risk:* Risks arising from business processes that are not clearly defined, poorly matched with overall business goals/strategies, where customer needs are not met, or where assets are exposed to misappropriation or misuse, are involved. Seven sub-categories include process threats.

*Financial Risk:* These risks arise when the corporation does not have enough liquidity to meet the obligations of the company or handles the financial risks in such a way that it is perceived as conflicting with the corporate goals of the general company. Price risk,

liquidity risk, and credit risk comprise some of these risks. Process risks include seven sub-categories:

- **Empowerment Risk:** When both staff and managers do not know what to do or how to do it, these risks arise. Often, when there are not enough resources for executives.
- **Governance Risk:** These risks arise when the governance structures of the company do not comply with legal requirements and the directors of the board fail to provide sufficient oversight for overall management activities.
- **Reputation Risk:** These threats are connected to the loss of the reputation of the brand, e.g., the company unable to compete on the market.
- **Integrity Risk:** This includes risks related to fraud by management, fraud by workers, unlawful and unwanted actions that contribute to the degradation of credibility in the business market.
- **Operations Risk:** These threats arise when activities are inefficient in meeting the needs of consumers and attaining the goals of the company.
- **Information Technology Risk:** These risks emerge when the needs of business are not fulfilled by existing technologies. These include risk of honesty, access risk, risk of availability, and risk of infrastructure (Protiviti, 2005).

*Information for Decision-Making Risk:* The risk of using inappropriate and inaccurate information to support strategic, operational, and financial decisions is not relevant or reliable. These risks include three subcategories.

- **Strategic Risk:** Environmental scan risk, business model risk, business portfolio risk, organization structure risk, planning risk, and life cycle risk are just a few examples.
- **Public Reporting Risk:** Financial reporting evaluation risk, internal control evaluation risk, pension fraud risk, and regulatory reporting risk are all examples of these risks.

- **Operational Risk:** Budget and planning risks, product/service planning risks, alignment risks, and account information risks are among them. (Protiviti, 2005).

### 3.2.3 Effect of ERM on strategic orientation

Whereas an important lesson from the financial crisis of the early 21st century is the importance of ERM, (Herbane, 2010; Mikes, 2009), the effects of ERM have only recently been examined (Beasley et al., 2008; Hoyt and Liebenberg, 2011; Pagach and Warr, 2011). ERM helps to recognise opportunities during upturns and guard against threats during downturns. (COSO, 2004). Companies with a wide variety of prospects for investment are likely to benefit from negotiating a more specific risk-adjusted rate (Meulbroek, 2002); If this is so, it is important to distribute capital more effectively and raise returns. Therefore, ERM can improve productivity and market performance. (Nocco and Stulz, 2006). In addition, organizations adopting ERM note the advantages of improved data quality and better strategic positioning. (Kleffner et al., 2003), this argument might be explored by Analyzing the strategic orientation of the organization in order to achieve comparative advantage. Strategic orientation is described as the technique for adjusting to the environment in order to achieve a more desirable alignment. (Miles and Snow, 1978).

Strategic orientation is divided into two forms:

- Defenders
- Prospectors

Defenders are considered as risk takers due to their adoption to that concept. Also, they adopt many other concepts such as: experimentation, opportunity-seeking, and action-initiating. In the other hand, prospectors who adopt a more offensive strategy. (Covin et al., 2000; Miles and Snow, 1978; Miller and Friesen, 1982). Defenders compete on a product, cost, distribution, or service basis, and place a heavy focus on the maintenance of existing markets. It follows that defender tend to be reactors, which is to say, they behave on the basis of others' experiences and have a short-term bias. However, prospectors tend to be analysts, i.e., they are more creative, market-oriented and have a long-term choice. (Laforet, 2008). The primary skill of prospectors is to explore and exploit strategic

possibilities. They explore new product and business markets and concentrate on new and effective manufacturing and process technology after a complete review of the strategic approach and how to compete. Prospectors benefit from their ability to change and respond to changing market environments quickly and creatively. (Laforet, 2008; Zhou et al., 2005). Three key facets of strategic orientation are analyzed in order to be able to categorize SMEs as defenders or prospectors: business growth, product launch and investment in manufacturing and process technology. (Danneels and Kleinschmidt, 2001; Dyer and Song, 1998; O'Regan and Ghobadian, 2005).

### **3.2.4 ERM advantages and disadvantages**

Enterprise Risk Management (ERM) is a relatively modern discipline in management (which has evolved mainly in the last decade) that allows a business to:

- Identify challenges and opportunities facing the organisation.
- Systematic perception of the possibility and consequence of these risks and opportunities.
- Select and prioritize proactively, which should be handled strategically.

The advantages are numerous, including focusing business resources on mitigating the downside of risk, as well as the upside represented by those threats. The upside includes Competitive opportunities or strategic advantages of taking more risks in ways that make sense, while reducing risks in others, depending on the organization's risk appetite, Companies of any size face an extremely diverse number of risks, ranging from currency movements, changing economic conditions, to their image and reputation, and thus ERM helps these leaders develop a strategic plan to address them, but also increases the confidence of investors in the company, which is incredibly important to any company that has them.

The disadvantages are mainly two categories:

1. There is a cost related with taking the time for ERM. However, Companies that use ERM will notice that protecting their most valuable assets (such as reputation) and positioning the company on the right track to achieve their strategic goals is worth the cost.

2. Because ERM is generally very valued by top management, it has a large authority into the company's strategic plan. If the risks and opportunities are not clear enough, it might lead to implementing the wrong strategies.

Henceforth, the utilization of ERM by the companies should be in a systematic, disciplined approach:

*Overcapacity in production:* To prevent production interruption or delivery problems it is necessary to have safety stocks, excess capacity in production and excess capacity in the warehouse, Thun et al. (2011)

*Emergency plan:* In case of natural disasters or terrorist attacks, it may be important for companies to have established a contingency plan. Cioccio and Michael (2007)

*Networking/cooperative relations:* Personal networks and close relationship with the important suppliers may be considered as a technique to manage risks successfully. Gilmore et al. (2004)

## **4. PERSONNEL RISKS**

### **4.1 Definition of Personnel risk**

A company's success rests in many different areas. Each area has to be effective for the whole company to function in the optimum way.

The most important resource of any company is Personnel. Generally, the absence of an employee in large enterprises may not affect the business at all.

In the other hand for Small and Medium-sized Enterprises they rely on every single employee and the absence of one single person may cause delays in deliveries, faults in quality and other threats to a company's operation. Also, absence immediately increases the workload for other employees.

Moreover, the success of this category of enterprises is based on the expertise and motivation of its employees.

Over the years, experienced workers in particular have gathered expertise that includes a lot of undocumented and unrecorded knowledge concerning the operations of their company. This knowledge and expertise can provide the company's competitive edge, even though its existence may not even be recognized.



Employees are also considered a company resource from the risk management perspective. A company's staff has knowledge and experience in solving many problems, risk situations and their management. Even though hazard identification and risk assessment often require specialist's knowledge, the input of employees is invaluable especially in issues related to the work environment.

## 4.2 Personnel risks categories

The prediction and management of personnel-related risks are an essential part of business activity. Personnel risks refer to threats that may be directed towards a company's employees and might harm them. These risks can come from within the company or from outside sources; however, personnel can also pose a risk to a company.

In the following, categories of Personnel risks: (The institution of occupational safety and healthy):

*Physical hazards:* Refers to the impact of various types of energy on employees and their health. The most significant physical hazards are noise, vibration, cold and hot conditions, radiation, and insufficient lighting.

*Accident hazards:* Typical accident types are injuries from falling objects, falls from heights, slips, trips and falls and getting hit by moving objects. Most accidents are due to management failures leading to unsafe acts (e.g., horseplay) and unsafe conditions (e.g., poor housekeeping and maintenance, unguarded machinery, etc.)

*Physical strain hazards:* Strain injuries can be caused by poor 'ergonomics' i.e. work, work methods and tools that are unsuitable for people. Good ergonomics and manual handling training are used to prevent physical injury caused by heavy-work phases, difficult working positions, inadequate workstations and tools, and the use of machines and equipment.

*Hazardous substances:* Refers to substances in solid, liquid or gaseous states that can be hazardous to health. The health risks associated with substances depend on their properties, the volumes used, the way they are used and the potential routes of entry into the body. There may be chemical, biological, flammable/explosive or radiation effects from some substances.

Work-related stress (WRS): Uncontrolled WRS can cause psychological and physical harm. However, when stress is under control, work feels meaningful, the work atmosphere is good and productive.

People's actions: Unsafe acts and risk-taking by employees can cause accidents, leading to serious injuries and ill health.

Figure 5. Personnel risks



Source: IOSH

### 4.3 Personnel risk management

Human errors are common and might have a crucial effect. They can bring about defective products, time wasting, worker endangerment, boom in employees' strain level, client's dissatisfaction, etc.

To prevent them, firms need an effective error management system in place (Guchait et al., 2015). There are many reasons that can make employees commit errors in a firm, like work-related stress, stress from job insecurity, wage, or location, etc. (Roll et al., 2019).

It is essential to understand the managers' and owner's opinions regarding the employee error rate and its effect on the firm's performance. It is especially for SMEs, considering that they have limited resources and small structures that tightened their error margin and give them less space to make a mistake.

To reduce or even avoid the negative impact of employee error rate, managers must develop skills and awareness of workers to tackle their mistakes commitment effectively and efficiently. Lack of skills and low experience of employees can also lead to human error occurrence.

According to Yeow et al., (2014) 90% of the accidents in factories happen because of human error. While education of the employees has a moderate positive relationship on job performance and minimize related risks (Ranasinghe, 2019), the quality of human performance also depends on knowledge strategy of the company (Bencsik et al., 2018). Knowledge management helps employees feel satisfied at work and achieve their goals. (Zamir, 2019).

The main objective of risk management should be to prevent unwanted incidents or reduce their consequences. The major methods of risk management are: (IOSH)

- Avoiding a risk, which is frequently only possible if the actions in question are completely avoided. lowering a risk by reducing the likelihood of an event occurring and the consequences of that event
- Assigning a risk to someone else, such as through insurance or subcontracting.
- Keeping a risk as your own responsibility. Certain risks are retained, and the company absorbs any losses.

It is useful to have a contingency plan in advance, contains the actions to be taken in the event of an accident or emergency, as well as the steps to be taken for recovery.

## **5. OPERATIONAL RISK**

### **5.1. Operational risk Definition**

Operational risk is all risks which are not market risk and not credit risk. According to Hida, Edward; Pieper, Michael, it is a negative definition. Moreover, some banks use the term operational risk as a synonym of non- economic risks. (Basel I (the round of deliberations by central bankers)

In Base II operational risk, was defined as the risk of losses arise from inadequate or failed internal processes, people, and systems or from external events. This definition includes fraud, human errors, human resources problems etc.

Judicial risks are included in operational risk, but reputational risk is excluded, and it is present in all banking goods and operations. It has long persisted in banking and non-banking institutions, but it has taken on new significance as the financial system has become more dynamic and globalized, as well as the recent materialization of unparalleled

extraordinarily high losses through the publication of its guidelines and RTS (Regulatory technical standards) on operational risk.

The European Banking Authority (EBA) seeks to promote and improve the efficiency of operational risk control and regulation in the banking industry. (European Banking Authority)

Since the Basel Committee recognizes that operational risk has several different concepts and interpretations, banks are free to use their own internal definitions of operational risk as long as they incorporate the minimum elements in the Committee's description.

