Marketing strategies and Management of economic risk in small businesses in the Czech business environment

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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 strategies and managing the economic risk in the Czech Republic business environment.

II. Practical part

- Analyze marketing strategies in small businesses in the Czech Republic.
- Evaluate and assess a supportive marketing strategies and techniques to boost he economic business environment in small businesses in the Czech Republic.
- Perform cost and risk analysis of the proposed strategies.

Conclusion

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ABSTRAKT

Diplomová práce si klade za cíl prozkoumat vhledy a vnímání k tématu řízení ekonomických rizik v malých a středních podnicích v České republice. Malé a střední podniky hrají v domácím hospodářském rozvoji zásadní roli. Jsou to organizace s vyšší přijatelností a flexibilitou ve srovnání s velkými podniky. Kvůli nedostatku osvědčeného rámce a omezeným zdrojům jsou však extrémně zranitelní vůči rizikům. Kromě toho jsou postupy a techniky řízení rizik zásadní pro výkon a rozvoj malých a středních podniků. Řízení rizik zahrnuje zjišťování hrozeb a určování pravděpodobnosti jejich výskytu a jejich nebezpečnosti. Klíčovým problémem v procesu řízení rizik je řešení známých rizik a stanovení, co s nimi dělat. Diplomová práce má tendenci komplexněji zkoumat současný stav řízení rizik v malých a středních podnicích v České republice. Hlavním cílem je zjistit závislost průmyslového sektoru malých a středních podniků a jejich přístup k řízení rizik. Pokrývá teoretickou část, která obsahuje přehled literatury z pohledu českých i zahraničních autorů definujících základní pojmy řízení ekonomických rizik pro malé a střední podniky. Empirická část obsahuje data získaná od různých společností, následují výsledky průzkumů mezi malými a středními podniky v České republice a jejich hodnocení. Závěry získané z empirické části práce v tomto bodě budou vyplněny jako důvod pro projekt zavedení podpůrného nástroje ke zvýšení kvality podnikatelského prostředí v sektoru malých a středních podniků v České republice.

Klíčová slova: Řízení rizik, malé a střední podniky, proces řízení rizik, ekonomická rizika

ABSTRACT

The diploma thesis aims to explore the insights and perceptions towards the topic of economic risk management in the small and medium-sized enterprises in the Czech Republic.Small and medium-sized businesses (SMEs) play a critical role in domestic economic development. They are organizations with higher adoptability and flexibility comparing to large enterprises. However, due to a lack of proven framework and limited resources, they are extremely vulnerable to risks. Furthermore, risk management practices and techniques are essential to the performance and development of SMEs. Risk management includes detecting threats and determining how likely they are to materialize and how dangerous they can become. A key concern in the risk management process is dealing with known risks and determining what to do with them. The diploma thesis tends to investigate the current state of risk management in Czech Republic SMEs more comprehensively. The main objective is to determine the dependency of industrial sector of SMEs and their risk management approach. It covers the theoretical part that includes literature overview from the perspective of Czech and foreign authors defining the basic concepts of economic risk management for SMEs. The empirical part comprises the data extracted from different companies, followed by the results of the surveys conducted among SMEs in Czech and their assessment. The conclusions acquired from the empirical part of the work at that point will fill in as a reason for the project of introducing a supportive tool to increase the quality of the business environment in the sector of small and medium-sized enterprises in the Czech Republic.

Key words: Risk management, small and medium-sized enterprises
(SMEs), riskmanagement process, Economic risk.

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CHAPTER I

INTRODUCTION

Risk is global and spreads through every issue of life. To business sectors, unanticipated situations create severe loss exposures. Moreover, to small and medium-sized enterprises and micro companies, where the capital background is not sufficiently strong, a disaster could likely lead to interruption in operational activities, financial loss, and bankruptcy. According to Small Business (2006), there were more than ten thousand of self-employed workers went bankrupt. In Finland, on the other hand, SMEs made up 99.4 percent of all businesses in 2010, with micro businesses accounting for more than 83 percent (OECD 2012 p.66). As obviously known that the number of small businesses is increasing, the statistics number for financial loss or business failure will grow and develop accordingly. Therefore, managing risks to reduce anddiminish the loss exposure is primordial for every small business. Despite the need, many SMEs seldom perform comprehensive risk assessments and develop risk management strategies. It is due to the fact that engaging in risk assessment and management require and need a certain budget and human resource, which are limited in small enterprises. These companies' decision on how and what to invest in relies on the ongoing activities and on their financial status. Small scale businesses in general shift the process of risk management into project- based. It is controversial that whether a traditional risk management plan or a customized project risk management would help SMEs to reduce the losses or would negatively weigh ontheir budgets. Risk management should not be approached exclusively from a financial perspective since this may lead to important strategic or operational threats being ignored or underestimated. Strategic and operational risks have now become the most significant issues for the majority of companies. A remarkable difficulty is that traditional risk management techniques aim to focus and concentrate on risks where there is proportionately strong historical data, and where the potential impact and possibility of occurrence can therefore be identified with a degree of statistical probability. Such data is hardly ever available to support decisions on strategic and operational issues. For instance, there is currently a concern that businesses may not be taking adequate and satisfactory measures to deal with risks arising from emerging issues, such as e-commerce, due to a failure to understand, identify, evaluate, and assess the underlying risks. Regardlessof which organizational

structure is adopted to deal with business risk, the main first step must always be for the directors to identify the company´s appetite for risk.

In other terms, the extent to which it is willing to accept a degree of risk. Some businesses by their extreme nature need to accept a certain level of risk to be able to operate. An essential factor is for the directors to develop and boost awareness of the relative risks of others in the same industry or sector and highlight any differences and to comprehend why they are willing to take a different strategy. Now, it is crystal-clear that the increasing speed of technological development and globalization of the marketplace, business environment has become more and more risky andchallenging for companies. Knowing how to identify, analyze and response to different typesof risks in today´s business environment is very important for survival. Furthermore, SMEs (Small to Medium-Sized Enterprises), due to their limited resources as previously mentioned,and their structural features, are more influenced by effect of various risks compare to large organizations. SMEs require the implementation of an effective risk management (RM) framework because they contribute significantly to human resources and value-added creation. The current thesis tends to see how risk management is practicing by SMEs of different industrial sectors in Czech Republic. Regards the significance of SMEs in Czech economy growth, the thesis is to see if there is any systematic risk management process in Czech SMEsand if risk management (RM) practices show any dependency to industrial sectors. This diploma thesis focuses on the risk management processes in small businesses, preciselyin the Czech Republic, and investigates main risk management terms and theoretical risk management concepts. This research thesis aims also to examine the influence of the company’s risk management strategies to its operational activities and expects to be concluded by a convenient and effective risk management scheme to the business scale of the Czech small and medium-sized enterprises (SMEs) that is acquired from the analytical part of the work and to come up with introducing a supportive tool to increase the quality of the business environment in the Czech Republic's small and medium-sized enterprise sector.

SCOPE OBJECTIVES AND METHODOLOGY

In the recent decades, many authors, and scholars turned their focus and attention to the topicof risk management in SMEs. However, it is important to acknowledge and understand first that risk is a part of uncertainty. According to Frank Knight (2006), "risk" is the word used todescribe and express cases of known probability. For instance, a store can calculate the probabilities that a cashier might wrongly check an order per every single number of customers and therefore the store account might lose some balance. Uncertainty is when the probabilities can´t be calculated or make any forecasted assumption. An example for uncertainty is to predict stock market price for sixty years in advance. Risks and uncertainties are quiet often marked in the language of "statistical probability" (B. Ritholtz, 2012). Regardless of the different scope of these two terms, both risk and uncertainty might result in positive or negative impact to the business operation and require decent management. Risks might stimulate from uncertainties related to management, natural disaster, political affairs, and cultural factors. (Köster, 2009, p99). Classification of risks according to their influences or nature is the important step to any risk management strategies(Wideman 1992, III-2). The research thesis aims to examine the state of risk management processes in a small and medium-sized enterprises, and to discuss the extent of an effective management strategy based on the discussed business scale. Within this thesis, risk management is defined as theprocess of identifying, evaluating, and preventing risks. The losses expose to corporate involve financial loss, resource misfortune, operation inefficiency, and so forth. In order to study this passage, some questions were established to be answered:

RQ1: How can a more holistic view of economic forecasts be developed that takes into account a wide range of risk factors?

RQ2: How do SME in Czech Republic assess risks and implement an effective risk management strategy?

RQ3: What would be beneficial for SMEs in adopting significant supportive tools to help them overcome the crisis?

Thus, the scope of objectives of the diploma thesis are:

- To perform critical literature review from the perspective of Czech and foreignauthors defining the basic concepts and aspects of economic risk and risk management, supporting tools for SMEs (small and medium-sized

enterprises);

- To distinguish the current supportive tools for SMEs in Czech Republic and the ones in European Union.
- To identify the level of implementation of introducing a supportive tool to increasethe quality of the business environment in the sector of small and medium-sized enterprises in the Czech Republic.
- To conduct the survey among SMEs in the Czech Republic.
- To explore the insights and perceptions towards the topic of Economic risk management in SMEs in the Czech Republic.

In the view of all the above, the main goal of the diploma thesis is to create a project of introducing a supportive tool to increase the quality of the business environment in the sector of small and medium-sized enterprises in the Czech Republic. In the attempt to find answers to the above-mentioned research questions and reach thesisobjectives, certain methodology will be used in the thesis. In the theoretical part of the thesis qualitative research of Czech and foreign sources andanalysis of scientific literature will be performed. When it comes to research and analytical part, both main and secondary data will be used to complete the task. Primary data will be gathered as a result of the survey's nature. The questionnaire among SMEs in Czech Republic will be conducted in order to look at the current situation from the perspective of SMEs in Czech Republic and to reveal their attitude toward financial and market risk, their knowledge and interest in risk management programs, and risk perception. The survey will be conducted online using Google forms and sent to companies (SMEs) in the Czech Republic via email. The questionnaire consists of 77 questions that can be answered using the connection given. The questions can be found in appendix P. The targeted group of respondents are small-medium sized enterprises in Czech Republic. The analysis and results will be revealed in section 9. However, it is worth noting that the sample size of the study is small, owing to the inability to obtain a wider variety of respondents for the survey. Another major drawback of the study appears to be the difficulty in obtaining a broader response from respondents as a result of the global COVID-19 outbreak. As well as the novelty of the subject, time, and language constraints. The survey will be conducted in English, which is not the respondents' first

language, which may preclude them from fully comprehending the questions. Secondary data will be gathered from internal documentation of Czech small and medium-sized businesses, as well as a variety of regional and national supporting documents. Furthermore, a comparative approach and best practices will be used to define the differences and similarities between current supportive tools for managing financial and market risk among small and medium-sized enterprises in the Czech Republic and best practices from other countries. Another method used in the thesis is MLRs analysis, which is the multiple linear regression models of the future project. The project itself will be planned to introduce a supporting mechanism (tool) for managing financial risk, market risk, and marketing strategies in small and medium-sized enterprises in the Czech Republic. (MLRs) will be used for time analysis, while a risk matrix will be used for risk analysis.

II. THEORY

CHAPTER II. LITERATURE REVIEW

I. THEORITICAL FRAMEWORK

1. RISK MANAGEMENT

1.1 Definition of risk

The notion of risk has experienced many different interpretations, and still there is no unifieddefinition of it. Because of the uncertainty associated with following a course of action, risk can be described as the probability of economic or financial losses or gains (Chapman and Cooper, 1983). Risk pervades and penetrates all human actions to varying degrees, all kinds of businesses and every zone of management of a company. However, in the majority of cases, risk can be predicted based on experience, trying to better govern the disorder. Risk management has the task of identifying risks, measuring the probability and the possible impact of events, and treating risks, eliminating, or minimizing their effects with the minimum investment of resources. In other scholars' words, risk can be also the possibility for danger, negatively unexpected circumstance to occur (Oxford English Dictionary, 2013). The negative deviation from the plan is referred to as danger in most economic publications (Maylor 2010). In finance, risk refers to the danger of making an investment or taking out a loan (Encyclopedia Britannica, 2013). In terms of corporate and business, risk is the possibility that an event, either expect or unexpected, may create a disadvantageous effect on the organizations. Corporate risks are classified by the impact they might create or make on different business operational activities. This means thata risk can be repeatedly divided into different classes, business risks, property risks, information risks, environmental risks, etc. are some common classifications. Management is being adopted and boosted in a lot of fields, such as environment, healthcare, public safety, and within enterprise management. This diploma thesis takes into high consideration risk management for small and medium enterprises (SMEs). Furthermore, SMEs must implement a risk management plan and approach because they lack the resources to react quickly to internal and external challenges and threats, potentially resulting in massive losses that jeopardize their existence.

Another reason for promoting risk management in SMEs is to protect creative ventures that are essential for gaining a competitive edge and succeeding in the market but must inevitably require risky decisions and activities (Vargas-Hernandez, 2011). Innovative SMEs must identify and handle risks early in order to keep project-related risks under control. Risk management could improve the ability to successfully manageall stages of the innovative projects. It has just been a couple of years since business management literatures started to show an interest in applying risk management in SMEs; that is the reason why many areas are still understudied. The importance of SMEs in the Czech Republic is measured first and foremost by their economic importance; in 2013, SMEs in Europe numbered about 21.6 million, employed 88.8 million people, and produced €3,666 trillion in non-financial business value added. This is the equivalent of 28% of EU GDP. In general, SMEs accounted for 99.8% of all enterprises active in the EU non-financial business sector (European Commission 2014). Despite their strategic importance to economic growth, SMEs are more vulnerable to risk because they have less capital and structural features. As a result, the second motivation is to encourage the advancement of risk management for SMEs, as there have been few studies to date to improve these firms' ability to sustain and build value over time. Therefore, this research thesis focuses on the risk management processes that should be adopted in small businesses. It will review the existing literature on risk management in SMEs, synthesize and categorize it using defined categories, explore key risk management concepts and theoretical risk management models, and identify current gaps and potential research opportunities.

1.2 Risk identification and management

The detection of risks is the final step in the management process that determines the outcome. With an open mind and vision, management should consider all scenarios that could impact the project's objectives. Screening through the phases of the project life cycle is one way to ensure and guarantee appropriate risk listing (Chapman C. et al, 1986). Conceptualization, preparation, implementation, and termination are the four phases that most projects go through, with substages and measures in between. The management process would be more effective for both the boards and the staffs if risks are assigned to specific stages and steps. The Harvard Business Review (2011) analyzed and judged that

organizations with a CRO – Chief Risk Officer had far more robust risk preparation than other firms in a study on risk management. When comparing large corporations, this could be accurate. Risk managers in small companies may not even be required, as the risk evaluation can be done concurrently with other management tasks.

The keys to effective project risk management in SMEs are to integrate risk management into project management and to communicate about risks (Bart Jutte), which is a much simpler measure to take at a smaller scale of activity than it is at a larger scale. As a result, risk detection is well-known in various authors' perspectives that it entails recognizing and classifying risk sources in order to understand what must be handled in a construction project.

Risk detection is the first step in the risk management process since possible problems must be detected before the risk can be assessed, responded to, and controlled. While it is one of the most important aspects of the method, it is also one of the least well-defined and often overlooked. Risk detection can be done in a variety of ways, including record review, information collection, checklists and risk catalogues, assumption analysis, and diagram techniques. The most popular method of determining risk sources is information collection. It includes brainstorming sessions in order to compile a detailed list of potential threats. To identify the risk, it is necessary to rely on the expertise of experienced project participants, stakeholders, and experts. Reviewing all project documents to find uncertainties is one of the other approaches. Developing a risk checklist based on historical data from previous projects, evaluating the project assumptions' validity, and defining the risks posed by assumptions' inaccuracy, volatility, inconsistency, or incompleteness. Furthermore, cause and effect diagrams, flow maps, and impact diagrams may be used. These approaches for defining risk sources are critical for the project's overall risk assessment and, as a result, for the project's progress.

1.3 Risk types

Although the word "risk" is broad, bordering on nebulous, there are many different forms of risk to consider. In this research, some types of risk can be identified and addressed, as well as how they impact businesses:

- ***Business risk:*** Due to uncertainty, it is possible for a commercial company to make insufficient profits (or even lose money). Changes in consumer tastes, protests, intensified competition, and changes in government policy,

to name a few examples. While conducting business, each business enterprise is exposed to a variety of risks. Business risk refers to the uncertainty of earnings or the risk of loss, as well as incidents that could pose a risk due to unexpected events in the future, causing companies to fail. Every company faces business risk as it enters a market; there are a number of factors that can have a negative effect on profitability and even contribute to business failure, such as government legislation or the general economy.

- Different types of risk, such as strategic risk, operational risk, reputational risk, and more, are analyzed by businesses under the umbrella of business risk. From a broader viewpoint, something that threatens an organization's growth or causes it to miss deadlines or edge goals is perceived as a business danger, which can manifest in a variety of ways.
- ***Volatility risk:*** Volatility risk refers to the risk that a portfolio's value will fluctuate due to volatility (price swings) caused by changes in the value of the portfolio's underlying assets, especially a stock or group of stocks that are experiencing volatility or price fluctuations. The risk of volatility is often tested and analyzed in the context of options trading, which is designed to have a higher risk of volatility due to the existence of options. Stocks are often given "beta" scores, the help investors identify which stocks are riskier for their portfolio. The beta value of a stock compares it to the overall market or a benchmark index such as the S&P 500.
- ***Inflation risk*****:** In other words, the possibility that the cash from an investment will be worth less in the future due to inflation reducing its purchasing power is known as the purchasing power risk. Inflation risk examines how expansion (explicitly when higher than expected) can jeopardize or reduce returns by eroding the investment's value. In general, investors with debt investments such as bonds or other cash-heavy investments are more concerned about inflation risk. Even though investors' primary concern may not be inflation, it must be kept in mind when dealing with cash flows over time in investment funds or when estimating expected returns. The longer cash flows are exposed, the more time inflation must

have an effect on real investment returns and consumption income, particularly if inflation is accelerating.

