

The Impact of the Geopolitical Crisis in Europe on Financial Risks in the Manufacturing Sector

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Bachelor's thesis
2023

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ABSTRAKT

Tato práce si klade za cíl prozkoumat vztah mezi geopolitickou nestabilitou a finanční výkonností vybrané nadnárodní společnosti ve výrobním sektoru. V první části práce jsou uvedeny definice finanční analýzy, řízení rizik a geopolitiky. Studie na základě současné geopolitické situace navrhuje hypotézu negativního dopadu na finanční výkonnost. Výzkum provádí finanční analýzu srovnáním dvou různých časových období, před krizí 2020 a během krize 2022, na různých úrovních společnosti. Finanční analýza provozní jednotky odhaluje pokles finanční výkonnosti v období krize, který přímo souvisí se zeměmi postiženými geopolitickou nestabilitou. Provedením matice rizik studie dochází k závěru, že se důrazně doporučuje začlenit specifické zaměření na geopolitická rizika, zejména narušení dodavatelského řetězce, do pohotovostního plánu společnosti.

Klíčová slova: geopolitika, řízení rizik, finanční analýza, krizový plán

ABSTRACT

This thesis aims to examine the relationship between geopolitical instability and the financial performance of a selected multinational corporation in the manufacturing sector. The first part of the thesis introduces the definitions of financial analysis, risk management, and geopolitics. Using the current geopolitical situation as a baseline, the study proposes a hypothesis of a negative impact on financial performance. The research conducts a financial analysis by comparing two different time periods, pre-crisis 2020 and during-crisis 2022, at multiple levels of the corporation. The operational unit's financial analysis reveals a decrease in financial performance during the crisis period, which is directly related to the countries affected by geopolitical instability. By conducting a risk matrix, the study concludes that incorporating a specific focus on geopolitical risks, particularly supply chain disruptions, into the company's contingency plan is highly recommended.

Keywords: geopolitics, risk management, financial analysis, contingency plan

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

I would like to thank my family for the love and support I feel from them every single day. I also want to extend my appreciation to my colleague, Dušan Michalko for showing me everything in life is manageable. For his guidance and support, not only during the completion of this thesis but in all aspects of life. I will always be grateful for sharing his fiery life energy with me.

Last, but not least, I'd like to thank the most involved professor I have ever known, Jirka Dokulil, for his unwavering patience, open-minded discussions, and constant encouragement. Thank you for always cheering me on.

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INTRODUCTION

There's a saying from Ancient Romans "si vis pacem, para bellum," which translates as "if you want peace, prepare for war". This could be considered as the earliest definition of risk management. Given the rapidly changing global environment, the pressure on managers to stay vigilant increases daily. Organizations now employ risk managers to identify and mitigate potential risks, from cyber security threats to supply chain disruptions. Knowledge of traditional business risks might not be enough for navigating modern era of open economics. The high level of adaptability seems to be a crucial skill for risk managers to be able to identify potential risks arising from continuously unstable political situation across the world. Specifically for companies in the manufacturing sector which are dependent on supplier and customers based on their geographical position. As stated by IMF in the World Economic Outlook for 2023 we are entering phase during which economic growth remains low by historical standards and financial risks have risen.

The aim of the thesis is to identify the financial risks affecting the company in the manufacturing sector with an emphasis on the risks caused by the geopolitical crisis in Europe while simultaneously not neglecting any existing traditional business risks. The goal is to analyze a financial health of a selected manufacturing company and show the importance of incorporating geopolitical risks into the risk management approach.

To perform a various angle of financial analysis and regularly reviewing potential risks are two critical steps for managers in order to maintain a financial health of a company not only in times of geopolitical uncertainty. In this regard, the first part of this thesis covers theoretical knowledge on financial analysis, risk management and furthermore, current geopolitical situation in Europe with an additional focus on supply chain disruption.