## 5.2. Operational risk categories

Operational risk is divided into seven groups, according to Basel II:

- *Internal fraud:* Losses resulting from actions designed to defraud, misappropriate property, or override rules, the statute, or organizational policies, excluding diversity/discrimination incidents including at least one internal party.
- *External fraud:* Losses resulting from third-party actions designed to defraud, misappropriate property, or undermine the rule.
- *Employment practices and workplace safety:* Losses resulting from violations of housing, welfare, or safety laws or arrangements, as well as the payment of personal injury lawsuits and diversity.
- *Client, products, and business practice:* Losses resulting from the origin or specification of a product, or from an accidental or incompetent inability to fulfill a professional duty to particular clients (including fiduciary and suitability requirements).
- *Damage to physical assets, business disruption and system failure:* Losses resulting from natural disasters or other incidents that result in the loss or injury of physical objects.
- *Business disruption and Technology system failures:* Losses resulting from operational interruptions or system deficiencies.

- *Execution, Delivery & Process Management:* Failures in transaction handling or process control, as well as relationships with trading counterparties and suppliers, all result in losses.

### 5.3. Operational risk benefits

Operational risk management affords a business benefit by: (Robert J. Chapman)

- Improving the company's willingness to meet its corporate goals.
- Allowing administrators to concentrate on revenue-generating operations rather than dealing with crisis after crisis.
- Keeping day-to-day losses to a minimum
- Putting in place a more reliable corporate risk management system.
- Assisting in the development of a framework that allows the correlation of various risk groups to be recognized and, where applicable, modelled.

## 6. LEGAL RISK

### 6.1. Legal risk definition

According to Whalley, M. 2016, legal risk is the risk of financial or reputational loss due to failure to meet the legal requirements. In other word, the lack of awareness or ignoring or misunderstanding of the way law and regulation apply to the business, its relationships, processes, products, and services.

According to chapman Legal risk for a business may be defined as the risk of failing to operate within the law, be aware of its legal obligations, honor contractual commitments, In the case of default, agree on compensating remedies with a supplier, produce proof that it has acted within the law, or acknowledge. and successfully deal with legal issues.

### 6.2. Legal risk causes

According to McCormick, R. 2004 Legal risk might be caused by:

- Faulty or defective transaction.
- liability for the institution or other's loss.
- failing to meet legal requirements
- fail to be up to date in law.

Legal risk management is not a precise science and is subjective to the institution's situation and is mostly attributable to a lack of sufficient communication networks, ambiguous administrative priorities (such as lack of policies and regulations), uncertain flow of knowledge between various staff and departments, a lack of delegation of authority to specify risk reduction tasks.

### **6.3. Benefits of legal risk management**

Legal risk management affords a business benefit as it:

- Decreases the amount of time spent in court cases by administration and external assistance.
- Ensures that contractual, regulatory, and constitutional obligations are met
- Lessens the risk of reputational damage.
- Encourages a more rigorous analysis of contracts both at home and abroad (where appropriate).

### **6.4. Implementation of legal risk management**

The development of a sound risk management system would rely on a variety of issues, such as: knowing the legal structure in which businesses function. Having legal representatives review major contracts before completion. (Robert j chapman,2006)

- Maintaining legal representation.
- Ensure the accuracy of yearly reporting and accounts
- Ensuring that copyright, trademark, and patent laws are followed.
- Ensuring that client confidentiality standards are met.
- Examining current product law before introducing new items into existing and new markets.
- Maintaining employment-law-compliant systems and processes
- Ensuring that staff are aware of the laws that they must follow in order to carry out their roles and responsibilities, as well as offering training and monitoring when needed.
- Providing effective legal defense against challenges.

- Recognizing the requirements of legal discovery and the effects of technological advancements.

## **7. MARKETING IN SMEs**

### **7.1. Marketing Definition**

The marketing principle is the belief that businesses should analyze their customers' interests and then make choices to help meet those needs than their competitors. Any company's primary goal is to earn income. This can be done and accomplished by product marketing.

The American Marketing Association defines marketing as "the activity, collection of organizations, and procedures for generating, engaging, distributing, and sharing services that have value for clients, firms, partners, and society as a whole.

The second definition by Philip Kotler in which he considers Marketing as social mechanism that allows people and groups to get what they want and need by forming, connecting, and providing value to consumers, as well as maintaining customer interactions in ways that favor the company and its stakeholders.

Marketing helps businesses to build demand and gain profits. If these two things are not taken care of, the business in the market will not succeed.

### **7.2. Marketing phases**

To deliver and meet the consumer's needs and desires, many activities are indulged in marketing to achieve that. For the journey of goods from the producer to consumer, marketing functions cover all those needed activities.

In the following, the process of marketing:

- Identification and review of the consumer's wants, desires, and requirements.
- Testing the reaction of customers with regard to product characteristics, costs, distribution channels, new product ideas, and the launch of new goods.
- Matching the needs of customers with the offers and resources of the company.
- Creating effective marketing communications and program with emphasis on lower price, mass distribution channels and mass advertising to reach numerous market segments so that the consumers know about the product's availability.

- Establishing resource allocation processes among different marketing elements, such as sales promotion, advertising, delivery, and product design, among others.

### 7.3 Entrepreneurial marketing

In marketing literature, SMEs are defined as being limited by a lack of resources (Carson 1990), especially in terms of human, operational, and financial resources (Bjerke and Hultman 2002; Schindehutte et al. 2008), marketing experience, and planning (O'Dwyer et al. 2009; Morris et al. 2002; Hills et al. 2008; Hoy 2008). Recent contributions to entrepreneurial marketing argue that marketing strategies in SMEs have played a central role in reacting to changes in demand, although not as organized and complex as in large organizations.

Entrepreneurial marketing (EM) literature retains that the lack of formal marketing strategies and planning within small and medium-sized enterprises should not be interpreted as a general lack of marketing (Bjerke and Hultman 2002). SMEs illustrate specific ways of marketing that vary from conventional and structured forms typical of large companies and involve a thorough comprehension of novel conceptual frameworks (Hills et al. 2008).

"Entrepreneurial marketing," according to Morris et al., is "the effective identification and utilization of opportunities for obtaining and retaining productive customers through creative risk management, resource leveraging, and value development via innovative risk management, resource leveraging, and value creation via innovative risk management, resource leveraging, and value creation."

The distinctive feature of this new understanding, which is basically a market-oriented inside- out viewpoint, may be the creation by entrepreneurial action of the company's particular competencies with a view to satisfying the latent demand of potential consumers for goods that do not yet exist. This is often referred to as "the entrepreneurial marketing concept" (Duus, 1997). Entrepreneurial marketing is the promotion of small businesses that are rising as a result of entrepreneurship.

It is now becoming clear that marketing in SMEs is radically different and more Successful in SMEs rather than in big firms.



Smaller businesses will move on opportunities and execute plans quicker than larger businesses because decision-making is more ad hoc (Morrish and Deacon, 2009).

### 7.3.1. Entrepreneurial marketing dimensions

According to Morris et al. (2002) EM consist of seven core dimensions:

- Proactiveness
- Calculated risk-taking,
- Innovativeness,
- Opportunity focus,
- Resource leveraging,
- Costumer intensity,
- Value creation.

Entrepreneurial marketing differs from conventional marketing in these aspects (Hills et al., 2008). The first five parameters are related to entrepreneurship orientation, while the last two are related to marketing orientation. (Kocak, 2004).

The differences between traditional marketing and entrepreneurial marketing are presented in the following:

Table 4. Comparison of Conventional Marketing and Entrepreneurial Marketing

	Conventional marketing	Entrepreneurial marketing
<i>Marketing Concept</i>	Customer-orientated: Brand production is market-driven, with a largely reactive attitude toward the external world.	Innovation oriented: The company tries to control or redefine facets of the external world through idea-driven, intuitive assessments of consumer needs.
<i>Market Approach</i>	Marketing aims to follow consumers, using a reactive yet adaptive attitude to the new brand environment with gradual innovation.	Taking the initiative and guiding the consumer with dynamic innovation

<b><i>Context</i></b>	Markets that are well-established and generally stable	Markets that are imagined, evolving, and fractured, with high levels of turbulence and the potential to create new markets.
<b><i>Focus Point</i></b>	The marketing mix should be managed effectively.	Relationships, partnerships, capital management practices, and the marketing mix all contribute to the development of new value for the consumer.
<b><i>Risk Perspective</i></b>	In marketing actions, risk minimization is essential.	Marketing as a tool for taking measured chances, with a focus on identifying ways to mitigate, stage, or share risks.
<b><i>New Product/Service Development</i></b>	Marketing aids in the introduction of new products and services through Research & Development and other departments within the company.	The entrepreneurship phase in the company is housed in marketing.  The consumer is a co-active producer, and marketing is the source of creativity.
<b><i>Marketing Overview</i></b>	Marketing functions as a functional silo, facilitating transactions and brand influence.	Marketing encourages pace, transition, adaptability, and versatility as a cross-disciplinary and interventional pursuit.
<b><i>Marketer's Role</i></b>	Marketers provide the most importance to the campaign mix coordinator, brand designer, and promotion and consumer contact.	Shift agent both internally and externally

<b><i>Customer's Role</i></b>	Intelligence and suggestions from outside sources	Participant in the marketing decision-making process for the company, helping to define quality, price, delivery, and communications.
<b><i>Resource Management</i></b>	Scarcity ideology, efficient utilization of available services, and a zero-sum strategy approach to resource allocation.	Acts are not limited by resources currently controlled; leveraging, imaginative usage of others' resources; doing more for less.
<b><i>Customer Needs</i></b>	Customers articulated, believed, and communicated themselves through market analysis.	Unarticulated, found, and reported by lead users
<b><i>Market Intelligence</i></b>	Survey analysis is heavily reliant. Formalized information and analysis networks.	Usage of complementary methods; informal networking and knowledge gathering; skepticism of traditional market analysis.
<b><i>Strategy</i></b>	Top-down segmentation, targeting, and positioning	Bottom-up targeting of customers and other influence groups
<b><i>Methods</i></b>	The marketing mix; Four/Seven P's.	Interactive marketing methods; Word-of-mouth marketing.

Source: Morris et al., 2004; Morris et al., 2002; Stokes, 2000a.

risk is the leading source of uncertainty. When it comes to marketing, it's never certain whether the message will reach the intended audience, if potential buyers will respond positively, or whether your brand will become well-known. The most important for a marketing risk management plan is that it enables the identification and definition of all the hurdles the marketing team might come across. By knowing what the company is facing, it can help to make the right decisions to

avoid the threat or minimize the negative effects. It also provides with significant insights into the risk might the firm set to encounter during the planning phase and after marketing efforts are implemented. Analyzing each potential risk, allows to tell how likely they are to occur, their magnitude, and how frequently they may occur. Then your marketing strategy to overcome any challenges that lay on the way. That is why analyzing all risks before launching your marketing efforts will set up for success. Risk management is an important procedure that any organization should incorporate into its operations. Implementing a risk management plan into marketing strategy can help any organization to foresee any challenges, get ready to face them, and avoid them altogether.

## **II. ANALYSIS**

## **8. BUSINESS ENVIRONMENT: CZECH REPUBLIC**

### **8.1 Czech Republic as an EU Member and the Czech Economy**

1 May 2004 is the date when Czech Republic joined the EU, along with nine other Eastern European and Mediterranean countries.

Czech Republic is recognized as one of the most prepared countries to join EU. Mainly because of its steady economic performance. Notably, GDP (gross domestic profit) per capita's by reaching over US\$13,000 (world bank) in 2005 is relatively high. comparing to Central and Eastern European regions (Estonia, Latvia, Lithuania, Poland, Germany, Slovakia, Hungary, Romania, Bulgaria, Slovenia, Croatia, Albania, Montenegro, Serbia, North Macedonia, Bosnia and Herzegovina, Kosovo (partially recognized territory)<sup>aa</sup> this figure is among the highest.