- ***Liquidity risk:*** When assets cannot be liquidated (turned into cash) quickly enough to ride out a particularly volatile market, this form of risk arises. This type of risk has an effect on a company's, corporations, or individual's ability to repay debts without incurring losses. Small businesses and issuers, in general, face a higher liquidity risk because they may be unable to meet their debt obligations quickly.

1.4 The importance of risk management

Risk management, according to IRM (2002), protects, secures, and adds value to the organization and its stakeholders by assisting the organization in achieving its goals by:

- Providing an organization with a structure that allows for potential operation to be consistent and regulated.
- A detailed and systematic understanding of market operation, uncertainty, and project opportunity/threat improves decision making, preparation, and prioritization.
- Assisting the organization in making more reliable and successful capital and resource allocation decisions.
- Reducing uncertainty in the business's non-essential areas.
- Defending and enhancing properties and the company's image.
- People and the organization's knowledge base are developed and supported.
- Improving organizational effectiveness.

Risk management is an essential component of every company's strategic planning. It is the mechanism by which organizations identify and resolve the risks associated with their operations in order to achieve long-term advantage in each operation and through

the portfolio of all activities. It must also be a constant and evolving process that runs throughout the organization's plan and execution. It should also resolve all threats related to the organization's past, current, and future operations in a comprehensive manner. Furthermore, it must be incorporated into the organization's culture through an effective strategy and program driven by senior management. It must translate the plan into tactical and operational goals, delegating responsibility around the organization and making risk management a part of every manager's and employee's job description. This promotes organizational efficiency at all levels by supporting transparency, success assessment, and compensation (IRM, 2002). Risk management is characterized as a process that uses various instruments to protect a company's assets from losses that may occur during the course of its operations (prevention, retention, insurance, etc.) and at the most affordable prices (Habib et al. 2014). Furthermore, risk management refers to the process of planning, coordinating, directing, and managing resources in order to achieve specific goals when unexpectedly good or bad events may occur (Head, 2009).

1.5 Risk management effectiveness

Defining and evaluating whether an entity's enterprise risk management is successful, according to COSO (2004), is a decision based on an examination and assessment of whether the eight components are present and working properly. Consequently, the elements can also be used as guidelines for business risk management. There must be no material vulnerabilities for the components to be present and working properly, and risk must be brought within the entity's risk appetite. When it is decided that enterprise risk management is successful in each of the four categories of objectives, the board of directors and management have fair and practical confidence that they recognize the degree to which the entity's strategic and operational goals are being met, that the entity's reporting is accurate, and that all relevant laws and regulations are followed. In each body, the eight components will not work in the same way. Small to mid-sized businesses, for example, can use a less formal and organized approach. Nonetheless, if all the elements are present and running correctly, small businesses will have successful enterprise risk management (COSO, 2004). As previously mentioned, enterprise risk

management is made up of eight interconnected components. These are derived from management's approach to running an enterprise and must be incorporated into the management process (COSO, 2004).

The interrelated elements are expanded upon below:

1. Internal Environment: It defines the entity's risk management philosophy, risk appetite, and risk culture.
2. Setting the Goals:
    - *Strategic:* High-level objectives that are in line with or complement the mission/vision.
    - *Operations:* The effectiveness and efficiency with which an entity's operations are carried out.
    - *Financial/non-financial risk* is reported both internally and externally.
    - *Compliance:* Adherence to all relevant laws and regulations.
    - *Identifying Events:* External and internal variables that influence risk.
3. Risk Assessment: Incidents that have an effect on the goals.
4. Risk avoidance, risk reduction, risk sharing, and risk acceptance are all options for dealing with risk.
5. Control Activities: Policies and procedures to ensure proper risk response execution.
6. Information and communication: Risk perception and communication.
7. Monitoring: Ongoing operations or a different assessment.

1.6 Classification of risk

Bernoulli, who suggested calculating risk with the geometric mean and reducing risk by spreading it through a series of separate events in 1738, is credited with one of the earliest definitions of risk (Bernoulli, 1954). As a result, the standard definition of risk is based on two variables: the likelihood of occurrence (probability) of the “risky” event, i.e., the number of times the risky event occurs in a given time span, and the magnitude of the event's consequences, i.e., all of the consequences of the event's occurrence.

Risk, according to Chapman and Cooper (1983), is the probability of experiencing economic and financial losses, as well as physical material harm, as a result of the action

taken. However, according to a later description defined by management literature, risk includes both positive and negative effects of an occurrence that can impact a company's strategic, operational, and financial goals (BBA et al., 1999). Risk, on the other hand, was given the shortest description in the ISO 31000 paper, which was published in 2009. It was defined as the impact of uncertainty on objectives. Given the scope and severity of the threats that businesses face, scholars have identified two key categories of risks (Mowbray et al., 1979, cited in Antonio & Barbara 2013), namely:

- ***Pure or static risk:*** This is a risk that only causes harm and has no potential for profit if it occurs. It is always negative, and it is always unexpected since it is decided by chance events. This risk is fully covered by the insurance policy.
- ***Speculative or dynamic risk:*** This is a risk that can result in losses or opportunities for profit. These are the usual threats faced by entrepreneurs, such as the effects of a loss-making investment. They are usually concerned with the planning and management of the company's various businesses and functions, such as manufacturing, merchandise, marketing, and sales. External factors (economic, environmental, social, political, and technical aspects) and internal factors (infrastructure, human resources, method, and technology used by a company) can also contribute to risky events (COSO, 2004).

1.7 The purpose of risk management

The key aim of risk management is to recognize potential risks, analyze risks, and assess which have the highest likelihood of occurring, identify the risks that will have the greatest effect on the entity if they occur, and define strategies to help minimize and diminish the risk's impact or eliminate the risks while maximizing the opportunity (Hong, 2014). In addition, Hong (2014) claims that risk management is more specifically concerned with the following five areas:

- *Identifying and reporting potential risks.*
- *Risk analysis and prioritization.*
- *Make a risk assessment.*
- *Keeping track of risk plans and putting safeguards in place.*
- *Conduct risk assessments and analyses.*

When Reuvid (2009) stated that risk management must be a disciplined and consistent

process that must include all the areas listed below; he compiled the objectives of the above five areas.

- *Risk identification and assessment:* Identifying and assessing the organization's significant risks, including the development of risk registers and risk mapping, as well as quantitative and qualitative analysis of the exposures.
- *Risk mitigation strategies:* The creation of risk mitigation strategies is critical to managing risk concerns, and action plans must be implemented in the organization's overall strategic plans to ensure and guarantee effective execution.
- *Residual risk transfer:* The residual risk must be efficiently controlled through a mix of insurance, hedging, and other alternative approaches to ensure the highest available coverage at the lowest possible transfer cost after all risk mitigation measures have been assessed and implemented, as necessary.
- *Risk reporting:* Internally, the company needs to be able to disclose risks precisely to senior management and the board of directors.
- *Monitoring:* This stage of the process is meant to ensure that risk management strategies and practices are followed to the letter of the law. According to Ernst and Young, "the efficiency of a successful business's risk management mechanism is a vital characteristic of its success: the better the process, the more assurance there is of stability and future long-term competitive advantage.

1.8 Risk management limitations

Small to large business owners, administrators, and entrepreneurs, according to Reuvid (2009), must recognize that risk management, like any other management mechanism, has limitations. The following are examples of these flaws and deficiencies:

- Risk management cannot make decisions or take resolutions on behalf of the company: It will assist the owner in making decisions, but these resolutions will be limited by the depth of the risk research and analysis, as well as the expertise and risk management skills of those involved in the risk assessment.

- Risk management does not guarantee or ensure complete freedom from all risks: risk management does not aim to eradicate risk, but rather to prioritize the most efficient use of limited resources and time.
- Risk control cannot guarantee that bad things will not happen: It includes early warnings of potential issues as well as an emphasis on techniques to protect integrity and business continuity.
- Risk assessments will not be exhaustive and, as a result, will not be foolproof (GRA & NSW, 2005). Risk assessments will almost always recognize all potential risks; however, they will be constrained by the resources available, such as information, personnel capacity, time, and budget.

2. SMALL BUSINESSES (SMEs)

2.1 Definition of SMEs

Small and medium-sized businesses (SMEs) are widely recognized as an important sector for national and international economic growth. Small companies that are focused on growth make a significant contribution to economic development and job creation in local communities and national economies (Smallbone and Wyer, 2000). Small and medium-sized businesses (SMEs) contribute significantly to national economies (Poon and Swatman, 1999) and are considered to account for 80% of global economic growth (Jutla et al, 2002). Despite the fact that the importance of the SME sector and the informal sector is recognized globally, defining a SME is a difficult task since each state has its own concept. A small business has no widely accepted meaning (Hans, citing Storey, 1994). The capitalization, revenue, and job levels of businesses vary. As a result, definitions that use size measures (e.g., number of workers, turnover, profitability, and net worth) when applied to one sector may result in all companies being defined as small, while the same size description applied to another sector may result in a different result.

SMEs definitions can be widely categorized into two, economic and statistical definitions. A company is considered small according to the economic concept if it

meets the following three criteria:

- Controls a disproportionately small portion of their business.
- Is run by the owners, or part-owners, in a personalized manner rather than through a structured management structure; and
- Is self-contained and not a subsidiary of a larger corporation.

Statistical meaning, on the other hand, is used in three main areas:

- Measuring the size of the small business sector and its effect on GDP, jobs, and exports.
- Examining how the importance of small businesses to the economy has changed over time; and
- In a cross-country study of the economic contribution of small businesses.

2.2 Entrepreneurship

The process of creating or extracting value is described as entrepreneurship. Entrepreneurship is described as "shift" in this definition. In general, involving risk beyond that which is typically experienced when starting a company, and which may involve values other than monetary ones. Entrepreneurship has been described as the process of planning, beginning, and operating a new company, which is often initially a small business, or as the ability and willingness to create, boost, coordinate, and manage a business venture, including any risks, in order to make a profit, according to more detailed definitions. Entrepreneurs are the individuals who start these companies. Although most concepts of entrepreneurship focus on the process of starting and running a company, due to the high risks involved in starting a business, many start-ups fail due to a lack of capital, poor business decisions, government policy, an economic downturn, a lack of market demand, or a combination of these factors. The term entrepreneur is used in economics to describe an organization that can turn innovations or technologies into goods and services. Entrepreneurship, in this context, refers to the activities of both existing and new companies. Entrepreneurship, as a scholarly field, accommodates a variety of viewpoints. It has been researched in fields like economics,

sociology, and industrial history. Some people believe that entrepreneurship is just for entrepreneurs. These researchers want to concentrate on what an entrepreneur does and the characteristics that an entrepreneur possesses. The functionalistic approach to entrepreneurship is what it is called. Others deviate from the individualistic viewpoint by focusing on the entrepreneurial phase and immersing themselves in the interaction of agency and meaning. This approach to entrepreneurship is also known as the processual approach or the contextual turn/approach.

2.3 Risk management in SMEs

The importance of small businesses has been emphasized around the world because of their role in job growth, creativity, and long-term economic development. In most Organization for Economic Cooperation and Development (OECD) countries, small and medium-sized enterprises account for 60 to 70% of employment, and they also account for an excessively large share of new jobs. However, according to the OECD report, many start-ups do not live for more than five years, and far fewer develop into high-growth businesses (AFREC, 2005). Researchers, on the other hand, assume that the idea of risk management will assist small business owners, administrators, or entrepreneurs in achieving their goals (CPA Australia 2009 and Crisp 2015). “Every company or other venture needs and requires risk management; otherwise, they have a high likelihood of failure,” said Winks (2009), former president of the Institute of Risk Management South Africa (IRMSA). Furthermore, SMEs are more fragile than larger organizations, but they do take a structured approach to this sensitive field on occasion. Risk management emphasizes the fact that a company's ability to anticipate and plan for change, rather than waiting for it and reacting to it, is critical to its survival. The aim of risk management, it is clear, is not to avoid or discourage taking risks, but to ensure that risks are taken knowingly and with full awareness and understanding.

2.4 Categories of risk in SMEs

Many categories of risk relate to small businesses. Therefore, a careful distinction should bemade between each specific area, and topic as this will favor a structured approach to risk identification. It is sometimes accomplished through a brainstorming session or a SWOT analysis. By categorizing threats, company owners would be able to more effectively prepare for risk and communicate risk information. They will also

be able to pick the required tools and techniques for each group (GRA & NSW, 2005).

Table 1. Some categories of risk

Financial	Equipment	Security/Safety	Strategic
Organizational	Operational	Project	Technology, Innovation
Security	Reputational	Commercial	Stakeholder Management
Legal & Regulatory compliance	Service Delivery		

Source: GRA & NSW, 2005.

2.5 Incorporating risk management in SMEs

The risk management strategy should leave nothing to chance. There is a plenty of risk models, which captures all significant risks and identifies, analyses, prioritizes and manages those risks (Di Serio, et al., 2011). As a result, risk management in a small business cannot be seen as a stand-alone program, as it is combined with other management systems and strategies to ensure a company's success (GRA & NSW, 2005).

The wheel of integration graphically depicted in terms of its incorporated parts, is elaboratedupon below:

- *Business planning:* In any size company, it is an important management technique. Risk management can aid and assist a company in efficiently managing its vulnerabilities and risks in order to achieve its goals, as well as identifying and capitalizing on opportunities to help the company grow and develop.
- *Occupational Health and Safety*: Employers have a responsibility to their workers' health and safety at work. Risk management ensures that threats and risks to employees' safety and health are detected, documented, and held to a minimum as far as possible.
- *Human resources management:* Risk assessment can assist the company owner in identifying risks related to human resource management, as well as the necessary treatment methods for managing and monitoring them on a continuous basis.
- *Compliance:* Risk management will help you gain a better understanding of the areas of compliance that need to be handled and controlled, such as the

consequences of a possible violation and what you can do to avoid it.

- *Financial management*: Risk management aids in identifying where financial challenges and opportunities occur in order to ensure the quality and effectiveness of financial management in a sector.
- *Client-customer relationship management:* Risk management assists in identifying and minimizing the deterioration of current client or customer relationships. A complaints management system may help with this.
- *Contract management:* Suppliers, customers, and subcontractors all have contracts. Risk management aids in the efficient management of contracts in order to protect and secure a company and its employees.
- *Quality assurance:* It is a necessary component of risk management. It is a continuous process that begins with risk assessment and progresses through monitoring and analysis to a period of continuous improvement.

2.6 Risk management implementation in SMEs

The majority of the SMEs that had been studied do not have formal risk management mechanisms in place, according to researchers and academics. Furthermore, identifying the root causes of risk determinants and their associated sources is not practiced in SMEs, and even when it is, the flow of information continues to bypass many of the applicable staff in small businesses (Islam and Tedford, 2012). It can clearly define all risks and address all relevant solutions using a formal risk management approach. By incorporating a risk strategy at the start of the project and using the same document, approach, and guidelines, Martnez et al. (2012) acknowledged that the risk management process should be followed in parallel with the various project management phases. Small and medium-sized businesses should be able to use the methodology outlined to help them identify and treat the risks that are relevant to them.

By integrating the metrics of time, resources, and asset loss, they should be able to determine the magnitude of the risks associated with the determinants.

2.7 Risk management process

For a long time, academics, analysts, and industry experts have debated risk management. Risk management is characterized as the systematic application of

management policies, procedures, and practices to the tasks of establishing the context, defining, evaluating, assessing, handling, tracking, and communicating, according to a study by Southern Cross University (2012). In relation to other industry areas, there should be as many dimensions and principles of risk management as possible. Aside from financial risk management, David O. and Desheng W. discussed risks from the viewpoints of accounting, supply chains, information systems, and disaster management in their book (2008, pp. 3). There are three key steps in a typical risk management approach that follows the guidelines of the International Organization for Standardization (ISO 31000:2009):

- *Establishing the context:* This phase involves defining the entire area of potential threats, assessing the related potential effects, and then preparing or mapping out the entire management strategy.
- *Identification:* After gaining an understanding of the context of potential business risks, risk management can go through the process of identifying the causes of the issues, challenges, or risks. Selecting the appropriate approach for identifying and analyzing risks would make the planning and mitigation measures go more smoothly. However, cultural, organizational, political, and other factors influence the approaches used. The identification of control solutions comes after the risk identification.
- *Assessment:* There are a few sub-steps in the final step: Establishing the risk rating index, as well as the probability and outcome definitions. Identifying which outcomes would result in a severe risk or only a low-level risk would result in an acceptable control process. Developing risk management strategies, as well as defining the level and implications of risks, is prudent and advisable.

Organizations will extend the risk management process to the step of monitor and post-process assessment for future development and references. Reviewing risks on a regular basis and updating definitions or procedures is critical to risk management and the smooth operation of the company.

3. ECONOMIC RISK

3.1 Definition of economic risk

The probability that a financial investment would be affected by macroeconomic factors such as government policy, exchange rates, or political stability, most usually in a foreign country, is referred to as economic risk. To put it another way, when funding a project, the possibility that the project's production would not generate enough revenue to cover operating costs and repay debt obligations. Economic risk, on the other hand, is a nebulous concept with many meanings. In a nutshell, economic risk refers to the possibility that a venture will become financially unsustainable as a result of a variety of factors ranging from changing economic patterns to fraudulent activities that jeopardize a project's success. Before beginning the projects, it is important to consider economic risk in order to determine if the costs are outweighed by the benefits. Economic risk can be calculated in a number of ways using a variety of modeling systems. Consider the case of a proposed housing development. The economic risk in this situation is that the development's profits would not cover its expenses, leaving the developer in debt. This can happen as a result of real estate market downturns, a lack of interest in housing, unforeseen cost overruns, and a variety of other factors. One of the reasons why foreign investment carries a higher risk than domestic investing is because of economic risk. Bondholders and shareholders in general accept the risk that multinational corporations take. Investors who buy and sell foreign government bonds are also at risk. Furthermore, economic risk will provide investors with additional opportunities. Global bonds, for example, enable investors to participate in the foreign exchange markets as well as the interest rate environments of different countries in a roundabout way. Foreign regulatory authorities, on the other hand, have the authority to place various conditions on the sizes, forms, timing, credit rating, bond disclosures, and underwriting of bonds issued in their countries. Economic risk, on the other hand, can be mitigated by investing in foreign mutual funds, which provide instantaneous diversification by investing in a variety of nations, currencies, instruments, and international industries.