Analytical part consists of financial analysis of multinational corporation in manufacturing sector. Starting with analyzing financial health on the highest corporation level the thesis aims to distinguish between two different time periods taking into consideration year 2020 as pre-crisis period and year 2022 as during-crisis period. Following this approach financial indicators are examined also on Group Sector level. The Operational Unit considered the smallest legal entity within the selected corporation is located closely (geographically speaking) to the countries currently impacted by geopolitical instability. Financial analysis

of Operational Unit investigates those specific countries in order to observe impact of geopolitical crisis on financial risks in this manufacturing entity.

It's anticipated that financial performance decreased during-crisis period compared to pre-crisis period, therefore the hypothesis is formulated accordingly. Consequently, applying methods of identifying, assessing, and evaluating risks through Risk Matrix this thesis, based on the findings, aims to propose various control measures to mitigate both, financial and geopolitical risks applicable in manufacturing sector.

I. THEORY

1 FINANCIAL ANALYSIS

The most basic understanding of financial analysis states: "The goal of financial analyst is to use financial data to evaluate the current and the past performance of a firm and assess its sustainability." (Palepu et al., 2021) "The influence of the financial manager (and financial management in general) has increased substantially in recent years" (Sherman, 2015). By reviewing and evaluating the company's financial statements, we can understand its financial health and performance. Bragg (2017) emphasizes the importance of mastering financial terminology to interpret and assess a company's financial position effectively. Key terms in financial analysis include revenue, expenses, net income, assets, liabilities, equity, working capital, return on investment, and various financial ratios such as liquidity ratios, solvency ratios, and profitability ratios.

1.1 Definition of Financial Analysis

Despite the widespread recognition of financial analysis's importance, its definition and methodology can vary among authors and practitioners. This chapter provides an overview of financial analysis by examining various definitions.

1. Bragg (2017) defines financial analysis as "the process of understanding the risk and profitability of a firm through analysis of reported financial information, particularly annual and quarterly reports" (Bragg, 2017).
2. Fridson and Alvarez (2022) describe financial analysis as "the art of transforming data from financial statements into information that is useful for a wide range of purposes" (Fridson & Alvarez, 2022).
3. According to Růčková (2021) FA (Financial Analysis) "represents a systematic analysis of the obtained data that are primarily contained in financial statements. FA includes an assessment of the company's past, present, and forecasting of future financial conditions" (Růčková, 2021).
4. Quiry et al. (2018) suggest that "the purpose of financial analysis, which primarily involves dealing with economic and accounting data, is to provide insight into the reality of a company's situation on the basis of figures" (Quiry et al., 2018).

By analyzing financial statements, managers can make informed decisions about where to allocate resources, optimize the company's financial performance, and identify potential risks and challenges. Based on the revision of multiple publications concerning (not only)

financial health, can be safely stated that financial analysis is a critical tool in corporate management and plays a crucial role in managing risks.

1.2 Selected Methods of Financial Analysis

As already mentioned, financial analysis is a critical component of decision-making and strategic planning for companies overall. Various authors, economists, analysts, and professors have proposed different approaches to financial analysis, emphasizing specific aspects.

1.2.1 Financial Forecasting

McKeever (2018) contends that the most essential part of financial analysis is the profit and loss forecast, which provides a projection of a company's revenues, expenses, and net income. According to McKeever, this forecast helps businesses assess their potential profitability and make informed decisions about their operations, investments, and financing activities. Samonas (2015) also support's this argument and his book, *Financial Forecasting Analysis, and Modelling: A Framework for Long-Term*, in which he provides various forecasting techniques, methodologies, and tools, emphasizing their importance in making informed financial decisions and guiding strategic planning.

Regarding small and medium size enterprises (SMes) multiple approaches could be found in the literature on key financial indicators. For instance, Ključnikov (2017) also refers to financial forecasting as one of the ways to maintain the financial health of a company by estimating future financial outcomes for SMEs based on historical data and market trends. He suggests that this approach helps businesses to anticipate future revenue, costs, and cash flow, enabling them to make informed decisions and plan for growth.