Since 1993, when the country became an independent state, the Czech economy has undergone into major restructuring. In the process, the share of employment in the state sector has been fluctuating, resulting some redundancies that are absorbed by private enterprises. Unemployment rate has been declining 8% in recent years till approximately 1.90 %. According to European standards it is low level. Given the country's highly skilled labor and well-developed industrial base, foreign direct investment inflows have also increased rapidly.

The private sector is responsible for economic growth, and it will continue to do so in the medium future. A variety of service industries, including as financial intermediation and business services, also contribute to the economy. As a result, while the agricultural and industrial sectors have continued to develop in tandem with the economy, their percentage of the economy has declined over the previous decade as the services sector has grown faster. In terms of value added, agriculture and manufacturing account for a combined share of some 34% of the economy, while services such as construction, trade, transport, and finance make up the rest. Tourism is among the economic pillars. It is estimated that one in eight people in the country is employed in tourism or related branches, which account for nearly one-tenth of GDP (Czech tourism). All these favorable factors should sustain economic development, boding well for further growth of the economy.

In 2018, the value added by micro enterprise is 22.5 billion euros, small 17 billion euros, medium sized 21.6 euros, in total we find a total of value added of 61.1 by all SMEs categories.

Table 5. Czech economic indicators during 2018 – 2020

Main Indicator	2018	2019	2020 (Estimated)
GDP (billion USD)	248.91	250.68	241.98
GDP (Constant Prices, Annual %change)	3.2	2.3	-6.5
GDP per Capita (USD)	23	23 (estimated)	22
General Government Balance (in % of GDP)	0.2	-0.6	-3.8
General Government Gross Debt (% of the labor force)	32.1	30.2	39.1
Inflation Rate (%)	2.2	2.9	3.3
Unemployment Rate (% of the labor force)	2.2	2.0	3.1
Current Account (billion USD)	1.04	-0.93	-1.64
Current Account (in % of GDP)	0.4	-0.4	-0.7

Source: IMF (INTERNATIONAL MONETARY FUND), World Economic Outlook Database, October 2020

## 8.2 Main Sectors of Czech Industry

Even the serious crisis in the 1990s and the agricultural sector went through, it remained highly supported financially. In 2019, it accounted for 1.9% of the country's GDP and employed 3% of the labor force (World Bank). The principal agricultural products are sugar beet, potatoes, wheat, barley, and poultry.

Industry accounts for 32% of Gross domestic profit (GDP) and employs 37% of the labor force. Growth in performance has been accompanied by an increase in the productivity of

the labor force. By far, the automotive sector is the largest industry, with companies like Skoda (owned by Volkswagen). Since 2005, foreign investors such as Toyota and PSA have also started

producing cars in the Czech Republic. Czech cars are also the spine of exports, which contain as much as 80% of the total.

Services contribute to 56.2% of the GDP and employ nearly 60% of the active population. The tourism sector keeps its pace of sustained growth, with the number of guests accommodated in collective accommodation establishments reaching almost 22.0 million in 2019 (+3.5% y-o-y - Czech Statistical Office).

Table 6. Czech Economic activity

Breakdown of Economic Activity By Sector	Agriculture	Industry	Services
Employment By Sector (in % of Total Employment)	2.6	37.1	60.2
Value Added ( in % of GDP)	1.9	32.0	56.2
Value Added ( Annual % Change)	1.5	1.2	3.2

Source: *World bank*

### 8.3 Impulse in Foreign Direct Investment Inflows

The Czech Republic is an attractive country for investors. Moreover, the accession to EU liberalized investment environment in the country. This can be exemplified by the continued inflows of foreign investment into the economy, which has been resulted well before the country's accession to the EU.

Today, the Czech Republic is considered as one of the major recipients of foreign direct investment in the Central and Eastern European region. Particularly, the introduction of various investment incentives in 1998 has stimulated massive inflows of foreign direct investment into the country in subsequent years. By mid-2006, more than 46 billion euro of foreign direct investment has been recorded in the country since 1993(Czech invest)

Not surprisingly, significant amounts of foreign direct investment in the country are attracted by the continued privatization of remaining government stakes in state-owned



enterprises while inflows of greenfield projects will continue to be facilitated by the country's favorable business environment.

Germany, which accounted for around 27% of total foreign direct investment in the Czech Republic between 1993 and mid-2005, was followed by the Netherlands (15%), Austria (10%), France (8%), Spain (6%), and the United States (6 percent).

Production industries, mainly consisting of the sectors of machinery and equipment, refined petroleum and chemicals, food and tobacco and base metal products, accounted for about one-third of total foreign direct investment. The Czech Republic, for example, has a competitive advantage in mechanical engineering and chemicals, and the country nevertheless has a substantial cluster of processed food industries. In addition, the Czech Republic has profited from the migration of car and electronics manufacturing from Western Europe. Volkswagen (vehicle assembly), Denso (auto components), Matsushita, Siemens, and Philips are among the major international investments (electronics). Finance (18%), transportation, storage, and communications (17%), trade, hotels, and restaurants (12%), and real estate (12%) are other prominent foreign investment targets (10 percent).

## **9 ANALYTICAL METHODS**

### **9.1 Questionnaire survey**

Surveys are one of the most popular ways to do analysis which come in a variety of formats. Usually, the represented sample of the target group in which the researcher is involved constrains them. Based in the types of questions posed, questionnaires may be categorized in both quantitative and qualitative tools. Quantitative approaches are used to analyze the results of closed-ended questions with multiple choice responses, which can include bar charts, pie charts, graphs, and percentages. While the results of an open-ended questionnaire can be evaluated using quantitative methods such as discussions and critical analysis without the need for estimates, the results of a closed/ended questionnaire can be analyzed using quantitative methods such as discussions and critical analysis.

The following are the types of common sorts of questions:

- Open-ended questions: are those that do not have a specific answer. Open-ended questions are used to gather qualitative data in a questionnaire by

allowing the survey taker (either owners or managers) to comment in an unrestricted manner.

- **Dichotomous Questions:** The dichotomous question is usually a closed ended “yes/no” question. This question is frequently asked when simple confirmation is needed.
- **Multiple-choice questions** are a form of closed-ended question in which a respondent must choose one (single choose multiple choice question) or multiple (multiselect multiple choice question) answers from a list of choices.
- **Scaling Questions:** The four measurement scales – nominal, ordinal, interval, and ratio – are used to answer these questions.
- **Pictorial Questions:** This form of question is simple to use and allows respondents to answer. It functions in the same way as a multiple – choice query does. A query is posed to the participants and the solution options are pictures. This allows respondents to choose a response without overthinking it, resulting in more reliable results.

Increased data collection speed, reliability, performance, broad geographic reach, and low to no costs are just a few of the benefits of using the questionnaire method. Nevertheless, questionnaires have several drawbacks, such as the respondent selecting a random response option without thoroughly reading the question. Furthermore, respondents are barely given the opportunity to share their feelings about the subject or a specific issue, or to explain why they choose this or that answer. (Mathers et al., 2007)

There are several forms of questionnaire:

- Computer questionnaire.
- Telephone questionnaire.
- In-House questionnaire.
- Mail questionnaire.

The questionnaire forms adopted in this thesis are Computer, Telephone, and mail forms.

## 9.2 RESEARCH STRUCTURE

### 9.2.1 Aim

The aim of the analytical section is to Analyze the perception of selected economic risks in the business environment in the Czech Republic according to the entrepreneurs' small and medium-sized businesses. Also, to analyze used marketing tools by SMEs in CZ.

### 9.2.2 Data Collection

The information was gathered between September 2019 and April 2020. an entrepreneur (owner or senior manager) of a small or medium-sized company (SME) that exists in the Czech Republic's market climate (hereinafter referred to as the "respondent") is the statistical unit. This statistical unit is chosen because we are looking for feedback from individuals who may know all the information regarding the company as well as having the power to make decision so we can get answers about some undone decision. To identify the specific collection of respondents and then to answer them, the CRIBIS database was used. The perceptions of respondents were gathered through a process of interviewing that included filling out an online or written questionnaire. In the first part of the study, respondents were contacted by email with a formal request to answer the online questionnaire "Management, market risks, and bankruptcy in the category of small and medium-sized firms in the Czech Republic." The firms were called by phone in the second process and asked to complete the questionnaire. The survey is still accessible through the internet at: <https://forms.gle/okjZypAru4BpSHFb8>

&

[https://docs.google.com/forms/d/1cphnFN\\_ZpG5CpXSb5\\_IO1WSZOXwWN9CL8nxPKnSHLjk/prefill](https://docs.google.com/forms/d/1cphnFN_ZpG5CpXSb5_IO1WSZOXwWN9CL8nxPKnSHLjk/prefill)

The number of respondents who correctly completed the questionnaires (subsequently referred to as the "sample") was 454 (97.6%). Incorrectly completed questionnaires accounted for 11 (2.4 percent) of the total number of respondents. The below are the most critical reasons for removing a respondent from the sample: duplication of the questionnaire in the sample; accuracy of the respondent's approach to assessing market risks; respondent's inattention while answering questions that they were not required to address etc. The claims of market threats and bankruptcy were phrased in a constructive light to keep the answers consistent.

### 9.2.3 Questionnaire and Statements

There were 85 questions in total, grouped into multiple parts as shown in the following:

Table 7. Survey grouping

Section	Question Nr	Outcomes
1 <sup>st</sup>	1–10	We learned the basic characteristics of the respondent and the organization
2 <sup>nd</sup>	11 – 34	Statements concerning management, corporate social responsibility, marketing, social media and internationalization of business
3 <sup>rd</sup>	35–67	Included claims about business threats, such as strategic, competition, financial, staff, legal, and operating risks.
4 <sup>th</sup>	62–67	Looked at the respondents' feelings towards the company's bankruptcy allegations.
5 <sup>th</sup>	68–77	Concentrated on the reasons for the company's bankruptcy and risk management.
6 <sup>th</sup>	78 – 85	Emphasizes on the marketing tools used by the sample and its impact on the performance.

Source: own data collection

The comments were rephrased as statements to which respondents could answer in scales as follows:

1	2	3	4	5
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

The following points regarding market uncertainties and the emotional future of the firm were formulated to achieve the article's key purpose:

#### **Legal risk statements (LEG):**

- LEG1: I believe the legal risk is reasonable and does not jeopardize our (my) business.
- LEG2: Legislative changes affect business, yet they have no detrimental influence on our (my) company.

- LEG3: The corporate climate is not 'over-regulated,' in my opinion.
- LEG4: I am well-versed in the legal elements of running company.

**Operational risk statements (OPE):**

- OPE1: We make adequate use of corporate resources.
- OPE2: We place a high value on product and service innovation, which is reflected in the company's overall stability and success.
- OPE3: There is a declining tendency in the quantity of probable requests for certain products/services.
- OPE4: Our firm isn't reliant on a small number of vendors.

**Perception of the future of business (Y):**

- Our (my) firm will not go bankrupt in the next five years.

**9.2.4 Hypothesis**

H: The selected business risk ( $H_e$ : Legal risk ( $H_{e,LEG1}$ ;  $H_{e,LEG2}$ ;  $H_{e,LEG3}$ ;  $H_{e,LEG4}$ ),  $H_f$ : Operational risk ( $H_{f,OPE1}$ ;  $H_{f,OPE2}$ ;  $H_{f,OPE3}$ ;  $H_{f,OPE4}$ )) has a positive influence on the entrepreneurship climate of small and medium-sized businesses in the Czech Republic's view of the future of industry.