3.2 Economic risk types

The risk associated with the project's financial and other economic factors is known as economic risk. Economic risk assessment is critical in determining the project's overall risk. Economic risks have a significant effect on the company's sales and expenditures,

as well as its earnings. The following are the major categories of economic risks: Mr. Bazil (2013, Mr. Bazil)

- ✓ *Risk of rising prices for raw materials and energy*: The cost of manufactured goods rises as the price of raw materials rises. If a company operates in a competitive market where commodity prices cannot be increased, the company's profitability will suffer.
- ✓ *Risk of minimum wages increasing:* Rising labor costs also raises production costs. The government may raise the minimum wage for workers, which could result in an increase in the size of all salaries in the economy.
- ✓ *Risk of production prices reduction*: Even if costs remain constant, a drop in market rates for a company's production results in a drop in profitability.
- ✓ *Interest rate risk (credit risk)*: The rising interest rates on loans may have a substantial negative effect on financial results if a business uses credit capital to project.
- ✓ *Risk of higher taxes and duties rates*: This is referred to as an economic-legal risk. Profits are reduced when current tax rates are raised, or new taxes are imposed. This group of economic risks also includes the risks of imposing new tariffs on exports and imports. New export or import tariffs may result in the closure of companies that conduct export or import business.

Other economic risks, such as foreign currency exchange risk, are also very relevant in the import-export market or when receiving foreign currency loans, in light of all of the above.

3.3 Economic risk factors

Whether it is unemployment or cyber-security, every country has vulnerabilities in its economy that, if exploited, might send it into recession. Regardless of how robust a country's economy is, there will always be risk factors that threaten to halt growth and even send it into recession. Some of these threats, such as the collapse of national manufacturing, have been around for decades, while others, such as cyber-attacks, are relatively recent. These are easier to anticipate by legislation, infrastructure, or technology, while others can occur unexpectedly, leaving serious and long-lasting

consequences. Depending on the state of their industries and organizations, some countries can be hit harder than others by different risks due to the particular nature of their economies. Conversations with policy makers in government, industry, and civil society are the best way to determine which risks are the most serious and how a country is planning. Countries offer themselves the best chance of bouncing back when a risk manifests itself by becoming mindful of the potential risk factors. The following are the key sources of economic risk: (2019, World Finance)

- *Unemployment or underemployment:* The World Economic Forum has identified unemployment as the biggest risk factor worldwide, naming it as the highest possible cause of economic crisis in 31 countries (WEF). Also, short periods of unemployment can have a significant impact on a person's standard of living, particularly if they were previously employed in a low-paying job and have no savings to fall back on. Similarly, several weeks without work can push a family below the poverty line, particularly in African countries where severe poverty is already a problem. High unemployment means that governments in these countries, as well as in more developed European nations, must raise benefit spending, placing additional strain on the national budget. Long stretches of unemployment will erode skills, making it more difficult for those who have lost their jobs to re-enter the workforce, lowering productivity and the country's ability to recover.
- *Fiscal crises:* They are the most significant economic risk factor in countries where economic development is shaky and vulnerable to a variety of national or global fiscal events. This is definitely the case in Turkey, Azerbaijan, Argentina, and Russia, which were identified by the World Economic Forum as the 11 countries most likely to face economic collapse as a result of a financial crisis. The 2008 financial crisis, for example, disrupted developed countries' economic growth, plunging millions into deep recessions. Fiscal crises are difficult to forecast, making it difficult for policymakers to prepare. However, reducing the national debt, creating a budget surplus, and stimulating business growth, productivity, and jobs are all good places to start. When a crisis strikes, policymakers can prevent unsustainable national and personal

spending and debt by planning at the national level, which has long-term economic consequences and can derail recovery.

- *Failure of national governance:* A government's function includes ensuring that the current law of the land is followed and introducing steps to improve living standards for all citizens. However, if this burden is not fulfilled, whether due to corruption or unsuccessful policies, the economy and culture are put at risk. According to the World Economic Forum, 11 nations, including Panama, Greece, Ecuador, and Brazil, face the greatest risk of economic collapse due to a lack of national governance. Several of these countries, for example, Brazil and Ecuador, in particular, have major corruption problems to address, and current governments must try to untangle money laundering, bribery, fraud, and a variety of other issues that are deeply ingrained in those societies. Previous governments in countries like Greece have also massively overspent on a national level, resulting in a budget mentality of devil-may-care, which now poses a significant threat to the economy. Government problems are not solely the responsibility of politicians; corporations, civil society, and the general public all have a role to play. Companies operating in countries with weak governance face higher costs, so it is in their best interests to follow national legislation and advocate for those that would safeguard their operations. Similarly, in countries where enforcement and compliance are lacking, customers are more likely to be defrauded or scammed, and the justice system would groan under the weight of a mountain of fraud cases.

3.4 Strategic risk

Strategic risks refer to the chances of suffering a loss as a result of a bad strategic business strategy, judgment, or inconsistent and awkward execution of the plan. Earnings, capital access, and the company's profitability are all threatened by strategic risks. Since strategic plans define an organization's operational direction as well as its structure, vision, and goals, the lower the level of strategic risk, the stronger the organization. As a result, boards of directors are concentrating on how companies define, evaluate, and handle risks. Strategic risk management necessitates a focus on

threats to shareholder capital as the primary target (Beasley, et al. 2008), as well as consideration of the impact of external and internal situations on the organization's ability to meet its priorities and objectives. A critical aspect of business risk management is strategic risk management. In order to conduct a strategic risk evaluation, you must first understand the organization's tactics. The evaluation process should be consistent with the business model, and it should be backed up by a clear strategic risk profile, as well as risk management coordination and action plans. (M. Frigo et al., 2009).

3.5 Operational risk

Due to the debate that human error causes company processes loss, operational risks are often referred to as human risks. Nonetheless, operational risks include all risks posed by an organization's internal operations, including individuals, goods or services provided, operational processes, and external factors (Global Association of Risk Professionals, 2011). Banking is the industry with the highest probability of operating risks. According to the Basel II regulations (Basel Committee on Banking Supervision, 2004), there are seven types of operating risks:

- Internal fraud.
- External fraud.
- Workplace safety and employment practices.
- Client, commodity, and business practices.
- Physical asset damage.
- Business interruption and system failure.
- Execution, delivery, and process management

Despite the fact that banks and investment firms are the most vulnerable to operating threats, other companies are also at risk. Small daily losses due to customer dissatisfaction or a bad image can quickly add up and cause major damage to any business. Some risks may be more sensational than others, but what matters is a strong and practical management framework based on the organizational risk approach chosen. A business manager, in particular, must create a sufficient system of personnel and

resources, as well as demonstrate acceptable leadership behavior. Monitoring, reviewing, and updating existing management data and structure is also an important part of managing operating risks (An Oracle White Paper, 2010).

4. FINANCIAL RISK

4.1 Definition of financial risk

Financial risk is a broad concept that encompasses a variety of negative financial risks, such as liquidity risk, funding risk, interest rate risk, valuation risk, price risk, and credit risk, to name a few. Financial uncertainty can work in one company's favor while hurting another. For example, an increase in fuel prices can affect a company's financial statement whether it manufactures or sells fuels; additionally, an increase in fuel prices can result in additional costs for a transportation organization. The implications and magnitude of an organization's financial risk exposure are determined by the size of its financial transactions: how much of the company's borrowings are compared to its business scope (CPA Australia, 2006). In general, financial risk refers to the risk that arises from making a profit that is not as anticipated. As a result, risk is inherent in all economic activities. Furthermore, since there is a direct correlation between income and risk, risk is taken on purpose in order to make a higher profit. A higher risk means a greater chance of a higher return on investment. Businesses that take chances risk incurring greater losses. However, there is a chance to make a bigger profit at the same time, because the range of benefits and drawbacks is broader.

4.2 Financial risk types

The word "risk" is commonly and wrongly associated with the word "threat." There is a major distinction between these two concepts that must be taken into account. Risk is more of a direct threat; however, it happens in situations where the outcomes are unknown. A certain loss is not a risk in this sense. There are several other definitions of risk. Risk is approached differently by different authors, demonstrating how important a phenomenon it is and how difficult it is to identify and quantify. As is the case with defining risk, classifying it is also difficult. Since current risk categories are not uniform and disjunctive, one type of risk may be a particular example of another. The following

are the most common forms of financial risk.

- **Trade risk:** Commercial operation brings with it a direct risk. It has the following components:

    a) *Liquidity risk*: It manifests itself in the need to change asset and liability maturities to ensure that an organization can fulfill its obligations.
    b) *Credit risk*: A business partner's inability to satisfy their obligations to a specific party is referred to as a breach of contract. Currently, over 80% of global trade is performed with a payment period of 30 days or more. The length of a trade credit term is determined by the type of products. Consumer goods have the shortest payment terms (around 30 days), while investment goods have payment terms of at least one year. Companies will stretch terms even more as a result of increased rivalry and the need to compete for customers.

- **Market risk:** Concerns the likelihood of changes in the valuation of market instruments, i.e., the risk of financial conditions changing as a result of changes in market prices, which includes:

    a) *Commodity risk*: i.e., changes in the price of commodities have a significant impact on an economic organization's financial results.
    b) *Interest rate risk*: Since the valuation of a portion of assets and liabilities is based on interest rate increases, this term was coined (e.g., a loan bearing a variable interest rate). Interest rate variations are the cause of this.
    c) *Foreign exchange risk:* Unsecured open foreign currency positions and unfavorable exchange rate changes are related.

There is also market risk, such as resource risk, price risk, business cycle risk, and technical risk, which has an indirect effect on financial performance. Depending on the nature of a particular business operation, more complex areas of risk are defined. While not all of the risks mentioned above can be anticipated or monitored, it is important to be aware of them and to minimize their occurrence and effect on the organization as much as possible. It is difficult to avoid risk because there are so many variables that trigger it. Furthermore, some of these variables are beyond a company's influence.

4.3 Financial risk management

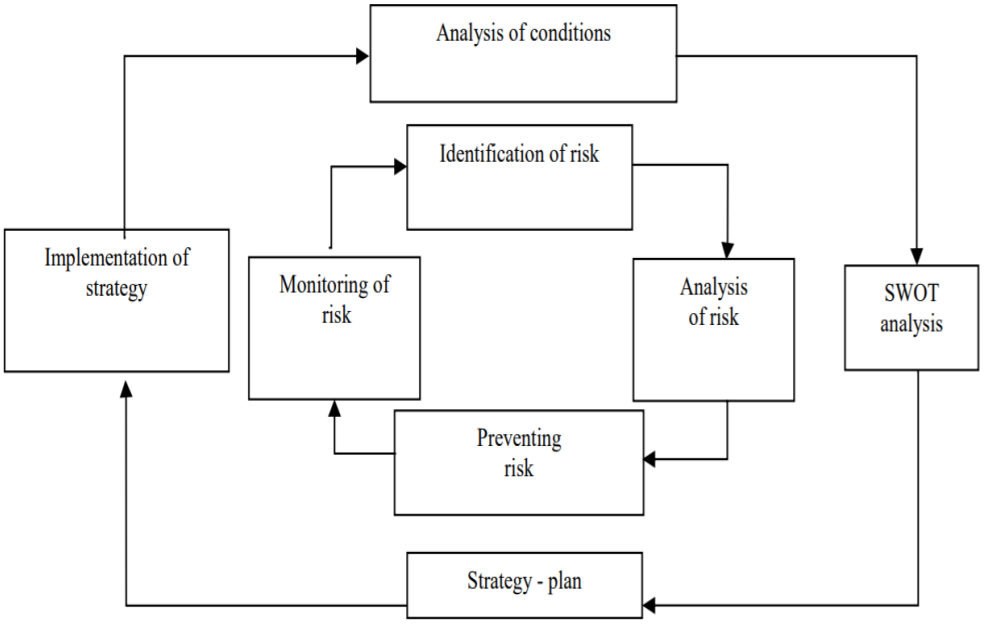
The ultimate goal of financial risk management is, on the one hand, to strengthen and enhance an enterprise's business performance, and on the other hand, to create circumstances under which an organization does not suffer massive losses that were not expected. In practice, this means limiting risk to the greatest degree possible and making plans for its effects. Risk management entails determining the type of risk to which an organization might be exposed, as well as assessing and monitoring the risk using available tools. As a result, risk management can be described as a logically organized collection of principles and rules that are applied consistently and consistently to all organization activities. One of the fundamental methods is risk management, which aims to maximize the likelihood of achieving goals. To effectively manage risk, specific unit goals should be identified in order to recognize risks that can prevent them from being met. Risk management is a never-ending procedure. According to financial management principles (Patton A.J.,2006), the head of a unit routinely recognizes both internal and external risk related to the accomplishment of the unit's goals, both for the entire unit and for individual programmers, programs, or tasks. As the circumstances under which a unit works change, the risk identification process should be repeated. Each risk should be evaluated in terms of the possible consequences and the likelihood of their occurrence. A manager may evaluate task completion on a continuous basis using qualitative and quantitative metrics, as well as other defined criteria. Any business should devise and enforce a system for detecting and analyzing risk (Pikos A.2015). The software must allow the recognition and comprehension of all forms of risk that a unit faces when delivering services and achieving its objectives. In this method, a risk management system is especially important. Risk management is a rational and structured method of establishing context, defining, evaluating, and assessing risk, as

well as taking action, supervising, and advising about risk, in order for an enterprise to reduce loss and optimize opportunities (Grant W., Wilson G.K. 2014). As a result, the financial risk management process entails:

- As soon as possible, identifying threats associated with operating operations,
- Determining the extent to which risk has an effect on a company's performance and objectives,
- Appropriate risk management mechanisms must be implemented,
- Risk control systems, such as organizational strategies, risk management policies and procedures, data on all teams and entities responsible for risk, and risk documentation.

Risk management seems to be a must these days. Furthermore, the ongoing recession has altered the way financial markets function due to the increased degree of economic uncertainty (Guidolin M., Timmermann A.,2006). With a thorough understanding of the essence of risk and the extent of potential risk, one may choose preventive steps at the right time to lessen or eliminate the risk's effect and consequences. Risk should be limited by well-thought-out management because it contributes to the most efficient use of an enterprise's resources and opportunities.

Figure 1. Strategic Management and Financial Risk Management Cycle



Source: Andersen T.J., Garvey M., O. Roggi, Managing risk and opportunity, OxfordUniversity Press, Florence, 2014.

Risk management is a collection of procedures and guidelines for identifying, analyzing, assessing, and monitoring risk (Miciua I., 2014). It enables you to not only reduce risk but also to seize any opportunities that might arise. A good system should improve outcomes in the future and help with decision-making on a regular basis. As a result, it should include a well-thought-out, rational, detailed, and recorded strategy. Instructions, schedules, and procedures that would be included in the day-to-day operations of a specific office or its organizational units to handle risk are included in such a strategy (Patton A.J., 2006).

5. MARKET RISK

5.1 Definition of market risk

Market risk refers to the risk of losing money as a result of adverse price fluctuations in the market. These markets include anything from commodities to cryptocurrencies, and they all carry risk. Price risk cannot be eliminated by portfolio diversification because it affects the whole market rather than individual assets. Market risk refers to the possibility that investments or equities will lose value as a result of broader economic

or market shifts or events. There are many types of more specific market risks that fall under the umbrella of market risk, including equity risk, interest rate risk, currency risk, and several others that will be addressed in the next point.

5.2 Market risk types

Market risk is determined by the form of protection being traded as well as the trade's geographical boundaries. Trading entails inevitable and sometimes unpredictable threats. The following are some of the most common business risk forms and how to calculate them:

Interest rate risk: Market volatility is expected to rise if interest rates rise or fall abruptly. Interest rate increases influence asset prices because the amount of spending and saving in a given economy can rise or fall depending on the rate change's course. When interest rates rise, people tend to spend less and save more. In the other hand, as interest rates fall, people prefer to spend a little more and save a little less. Any market, including stocks, commodities, and bonds, is susceptible to interest rate risk.

Equity price risk*:* Stock values, more than other asset classes, can be extremely unpredictable. The price of a security will fluctuate dramatically, causing it to lose value. The term for this is "equity price risk." Although a variety of factors influence stock prices, there are only two forms of equity risk: systemic and unsystematic risk. The first is risk linked to the industry as a whole, while unsystematic risk is specific to a single business.

Exchange rate risk: The risk associated with the fluctuation of currency prices is also known as currency risk or foreign exchange risk. Buying foreign assets becomes less or more costly as currency rates adjust, depending on the direction of the change. If a trader is exposed to international forex markets, exchange rate risk rises, but a trader may be indirectly exposed by owning shares in a business that does a lot of foreign trade or by selling goods priced in foreign currency. Furthermore, a country with a high debt burden would face a significant currency risk.