1.2.2 Cash Flow Analysis

However, some authors argue that cash flow analysis is more critical than the profit and loss forecast. For instance, Thomas R. Ittelson (2022) suggests that cash flow analysis is a crucial aspect of financial analysis, as it provides insights into a company's liquidity, operational efficiency, investment, and financing activities and helps identify trends and patterns, allowing for better decision-making. Moreover, he claims that by conducting cash flow analysis over several periods, financial analysts can identify trends and patterns that may signal potential problems or opportunities (Ittelson, 2022). Furthermore, as Jury (2012)

suggests: "Running a business is all about cash. More specifically, it is about generating as much cash as possible from going round the working capital cycle again and again."

In general, a positive cash flow indicates that a company can pay its bills and invest in its growth, while a negative cash flow may lead to financial difficulties. Focusing on cash flows can help manufacturing companies better manage their working capital, identify potential liquidity issues.

1.2.3 Comparative Analysis

Another approach to financial analysis is the comparison of (any chosen) financial ratios. This comparison can be executed based on:

- microeconomic indicators (comparison of company's financial results throughout different periods of time - for instance, quarterly comparison of gross margin results),
- macroeconomic environment (comparison of a company's financial results with another company's financial performance that operates in the same sector).

Comparative analysis implies reviewing a company's most significant profit ratios in order to compare them to the typical (median or average) indicators of businesses engaged in the same line of business (Quiry et al., 2018). Brigham and Ehrhardt (2019) imply that financial ratio analysis allows companies to compare their performance with industry benchmarks and competitors (macro), as well as track their progress over time (micro). They suggest that manufacturing companies should focus on key financial ratios, such as gross margin, operating margin, and return on assets, to evaluate their operational efficiency and profitability during different periods of time.

When choosing an appropriate method of financial analysis, it is important to realize for whom the results are intended and what's the level of availability and precision of data, ratios, and reports. "In general, the better the methods, the more reliable the conclusions, the lower the risk of making a wrong decision, and the higher the hope for success" (Růčková, 2021).

1.3 Financial indicators

Various metrics provide insight into the financial health and performance of a company. These indicators often fall into categories such as profitability, revenue, liquidity, solvency, and efficiency, and they are instrumental in determining a company's overall financial position (Brigham & Ehrhardt, 2021). For the purpose of this thesis, which aims to examine

the impact of the geopolitical crisis on financial risks in the manufacturing sector, the focus will be limited.

1.3.1 Profitability

According to Caruntu, G. A. (2021) profitability reflects the economic agent's ability to produce profit. "Achieving maximum profit and minimizing costs is one of the main goals of any commercial enterprise" (Honcharenko, 2019). Generating and optimizing profits enables a business to consistently evolve and enhance its development and improvement, providing it with competitive advantages in the market. As explained in Investopedia (2021), there's a difference between net profit and gross profit. They argue net profit margin to be "far more definitive profitability metric, as it includes a company's total expenses.

Gross Profit Margin is a ratio of profitability that shows the rate of return on gross profit to net sales. "The gross margin is one of the most prominent financial ratios in nearly every analysis. It expresses the gross profit as a percentage of revenues" (Schmidlin, 2014). Nariswari and Nugraha (2020) claim that the greater the net profit margin, the better. Based on their suggestion it means companies are able to get a high enough profit through sales with the ability to properly reduce its operational costs. As explained by Corporate Finance Institute (2023) "the net profit margin is equal to net profit (also known as net income) divided by total revenue, expressed as a percentage."

$$\text{Gross Profit (€)} = \text{Sales Revenue} - \text{Cost of Goods Sold (COGS)}$$

(1)

$$\text{Gross Profit Margin (\%)} = \frac{\text{Gross Profit}}{\text{Total Revenues}} \times 100$$

(2)

$$\text{Net Income} = \text{Revenue} - \text{COGS} - \text{Operating Expenses} - \text{Other Expenses} - \text{Interest} - \text{Taxes}$$

(3)

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Total Revenues}} \times 100$$

(4)

Profitability ratios serve as critical tools for evaluating a company's financial performance by comparing earnings to expenses, assets, and equity. These metrics provide insight into a company's ability to generate profits, which is essential for evaluating its overall efficiency and success. For instance, Return on Sales (ROS) – also known as operating margin or operating profit margin, is a financial ratio that measures a company's operational efficiency and profitability. It shows how much profit a company generates from its sales revenue, excluding non-operating income and expenses.