**9.2.5 Methods**

In certain scientific experiments, regression analysis is used to forecast the future of a dependent variable (Nava et al., 2018). Regression analysis isn't necessarily the most important factor to consider. Regression analysis may also be used to define and measure independent variables (such as specific market risks) as well as to assess the direction and frequency of the effect on a dependent variable. This second application of regression analysis is also significant and widely used. (Civelek et. al, 2019; Dvorský et al., 2019). It is possible to use this statistical approach to validate the formulated hypothesis since all tested variables (independent, dependent) are similar metrics (same scaling of responses).

The expectations about independent variables must be fulfilled in order to use regression analysis. The independent variables must meet the linearity, normal distribution, and homoskedasticity assumptions. Multicollinearity must not be a factor in the regression model.

In addition, the regression model's random component expectations must be fulfilled. (Goodman,1970).

The hypothesis of linearity was confirmed by a scatter plot analysis of the data (Hair et al., 2010; de Waal, 1977). By measuring and checking descriptive characteristics, the assumption of a standard distribution of respondents' attitudes (for individual statements on market risks) was verified (skewness and kurtosis). The inference of a regular distribution is agreed if the skewness (measure of symmetry) and kurtosis (measure if the data are heavy-tailed or light-tailed) values are in the range of -2 to 2. (James, 1964). The relationship between the dependent variable and the independent variables was determined using a correlation matrix of pairwise correlation coefficients. The correlation coefficient (R) can be somewhere between -1 and 1 (Hair et al., 2010; Lancaster, & Hamdan, 1964). The importance of regression coefficients of independent variables is tested using the student's t-test. If the p-value of the t-test is less than the degree of importance, the regression coefficient in the regression model is statistically important (Zheng & Yu, 2015; Qin & Lawless, 1995). The general linear regression model has a following form:

$$Y = \beta_0 + \beta_1 \times BR_1 + \beta_2 \times BR_2 + \beta_3 \times BR_3 + \beta_4 \times BR_4 + \varepsilon_n, \quad (1)$$

where:

- Y: perception of the future of business (dependent variable).
- $\beta_0$ : intercept.
- $\beta_1; \dots; \beta_4$ : regression coefficients (independent variables).
- BR1, ..., BR4 – independent variables (i = 1, ..., 4 – business risk statements);
- $\varepsilon_n$  – random error.

It is possible to create Linear regression models for other types of business risks (RM1: Legal risk model, ..., RM2: Operational risk model),

We calculate and analyze regression characteristics such as the multiple correlation coefficient (MCC), determination coefficient (R<sup>2</sup>), modified determination coefficient (Adj.R<sup>2</sup>), F-ratio, multicollinearity, and normality of errors to ensure that the regression model is of high quality (Breslow, 1990). The coefficient of determination denotes the percentage of variance in market perceptions that can be explained by the independent variables chosen (Lancaster & Hamdan, 1964). The F-test was used to verify the statistical significance of the regression model (de Waal, 1977). The required p-value of the F-test

must be lower than the level of significance, then the regression model is statistically significant. The use of the inflation variation factor (VIF) in the regression model verifies the assumption of multicollinearity (Liao et al., 2012). If the value of the VIF test for the independent variable is lower than 5, Subsequently, we can conclude that this coefficient is not affected by multicollinearity (Salmerón et al., 2018; Arnold, 1980). The Shapiro-Wilk test (S-W test) was applied to verify the normal distribution of errors (de Waal, 1977). This assumption of the regression model is accepted when the p-value of the test criterion of the S-W test is higher than the level of significance. The Bartlett test was used to verify the assumption of homoscedasticity. This assumption is accepted if the p-value of the Bartlett test criterion is higher than the level of significance (Snedecor & Cochran, 1989; Arnold, 1980).

### 9.2.6 Demographics structure of respondents

The following tables shows the Demographics structure of respondent:

Table 8. Demographics structure of respondent

Size of the enterprise	Small enterprise		Micro enterprise		Medium enterprise
Percentage %	23.6 (107 Respondant)		63.9 (290Respondant)		12.5 (57Respondant)
Duration of the company in the business environment	Up to 3 years	From 3 to 5 years	From 6 to 10 years	Over 10 Years	
Percentage %	5.9	6.2	14.1	73.8	
Respondent's highest level of education:	Secondary school without GCSE	Secondary school with GCSE	Bachelor's university education	Master's / engineering university education	Doctoral university education
Percentage %	10.1	40.8	7.5	37	4.6
Gender of respondent	Male			female	
Percentage %	71.1			28.9	

Age of respondent	Up to 35 years	From 36 - 45 years	From 46 to 55 years	More than 55 years
Percentage %	15.2	23.3	26.9	34.6
Relationship of education to the national economic sector	Yes, I run a business in the field I studied	To some extent related (some business processes are related to the area I studied)		Unrelated
Percentage %	37.7	34.8		27.5
Respondent's job position in the company	I am the owner of the company		I am a manager.	
Percentage %	22		78	

Source: own data collection

## 10. CASE STUDY RESULTS:

### 10.1. DESCRIPTIVE STATISTICS

Table 9 shows the basic descriptive statistics (DS) of entrepreneurial risk factors (mean (M), standard deviation (SD), skewness (S), and kurtosis (K)).

Table 9. Selected descriptive characteristics of the evaluation of business risk indicators

DS	LEGAL RISK				OPERATIONAL RISK			
	LEG1	LEG2	LEG3	LEG4	OPE1	OPE2	OPE3	OPE4
M	2.773	2.954	3.370	1.870	2.077	2.198	1.731	2.357
SD	1.109	1.282	1.295	0.832	0.843	0.986	0.875	1.304
S	-0.549	-1.015	-0.950	0.775	0.397	-0.106	1.324	-0.883
K	0.419	0.150	-0.358	0.849	0.673	0.594	1.185	0.565

Source: own data collection

In the table 9, the values of skewness and kurtosis are ranging between -2 to 2 (LEG1: S=-0.549, K=0.419..... OPE1: S=0.397, K=0.673. (See the rest of numbers in the table 9). Subsequently, the assumption of a normal distribution is fulfilled for each independent variable.



## 10.2. CORELATION ANALYSIS

The pairwise correlation coefficients in the correlation matrices between the independent variables and perceptions of the future of industry are summarized in Table 10 (Y).

Table 10. Dependence of indicators of business risk and dependent variable

LEG	Y	LEG1	LEG2	LEG3	LEG4	OPE	Y	OPE1	OPE2	OPE3	OPE4
Y	1					Y	1				
LEG1	0.190	1				OPE1	0.295	1			
LEG2	0.131	0.430	1			OPE2	0.190	0.372	1		
LEG3	0.144	0.284	0.235	1		OPE3	0.255	0.321	0.284	1	
LEG4	0.178	0.167	0.148	0.092	1	OPE4	0.222	0.196	0.242	0.249	1

Source: Own collection

According to correlation matrix in the table 10 we see that all values are above 0 which means that the relationship between the business risk and the dependent variable is a positive relationship.

The values range between 0.092(Min value) to 0.430 (Max value). According to Pearson Product-Moment correlation coefficient strength, the correlation between dependent and independent variable is low.

## 10.3. LINEAR REGRESSION MODELS

The following Table 11 summarize the results of verification of the statistical significance of the proposed regression models.

Table 11. The impact of indicators of the legal and operational risk on the perception of the future

RM5 – Impact LEG on Y					RM6 – Impact OPE on Y						
MCC	0.256	Adj. R <sup>2</sup>	0.059	MCC	0.368	Adj. R <sup>2</sup>	0.128				
R <sup>2</sup>	0.066	SE	1.082	R <sup>2</sup>	0.136	SE	1.042				
Verification of the significance of LRM					Verification of the significance of LRM						
ANOVA	Df	SS	MS	F- ratio	ANOVA	df	SS	PMS	F- ratio		
Regression	3	37.081	12.360	10.550	Regression	4	76.466	19.117	17.594		
Residual	450	527.227	1.172	P – value	Residual	449	487.842	1.087	P – value		
Total	453	564.308		1.02E-06	Total	453	564.308		2.0E-13		
Statistical significance testing					Statistical significance testing						
Variables	RC	SE	t-Stat	Sign. (p-val.)	VIF	Variables	RC	SE	t-Stat	Sign. (p-val.)	VIF

Intercept	1.217	0.192	6.337	0.000	-	Intercept	0.979	0.162	6.031	0.000	-
LEG1	0.141	0.048	2.907	0.004	1.111	OPE1	0.274	0.065	4.245	0.000	1.238
LEG3	0.078	0.041	1.900	0.048	1.090	OPE2	0.044	0.055	0.796	0.427	1.233
LEG4	0.197	0.062	3.175	0.002	1.032	OPE3	0.183	0.061	3.004	0.003	1.189
						OPE4	0.117	0.040	2.952	0.003	1.110

Source: own data collection.

Note: Df. – Degree of freedom; SE – Standard Error; RC – Regression Coefficient; VIF – Variance Influence Factor.

The table 11 findings indicate that the suggested regression model of linear relations between market perception and measures of legal risk (RM5) and operating risk (RM6) is statistically significant. (RM5: F-ratio: p-value = 1.02E-06; RM6: F-ratio: p-value = 2.0E13).

The forms of the regression functions are:

$$Y = 1.217 - 0.141 \times LEG1 + 0.078 \times LEG3 + 0.197 \times LEG4 + \varepsilon_t \quad (2)$$

**Note:**

$Y$	<i>Dependent variable (perception of the future of business)</i>
$LEG1, \dots, LEG4$	<i>Independent variables (indicators of the legal risk);</i>
$\varepsilon_t$	<i>Random error.</i>

$$Y = 0.979 + 0.274 \times OPE1 + 0.044 \times OPE2 + 0.183 \times OPE3 + 0.117 \times OPE4 + \varepsilon_t, \quad (3)$$

**Note:**

$Y$	<i>Dependent variable (perception of the future of business)</i>
$OPE1, \dots, OPE4$	<i>Independent variables (indicators of the operational risk)</i>
$\varepsilon_t$	<i>Random error</i>

There was no evidence of multicollinearity in the regression model based on the VIF test results (see Table 5). For both regression models, homoscedasticity was verified (RM5: Bartlett's test: p-value = 0.187; RM6: Bartlett's test: p-value = 0.207). The normal

distribution of errors was confirmed for both regression models by S-W test (RM5: S-W test: p-value = 0.084; RM6: S-W test: p-value = 0.132).

The evaluation of scientific hypothesis:  $H_{e,LEG2}$ ,  $H_{f,OPE2}$  were rejected;  $H_{e,LEG1}$ ,  $H_{e,LEG3}$ ,  $H_{e,LEG4}$ ,  $H_{f,OPE1}$ ,  $H_{f,OPE3}$ ,  $H_{f,OPE4}$  were accepted.

#### 10.4. DISCUSSION

The estimation of main sales of services and goods (MR1: p-value = 0.000) and the fact that the business has a fair difficulty selling products and services (MR3: p-value = 0.006) affect the view of the company's future. The estimation of appropriate sales of services and goods ( $\beta = 0.273$ ) is the most significant predictor of consumer risk, with the greatest positive effect on the future of industry.

The challenge in marketing goods and services has a major positive effect ( $\beta = 0.160$ ).

The respondents' optimistic perception of competitiveness as a motivator and the company's potential to win new markets in novel forms were not proven (MR2: p-value = 0.252 and MR4: p-value = 0.823).

The view of financial risk as a part of daily life (FR1: p-value = 0.044) and a favorable understanding of the company's financial success (FR2: p-value = 0.000) affect the company's future. An optimistic view of corporate financial success ( $\beta = 0.408$ ) is the most important predictor of financial risk and has the greatest effect on the future of business. The importance of respondents' abilities to consider the most critical facets of financial risk and their ability to better handle financial risk (FR3 p-value = 0.156 and FR4 p-value = 0.995) was not verified.