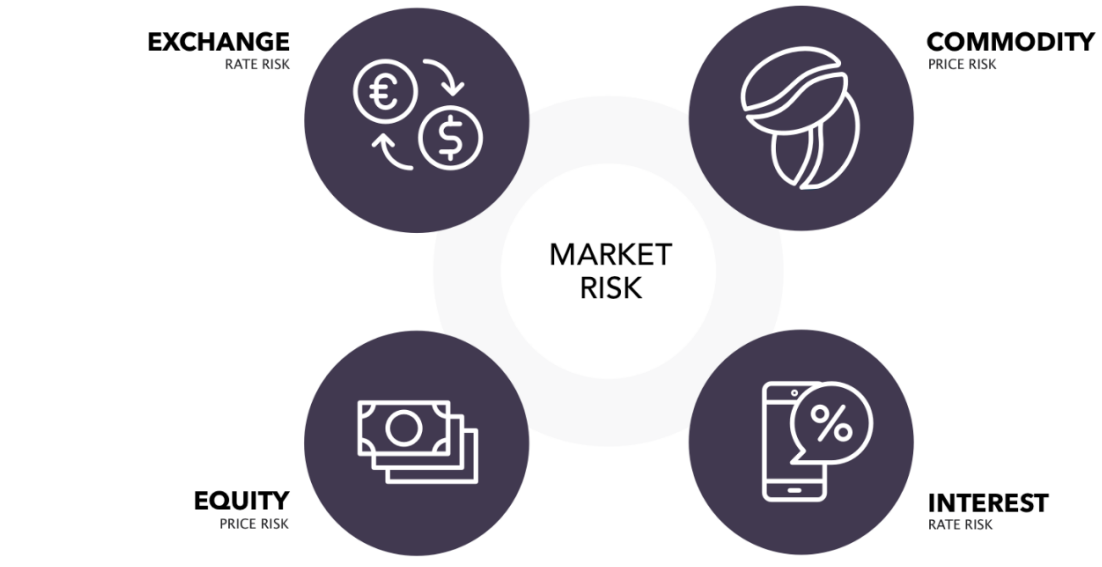
Commodity price risk: If there are some political, regulatory, or seasonal shifts, commodities like crude oil, gold, and corn will experience sharp price fluctuations. Commodity price risk is the name for this form of risk. Commodity price changes can influence traders, investors, purchasers, and producers alike. A drought, for example,

can reduce corn production and, as a result, raise prices. Commodity price risk, on the other hand, goes beyond the risk of price fluctuations in the goods themselves. Since they are the foundation of most products, shifts in their prices can have far-reaching implications for businesses and consumers. Price shifts put a strain on the entire supply chain, affecting economic results in the end. Value-at-risk (VaR) and beta are the two basic approaches for calculating business risk.:

- *Value-at-risk* is a mathematical tool that can quantify the magnitude of the risk (potential loss) as well as the likelihood that the loss will occur within a particular time period (occurrence ratio).
- *Beta* measures the stock's volatility in comparison to the economy, based on its previous results. In other words, it decides whether stocks follow the market's lead.

  However, none of these approaches has an agreed-upon formula for calculating market risk; some are quite basic, while others are very complex.

Figure 2. Market risk types



Source: Careers IG Group.

5.3 Importance of market risk in SMEs

SMEs have become an increasingly important part of economic growth, accounting for a significant portion of national economies all over the world (Karpak and Topcu, 2010). SMEs, according to Henderson and Weiler (2010), can be defined as the primary engine of economic development. According to the European Commission (2011, s 4), the European Economic Community's lifeblood is 23 million European small and medium-sized enterprises (SMEs), which account for more than 98 percent of the business community. They account for two-thirds of all private-sector employment contracts, and they have provided roughly 80% of new work openings in the last five years. SMEs are also very significant in the Czech Republic's and Slovakia's economic systems. In the Czech Republic, for example, the share of small and medium-sized enterprises in the total number of active enterprises was 99.86 percent in 2012.

In 2012, the share of added value was 53.81 percent. In 2012, SME workers made up 59.43% of total jobs in the Czech Republic's business sector. Financial gap is a significant problem for SMEs, as many of these businesses have restricted access to external financial services. Well before the economic downturn, small companies struggled to find the financial resources they needed for expansion and innovation. Due to the financial crisis, banks are now less likely to lend to the business sector, causing businesses to face even more serious problems. (Evropská komise, 2011). Small and medium-sized businesses, according to Dierkes, Erner, Langer, and Norden (2013), are smaller, more informationally hazy, riskier, and more reliant on trade credit and bank loans. Small businesses, especially young small businesses, have little internal cash flow to fund their operations, according to Canales and Nanda (2012), and are also associated with significant asymmetric knowledge. The high risk of SMEs, according to Majková-Sobeková (2012), is focused on their high debt ratio and limited capacity to ensure or guarantee. Obtaining commercial loans is difficult for such businesses, according to this fact. In this situation, Di Giuli, Caselli, and Gatti (2011) reported that credit availability is a critical component of small and medium-sized business growth. SME loan funding was studied by Neuberger and Räthke (2009). According to the authors, microenterprises are particularly vulnerable to poor selection and moral hazard, and therefore have restricted access to credit. Small businesses have more knowledge

asymmetry and are more vulnerable to credit risk. In small business lending, Kirschenmann and Norden (2012) looked at the relationship between borrower risk and loan maturity. The fact that there are several mechanisms that explain the positive relationship between borrower risk and loan maturity is a significant implication of their analysis for small business lending research. Since small businesses are informationally opaque and bank dependent, these processes, information asymmetry, and negotiating power, are particularly relevant in small business lending. According to Moro and Fink (2012), banks play an important role in SMEs' funding because they have more difficulty accessing equity on capital markets. Different lending technologies are used by banks to determine when and how much to lend, and banks typically use more than one technology at a time. According to Neuberger and Räthke (2009), credit strategies such as relational lending or lending transaction decide the relationship between the bank and the customer. Relational lending is mainly focused on soft information (such as personality and character traits, company management efficiency, business strategy, ownership structure, and so on) obtained by the bank through direct communication with the customer, in the local territory, and through long-term monitoring of the company's financial results. Hard data such as return on equity, profitability, operating cash flow, interest coverage, liquidity, and so on are used to underpin transaction lending. Direct aspects of credit risk, according to the authors, have no major effect on the SME category. As an example, small businesses have a low credit risk because they are small, and their legal structure is often associated with unconditional guarantee, and commercial banks offer commercial personal guarantees for loans. The capacity and willingness of the organization to fulfill its obligations to the bank determines the degree of credit risk. The financial capacity of borrowers to repay their obligations to the bank, which is measured by the company's financial performance, is the most significant factor in effective loan repayment. Since the effect of various types of business risks is translated into the financial performance of the company, the ability to handle business risks determines the financial performance of the company.

6. MARKETING TOOLS IN SMALL BUSINESSES

6.1 Definition of marketing

Marketing refers to the practices that an organization engages in to facilitate the purchase or sale of a product or service. It is one of the most important aspects of business administration and trade. Marketers may target their goods to other companies, which is known as B2B marketing, or directly to customers, which is known as B2C marketing. Several considerations exist regardless of who is being sold to, including the marketers' viewpoint. They are called consumer orientations, and they decide how marketers can handle the marketing planning stage. The world around the product, the outcomes of marketing analysis and market research, and the features of the product's target market all influence the marketing mix, which summarizes the details of the product and how it will be marketed. After these factors have been decided, advertisers must decide how they will sell the product, which could include the use of coupons and other price incentives. Marketing, also known as customer attraction, refers to the insight acquired by researching the management of trade relationships as well as the market process of recognizing, predicting, and meeting customers' needs. To achieve its organizational goals, a company can predict the needs of potential customers and meet them more efficiently than its rivals, according to the marketing philosophy. This idea first appeared in Adam Smith's book *The Wealth of Nations*, but it was not generally adopted until nearly 200 years later. Marketing Concepts and Marketing are inextricably linked. Given the importance of consumer needs and desires in marketing, it is important to have a thorough understanding of these concepts:

Needs: Needs may be concrete and physical, such as the need for food, water, and shelter, or subjective and psychological, such as the need to be a part of a family or social community and the need for self-esteem.

Wants: Anything that is wished for, wanted, or aspired to. Wants are not necessary for simple survival, and they are often influenced by culture or peer groups.

Demands: When a person's desires and needs are backed by the willingness to pay, they may become economic demands.

Marketing research is frequently concerned with recognizing the unmet needs of

consumers as it is undertaken for the purpose of new product creation or product enhancement. Market segmentation is concerned with separating markets into distinct classes of customers based on distinct preferences, attributes, or attitudes that may need different goods or marketing mixes. Customer needs are fundamental to market segmentation. Customers' expectations are at the core of how an organization develops and markets goods or services through needs-based segmentation (also known as benefit segmentation). While it is difficult to implement in practice, needs-based segmentation has been shown to be one of the most successful ways to segment a market. Finally, a lot of advertisement and marketing is aimed at demonstrating how a product's advantages fulfill the customer's needs or desires in a specific and special way.

6.2 Organizations

In today's world, marketing's position in organizations is far too critical to be overlooked. Today, large, and small businesses compete for the same market, and the most creative and proactive companies have emerged victorious (Timothy Mahea, 2014). The global economy has recognized the value of small businesses and is increasingly providing them with the resources they need to continue to expand. As a result, a company's sustainability is reliant on effective marketing campaigns, as well as financial and organizational functions within its framework. Marketing is critical in forming partnerships between consumers and the businesses that provide services to them. In contrast to cases where goods reach the market without advertising, it gives people the courage to try a new product. This makes marketing a vital role of every company, whether for profit or not for profit. Marketing forms an organization's image, how people connect the company's products or services, and gives people trust in those products or services. Organizations compete to be at the forefront of their consumers' minds while still attempting to defend and secure their market share. Customer loyalty and retention are built on the foundation of marketing. As a result, the feature occasionally runs promotions and advertisements, which has proven to be a fruitful strategy for attracting new customers. Brands will not be illuminated without ads, and companies will be lifeless. The performance of an organization is determined not only by the prudent allocation of funds to different investment portfolios, but also by the relationship formed with customers, which is a feature of marketing.

6.3 Supportive marketing tools for SMEs

Small businesses already have a lot on their plates, particularly when they are just getting started. Small and medium-sized businesses (SMEs) need a high-quality marketing team able to devote the time and resources required to spreading the brand's name among customers. The best way to do this, is to provide the team with the best marketing tools from the start. Marketing technologies come in a variety of shapes and sizes, including automated email marketing campaigns, social media campaigns, and more in this day and age of technology. The following are some helpful marketing strategies for SMEs: (2019, Ashlyn Etree).

Traditional Marketing Media: Marketing resources such as paid print ads, commercials, and press releases can be used on billboards, posters, newspapers, magazines, television, radio, and telephone directories. This strategy focuses on a one-way sales pitch and relies on a large number of people to be effective. Advertising in magazines and networks is an expensive marketing method, so calculating the return on investment is important.

Digital Marketing Media: With the help of computer technologies, potential customers can be reached with targeted, observable communications. Search engine optimization, mobile ads, interactive online advertising, opt-in email, and online collaborations such as affiliate marketing and sponsorships are all examples of digital media marketing tools. Web analytics, which provide information on an internet user's online activities, IP address, and search keywords, is an important component of digital marketing tools. This data can be used to create a tailored advertisement strategy to meet a company's target market.

Social Media Marketing: Is a form of digital media marketing that focuses on the use of social media. However, rather than mining covertly for consumer data, the main aim of social media marketing tools is to improve and establish an engaging, online relationship with the customer. Blogging, tweeting, writing, messaging, networking, pinning, bookmarking, media sharing, and commenting on social media platforms such as Twitter, Facebook, LinkedIn, Pinterest, Reddit, and YouTube are examples of social media marketing tools. Small businesses and individual entrepreneurs benefit from social media marketing because it provides low-cost resources with potentially high returns.

Promotional Marketing Tools: Brochures, business cards, press kits, blogs,

informational films, and merchandise are examples of tangible marketing materials. Some of these things provide a lot of details and illustrate unique features of goods or services; others, including business cards and trade show giveaways, may only include a company logo and contact information. Promotional products help to raise brand awareness in addition to increasing sales; however, cost is a consideration when choosing these items.

7. ERM NEW PARADIGM

7.1 Enterprise risk management

Enterprise Risk Management (ERM) has recently emerged as a necessary and proportionately new business trend that combines conventional risk management concepts. It is a more systematic and disciplined approach that aligns strategy, procedures, people, technology, and experience with the goal of analyzing, assessing, and managing the uncertainties that the organization faces as it generates value, according to KPMG (2001). Traditional functional, divisional, departmental, or cultural obstacles must be removed enterprise wide. ERM is a modern concept that encompasses risks not only in health and safety and finance, but also in technical, reputational, and other areas of industry (Nayak et al., 2010). ERM encourages a risk-based decision-making culture by providing a more balanced view of different risks around the company, making decision-making easier. ERM has the ability to offer a new strategic advantage to a number of organizations. As a result, businesses have begun to incorporate ERM ideas into their operations and are reaping the rewards. Several other companies, on the other hand, are also unsure about ERM and how to translate ERM principles into tangible action measures that will help them increase shareholder value.A value based ERM architecture is another choice. A value based ERM does not strive to replace conventional risk management strategies, which will still be necessary; rather, it aims to incorporate risk into the firm's wider strategic decisions, defining, assessing, and managing not only the direct financial effects of risk and opportunities, but also indirect consequences such as possible non-financial effect.

7.2 Main components of ERM

Attempting to manage market risks has been around for a long time. However, Enterprise Risk Management (ERM) is a codified collection of procedures that have

been used in the United States since the 1990s to handle and monitor all possible risks to a company's operations. The most common cross-sector concept of ERM is a mechanism used in strategy-setting and throughout the organization by an entity's board of directors, management, and other staff to identify potential events that may impact the entity, manage risk to be within its risk appetite, and provide fair assurance about the achievement of the entity's objectives. The following are the main components of ERM as described by (Nicholas J. Price, 2018):

Operational Risk Management: Business hazards, which include property harm, liability, and other risks that cannot be predicted, are the purest type of danger. This is described as "the risk of loss resulting from inadequate internal processes, people, and systems or from external events," according to the Basel II Accords' international capital structure. Employee turnover, management supervision, bad IT design, and other operations risks are examples of operations risk. They are considered a pure risk because, unlike risks, they cannot be prepared for. Managing them necessitates the identification of risks in all operations through surveys, seminars, and a risk assessment system. Once this is in effect, a comprehensive corporate governance system for managing operating risks must be implemented.

Financial Risk Management: Following the notorious financial scandals committed by representatives of companies like Enron and WorldCom, the US Congress included a provision in the Sarbanes-Oxley Act of 2002, which allowed publicly traded companies to have internal control systems. Financial risks arise from market impact on an entity's assets which include credit, price, and liquidity risks. These risks are classified as theoretical because, unlike hazards or operations risks, they can be forecasted and prepared for to some degree. It is normally the CFO's and their department's responsibility to keep track of them.

Strategic Risk Management: Looking at strategic risk means taking a step back from the day-to-day activities and finances of the company to its long-term growth and development. Although ERM tactics in operations and finance will assist in doing things correctly, policy risk management is more concerned with getting the entity to do the right things. If no one wants its products, the company with the best budgeting and most efficient operations will fail. Brand redundancy and turnover are normal parts of the

business cycle, and risk management can help with that. In the field of technology, there are many examples of ineffective (or completely absent) risk management. Consider the release of the first-generation iPhone more than a decade ago. Although iPhones and similar devices would not become ubiquitous right away, Apple's marketing generated an immediate demand for this feature for which other mobile phone vendors were clearly unprepared and had no idea how to deal. Apple made billions of dollars from this ephemeral technological breakthrough, while its rivals were plunged into crisis.

7.3 ERM in the current business environment

The present environment of apprehension is not fresh. Political transformations and other developments have necessitated the need to adjust and adapt for quite some time, given the integrated existence of companies around the world. An entrepreneur's job is to motivate and lead others. To accomplish this as a business develops and scales, it is critical to establish and maintain a clear company culture in which managers at all levels can agree with the mission and see the direct effect of their contributions on strategic goals. Enterprise risk management (ERM) provides good governance frameworks to help businesses navigate the complexity of dynamic market conditions and consider the impacts of changes. To build a high-performing execution environment that benefits managers and front-line workers alike, successful entrepreneurship necessitates good governance (Minsky, Steven, 2017). Entrepreneurs benefit from ERM because it enables them and their managers to comprehend the effects of structural threats posed by their market climate, technology, individuals, processes, and relationships. Strong governance may seem to be an obvious component of long-term profitability, but many companies lack it because they struggle to maintain their structures, creativity, and principles during periods of rapid growth. Talent management, security, suppliers, customer success, enforcement, audits, and contracting are just a few of the areas that become more complicated as a business grows. Good corporate culture is associated with strong governance, which is critical for recruiting the best new talent and investors while also providing a rewarding environment for current employees. The risk-based method of ERM aids and assists business leaders in identifying inefficiencies, allowing them to pinpoint time-consuming, manual activities that can be eliminated with new

technology. This allows workers to take on more cross-functional positions, allowing them to think objectively and spend more time using their individual strengths.

7.4 Benefits of ERM to business enterprises

ERM services, in general, offer a mix of qualitative and quantitative benefits to organizations. The following are some of the main advantages of ERM for businesses: (Jim Kreiser, 2013).

- ***Developing a risk-focused culture inside the organization:*** Organizations that have introduced ERM have found that putting a greater emphasis on risk at the top leads to more risk discussion at all levels. Risk can be addressed more openly as a result of this cultural shift, and risk management silos can be broken down. Risk conversations become a normal part of the overall strategic business processes, and operational units find that managing risk in a more formal way helps them manage their part of the enterprise. Communication and risk discussion are known as not only a way to provide input to senior management, but also as a way to exchange risk information inside and through the company's activities, allowing for better risk insights and decision-making at all levels.
- ***Standardized risk reporting:*** Better risk structure, monitoring, and review are all aided by ERM. Standardized reports that monitor enterprise risks will help directors and executives concentrate their attention by providing data that allows them to make better risk reduction decisions. The variety of data (status of key risk indicators, mitigation measures, new and emerging threats, and so on) aids leadership in comprehending the most basic risk areas. These reports may also aid in the development of a better understanding of risk appetite, risk thresholds, and risk tolerances among executives. The improved timeliness, conciseness, and flexibility of risk data is one of the major benefits of ERM risk reporting. This provides information to executives and directors, as well as other levels of management, to help them make better decisions. Through aggregating and exchanging all organizational risk data and factors and analyzing them in a consolidated format, ERM

assists management in recognizing and unlocking synergies.