$$ROS = \frac{EBIT}{Revenues} \times 100$$

(5)

Another financial ratio that indicates the profits that a business can generate using capital employed – ROCE (Return on Capital Employed). It's calculated by dividing earnings before interest and tax (EBIT) by the capital employed. Corporate Finance Institute Team (2023) suggests that when a company's ROCE is higher than the cost of capital, it means that the company has utilized the capital in an efficient manner to generate profits

$$ROCE = \frac{EBIT}{Capital Employed} \times 100$$

(6)

Lee et al. (2017) point out that the crisis influences firm profitability through its impact on multiple firm-specific factors. Interpretation of profitability measures depends on the industry and the company's objectives. Also, it is important to compare these measures with industry benchmarks and the company's historical data to gain a better understanding of the company's financial performance.

1.3.2 Liquidity

Corporate Finance Institute (2023) recognizes market liquidity (how quickly an investment can be sold without negatively impacting its price) and financial liquidity (ability to meet financial obligations). According to Dictionary of Economics (2017), liquidity is represented by assets, that are "easily turned into money rapidly and at a fairly predictable price." In the balance sheet, the cash is always listed at the top of the asset section (being the most liquid asset by default), while other types of assets, such as Property, Plant & Equipment are listed last. For instance, as stated in the Risk Management Report of Nissan (2016), an automotive business must have adequate liquidity to provide for the working capital needs of normal

day-to-day operations, ongoing research and development, capital investment needs for future expansion and repayment of maturing debt. Liquidity can be secured through cash and cash equivalents, internal cash flow generation and external funding (Fong, 2017). In general differentiation between Current Liquidity Ratio and Quick Liquidity Ratio is applied.

$$\text{Current Liquidity Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

(7)

Quick Liquidity Ratio

$$= \frac{\text{Cash and Cash Equivalents} + \text{Shortterm Investments} + \text{Accounts Receivable}}{\text{Current Liabilities}}$$

(8)

Days Sales Outstanding (DSO)

Days Sales Outstanding (DSO) represents the average duration, in days, required for a business to receive payment after completing a sale. When a company has a high DSO, it indicates that the firm takes an excessively long time to collect payments, which results in tying up funds in accounts receivable. Typically, DSOs are calculated on a quarterly or annual basis (Investopedia, 2023).

$$DSO = \frac{\text{Accounts Receivable}}{\text{Revenues}} \times 360$$

(9)

1.3.3 Non-quantitative indicators

Quantitative financial analysis is vital for understanding a company's financial health and performance. However, non-quantitative indicators also play a crucial role in financial analysis, as they provide context and additional insights. Consequently, as Bragg (2017) stated, "qualitative issues of FA are just as important, if not more so, than any quantitative analysis" (Bragg, 2017). Moreover, according to Fang F. (2016), "many enterprises rely mainly on qualitative analysis method to evaluate the financial risk, unable to do a risk assessment for the whole range of enterprise." Qualitative information that can be used in financial analysis includes factors such as management quality, industry trends, competitive

landscape, company culture, and/or external factors such as regulatory changes. Quiry et al (2018) suggest that "knowledge of an economic sector and a company and, more simply, common sense may easily replace some financial analysis techniques" (Quiry et al., 2018). One way to integrate qualitative information with quantitative indicators is by using a method called "triangulation," which involves comparing and validating data from multiple sources (Miles et al., 2020). The following arguments also strongly support the importance of non-quantitative indicators when analyzing a company's performance and financial health: "country-specific factors, such as the size of the country, the institutional framework, legal, government and political differences, and the utilization of the production factors and technology, can seriously affect firm strategy and consequently firm profitability" (Makino et al., 2004, Tong et al., 2008 in Bamiatzi & Bozos, 2016). Incorporating any qualitative factor in a decision-making require the analyst to be able to execute a proper amount of judgment and critical thinking when integrating these additional concepts into an analysis in order to forward a comprehensive recommendation to management.