The majority of SMEs as shown in the attached survey results agree that social media impacts the performance of the companies financially and operationally.

#### 10.5. RESULTS

In this section, we identified business risks that impact small and medium-sized firms' perceptions of the future in the Czech Republic's economic environment. The results show that selected indicators of market, legal and operational risk determine the perceived future of business. The legal risk is perceived as an indicator of the respondent's ability to understand the basic legal aspects and operational risk is perceived as an indicator of the use of company capacities.

### 10.5.1. Reflection

This case study is used as an exploratory research to help us generate data from SMEs in Czech Republic in order to understand the relationship between the size of an organization and its ability/capacity in handling/overcoming risks. The data is gathered from SMEs from all over Czech Republic and feedbacks from owners and managers as explained above ( see 9.2.2 Data collection part).

The results from this study will allow us to highlight where the small and medium enterprises stand against the large ones as well as their potential. Also, considering the sensitivity of this topic and concerns an important section of Czech Republic community we can say that this study is a primordial topic that deserves more and more in-depth research.

## 10.6. Case study limits

This fact can be considered restricting, despite the authors' attempts to collect the maximum possible sample of business organizations (n= 454) from the Czech Republic's business climate. The article's methodological section, on the other hand, goes into great depth about the respondents' composition. Another constraint is the quality of study, which is mostly conducted locally.

### 10.6.1. Limits

- The range of case study (454 respondents);
- Time period of data collection (before pandemic – beginning);
- Methods – only Linear regression method (LRM), exist different method e.g. SEM method – relationships between variables not only one line;
- Only one country – Czech Republic.
- Case study – only SUBJECTIVE perception of entrepreneurs (owner and manager)

## **11. PROJECT PART: INTRODUCING A SUPPORTIVE MARKETING TOOLS TO IMPROVE THE QUALITY OF THE BUSINESS ENVIRONMENT IN THE SECTOR OF SMES IN CZECH REPUBLIC**

The project of presenting a helpful tool for controlling risks and building marketing plans to boost small and medium sized firms in the Czech Republic was designed by the literature review and some analytical outcomes and conclusions.

### **11.1. Project framework**

The project part of this thesis will focus on identifying the most basic marketing tactics and strategies, as well as controlling legal and operational risks in SMEs in the Czech Republic, which are applicable not just to Czech small businesses but also to small enterprises around the world. In most economies around the world, small and medium-sized businesses (SMEs) play a significant role. For example, SMEs account for two-thirds of all private-sector jobs in the European Union, accounting for about 99 percent of all economic activities (Gama and Geraldes, 2012). SMEs are often perceived as having a simpler internal organization than larger companies, making them more flexible and quicker to respond to and adapt to change. SMEs, on the other hand, are frequently confronted with significant hurdles. SMEs benefit from economies of scale less frequently than larger businesses, and they have less access to a diverse resource base. SMEs are more sensitive to external shocks than larger corporations due to their typically low equity ratio. This shows that not only huge corporations suffer risks, but so do small businesses, whose survival is more readily jeopardized due to their limited financial and non-financial resources. Risk management can assist SMEs in identifying significant hazards that could jeopardize the company's performance or existence in time to effectively deal with them. In the worst-case scenario, misjudging or failing to detect risks can have terrible implications, ranging from customer loss to damaging liability, environmental harm, and even bankruptcy.

The goals of the project part are:

- Submit a reassuring marketing tools and techniques to increase the quality of the business environment in the sector of small and medium-sized enterprises in the Czech Republic.

- Managing legal, and operational risk in SMEs.
- Perform risk analysis and time analysis in SMEs.

Risk management is one of the most critical project management processes. Project risk management (PRM) can be aided by a variety of tools and strategies at various stages of a project. While major corporations' risk management tools are well publicized, little is known about the tools and tactics utilized by small and medium-sized businesses (SMEs). Given the importance of SMEs in the Czech Republic's economy, this project's goal is to discover tools and approaches to help them grow.

## **11.2. Management of legal risks in SMEs in Czech Republic**

SME risk frameworks will often identify and prioritize legal risks that might have a meaningful impact on the ability of SMEs to carry out their duties and result in financial or reputational loss. What constitutes a legal risk, however, may be less obvious. This is where Legal can help SMEs comprehend the breadth of legal risks and their nature, i.e., the universe of legal hazards that SMEs face. Legal, in order to do this effectively, must have a thorough understanding of the organization and its activities. Some of these risks will be inextricably related to Legal job, such as contracting, contract management, and dispute resolution, for which Legal may already be responsible. Others may fall under the purview of other functions and be familiar to Legal as a result of Legal involvement with those activities. It is critical to establish clear lines of accountability for the legal risks that have been recognized. This is important because there may be a propensity for all legal risks to be viewed as Legal responsibility, resulting in risks slipping through the gaps. All risks shall be owned by management, with the exception of those legal risks for which Legal is responsible. It is important to note that Legal only provides advice and is not the owner of the legal matter in question. As in-house lawyers are well aware, advising on legal risk is as much about knowing the organization's rights and obligations as it is about knowing the letter of the law. How are the various risks to be assessed so that control mechanisms can be put in place after the legal risks have been identified and accountability for them has been assigned?

A number of factors, including the level of regulation in the sector and the SMEs' business plan, may influence how they manage their legal risks. An acquisitive commercial

corporation, for example, may take a different attitude to certain risks than a government agency. Many organizations will evaluate legal (and other) risks using a framework. Finance, clients, operations, reputation, property/assets, and regulation are some of the most common categories. Various risk scenarios can then be matched against these parameters to determine the legal risk's possible impact. In the instance of a data breach, a product recall, a large litigation issue, or a regulatory intervention, for example. It will be necessary to determine the appetite or tolerance for risk in the organization as part of the process of analyzing legal risk. This will be determined by a variety of criteria including the organization's type, company, and strategy. As a result, various risks will have different tolerance limits. Legal job here will be to assist management in understanding the implications of a legal risk and to provide advice on risk mitigation strategies. Because of the potential consequences of a failure, some legal risks may have a zero or near-zero tolerance, but others will be managed within a tolerance range acceptable to management. Although Legal opinion will be crucial, it is not Legal who sets the risk appetite. The controls put in place to manage legal risks will differ depending on the risk's probable impact and the risk's accepted appetite. The goal is to keep the risks within the risk appetite of the organization. The severity of the risk will determine the scope of the controls. Implementation of checklists and policies, the use of technology, horizon scanning, escalation procedures (including to Legal), training and guidance, and the provision of tailored legal counsel are all examples of typical control mechanisms. By establishing and updating rules, providing generic guidance, training, and providing customized counsel, Legal can play a vital role in assisting in the management of legal risk.

Significant risks are frequently monitored and reported in SMEs' risk management processes. Whether legal risk is a distinct category of risk or a subset of other significant risks, a system for reporting on legal risks will be critical, regardless of where they fall in the risk management framework for SMEs. This could involve using dashboard reporting to provide critical indicators of risk levels and thresholds, as well as a traffic light system to show current compliance levels. Periodic stress testing and risk owner reports are frequently included in the reports escalated to various levels of management and the board.

### **11.3. Management of operational risks in SMEs in Czech Republic**

The day-to-day issues that SMEs may face when conducting business are known as operational risk. Physical assets may be harmed, systems may fail, products may fail, data may be stolen, or fraud may occur. Operational risk refers to the possibility of losses as a result of the entity's insufficient or defective logistic system, which includes processes and resources. Operational risk is defined as a type of risk that originates within an organization and is influenced by all of its aspects, as well as external variables. Operational risk, according to some research, is less common than other risks, but it can have more catastrophic consequences for an entity's operations. Market risk, as defined under the Insurance and Reinsurance Act, is the risk of suffering losses as a result of changes in the level and volatility of market prices for assets, liabilities, and financial instruments. In the case of economic activities, this risk comprises business relationships with suppliers and consumers, which serve as the foundation for the entity's operations while also posing a threat. Many SMEs are exposed to financial risk because they do not document sufficient cash flows in proportion to their expected plans. Financial risk, according to Basel and Solvency Risk Assessment Standards in Banks and Insurance Companies, is unique in nature and can be described as any occurrence or activity that may negatively affect an organization's capacity to achieve objectives or implement strategy. This means that the money gathered in these entities are mostly used to carry out present activities, therefore any increase in expenditures will result in a budget loss. The company will suffer financial difficulties if the budget is not effectively prepared, and cash generation does not meet the estimate. Economic risk is linked to the risks of doing business in a certain country. Its most essential component is tax risk, which encompasses concerns connected to tax law variability, interpretation of current laws variability, and tax construction procedures variability. It is also worth mentioning the level of interest rates or changes in labour rights, both of which have a substantial impact on the entity's profitability. Furthermore, financial risk is a common stumbling block for SMEs, limiting their growth. According to several authors, small businesses are more sensitive to the risks linked with the current crisis while also having insufficient knowledge into how to effectively manage its long-term implications. A rapid decline in market demand is to blame for small businesses' bad state and risk of insolvency. These businesses, on the other hand, demonstrate better adaptability

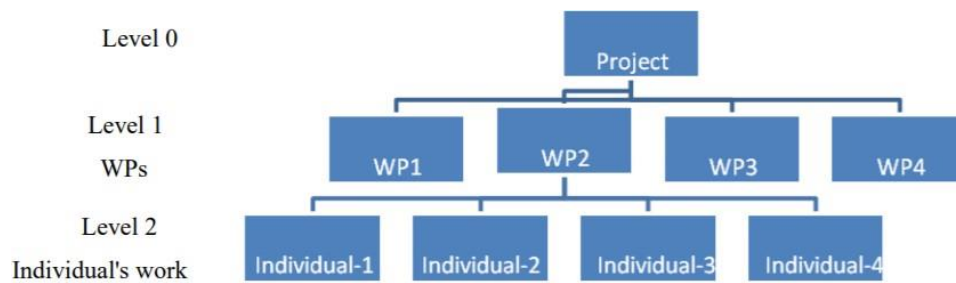


in the face of economic challenges. Constantly monitoring the impact of the pandemic on business operations and making expenditures for both structural and non-structural solutions are crucial elements in predicting particular company risks. The risk assessment stage of the risk management process is crucial. Simultaneously, the pandemic scenario has increased the complexity of operational, financial, and market processes in the face of operating conditions, and the resulting threats, which are intertwined, have complicated the process of dealing with them. This adds to the importance of the risk management process while also posing a significant challenge to the risk management function. Risk management is also emphasized in EU papers. To achieve financial security, some businesses should have a specialized strategy and methods for identifying, measuring, managing, and controlling financial risks.

## **12. ESTABLISHING SUPPORTIVE TOOLS TO HELP SMEs TO INCREASE THE QUALITY OF THE BUSINESS IN CZECH REPUBLIC**

Cost risk analysis is an important component of project risk analysis. Cost risk analysis looks at all of the costs connected with a project (labor, materials, equipment, administration, etc.) and focuses on the unknowns and risks that could affect those costs. A model is used in a project simulation to translate uncertainties into their possible impact on project objectives. Uncertain activities having a cost impact do not always occur, but we must be prepared to deal with them when they do. To estimate the cost uncertainty in a project, break down the overall cost into components, define the uncertainty in each item, and then put the components back together to generate a picture of the whole cost. This is commonly determined using a Work Breakdown Structure (WBS), which is a document that lists the various work packages (WPs) that make up the project from top to bottom. Each WP can then be broken into an invoice of items and labor estimates. A number of cost elements in each WP usually have some level of uncertainty.