- ***Improved focus and perspective on risk:*** Leading indicators are developed by ERM to aid in the detection of a possible risk event and provide an early warning. Key risk metrics and measurements add to the importance of monitoring and analysis by allowing companies to monitor possible improvements in risk vulnerabilities and potentially alerting them to changes in their risk profile. ERM also allows for a more comprehensive view of risk. Traditional risk management strategies emphasize risk control, approval, or avoidance. Efficient ERM processes, on the other hand, provide management with a mechanism for evaluating risk as a way to improve competitive positions and leverage those business and operational conditions.
- ***Efficient use of resources:*** Many people may be tasked with managing and monitoring risk through operating units in organizations without ERM. Although implementing an ERM program will not eliminate the need for day-to-day risk management, it will help to improve the process and resources used to execute the essential risk management functions consistently. By allocating the appropriate number of resources to minimizing risk, eliminating redundant processes enhance performance.
- ***Effective coordination of regulatory and compliance matters:*** Bond rating agencies, financial statement auditors, and regulatory examiners have started to ask for, test, and use data from ERM systems for tracking and reporting. Since ERM data provides details on recognizing and tracking controls and mitigation activities around the enterprise, it can help audits and evaluations go more smoothly and for less money.

CHAPTER III.
8. ANALYTICAL METHODS USED IN THE THESIS

The methods used in the analytical part of the work, such as research methodology, questionnaire design, and multiple linear regression models (MLRs), are described in this chapter.

III. ANALYSIS

8.1 RESEARCH METHODOLOGY

8.1.1. Objective

This chapter provides a more in-depth look at the study methodology, including its limits, data gathering methods, and analysis. Research is a very important element risk management and its relationship with marketing tools, ignoring to do research, will be same as an investor who ignores market signals. Research is needed to reduce the level of uncertainty and to provide data for developing strategies. To the contrary, no amount of research can answer all the questions about investments, ROI or guarantee a certain level of right without a field study. In this part the qualitative research for this particular study is to Analyze marketing strategies in small businesses in the Czech Republic. Also, Evaluate and assess a supportive marketing strategies and techniques to boost the economic business environment. Moreover, there will be a cost and risk analysis performing of the proposed strategies.

Qualitative research is a term that refers to study that does not involve quantification or quantitative analysis of data. Qualitative research investigates a product user's or producer's views, feelings, and motives. It is distinguished by a small sample size and has the potential to increase the efficiency of quantitative research (Proctor 2005, 222).

The Advertising Research Foundation (ARF) offers another definition: qualitative research is used to obtain insight into customer attitudes, beliefs, motivations, and action Qualitative research is frequently recounted in detail, and typically in the words of the respondents (Philip 1998, 122).

The key elements influenced the decision to do qualitative research: The type of questions used in the qualitative research is probing or investigative,

- Typically, the sample size is short.
- This sort of study is generally exploratory in nature.
- Subjective or interpretative analysis is the sort of investigation.

Under no circumstances should the results of qualitative research be interpreted as conclusions for the entire population. Qualitative research often includes fieldwork, which is an important component of this study. There are various studies of the benefits and drawbacks of qualitative research, as well as how it differs from quantitative research. - Qualitative research may help us uncover important behavioral patterns,

beliefs, views, attitudes, and motives within our target consumers.

8.1.2. Research Limitations

Although this research style appears to be appropriate for this topic, it does have certai n restrictions. The first important fact that can be considered as limiting is the difficulties to obtain the largest possible sample of business entities (n= 454) from the business environment of the Czech Republic. Also, the lack of precise information and statistics, and the lack of related documentations related to SMEs adopted strategies. One of the limitations of qualitative research is that it may miss subtle variations, whereas quantitative research can highlight these differences. Finally, the research interpretation, quality and analysis usually depend on the skills of the individual. As a result, in order to reach final conclusions, a clear methodology is required.

8.1.3. Data collection

The collection of data started from September 2019 and lasted until April 2021 (started by my supervisor Mr. Jan Dvorsky and pursued by me). The observation unit (respondent) is the owner or senior manager of a small or medium-sized enterprise (SME), which works in the business environment of the Czech Republic. The CRIBIS database was utilized to create a baseline group of responders, who were subsequently addressed. In order to accomplish the aim of this research study questionnaires (in the form of online filling questionnaire) were handed in order to obtain the opinions of respondents.

Respondent were contacted via an email requesting them to complete the online questionnaire “Management, business risks and bankruptcies in the segment of small and medium-sized enterprises in the Czech Republic”. Also, the companies were contacted by telephone with a request to complete the questionnaire. Questionnaire statistics:

- The number of correctly completed sample represented: 454 (97.6%) respondents.
- The number of incorrectly completed sample represented: 11 (2.4%) respondents.

Reasons why to exclude a respondent from the sample are:

- Duplication of the questionnaire in the sample.

- Consistency of the respondent's approach to the assessment of business risks.
- The respondent's inattention when answering the questions which the respondent did not have to answer, etc.
- The allegations of business risks and bankruptcy were formulated in a positive way so as to maintain the continuity of responses.

8.1.4. Questionnaire Design

In this research process a total of 1000 SME's, were targeted. The respondents consisted of business owners, workers/managers. A total of 1000 questionnaires, were handed out. The analysis and the entire questionnaire process were coordinated by my supervisor Mr. Ján Dvorský and me.

The questionnaire consisted of 85 questions divided into several parts:

- In the first part of the questionnaire, aimed to know the basic characteristics of the respondent and the company (questions no. 1 – 10).
- The second part (questions no. 11 – 34) of the questionnaire contained statements concerning management, corporate social responsibility, marketing, social media, and internationalization of business.
- The third part (questions no. 35 – 67) of the questionnaire contained allegations concerning business risks, namely strategic, market, financial, personnel, legal and operational risks.
- The fourth part (questions no. 62 – 67) of the questionnaire examined the respondent's attitudes towards the claims regarding the bankruptcy of the company.
- The fifth part (questions no. 68 – 77) of the questionnaire focused on the causes of the company's bankruptcy and risk management.
- The sixth part (questions no. 78 – 87) Evaluation of marketing strategies used to face risks.

The answers are formulated as follows:

(1) strongly agree, (2) agree, (3) neither agree nor disagree, (4) disagree, and (5) strongly disagree are the five options.

8.1.5. Hypothesis:

The following assertions concerning business risks and the emotional future of the or ganization were produced to achieve the article's main goal:

Table 2. Research Hypothesis

MARKET RISK STATEMENTS (MR)	
MR1	MR1: I consider the market risk (my company's lack of sales) to be sufficient.
MR2	MR2: Business rivalry drives me to improve my performance.
MR3	MR3: It is difficult to sell items and services on the market. Our firm, on the other hand, has a sufficient sales volume.
MR4	MR4: Our company uses innovative ways to win new markets and retain the existing customers.
FINANCIAL RISK STATEMENTS (FR)	
FR1	FR1: Financial risk is something I regard to be a normal element of my job/company.
FR2	FR2: I evaluate the financial performance of our (my) company positively.
FR3	FR3: I am aware of the most important part of financial risk.
FR4	FR4: I am capable of effectively managing financial risk in my (our) organization.
Perception of the Future of Business (Y)	Our (my) firm has no chance of going bankrupt in the next five years.

Source: Own collection

We consider the following:

H: The selected business risk (Hb: Market risk ($H_{b,MR1}$; $H_{b,MR2}$; $H_{b,MR3}$; $H_{b,MR4}$),

Hc: Financial risk ($H_{c,\ FR1}$; $H_{c,FR2}$; $H_{c,FR3}$; $H_{c,FR4}$),) has a positive impact on the perception of the future of business in the entrepreneurial environment of small and medium-sized enterprises in the Czech Republic.

8.1.6. Methods

Multiple linear regression (MLR) is a statistical methodology that predicts the result of a response variable by combining numerous explanatory factors (independent). MLR attempts to show the descriptive (independent) components' linear relationship with the response (dependent) variable.

Formula and Calculation of Multiple Linear Regression:

$$Y = \beta_0 + \beta_1 \times BR_1 + \beta_2 \times BR_2 + \beta_3 \times BR_3 + \beta 4 \times BR_4 + \varepsilon_n , \quad (1)$$

where:

Y stands for dependent variable (perception of the future of business);

β_0 – intercept,

β_1; …; β_4 – independent variable regression coefficients.

BR_1, ..., BR_4 – independent variables (i = 1, ..., 4 – business risk statements).

ε_n – random error.

Simple linear regression is a function that allows a statistician or analyst to generate predictions about one variable using data from another variable. Only two continuous variables—an independent variable and a dependent variable—can be utilized in linear regression. The parameter that is utilized to compute the dependent variable or result is known as the independent variable. Multiple explanatory variables are included in a multiple regression model.

The following assumptions underpin the multiple regression model:

- The independent variable assumptions must be met.
- The independent variables must satisfy the assumptions of linearity; normal distribution and homoskedasticity.
- Multicollinearity must not be a factor in the regression model.
- Y_i observations are selected independently and randomly from the population (Goodman, 1970).
- Residuals should have a normal distribution with a mean of zero and variance of one.

The coefficient of determination (R-squared) is a statistical tool for determining how much variation in the independent variables can be explained by variance in the result. Even if the predictors are unrelated to the outcome variable, R2 always rises when additional predictors are added to the MLR model.

As a result, R2 alone cannot be used to determine which predictors should be included

and which should be eliminated from a model. R2 can only be between 0 and 1, with 0 indicating that none of the independent variables can predict the result and 1 indicating that the independent variables can predict the result without mistake.

While maintaining all other variables constant, beta coefficients are appropriate for evaluating the results of multiple regression ("all else equal"). A multiple regression's outcome might be shown horizontally as an equation or vertically as a table.

The assumption of linearity was confirmed by a scatter plot examination of the data (Hair et al., 2010; de Waal, 1977). By calculating and evaluating descriptive features (skewness and kurtosis), the assumption of a normal distribution of respondents' views (for individual claims on business risks) was confirmed. The assumption of a normal distribution is accepted if the skewness and kurtosis values are in the range of -2 to 2(James, 1964).

The link between the dependent variable and the independent variables was determine d using a correlation matrix with pairwise correlation coefficients. The correlation coefficient (R) can take values in the range from -1 to 1 (Hair et al., 2010; Lancaster, & Hamdan, 1964). The T-test is used to see if there is a significant difference in the means of two groups that are similar in certain ways. It is primarily used as a hypothesis testing tool, allowing for the testing of a population-based assumption. The regression coefficient in the regression model is statistically significant if the p-value of the t-test is lower than the level of significance (Zheng & Yu, 2015; Qin & Lawless, 1995).

The F-test is commonly used when comparing statistical models that have been fitted to a data set to determine which model better matches the population from which the data were sampled. In other word, it is used to verify the statistical significance of the regression model (de Waal, 1977). the regression model is considered statistically significant if the p-value of the F-test must be lower than the level of significance. The variation factor of inflation (VIF - test) is used in the regression model to verify the assumption of multicollinearity (Liao et al., 2012). If the VIF test value for the independent variable is less than 5, multicollinearity has no effect on this coefficient (Salmerón et al., 2018; Arnold, 1980).

8.1.7. Demographics structure of respondent

The questionnaire’s structured as follows:

- Number of respondent: 465
- Size of the enterprise:
    1. 23.6% small enterprise.
    2. 63.9% micro enterprise.
    3. 12.5% medium enterprise.
- Duration of the company in the business environment:
    1. 5.9% business up to 3 years.
    2. 6.2% business from 3 - 5 years.
    3. 14.1% business from 6 - 10 years.
    4. 73.8% business over 10 years.
- Respondent's highest level of education:
    1. 10.1% secondary school without GCSE (General Certificate of Secondary Education).
    2. 40.8% secondary school with GCSE.
    3. 7.5% bachelor's university education.
    4. 37.0% master's / engineering university education.
    5. 4.6% doctoral university education.
- Gender of respondent:
    1. male 71.1%.
    2. 28.9% female.
- Age of respondent:
    1. 15.2% age up to 35 years.
    2. 23.3% age from 36 - 45 years.
    3. 26.9% age from 46 to 55 years.
    4. 34.6% age more than 55 years.

- The relationship of education to the national economic sector:
    1. 37.7% yes, I run a business in the field I studied.
    2. 34.8% to some extent related (some business processes are related to the area I studied).
    3. 27.5% unrelated.
- Respondent's job position in the company:

1. 22.0% I am the owner of the company.
2. 78.0% I am a manager.

9. EMPIRICAL RESULTS:

9.1 STATISTICS

Table 1 shows the fundamental descriptive statistics (DS) of entrepreneurial risk indicators.
Note:
M: Mean
SD: Standard deviation
S: Skewness
K: kurtosis

Table 3 | Selected descriptive characteristics of the evaluation of business risk indicators

DS	MARKET RISK				FINANCIAL RISK			
	MR1	MR2	MR3	MR4	FR1	FR2	FR3	FR4
M	2.458	2.458	2.458	2.458	1.938	2.231	1.965	2.121
SD	1.022	1.022	1.022	1.022	0.965	0.989	0.891	0.907
S	0.114	0.114	0.114	0.114	2.312	0.406	0.644	0.627
K	0.625	0.625	0.625	0.625	2.077	0.776	0.841	0.741

Source: own data collection

Interpretation:

The assumption of a normal distribution is fulfilled for each independent variable, without SR4 and FR1 (see Table 1). For these variables, the value is not in the range of -2 to 2 (MR4: Skewness = 2.014; Kurtosis = 2.147; FR1: Skewness = 2.312; Kurtosis = 2.077). The assumption of a normal distribution for the variables FR1 and MR4 is accepted due to the large sample size.

9.2 PAIRWISE COMPARISON

In the following Table, the pairwise correlation coefficients in the correlation matrices between the independent variables and perception of the future of business (Y).

Table 4 | Dependence of indicators of business risk and dependent variable

MR	Y	MR1	MR2	MR3	MR4	FR	Y	FR1	FR2	FR3	FR4
Y	1					**Y**	1				
MR1	0.309	1				**FR1**	0.021	1			
MR2	0.151	0.205	1			**FR2**	0.380	0.133	1		
MR3	0.239	0.340	0.318	1		**FR3**	0.193	0.236	0.345	1	
MR4	0.095	0.173	0.238	0.211	1	**FR4**	0.198	0.145	0.410	0.708	1

Source: own data collection

According to correlation matrix, the relationship between the business risk and the dependent variable is a positive relationship (all of values are above 0, see table 4).
All the values ranging from 0 and 0.40 can be interpreted by having a weak relationship between dependent and independent variable expect for FR4 and FR3, according to Pearson product-moment correlation coefficient, the correlation between dependent and independent variable is strong. (See table 4)

Table 5. Pearson Correlation Coefficient (PCC)

Correlation	Strength of the linear relationship
1	Perfect
0.8 to 1	Very strong
0.60 - 0.80	Strong
0.40 - 0.60	Moderate
0.20 - 0.40	Weak
0.00 – 0.20	None to extremely weak

Source: Devlin, Susan J, Gnanadesikan, R, Kettenring J.R. (1975)

9.3 STATISTICAL SIGNIFICANCE

The results of the statistical significance of the proposed regression models are present ed in Tables 6, and 7.

Table 6 | The impact of indicators of the market risk on the perception of the future

RM2 – Impact MR on Y					
MCC	0.345		**Adj. R^2**	0.111	
R^2	0.119		**SE**	1.052	
Verification of the significance of LRM					
ANOVA	**Df**	**SS**	**MS**	**F- ratio**	
Reg.	4	67.030	16.757	15.131	
Residual	449	497.278	1.108	**P – value**	
Total	453	564.308		1.311	
Statistical significance testing					
Variables	**RC**	**SE**	**t-Stat**	**Sign. (p-val.)**	**VIF**
Intercept	1.054	0.181	5.841	0.000	-
MR1	0.273	0.052	5.255	0.000	1.155
MR2	0.060	0.053	1.146	0.252	1.160
MR3	0.160	0.058	2.740	0.006	1.235
MR4	0.011	0.048	0.224	0.823	1.092

Source: own data collection.

Note:

- Df.: Degree of freedom.
- SE: Standard Error.
- RC: Regression Coefficient.
- VIF: Variance Influence Factor. Source: own data collection.

The findings of the MR2 model demonstrate that there is a statistically significant link between the dependent variable and the market risk indicators (F-ratio: p-value = 1.311). The market risk indicators (MR1: p-value = 0.000; MR3: p-value = 0.006) have a statistically significant influence on the dependent variable. Regression functions is:

$$\boldsymbol{Y} = 1.054 + \boldsymbol{0.273}\times\boldsymbol{MR1} + 0.060\times MR2 + \boldsymbol{0.160}\times\boldsymbol{MR3} + 0.011\times MR4 + \varepsilon_t, \quad (3)$$

where:

- Y: dependent variable (perception of the future of business);
- MR1,..., MR4: independent variables (indicators of the market risk);

- ε_t : random error.