When conducting a financial analysis, it is crucial to consider its context and objectives. For instance, if the goal is to evaluate the overall financial stability of a company in times of crisis, liquidity ratios would be particularly important. On the other hand, if the objective is to assess the efficiency of a company's operations and its ability to generate profits, profitability ratios would be more relevant. Therefore, the selection of appropriate financial indicators is dependent on the intended purpose and goals of the analysis.

This subchapter concludes that an integrated approach to financial analysis is most appropriate for manufacturing companies, as it offers a comprehensive perspective on their financial performance. According to Konečný (2010) financially healthy company is the one that is currently and prospectively able to fulfill the purpose of its existence, i.e., to carry out the activities for which it was established. Dumitrascu (2015) claims that the financial health of the company, which is theoretically profitable, can be compromised by the fact that the eligibility of liabilities is higher than the liquidity of assets, resulting in a negative treasury and, as a direct effect, its inability to pay. Brigham & Ehrhardt (2020) claim that financial health stands for "a company's ability to maintain stable cash flows, manage financial risks, and meet its financial obligations."

In conclusion, financial analysis is a multifaceted discipline that requires the combination of quantitative and qualitative information to provide a comprehensive understanding of a company's performance. By incorporating both types of data, analysts can develop more

accurate and insightful assessments of a company's financial health and make better-informed decisions.

2 RISK MANAGEMENT

The long-term success of an organization relies on many things, from continually assessing and updating their offering to optimizing their processes. Moreover, the challenge, they also need to account for the unexpected is managing risks. "Risk is often defined in relation to the uncertainty analyzed earlier, constituting its specification and particularization" (Jedynak and Bąk, 2020). Spiegelhalter (2017) defines uncertainty as "the inevitable unpredictability of the future resulting from unpredictable factors expressed by classical probabilities." Standard ISO 31000 (2018) in Risk Management Guidelines defines risk as "effect (expressed as a deviation from the expected state) of uncertainty on objectives (which may have different aspects and categories and may be used at different levels of management)." In the Risk Management Vocabulary (ISO, 2009) is risk explained as "the degree of uncertainty associated with achieving the organization's goals."

A dictionary of Economics (2017) defines risk management as process of "elimination or mitigation of negative consequences of a risk. This process involves identification, analysis, and assessment of risk, as well as the development and application of the appropriate measures." Identifying the risks is about identifying the potential risks that could impact the organization's objectives, including risks associated with the organization's activities, processes, and external factors. Risk assessment is associated with the probability of an event occurring and the significance of the consequences. Treating the risks involves implementing the chosen risk response, which could involve avoiding the risk, reducing its likelihood or impact, transferring it to another party, or accepting it. Monitoring and reviewing means monitoring the risks on an ongoing basis to ensure that they are being managed effectively and reviewing the risk management process to identify any improvements that could be made.

Given the multitude of disruptive forces that companies have endured over the last few years, it is no surprise that risk management needs to focus on mitigating a wider range of potential threats. Enterprise risk management (ERM) has become a critical component of organizational leadership in today's rapidly evolving business environment.

2.1 Financial Risks

Due to the accelerating growth of the global economy and the spread of the financial crisis worldwide, the manufacturing sector is dealing with the accumulation of enterprise financial risk, which ultimately leads to the financial crisis (Fang, 2016). Manufacturing companies

operating in Europe face an array of financial risks caused by (not only) a complex economic environment, rising competition, and political uncertainty. Understanding these risks and adopting strategies to maintain financial health is essential for long-term success. This thesis systematically explores the financial risks faced by manufacturing companies in times of geopolitical crisis, focusing on the highest-impact and highest-probability risks. Financial risks (FR) have long been a critical concern for businesses operating in the manufacturing sector, and the challenges posed by geopolitical crises have further amplified their significance. Financial Stability Review published in November 2022 by the European Central Bank (ECB) shows risks to financial stability in the euro area have increased amid soaring energy prices, elevated inflation and low economic growth.