Figure 7. Work Breakdown Structure (WBS)



Source: PMBOK, 2004;HOSSEN 2006

### 12.1. Qualitative risk analysis

Qualitative risk analysis evaluates the significance of detected risks to identify their likelihood and potential influence on project objectives, allowing risks to be selected for further examination through the development of a prioritized list. The Probability-Impact Matrix is the most used method for this. Individual risk probabilities and implications are evaluated and categorized as High (H), Medium (M), or Low (L), with additional adverbs such as (very). To rate each risk in terms of impact and likelihood of occurrence, numerical scales can be utilized. The sum of these assessments will provide an overall risk severity rating. However, the higher the risk level, the greater the risk. Qualitative risk analysis does not necessitate the use of a model, and it is typically faster and less expensive than quantitative risk analysis. The quantitative risk analysis is built on the foundation of qualitative risk analysis, which provides priorities for risk response strategy.

Table 12. Probability-Based Qualitative Scoring – Impact Grid

Impact	Probability		
	Low score 1	Medium score 5	High score 10
Low score 1	1	5	10
Medium score 5	5	25	50
High score 10	10	50	100

source: Ward,S.C 1999

For example, in a questionnaire where numerical ratings from 1 to 10 were used to reflect the probability and impact of each risk, the probability-impact ratings were rated as follows: Low (L), Medium (M), and High (H). The rating is based on a calculated priority score to

identify the risk class, which is deemed to be of the highest, intermediate, or lowest importance, accordingly; however, this rating score does not reflect the real magnitude of risk.

Table 13. Example of project risk prioritization

NO.	Name of risk	Rank Score	Rank type	Color
1	Lack of experience and financial abilities of the contracting companies	100	High	Red
2	Delays in payment to the contractors	25	Medium	Yellow
8	Unforeseen adverse ground condition and geological problems at the site	1	Low	Green

Source: Ward,S.C 1999

The results of this research were used to prioritize the risk level in a table in order to determine the most critical risks and provide suitable resources to the top-ranking risks. Priority Rating can also be displayed using colors such as Low (Green), Medium (Yellow), and High (Red), as seen in the table above.

## 12.2. Quantitative risk analysis

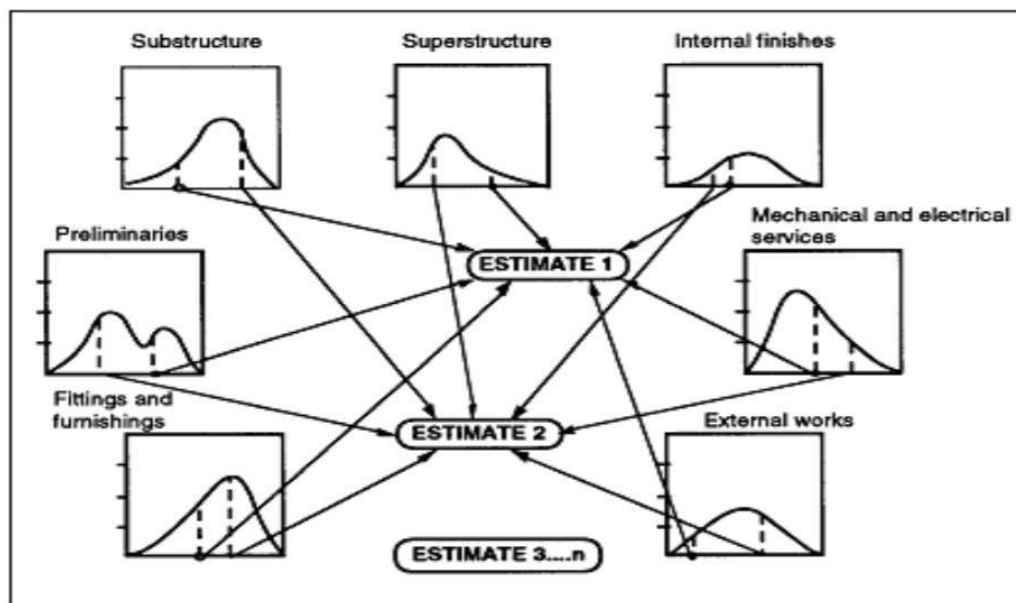
model of the entire project or key aspects and utilizing statistical simulations to analyze the combined effect on project outcomes. Based on the project's risks, the output is a probability distribution of the project's completion cost or date. Statistical techniques that can be applied with specialist software are employed in quantitative risk analysis. The goal is to help establish appropriate solutions by determining the total level of risk exposure connected with a project. The Work Breakdown Structure (WBS), which is made up of Work Packages, is used to analyze project cost risk (WPs). Each WP in the WBS necessitates a three-point cost estimate for the anticipated work. For each WP cost, the three estimates are the least, most likely, and maximum numbers. To indicate the uncertainty of those estimations, the cost of project components (WPs) is replaced by a probability distribution. To depict project cost uncertainty, beta and triangular distributions are widely utilized. Monte Carlo simulation can be used to analyze a project's cost using probability distributions to reflect uncertainty in activity costs. The triangle distribution was utilized to

model the cost of each work in this project section. Probability distribution functions are used to represent these uncertain variables.

### 12.3. Monte Carlo simulation (Supportive tool for managing risks in SMEs)

Monte Carlo simulation is a methodology that allows a computer to calculate the cost or time required to complete a project several times. Iteration is the process of repeating a calculation. The cost of unknown activities is entered as a probability distribution function. The cost of project activities is chosen at random using probability distributions.

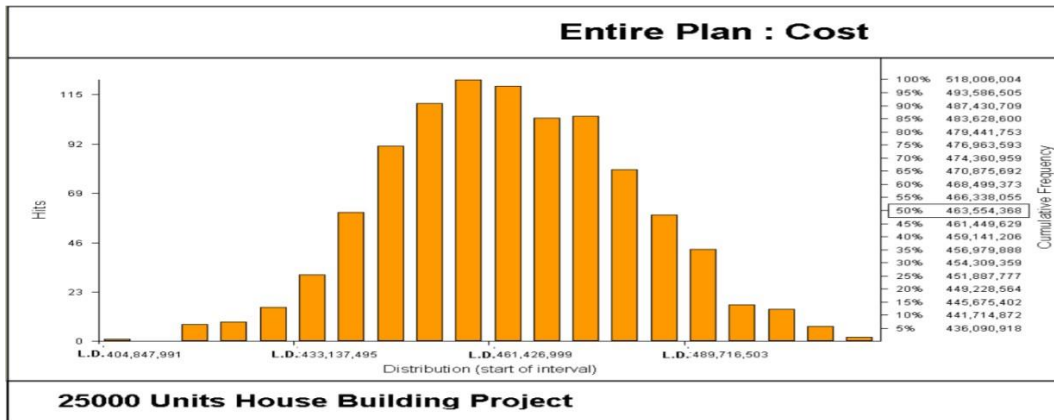
Figure 8. Random Variable Sampling (RVS)



Source: Flanagan and Norman, 1993

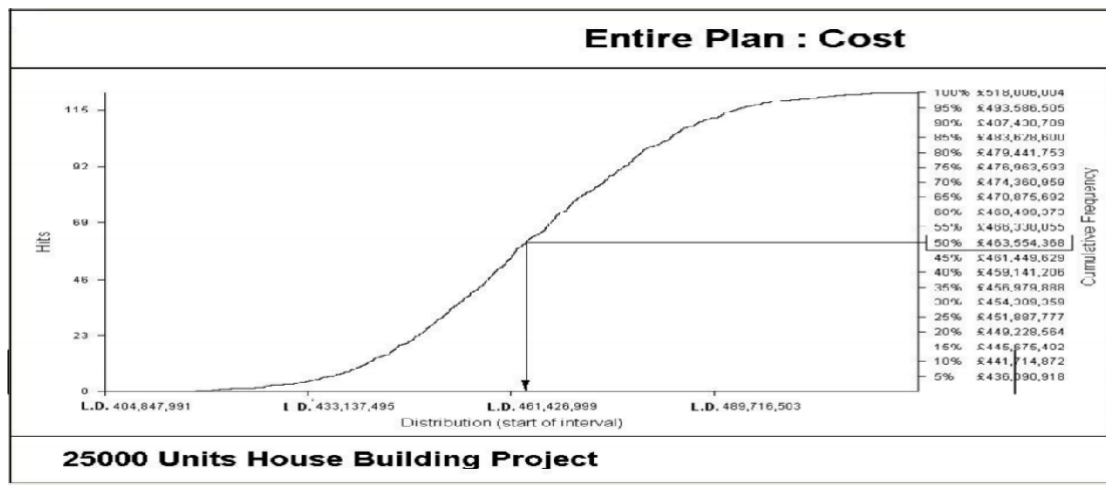
The procedure begins with the generation of random numbers between 0 and 1, and then proceeds to the generation of random deviates or variants from a density function of a given probability distribution, such as the triangle or beta distribution. The simulator selects a random sample from the given probability distribution for each simulation (iteration or replication), which is then utilized to model that uncertain factor. To develop a project cost distribution, the process is done a huge number of times.

Figure 9. Project Cost Analysis Histogram (Simulation Results)



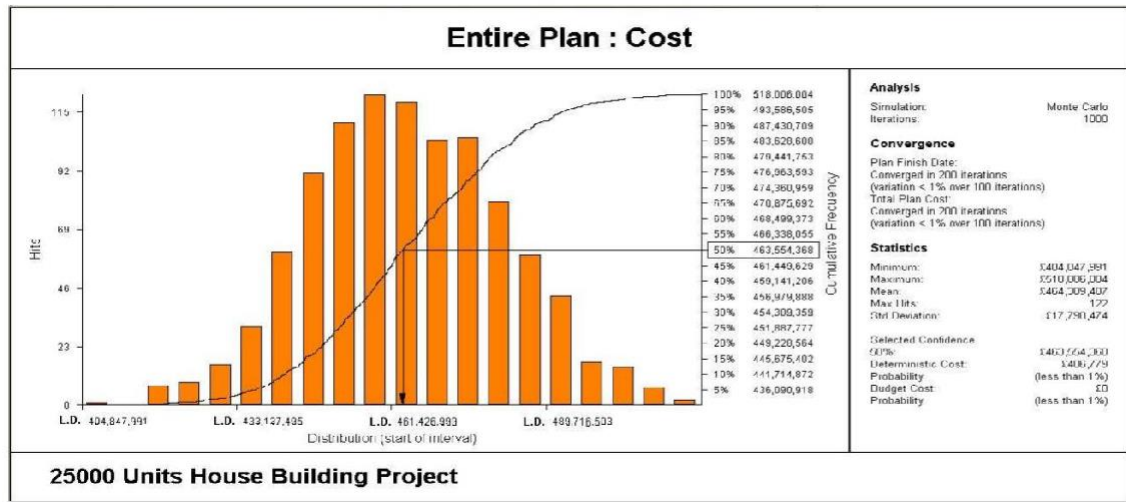
Source: Nicholas, A.(2004)

Figure 10. Project Cost Analysis Frequency Curve (Cost Risk Assessment)



Source: Nicholas, A.(2004)

Figure 11. Project Cost Analysis Distribution (Cost Risk Assessment)



Source: Nicholas, A.(2004)

After running the cost simulation model, a histogram is created with all conceivable project cost combinations. The software generates a histogram of all conceivable project cost outcomes. A Cumulative Frequency Curve is then used to show the simulation's outcome. This graph depicts the overall project cost at various probabilities. These estimated prices are more likely to be representative of the final project cost range. The 50 percent confident project cost will be compared to the most likely estimated project cost, the project contract's cost, and the most likely estimated project cost. According to the project's contract, the most likely cost for the project is (406779), while the approved budget for the project is (410680). According to the cost risk analysis, the probability of finishing the project inside the contract's budget is less than 0.01. (Equivalent to 1 percent). As seen by the cumulative frequency curve, there is a 0.99 risk (equal to 99 percent) of not finishing the project within the budget. The probability of exceeding the sum of the most likely estimated costs is represented by this cumulative frequency curve. It is much more useful for a project manager in a small firm to make decisions based on information that displays completion cost and its related likelihood rather than relying solely on predicted costs. The risks affecting the project's cost were quantitatively examined using Monte Carlo simulation and quantitative risk analysis of these risks to weigh up their effect on the project. The Monte Carlo simulation method has been used to represent unknown factors by creating a series of simulations that show the range of all possible outcomes. With a probability of 0.50, a

frequency curve (or Empirical Cumulative Distribution Function, ECDF) that represents simulation outcomes for project cost risk has been built. The model also displays the overall cost of the project with various possibilities. The project manager or decision maker can use this model to determine the overall budget for the project with a high level of confidence.