Interpretation:

- ✓ Multicollinearity in the regression model was not detected by the VIF test results (see Table 3).
- ✓ Homoscedasticity was confirmed for both regression models (MR1: Bartlett´s test: p-value = 0.297).
- ✓ The normal distribution of errors was confirmed for both regression models by S-W test (MR2: S-W test: p – value = 0.355).
- ☒ The evaluation of scientific hypothesis: $H_{b,\,MR2}$, $H_{b,\,MR4}$ were rejected; $H_{b,MR1}$,
- ✓ $H_{b,\,MR3}$ were accepted.

Table 7 | The impact of indicators of the financial on the perception of the future business

RM3 – Impact FR on Y					
MCC	0.396		**Adj. R^2**	0.149	
R^2	0.157		**SE**	1.030	
Verification of the significance of LMR					
ANOVA	**Df**	**SS**	**MS**	**F- ratio**	
Regression	4	88.317	22.079	20.827	
Residual	449	475.991	1.060	**P – value**	
Total	453	564.308		9.216	
Statistical significance testing					
Variables	**RC**	**SE**	**t-Stat**	**Sign. (p-val.)**	**VIF**
Intercept	1.310	0.161	8.119	0.000	-
FR1	0.104	0.052	2.019	0.044	1.064
FR2	0.408	0.054	7.559	0.000	1.217
FR3	0.112	0.079	1.421	0.156	2.092
FR4	0.000	0.078	0.006	0.995	2.144

Note:

- Df.: Degree of freedom.
- SE: Standard Error.

- RC: Regression Coefficient.
- VIF: Variance Influence Factor. Source: own data collection.

The findings (Table7) reveal that the suggested regression model of the linear correlations between business perception and financial risk indicators (MR3) is statistically significant (MR3: F-ratio: p-value = 9.216; MR4).

The regression functions are:

$$\boldsymbol{Y} = 1.310 + \boldsymbol{0.104}\times\boldsymbol{FR1} + \boldsymbol{0.408}\times\boldsymbol{FR2} + 0.112\times FR3 + 0.000\times FR4 + \varepsilon_t, \quad (4)$$

where:

- *Y: dependent variable (perception of the future of business);*
- *MR1,..., MR4: independent variables (indicators of the market risk);*
- ε_t *: random error*

Interpretation:

- ✓ The VIF test values did not show the presence of multicollinearity in the regression model (see Table 4).
- ✓ Homoscedasticity was confirmed for both regression models (MR3: Bartlett´s test: p-value = 0.259;).
- ✓ The normal distribution of errors was confirmed for both regression models by S-W test (MR3: S-W test: p –value = 0.118).
- ☒ The evaluation of scientific hypothesis: $H_{c,\,FR3}$, $H_{c,\,FR4}$, were rejected.
- ✓ $H_{c,\,FR1}$, $H_{c,\,FR2,}$ were accepted.

10. RESULTS AND DISCUSSION

In today's worldwide economy, organizations must be able to maintain a sufficient levelof competitiveness through a consistent management strategy and maximal alignment of all organizational activities and actors involved in the performance management process. (Labudova & Janosova, 2019)

Effective risk management in SMEs is critical to their market survival and contributes to the growth of not just the firm, but also the market and social environment. At the same time, it's important to remember that effective risk management necessitates the recognition, identification, planning, and prevention of multiple hazards posed by these

businesses.

However, in comparison to bigger organizations, the management process in SMEs is frequently disregarded, which contributes to the creation of multiple hazards. (Ślusarczyk & Grondys, 2019)

On the other hand, the risks associated with future perceptions of the company's existence are grave. On the other side, these might be viewed as future chances for boosting earnings, enhancing corporate performance, extending the company's portfolio, and so on. (Oláh et al., 2019).

The key findings in each risk category may be stated as follows:

The evaluation of main sales of services and goods (MR1: p-value = 0.000) and the fact that the firm has a fair difficulty selling products and services (MR3: p-value = 0.006) impact the view of the firm's future.

The estimate of adequate sales of services and goods (β= 0.273) is the most important in dication of market risk, with the largest beneficial influence on the future of company. The difficulty in selling products and services has a significant positive influence (β= 0. 160).

The respondents' favorable perception of rivalry as a motivator and the company's cap acity to win new markets in novel ways were not validated (MR2: p-value = 0.252 and MR4: p-value = 0.823).

The view of financial risk as a part of everyday life (FR1: p-value = 0.044) and a favorable opinion of the company's financial success (FR2: p-value = 0.000) impact the company's future.

A positive impression of business financial performance (β= 0.408) is the most import ant predictor of financial risk and has the biggest influence on the future of business. The influence of respondents' capacity to grasp the most essential parts of financial riskand their capacity to appropriately manage financial risk was not proven (FR3 p-value = 0.156 and FR4 p-value = 0.995).

11. PROJECT OF INTRODUCING A SUPPORTIVE TOOL FOR MANAGING RISKS AND ESTABLISHING MARKETING STRATEGIES TO BOOST SMALL AND MEDIUM SIZED ENTERPRISES IN THE CZECH REPUBLIC

Based on the literature overview and analytical findings, the project of introducing a supportive tool for managing risks and establishing marketing strategies to boost small and medium sized enterprises in the Czech Republic was created.

11.1. PROJECT OVERVIEW AND OBJECTIVES

Despite the fact that SMEs execute risk appraisal and control methods at numerous stages during their operational management, small businesses plainly struggle with risk management. Due to limited funding, small and medium-sized firms split their potential through initiatives to achieve aims on a smaller and more adaptive scale. However, limited resources, such as company size, non-theoretically oriented management, and unsystematically organized risk management techniques, combined with a variety of external factors, result in significant failures for small businesses in terms of risk management. Based on the research findings and data, this chapter introduces a supporting tool for managing risks in small and medium-sized businesses, as well as marketing strategies for successful project risk management.

11.1.1. Goals and objectives

Small businesses feel that carefully identifying and justifying the company's objectives and priorities is unnecessary because they feel that with their small human resources, workers can swiftly grasp concepts without requiring managerial effort. Nonetheless, for a small business with less than ten employees, occasional training sessions will not consume a significant number of financial resources while providing predictable benefits. Clarifying the company's priorities is critical to achieving success not just in risk management but also in the long run of operations. Project risk management should be at the forefront of the management of project firms, such as those in the Czech Republic. Conferences, workshops, or meetings focusing on the company's value and current challenges to those values ensure that workers understand the situation, risk management terminology, and provide a forum for employees to address and brainstorm

changes in the overall business or on specific initiatives.

11.1.2. Leaders' expectations in terms of risk

Effective project management and risk management within projects are highly reliant on the project leader's or, on a smaller scale, the company's management's expertise. Diversifying programs may be used by an organization to merge various networks and make use of available resources. The wider the scope of a project, the more managerial skills are needed. Project risk management is focused on practice, but it also requires a formal approach and a good understanding of risks and project risks. Leaders of small and medium sized companies, who are practically involved in almost any project, need training to fully understand the models in the patterns of existing risk management systems, in addition to training staff in terms of risks and risk management also some marketing techniques and strategies that would encourage and boost small businesses in duress situations.

11.1.3. Project risk management model:

Input, method, performance, and analysis are the four stages of successful project risk management. There are some aspects that matter, regardless of the risk management models that businesses use.

- *Attitude towards risks:* Small businesses have a tendency to view risks as potential for growth while ignoring evidence of failure. Small enterprises, such as SMEs and micro businesses, pursue assistance from larger organizations or government agencies, which they use to carry out programs. They strike to take chances in the hope of becoming stronger, believing that their own finances will not be harmed even if the project fails fatally. This is a situation where management must think carefully about how they choose and take risks. Overconfidence in one's own abilities can be harmful. When one project fails, it can have a negative impact on the team's attitude toward future projects, and in the worst-case scenario, lead to further failures.

Managers face a difficult task in judging overconfidence and ensuring that risk-taking does not jeopardize a company's chances of success.

- *Prioritize risks:* In general, SMEs in Europe handle new promising projects fairly for the sake of management and workflow simplification. It does not, however, produce the best results. Some ventures are more promising than others, while others pose greater risks. Projects, as well as related project threats, must be assessed and ranked. The criterion for prioritizing projects based on their resource requirements and anticipated benefits. The requirements for prioritizing risks are to assess their effect and probability of occurrence. Techniques for measuring and prioritizing should be used regularly.
- *Communication about risks:* When project workers or even the project leader are unaware of existing threats, this is a common cause of project failure. This could be the result of a poorly prepared risk identification phase, but it could also be due to a lack of coordination or an ineffective project culture. In certain cases, people involved in a project are not kept informed of new information when it becomes available during the implementation process. To combat this issue, leaders should implement appropriate and effective communication platforms, such as reports, change notice boards, meeting minutes, and a staff discussion forum.
- *Plan and implement a risk management strategy:* As previously mentioned, SMEs use their experiences to assess and monitor risks. Even the most experienced boss, though, will make mistakes. As a result, it is important to schedule and outline risk management measures ahead of time. A proper risk management strategy should include comprehensive risk details, the responsible individual, costs, and response schedules for various risks, as well as alternative measures in the event of a shift. Risk planning allows you to save money for unanticipated and unexpected events. In conclusion, project risk management, when properly implemented, will greatly aid project success. It is in the best interests of the company leader and project manager to assess and configure a project risk management plan that is appropriate for their project.

11.2. PREVENTION AND MEASURES OF SMEs FINANCIAL RISK

- ***Strengthen asset flow management, such as cash, inventory, and accounts receivable:*** The number of accounts receivable should not be excessive in the company management process. As a result, accounts receivable must be recovered in a timely manner to avoid a cash crisis. Aging analysis should be employed in the management of accounts receivable. To avoid bad debt losses, SMEs should develop a bad debt provisioning mechanism.
- ***To create an ideal internal control system:*** Whether or not an enterprise's financial internal control mechanism is complete has a direct impact on SMEs. Financial management is regarded as the center of SMEs management, with financial management extending across the enterprise's economic activities. As a result, businesses should develop a set of scientific, stringent, and highly effective financial internal control mechanisms, as well as strengthen their internal control system, accounting personnel's business abilities, and the quality of their managers. Furthermore, they should strengthen enterprise internal accounting audits and staff supervision, as well as execute tight enterprise financial control, to ensure the safety of enterprise funds and greatly limit the danger of capital management risk. As a result, increasing SMEs' awareness of internal accounting control systems is critical. SMEs can only implement internal accounting control system by improving enterprise staff's legal awareness and strengthening the ego to safeguard consciousness, as well as enterprise department personnel awareness. To effectively preserve the safety of company finance and ensure the smooth functioning of the SMEs internal financial supervisory system, financial risk can be considerably avoided.
- ***To build a reasonable remuneration structure and strengthen employee training mechanisms:*** Reasonable compensation is essential for SMEs to recruit talent. As a result, SMEs managers must develop a reasonable salary system, provide benefits to outstanding employees, and meet the reasonable needs of employees; in addition, personnel training mechanisms must be strengthened, and training for professional quality must be provided to improve the ability of workers.

- ***The proper adjustment of SMEs' capital structure:*** SMEs' financial structures must be optimized, and enterprise debt ratios must be adjusted. Enterprises must adapt their own structures, such as capital, debt, and so on, in response to changes in the environment in order to maintain a scientific, fair proportion. The proportion should not exceed the bear ability, with a liquidity ratio of no more than 2:1 and a quick adjustment ratio of no less than 1:1. To investigate capital structure problems, small and medium-sized businesses must develop a virtuous capital structure cycle. Starting with a suitable capital structure, they can construct a suitable dynamic combination of enterprise capital to achieve a new rational capital structure, taking into account the high benefit and acceptable risk of SMEs as a foothold. As a result, the following are a few significant issues that must be addressed during the management process:

  1) SMEs should repay short-term debt on time and minimize their debt ratios, particularly their current liabilities ratios; when money is available, SMEs should make short-term investments on time to speed up capital operations and avoid waste of cash and short-term "deposit."

  2) Bonds should be made more widely known, and the debt-to-income ratio should be improved. If SMEs require a large sum of money and have a low debt ratio, they can obtain funds by issuing bonds, which allows them to take advantage of tax benefits to lower their total capital costs.

  3) They should recoup foreign company investment and lower the cost of foreign shares, reducing the benefits of distributing and lowering the equity ratio. This has the potential to be more effective in terms of control.

- ***Enhance risk awareness and create a financial risk aversion system:*** Effectively mitigating financial risks requires not only the attention of a few people, but also the attention of all members of the organization. Professionals with excellent quality and skill should be hired by SMEs. They should learn to analyze the financial data of the company and identify potential financial hazards from the data, then actively promote financial risk awareness and increase financial risk research and training. A company's financial employees should pay close attention to the company's financial security, as well as the accuracy of accounting data and statistics. To

further strengthen the knowledge of accountability, clear division of labour, and clear responsibility, the company should also clear all types of internal financial relationships. Based on the entire enterprise doing a good job of profit distribution, protecting the business interests of all parties involved, fully arousing the enthusiasm of each department of the enterprise in financial management works, giving full play to the important role of financial management, making right, duty, and benefit organically unified, improve the quality of financial work done by businesses, and build a firm platform for business growth. For example, in order to compete in the fierce market for electrical appliances, dealers must foster a sense of risk and competition. Dealers must not only pay close attention to market information and understand the needs of the user, but they must also improve electrical appliances service facilities, strengthen a sense of after-sales service and credit, increase their service level, improve the competitiveness of firms, and increase their anti-risk capacity.

- ***To create a decision-making framework for investment management and make scientific decisions:*** The scientific investment management decision-making system should be established by small and medium-sized businesses. Market circumstances should be thoroughly examined and collected by information workers in order to obtain scientifically sound, reasonable, and accurate market data and ensure the information's high quality. Enterprise financial employees should be learning as they seek to enhance all aspects of quality, acquire skills, and then ensure rigor and accuracy in financial management; Managers of businesses should examine all elements of research based on scientific and accurate data and high-quality financial people collaboration in order to make the best investment management decisions and reduce decision-making risk.
- ***Establishing a financial risk warning system:*** Establishing a system that can reflect the financial status of SMEs and alert them to their financial risk is critical to effectively controlling their financial risk. This system should have an objective reflection and evaluation of SMEs' financial risk, as well as an examination of their actual financial activities and problems, in order to reflect the rapid change in SMEs' financial position, as well as the scientific relationship between SMEs and various

links, and to objectively reflect the potential risk between financial and business activities so that the manager of SMEs can find the financial risk timely and effectively based on the prompts of this system and make the right decision, eliminating the false and retaining the true, making the best judgments, and preventing the financial risk from continuing to rise in order to cut loss.

11.3. PREVENTION AND MEASURES OF SMEs MARKET RISK

- ***Establish a risk management strategy, policies, and accountability:*** The fundamental prerequisite for implementing risk enterprise management is to have appropriate support from top management. It is critical that the company's management is concerned about prevention. At this point, the organization must design a risk management strategy, policy, and principles, as well as assign responsibility for risk management. Even before implementing enterprise risk management, the entire business strategy must be understood. The risk management tasks may not be particular at all if the company has no plan and just flows in the changing barriers generated by the industry and the entire economy.
- ***Analyze the environment and set risk criteria***: In this step, managers must elaborate on their understanding of the internal and external business environments so that strategic and organizational relationships with risk management may be defined. Furthermore, managers should specify risk criteria that will be used to analyze specific risks, such as risk capability and risk appetite. Identify hazards, risk resources, and risk mitigation strategies (threats and opportunities). It is vital to identify the hazards in this step. The dangers must be identified and described. Managers should guarantee that all ongoing external and internal events affecting the achievement of objectives are monitored on a regular and continuous basis. It is important to distinguish between good (opportunity) and negative (effects) (threats).
- ***Prioritization and risk analysis:*** In this stage, there is a must to elaborate on the analysis of the identified risks based on the probability of occurrence and the impact. While some risks may have a larger probability, their impact on the enterprise's performance and overall success is minimal. The risk level is determined by the combination of the probability of occurrence and the impact, which determines the risk priority, or the amount to which risks may affect the company's goals.

- ***Risk assessment and risk catalogue creation:*** In this phase, the probability of occurrence and effects must be compared to the defined criteria indicated in the previous phase. The relevant managers should determine which risks should be reduced, what the risk management priorities are, and what actions should be taken.
- ***Develop and implement a strategy for preventative measures:*** This stage requires proposing preventative measures to reduce hazards. This is to guarantee that the anticipated approaches do not pose unacceptable dangers. Because of potential future changes in the degree of the identified hazards, as well as their characteristics, the acceptable risk should be monitored.
- ***Evaluate the effectiveness of the preventative measures and risk management:*** The next stage is to conduct a thorough examination of the entire risk management process. Effective communication, counselling, and reporting should be provided. From the standpoint of continuous improvement, the managers should assure the control of the identified risks, proposed measures, review of their efficacy and efficiency, and implementation of the risk management strategy.
- ***Ensure monitoring and early warning systems by controlling:*** The next step in the implementation of enterprise risk management is to provide an early warning system in the form of continuous monitoring of critical company operations, such as by controlling.
- ***Take a good attitude toward risk:*** The final step in implementing risk management in the firm is for senior management to instill ideals in the company's culture that will lead to managers having a good attitude toward risk and prevention.

It is important to remember that proper risk management is a continuous and never-ending business activity. Because of changes in the external and internal environment, all of the above-mentioned processes of market risk management may be updated over time. One-time labour is inexcusable. Enterprise risk management must be approached in a methodical manner. The risk management methodology application includes practical examples, tools, and recommendations for selected risk management methods and techniques that are crucial in the real application of the risk management process in small and medium-sized businesses in the Czech Republic at each level. The methodology is applicable to a variety of industries, and it is based on the rational

application and adaption of risk management to individual company conditions.