Fang (2016) suggests that "all of the financial risks impact on the enterprise is concentrated in the enterprise's financial position and operating results." He further examines different characteristics of financial risk:

- objectivity: FR is an inevitable phenomenon that changes with the objective environment and conditions. It can be identified due to objective reasons.
- uncertainty: FR is potential and uncertain, making it a necessary condition for enterprises. Without uncertainty, there is no risk, which is crucial for risk control.
- measurable: FR is an objective existence and can be measured using mathematical methods, such as probability and statistics. Without measurement, risk control becomes mere talk.
- complexity: FR causes, influences, and actions are complex. They can originate from internal or external factors, with some being predictable and others not.

As Lam (2017) also stated, there are subcategories inside each major risk category. For instance, market risk, credit risk, and liquidity risk can all be differentiated into financial risk. These financial risks, in consequence are interdependent on one another. "The combination of economic capital, human capital, and liquidity reserves represents the "risk capacity" of the company" (Lam, 2017). Following subchapter aims to provide a systematic analysis of the main financial risks impacting the manufacturing sector due to geopolitical crises, focusing on market and currency risk.

2.1.1 Currency and Market Risk

Foreign exchange rates are the costs at which foreign currencies can be bought or traded. The value of foreign currency payables and receivables fluctuates as a result of changing

foreign exchange rates over time. How to accurately report their value changes in the financial statements is the main accounting challenge associated with foreign currency transactions (Robinson, 2020). This fluctuation, whether positive or negative, can have an impact on overall financial state of a company, therefore, it's interpreted as a risk, more specifically, currency risk (or in some companies FX rate risk). Manufacturing companies operating in international markets are exposed to currency risk when they have revenues, costs, or assets denominated in foreign currencies (Chen, 2019). Hassan and Zhang (2021) claim that changes in exchange rates are largely unpredictable over short horizons.

For manufacturing companies, market risk can arise from changes in the prices of raw materials, energy, and other production inputs, as well as shifts in demand for their products.

2.1.2 Other Risks Comprising Financial Results of a Company

The global economy is undergoing rapid technological advancement and expansion — which the World Economic Forum (2022) has termed as the Fourth Industrial Revolution. According to Børge Brende (2022), President of WEF, in the upcoming five to ten years each company "to ensure technology and innovation are part of its DNA".

IT risk

In the context of broadly understood civilization progress, one of many dynamically rising risks is an IT risk. According to Janusz (2018 in) it relates to improper management of IT systems in terms of changes, development, configuration, or access. Commonly identified IT risks are hacking attacks on servers, phishing, data loss, failures of servers any many more. With cyber-crime on the rise and new threats constantly emerging, it can seem difficult or even impossible to manage cyber-risks. ISO/IEC 27001 helps organizations become risk-aware and proactively identify and address weaknesses. Moreover, World Economic Forum (WEF) in its 2023 Global Risks Report identifies "widespread cybercrime and cybersecurity" as the 8th most severe global risk over short (2 years) and long (10 years) term.

AI risk

Artificial Intelligence has the potential to revolutionize many industries and improve our daily lives, but the risks must be carefully considered and managed. "While AI systems are similar to traditional IT systems in many ways, they also present new aspects such as their ability to learn," says Wael William Diab, who chairs the joint IEC (International Electrotechnical Commission) and ISO (International Organization for Standardization) committee that develops AI standards (in Mullane, 2023). ISO/IEC 23894 Standard

published in February 2023 emphasizes the importance of constantly reviewing, identifying and preparing for potential risks of technology that is constantly evolving. This new ISO/IEC Standard provides essential guidance on risk management for organizations of all sizes and types that utilize AI in their systems or processes.

Risk managers must be able to identify and assess the risks associated with new technologies and implement effective risk management strategies to mitigate those risks. At the same time, they must be open to new solutions those emerging technologies offer, in order to stay ahead of the curve and effectively manage risk in a rapidly changing world.

The simultaneous occurrence of all the above-mentioned risks can have compounding effects on a manufacturing company's financial health, making it crucial for firms to adopt holistic risk management strategies (ERM, for instance) that address the interdependencies between different categories of risks.