In summary, the key to successful Monte Carlo simulation-based contingency planning is whether the project manages risk constantly rather than discretely or even periodically. In the past, document and information management posed a hurdle, if not a tax, to projects, making disciplined, continuous risk management prohibitively expensive. The time and resources required to develop the model for a Monte Carlo simulation were prohibitively expensive for medium and small projects; only large projects could pay the overhead. Capturing the data needed to generate and simulate project risks and cost estimates via a Monte Carlo simulation is much less expensive and complicated now, thanks to electronic information storage and movement both within and outside the project. Monte Carlo simulations run faster and provide a more comprehensive range of analytic tools when using sophisticated software tools that run on a desktop computer rather than a multi-floor machine. The benefit of Monte Carlo simulations is more readily available for medium-sized and smaller projects now that they are easier and faster to construct. Managing uncertainty, implementing contingency based on risk drivers while taking cost and risk correlations into account, demonstrating the cost benefit of risk management, and lowering cost capital are all simple tasks that may be accomplished. When doing Monte Carlo simulations, extreme caution is required. When it comes to this complicated process, there are numerous ways to cause problems. Although the advantages are genuine and significant, only the skilled application of Monte Carlo simulation may produce significant outcomes.

## CONCLUSION

Risk management becomes present in the actions taken by small and medium-sized enterprises and not just large ones. This study provided a literature background pertaining to the principles and concepts of risk management in small and medium enterprises, risk management process, implementation, tools, strategies, and frameworks were discussed. Also highlighted the efficiency of RM in helping SMEs in Czech Republic setting up against both legal and operational risks.

RM for SMEs is still a "spot" issue despite their vast distribution and importance from an economic and social standpoint, and the fact that they are fundamentally weaker and more vulnerable to failure when faced with unforeseen risks.

From our findings (survey), there is a huge neglect of adopting marketing strategies as a way of mitigating or evading risks. There traditional thinking is prevailing in SME's environment. In other word, marketing is only used as an attacking (in order to sell) tool not as a defensive one from external economic threats. In the light of this study, it can be concluded that all departments of the company should get distinctive investments aiming to survive against risks.

In addition, the recommended supportive tools are a must to be implemented but before doing so, there should be deep research from each small or medium company to match those recommendations with circumstances and business environment of every SME.



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## **LIST OF ABBREVIATION**

CRO Chief Risk Officer

COSO Committee of Sponsoring Organizations of the Treadway Commission

CZ Czech Republic

EM Entrepreneurial marketing

ERM Enterprise Risk Management

EBA European Banking Authority

ECDF Empirical Cumulative Distribution Function

GDP Gross Domestic Profit

LR Legal Risk

OR Operational Risk

SWOT Strength Weaknesses Opportunities and Threats

PMBOK Project Management Body of Knowledge

VIF Variation Factor of Inflation

SMEs Small and Medium sized enterprises

WBS Work Breakdown Structure

RVS Random Variable Sampling

IMF International Monetary Fund

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## **APPENDICES**

**P I** RANKING ON DOING BUSINESS TOPICS IN THE CZECH REPUBLIC.

**P II** AVERAGE SIZE OF THE SHADOW ECONOMY, 1990-2019.

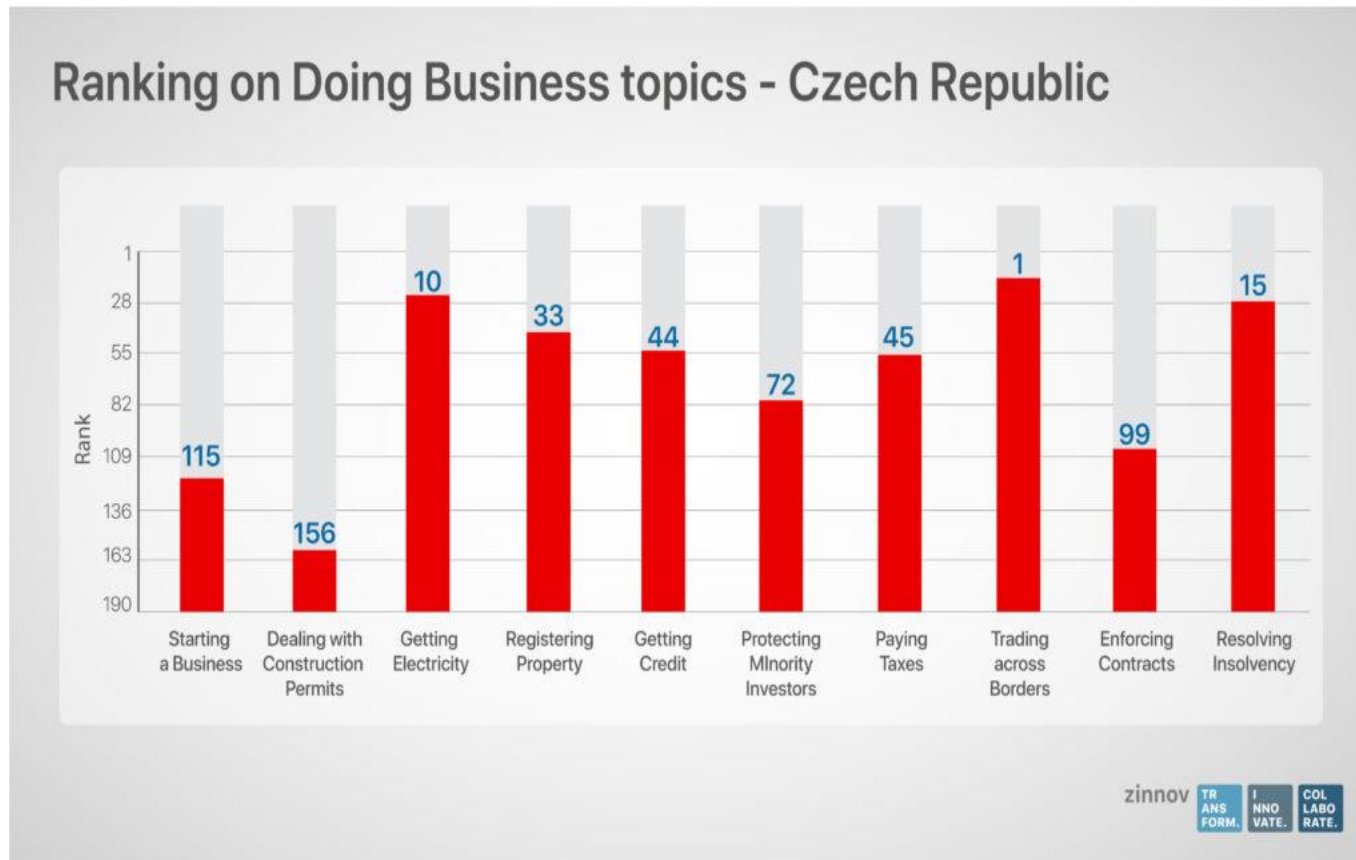
**P III.** ECONOMIC DATA OF THE CZECH REPUBLIC.

**P IV** LABOUR PRODUCTIVITY AND SMEs SHARE OF BUSINESS R&D EXPENDITURE IN THE CZECH REPUBLIC.

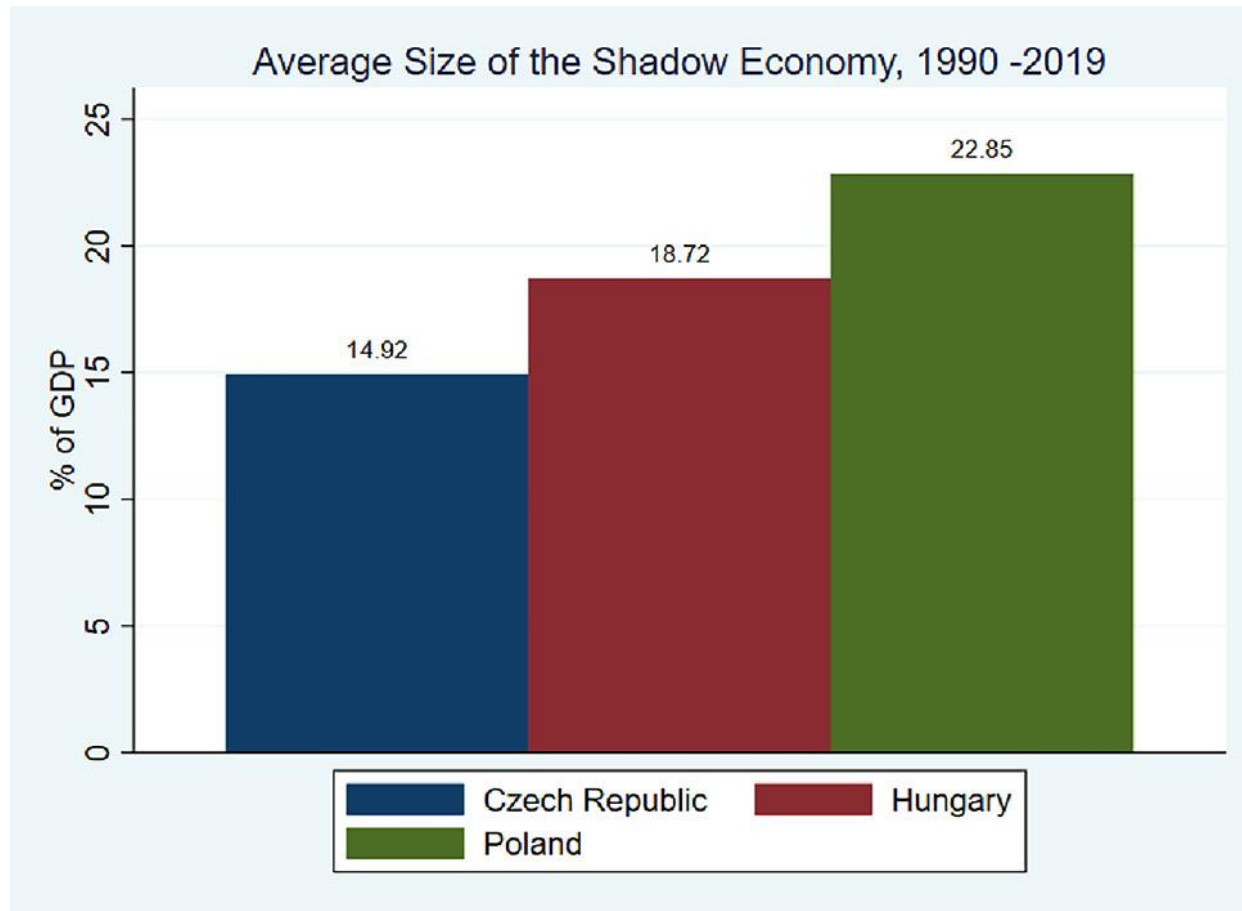
**P V** SMEs IN THE CZECH REPUBLIC.