12. INTEGRATED COST AND SCHEDULE PROJECT RISK ANALYSIS: SUPPORTIVE TOOL TO BOOST THE SMALL BUSINESSES IN THE CZECH REPUBLIC OF THE PROPOSED MANAGEMENT AND MARKETING STRATEGIES

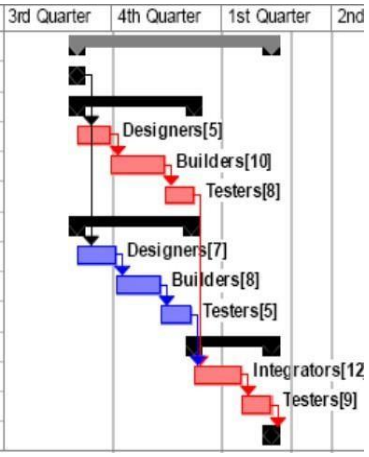
As project schedules slide, cost estimates frequently get distant from reality. Even when one of the key components of those estimates, activity length, changes, cost estimators occasionally assume their estimates are still correct. Because the cost of each activity is determined by duration estimates. Risk in all components of the cost equation, including the duration of the activities, affects cost risk. The idea is that if the sources of risk are disaggregated into those that affect time and those that effect the burn rate per unit time, the estimate of cost risk may be made more accurate and better understood. If the cost estimates are established outside the schedule, such as in a spreadsheet, this methodology needs first doing a schedule risk analysis and then utilizing the results as input to a cost risk analysis. If resources are loaded and priced into the schedule, at least two programs will run the integrated cost and schedule risk analysis at the same time, causing cost uncertainty to be driven by schedule uncertainty.

12.1. Cost and schedule project risk analysis

A cost/schedule risk analysis is typically performed for a project schedule with a large number of jobs. The schedule below shows two components that start on the start date and an integration and testing phase that starts once the components are ready.

Figure 3. Schedule of Simple Inputs

ID	Task Name	Duration	Start	Finish
0	**Integrated Cost-Schedule**	**163 d**	**9/1**	**2/10**
1	Start	0 d	9/1	9/1
2	**Component 1**	**98 d**	**9/1**	**12/7**
3	Design 1	28 d	9/1	9/28
4	Build 1	45 d	9/29	11/12
5	Test 1	25 d	11/13	12/7
6	**Component 2**	**95 d**	**9/1**	**12/4**
7	Design 2	32 d	9/1	10/2
8	Build 2	38 d	10/3	11/9
9	Test 2	25 d	11/10	12/4
10	**Integration and Test**	**65 d**	**12/8**	**2/10**
11	Integrate	40 d	12/8	1/16
12	System Test	25 d	1/17	2/10
13	Finish	0 d	2/10	2/10



Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

The prices for the resources included in the schedule are listed below. Before risk analysis, the entire cost of this project is predicted to be $1,629,040 when the number of resources, their hourly rate, and the number of days length are added together.

Table 8. Applied Resources and Prices

Resource Name	Type	Max. Units	Standard Rate
Designers	Work	50	$90/hr
Builders	Work	50	$80/hr
Testers	Work	50	$105/hr
Integrators	Work	50	$110/hr

Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

In order to build an integrated cost/schedule risk analysis on a real timetable, several issues must be addressed:

A. Unlike the cost estimate, the timetable is normally produced to a lesser level of detail. While tasks such as Design 1, Build 1, and Test 1 are included in our

calendar, a cost estimate can be created, and real expenses collected at the Component 1 summary level. Schedules tend to wander further and more away from the Work Breakdown Structure as they evolve in real project schedules, although cost aspects normally stay fairly close to the WBS.

B. We need duration uncertainty in the summary jobs, although most schedule risk analysis focuses on date uncertainty. Dates and durations are not identical; for example, due of the ambiguity in the preceding activities, we cannot identify when the integration and test phase begin in this timetable.
C. Normally, schedule risk and cost risk analysis are performed in separate contexts. The scheduling analysis is done in Microsoft Project, the simulation is done in Risk+ by C/S Solutions, and the cost analysis is done in Microsoft Excel and Crystal Ball by Decisioning to depict the problem. (An integrated cost / schedule risk analysis can be done if resources are fully described, priced, and loaded into the scheduling package.)
D. Cost unpredictability necessitates apprehension about average labour resources and average daily compensation, but project managers ramp up and down their resources, at least on a summary level. Because the project manager or team leader frequently does not think in terms of average labour force or salary, some context must be given to help them think. The data on average labour and compensation comes from the basis of estimate, which is where the baseline estimate's assumptions are recorded.

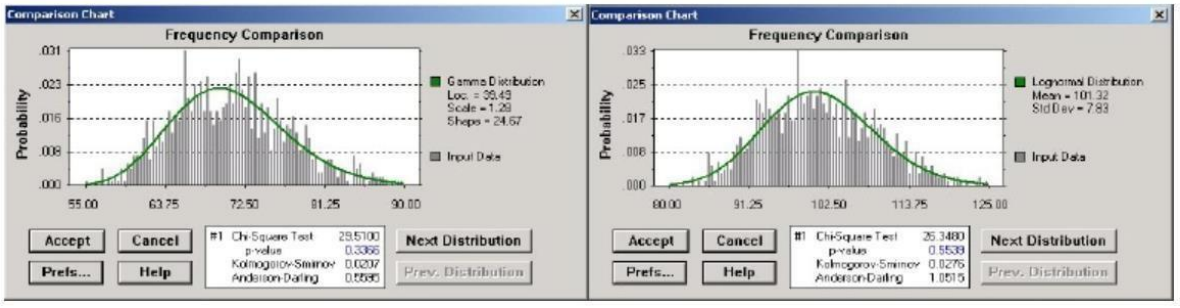
Starting with the schedule presented above, the risk analysis with schedule and cost in different programs goes as follows:

1. Conduct risk interviews regarding the unpredictability of the timetable.
2. Use Risk+ to simulate the timetable, gathering the findings at the appropriate level after each iteration. Component 1, Component 2, and Integration and Test summary tasks are at this level in this timetable.
3. In a spreadsheet, enter the duration results, not the date results, for each iteration of the schedule simulation.

4. Using Crystal Ball, fit the probability distributions to the duration outputs statistically. In the cost risk simulation, the fit provides the closest distribution and can be used to represent time uncertainty.
5. Run the cost risk model with inputs indicating burn rate uncertainty and the temporal uncertainty distribution from the fitting procedure.

The scheduling risk simulation saves the findings for each iteration (we ran 1,000 iterations) in a file that includes durations in minutes. In a spreadsheet file, the durations are converted to days by dividing by 480 for an 8-hour day plan. We need to construct a Crystal Ball probability distribution for the three summary tasks, Component 1, Component 2, Integration, and Test, for the cost risk analysis. The cost risk model uses these distribution types and characteristics for uncertain summary task durations as inputs. The following are two examples of fitted function results:

Figure 4. Cost Risk with Statistical Fits of the Duration Simulation Results



Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

At the summary task level, the cost risk model is comparable to the single-activity analysis that introduced this project section of the thesis. Over the summary path time frame, the input assumptions include labour hours and remuneration averages. The baseline estimate can be used to determine baseline assumptions if the interviewers, who are usually team leaders or project managers, do not think in these terms. Interviewees should use such estimations to get a sense of where they are in the process, but they should be careful not to place too much faith in the data. Component 1's input to the cost risk analysis model is provided below. The duration uncertainty is the estimated lognormal distribution of duration.

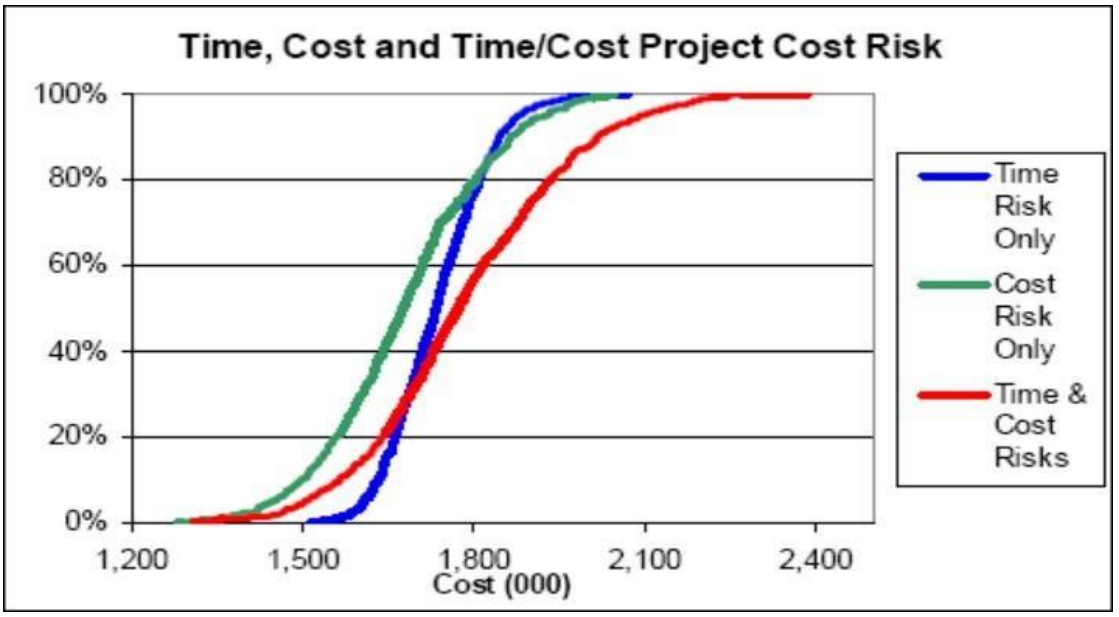
Table 9. Burn Rate and Duration Assumptions in a Cost Risk Model

Cost Risk Model with Inputs				
Component 1	Baseline Estimate	Low	Most Likely	High
Average of Workers per day	8.1	6	8	12
Average of Rate/Hour	88.1	80	88	91
Duration from Schedule	98.0	Estimated Lognormal Distribution		
Component 1 Cost	557			

Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

The simulation results below show how important it is to account for both duration and burn rate uncertainty. As a result of a schedule risk analysis, duration uncertainty is most correctly represented in the cost risk analysis.

Figure 5: Results of the Cost-Risk Model Distributions Cumulative

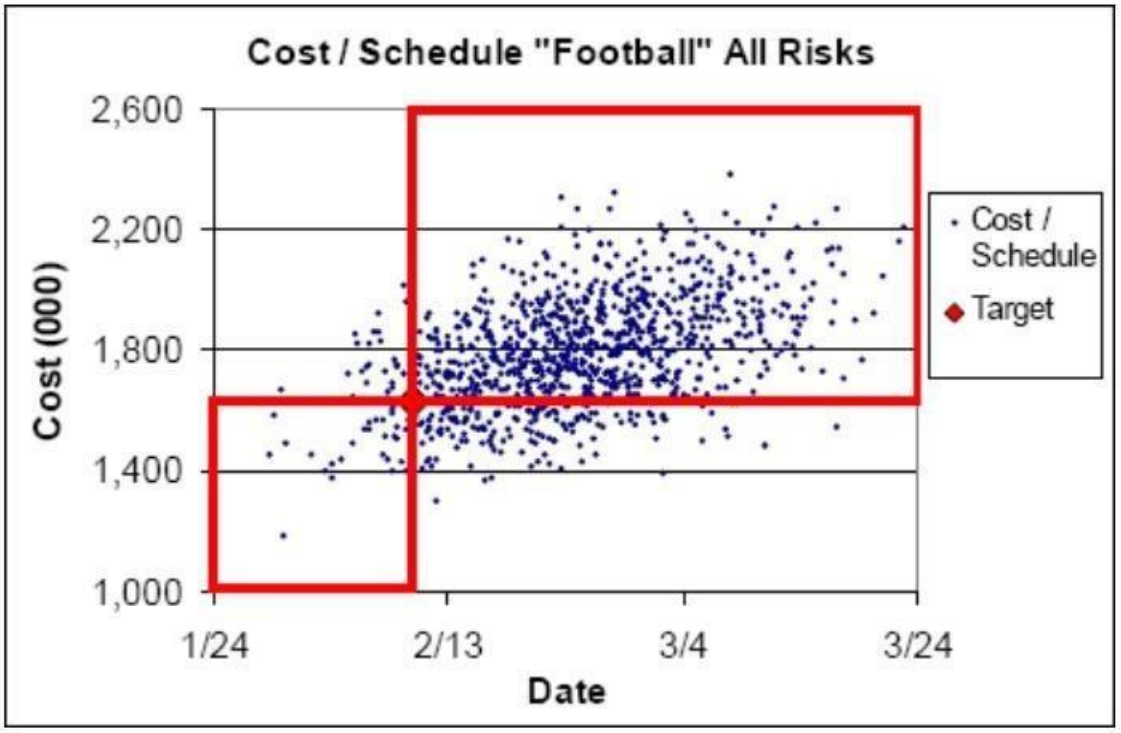


Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

Only if the schedule can be rebuilt in Excel can the cost – date scatter diagram be constructed

in this manner. This is only doable with a straightforward schedule. Although this is impracticable for real schedules, the timetable is replicated in the spreadsheet in this scenario.

Figure 6. Scatter Plot of Cost and Schedule Risk Model Results



Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

The four quadrants' results of this hypothetical risk analysis are given below. They suggest a high potential of overrunning, as well as a slim chance of fulfilling both cost and time goals.

Table 10. Scatter Diagram Results from the Four Quadrants

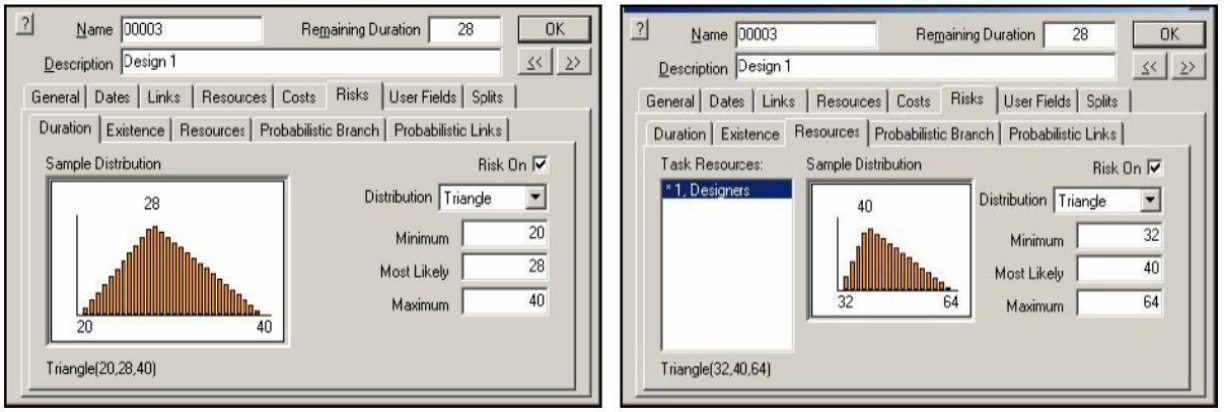
Results of Integrated Cost/ Schedule Risk Analysis	
Objective(s) Tested	Percentage Likelihood
Overrun Cost Objective	81%
Overrun Time Objective	93%
Overrun Cost and Time objectives	78%
Underrun Cost and Time Objectives	3%

Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

12.2. Loaded and priced resources in the Schedule risk analysis and cost analysis:

Most schedules are not fully resource-loaded, which means they do not contain resource charges. If this information is included in the schedule, two scheduling programs can compute an integrated cost/schedule risk analysis in which both time and burn rate can be adjusted at the same time, and time uncertainty helps drive cost uncertainty. Pert master 1and Monte Carlo are the two packages in question (from Primavera). They will both be depicted using the schedule provided in this section. The resources (designers, builders, testers, and integrators) have been added to the project timeline, along with their hourly rates. This is how the $1,620,040 cost was calculated. This MS Project schedule, including its unknown durations, resources, and resource charges, is read by Pert master. Then, in Pert master, the length and resource prices per day can be changed to get a realistic integration of unpredictable duration and unpredictable burn rate. The time and burn rate uncertainties for Design 1 are illustrated below as an example:

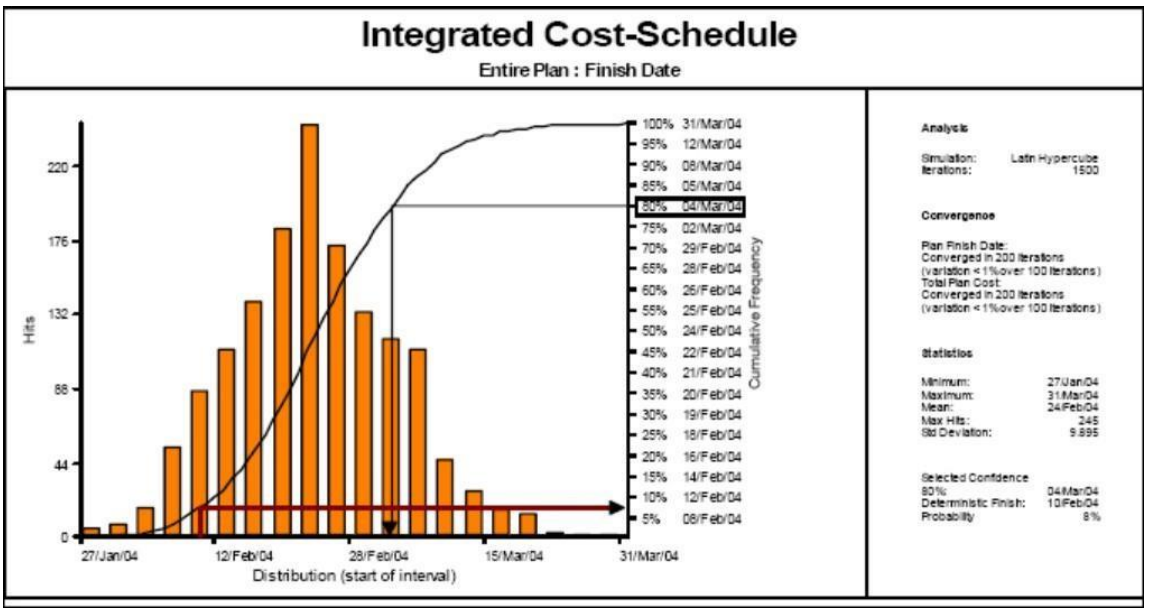
Figure 7: Pert master inputs for duration and Burn Rate Ranges



Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

For each iteration, the simulation selects duration and daily hours values for each detailed task. For each iteration, it calculates the implied date and ultimate project cost. Both unknown durations and unknown burn rates are factored into the cost uncertainty calculation. The following is an example of a schedule risk outcome for the entire project:

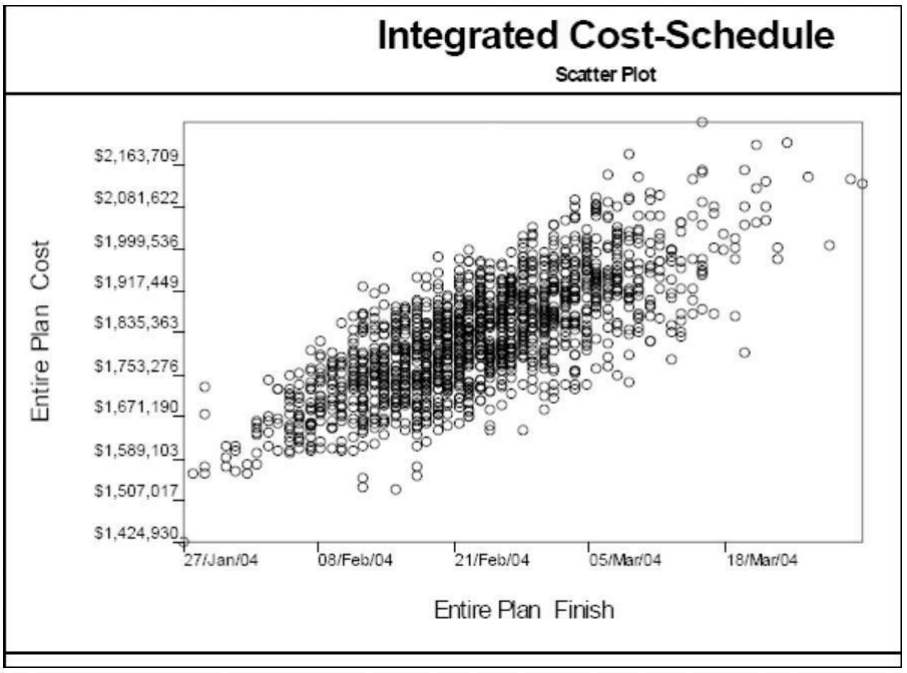
Figure 8: One result from Pert master's Schedule Risk Analysis



Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

Pert master plots the joint distribution in a scatter plot (see below), which is computed during the simulation of both time and resources.

Figure 9. Pert master's Cost / Date Scatter Plot

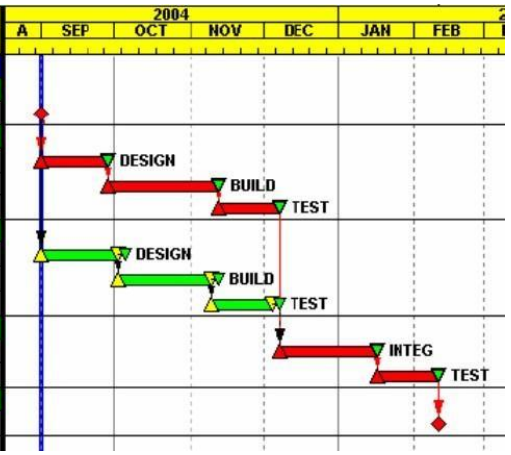


Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

The risk parameters are put up in the Primavera P3 schedule (see below) to use Monte Carlo from Primavera:

Figure 10. Monte Carlo schedule with duration and Burn Rate Ranges

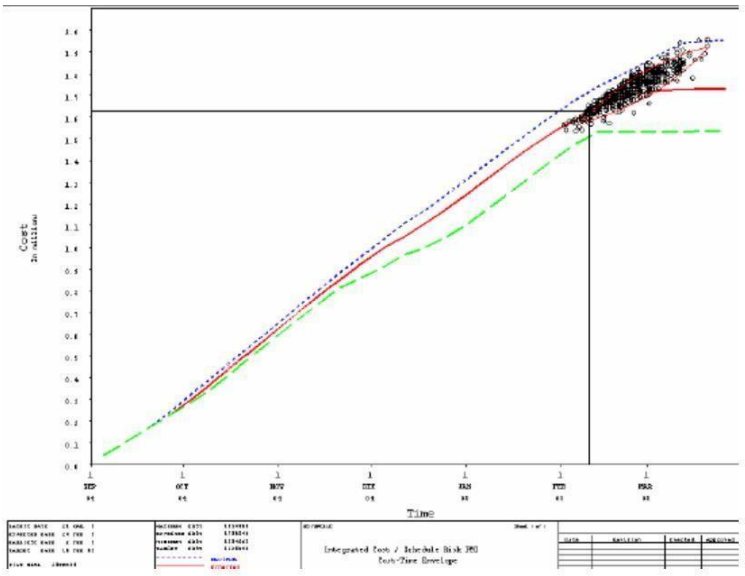
Activity ID	Activity Description	Orig Dur	OPTD	MOST	PESS	Resource	Budgeted Cost	ROPT	RMST	RPES	RESO
ntegrated Cost / Schedule Risk PMI											
A1											
START	Project Start	0					0				
C1											
C1 DESN	Design 1	28	20	28	40	DESIGN	100,800	4	5	8	U
C1 BLD	Build 1	45	35	45	55	BUILD	288,000	9	10	13	U
C1 TST	Test 1	25	15	25	40	TEST	168,000	7	8	10	U
C2											
C2 DESN	Design 2	32	24	32	43	DESIGN	161,280	6	7	9	U
C2 BLD	Build 2	38	35	38	47	BUILD	194,560	7	8	10	U
C2 TST	Test 2	25	15	25	45	TEST	105,000	4	5	8	U
INT											
INT INT	Intagrate	40	35	40	55	INTEG	422,400	10	12	15	U
INT	Test	25	18	25	40	TEST	189,000	8	9	12	U
Z9											
FINISH	Project Finish	0					0				



Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

Monte Carlo, like Pert master, generates probability distributions for scheduling and expense risk. Furthermore, a cost-time envelope, such as the one illustrated below, provides the same data as Pert master. Monte Carlo puts a band around the "football" (American-style) to try to encircle 90% of the cost-date pairings from the iterations.

Figure 11: Monte Carlo Cost / Date Scatter Plot



Source: Integrated Schedule Project Risk Analysis and Cost Risk Analysis, 2004, Prague, Czech Republic.

Because cost estimates are typically created on spreadsheet platforms, the results of the schedule risk analysis, such as uncertainty in the durations of particular tasks or summary project components, must be factored into a spreadsheet simulation. This project part demonstrated how to apply the scheduling risk results from Risk+ to the Crystal Ball cost model. There are at least two programs, Pert master, and Monte Carlo, that will provide integrated cost / schedule risk analysis if the resources are defined, priced, and assigned to activities in the scheduling software. These programs use cost estimations to simulate cost and date uncertainties, allowing both the duration and burn rates to fluctuate at the same time. Cost risk analysis that explicitly uses schedule risk analysis data, integrating them with burn rate risk information to produce more precise cost risk estimations than the traditional method. The results of the schedule risk

analysis are also supplied. Risk remedies that address the time- and cost-type concerns separately can be devised as needed.

CONCLUSION

The thesis' major goal was to present an idea for a supporting tool for controlling financial and market risk in order to help small and medium-sized businesses in the Czech Republic grow. As a result, the views, and perceptions on managing financial and market risk in SMEs in the future Czech Republic business environment were investigated.

Small and medium-sized businesses in the Czech Republic frequently lack sufficient money to avoid financial losses or insolvency, particularly during the severe epidemic time. It is a specific type of business for which risk management is particularly crucial, as smaller businesses are more frequently threatened by the shutdown of operations. Effective threat prediction and response can help to lessen and even prevent unfavourable business phenomena and events. At the same time, proper risk management necessitates that these organizations be aware of, identify, plan for, and counter risks that they have not dealt with previously. At each management level, risk sources should be identified, correctly considered, articulated, and, most importantly, controlled. Practical instructions for the application of the risk management system are lacking in Czech companies. Regardless of the company's broad systemic approach of risk management, businesses normally deal with risks in various areas separately. Because the analyzed sector of businesses (SMEs) is defined by a limited range of operations, risk management solutions are not usually required. At the same time, these entities are capable of evaluating the impact of particular phenomena on the company's operations; yet their impermanence suggests that they are unable to put their knowledge into effect.

The conducted research thesis allowed for the identification and assessment of the intensity of risk management in the context of boosting and supporting small and medium-sized enterprises in the Czech Republic, as well as marketing approaches and strategies to improve the quality of small businesses. Strong rivalry in the sector is one of the primary risk factors most hazardous to managing economic, financial, and market risks for majority of the studied businesses. The bulk of criteria point to the main direction of risk management system planning and organization in the SMEs sector.

Simultaneously, many entities on the verge of bankruptcy should view risk management, particularly during outbreaks and crises, as a lesson for the future when planning and managing risks connected with corporate activity in times of high political and environmental volatility. The thesis does, however, have certain drawbacks. It was conducted among Czech businesses and needs to be expanded to other nations, indicating the research's future path.

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LIST OF ABBREVIATIONS

AFREC: African Energy Commission

ARF: Advertising Research Foundation

B2B: Business-to-Business

B2C: Business-to-Customer

CFO: Chief Financial Officer

COSO: Committee of Sponsoring Organizations of the Treadway Commission

CPA: Certified Public Accountant

CRO: Chief Risk Officer

DS: Descriptive Statistics

ERM: Enterprise Risk Management

EU: European Union

FR: Financial Risk

GCSE: General Certificate of Secondary Education

GDP: Gross Domestic Product

IP: Internet Protocol

IRM: Information Risk Management

IRMSA: Institute of Risk Management South Africa

ISO: International Organization for Standardization

IT: Information Technology

KPMG: Klynveld Peat Marwick Goerdeler

MLRs: Multiple Linear Regression Models

MS: Microsoft

MR: Market Risk

OCED: Organization for Economic Cooperation and Development

PCC: Pearson Correlation Coefficient

RM: Risk Management

ROI: Return-On-Investment

SD: Standard Deviation

SMEs: Small and Medium-sized Enterprises

SWOT: Strength Weaknesses Opportunities and Threats

US: United States

VAR: Value-at-Risk

VIF: Variation Factor of Inflation

WEF: World Economic Forum

WBS: Work Breakdown Structure

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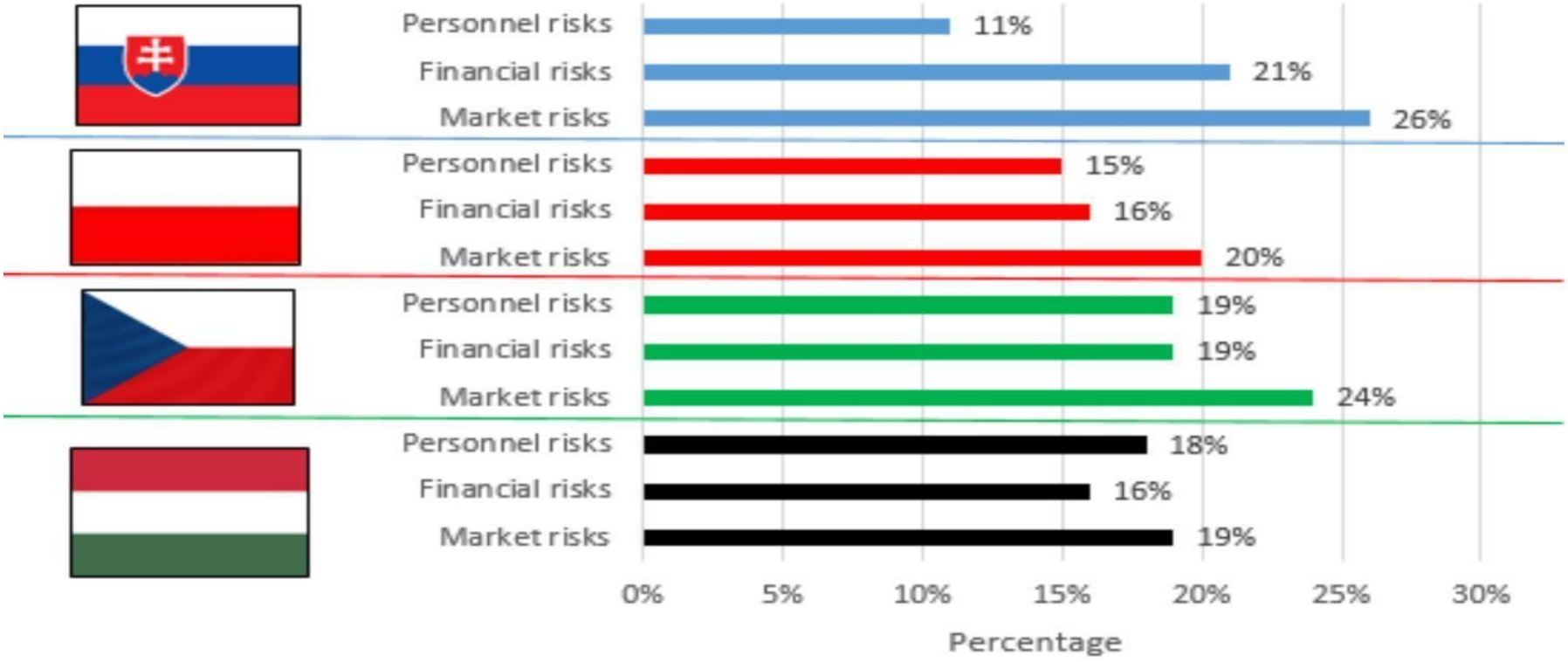

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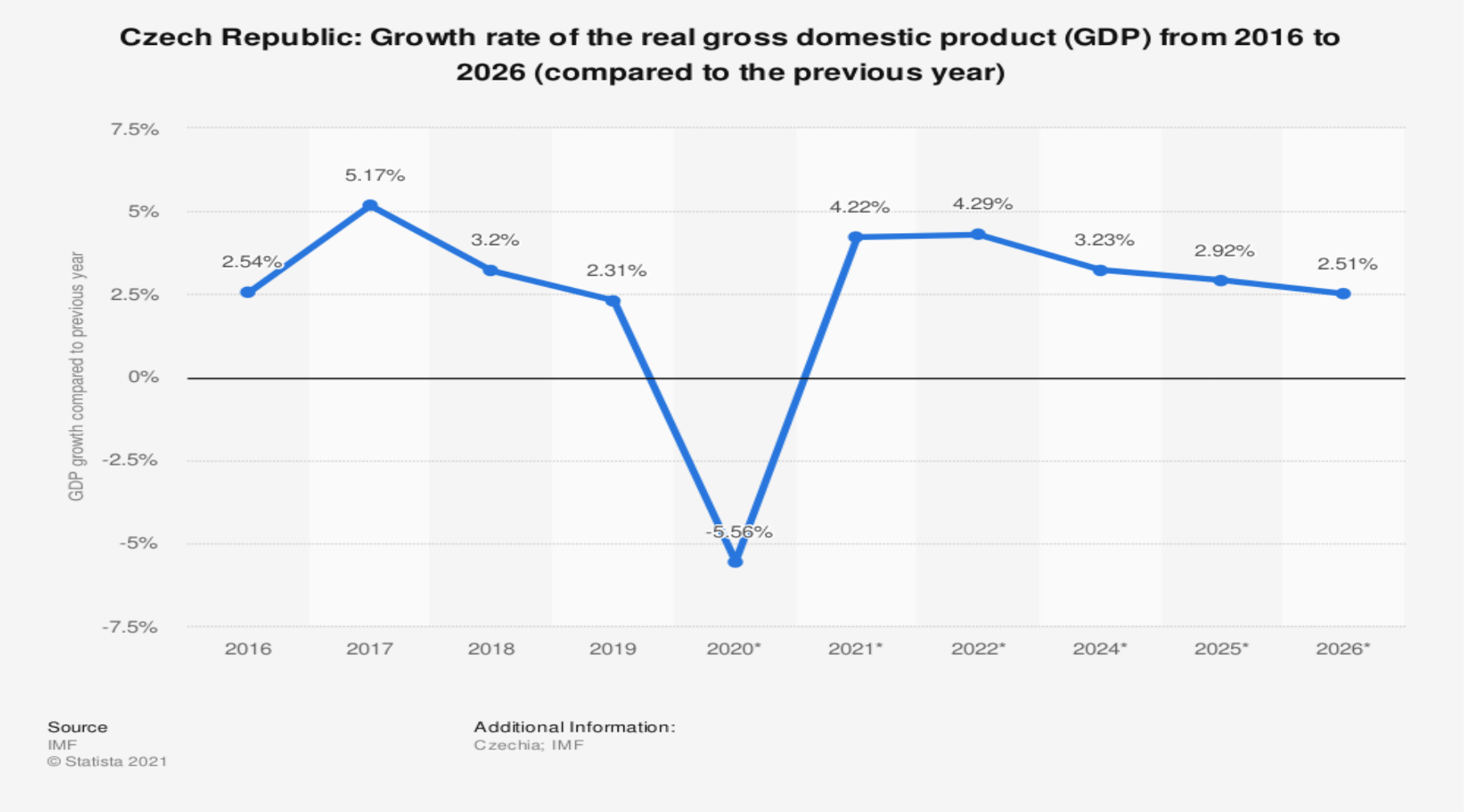

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