**P VI.** REAL GDP GROWTH IN THE CZECH REPUBLIC.

**APPENDIX P I: RANKING ON DOING BUSINESS TOPICS IN THE CZECH REPUBLIC.**



**APPENDIX P II: AVERAGE SIZE OF THE SHADOW ECONOMY, 1990-2019**



## APPENDIX P III: ECONOMIC DATA OF THE CZECH REPUBLIC

	2011	2012	2013	2014	2015
GDP growth, in percentage	2.0	-0.8	-0.5	2.0	4.3
Investment growth, in percentage	1.1	-3.1	-2.8	2.1	7.7
Industrial production growth, in percentage	5.9	-0.8	-0.1	5.0	4.4
Unemployment rate, in percentage	6.7	6.8	7.7	7.7	6.5
General government deficit, as percentage of GDP	-2.7	-3.9	-1.3	-1.9	-0.4
Public debt, as percentage of GDP	39.9	44.7	45.1	42.7	41.1
CPI inflation, in percentage	2.4	2.4	1.4	0.1	0.1
Central bank interest rate, in percentage	0.75	0.05	0.05	0.05	0.05
Stock exchange index variation, in percentage	-25.6	14.0	-4.8	-4.3	1.0
Exchange rate of the CZK to the EUR	25.8	25.14	27.43	27.73	27.03
Current account balance to GDP, in percentage	-2.2	-1.6	-0.5	0.2	0.9
Exports in EUR billions	99	104	103	110	118
Imports in EUR billions	96	99	97	102	111
Foreign reserves in EUR billions	31	34	40.8	45	59.4
Foreign debt as percentage of GDP	54.9	60.7	63.8	69.1	70.7

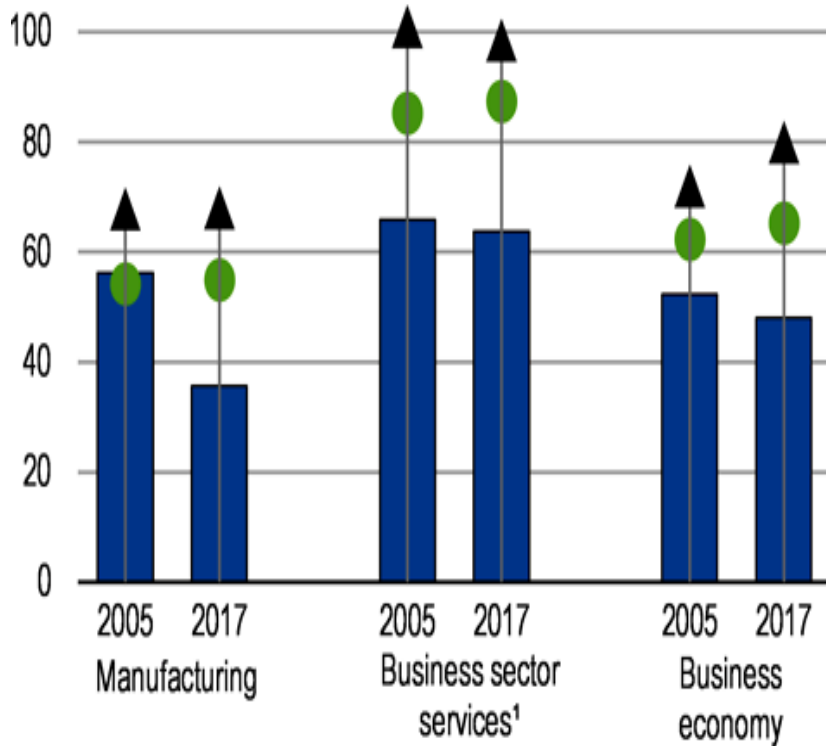
Source: Český statistický úřad, Česká národní banka

**APPENDIX P IV: LABOUR PRODUCTIVITY AND SMEs SHARE OF BUSINESS R&D EXPENDITURE IN THE CZECH REPUBLIC.**

**A. Labour productivity by enterprise size**

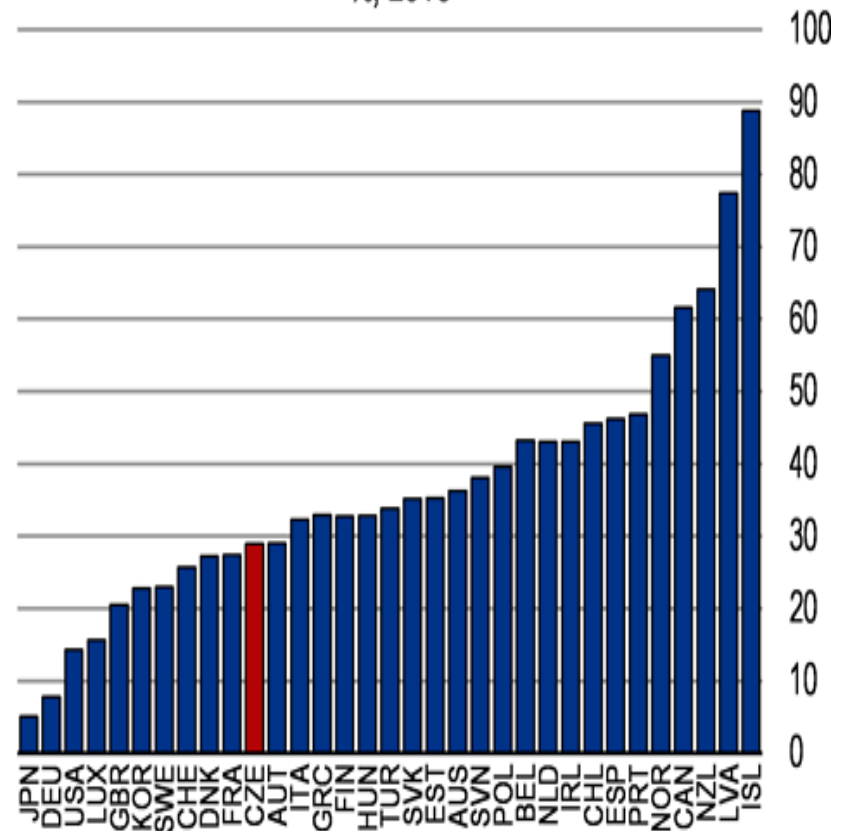
Index, productivity of large enterprises (250+) = 100

■ Micro (1-9) ● Small (10-49) ▲ Medium (50-249)



**B. SME share of business R&D expenditure**

%, 2016



APPENDIX P V: SMEs IN THE CZECH REPUBLIC.



# SMEs in CZ

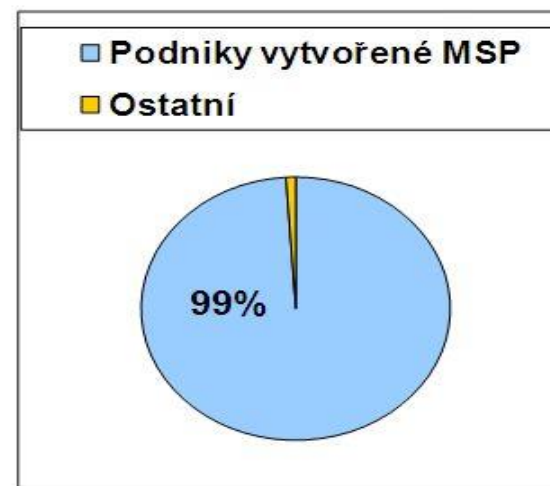
## 999.182 enterprises



**Market economy tradition  
in CZ from 1989**

**Total ent. in CZ:  
1.000.865 enterprises**  
➤ **SME 99,83 %**

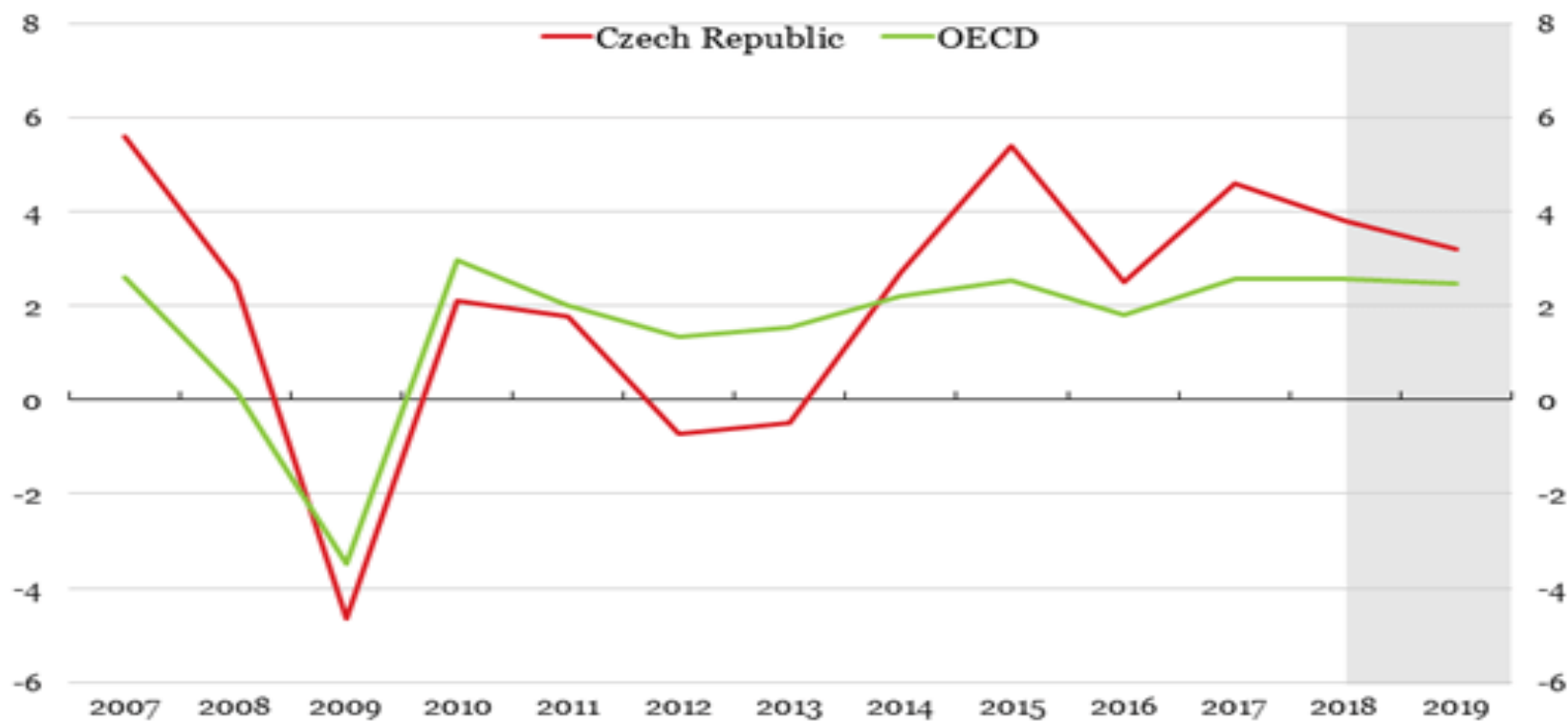
Source: ČSÚ/MPO, April 2008  
Data from 2007



## APPENDIX P VI: REAL GDP GROWTH IN THE CZECH REPUBLIC.

**Figure 1. The economy is thriving**

Real GDP growth, year on year per cent changes



Source: OECD (2018), OECD Economic Outlook: Statistics and Projections (database).