2.2 Enterprise Risk Management

"Recently, due to globalization, an increasing complication of risks, in response to global financial crises, and international regulatory requirements, a risk management committee is becoming essential and recognized as a vital corporate governance tool for controlling a company's risk" (Lechner & Gatzert, 2018; Bohnert et al., 2017; Hoyt & Liebenberg, 2015; Mensah & Gottwald, 2015 in Alduneibat, 2023). "The approach known as enterprise risk management (ERM) provides integrated risk management through an analysis of business contingencies and an evaluation of uncertainty, with organizational solutions recognized and shared by the whole company, with the aim of business continuity" (Beasley et al., 2008; De Loach, 2000; Idris & Norlida, 2016; Liebenberg and Hoyt, 2003, 2011; Navak and Akkiraju, 2012 in Dicuonzo et al., 2019). Hence, integrating Enterprise Risk Management into the company's policy and strategy is one way to ensure the company's financial health. *A Common Framework for the Entire Organization* book by Steve M. Bragg (2015) provides a comprehensive guide to understanding and implementing enterprise risk management (ERM) within an organization. The essential steps of integrating the ERM framework are:

- risk identification,
- risk assessment,
- risk response,
- monitoring,

- reporting.

Bragg also provides practical advice on creating an ERM program, including guidance on developing a risk appetite statement and establishing risk management policies and procedures. Overall, an effective ERM program should include policies and procedures tailored to the organization's specific risk profile and goals and regularly review and update to reflect changes in the organization's risk environment. Also, J. Lam suggests that companies should implement ERM programs to analyze multi-risk scenarios that may have a significant financial impact (Lam, 2017). Companies should implement a robust risk management framework that includes regular risk assessments, scenario analyses, and stress testing to identify potential vulnerabilities and develop contingency plans (Gatzert & Kolb, 2020). Subsequently, the guidelines, methods, and procedures outlined in the ISO 31000 standards can be used for risk assessment and management. These standards emphasize that risk assessment and management must be customized to the unique requirements and organizational structure of the given company rather than mandating a "one size fits all" approach (Rezaee, 2015). According to ISO 31000 (2009), risk management needs a strong commitment from the leadership to be successful. "In support of this, Hohan et al. (2015) emphasized the significance of leadership in the establishment of an integrated management system within the company" (Ahmed & Manab, 2016). Moreover, many authors support the idea that rapid identification and quantification of new risks and a transparency in reporting activities are essential in risk management (Elgendy and Elragal, 2014; Lackovic et al., 2016 in Dicuonzo et al., 2019). Promoting risk transparency through enhanced reporting is one of the major purposes of continuous ERM. J. Lam (2017) explains it agreeably as: "the adage - what gets measured gets managed" certainly holds true in risk management." For the interactive and multidirectional process of risk assessment and management, it is crucial that a wide variety of information (big data) is shared across an organization (Dicuonzo et al., 2019). That all being said, ERM "is considered a universal tactic and strategic tool used by management to encounter and respond to any potential firm's risk (Aldhamari et al., 2020).

2.3 Risk Matrix

Risk matrices are widely used in risk management and play a crucial role in various risk management standards and guidelines, as well as serving as formal corporate risk acceptance criteria (Dujim, 2015). Many companies aim to standardize risk management by implementing a standard risk matrix throughout the entire organization. However, ISO

(2018) warns that matrices "should be designed to be appropriate for the circumstances, so it may be difficult to have a common system applying across a range of circumstances relevant to the whole organization." Dujim (2015) also notes that risk matrices are particularly suitable for expressing hazard aversion in line with stakeholders' preferences.

One key aspect of the risk matrix process is brainstorming sessions between managers. These sessions foster communication and collaboration, allowing them to identify potential risks, assess their likelihood and consequences, and evaluate their overall impact on the organization. Brainstorming encourages diverse perspectives and ensures a comprehensive understanding of the risks at hand. Risk matrices come in different types and complexities, with varying degrees of categories and risk gradations. They may also employ different ways of defining likelihood and consequence categories.

Risk matrices are used to determine the overall level of risk by assessing both the likelihood and consequences (also referred to as impact or severity) of potential risks. In some literature, the terminology may vary, with terms such as impact and probability, or severity and probability being used interchangeably.

Risk Matrix						
Impact (consequence)		Very Low	Low	Medium	High	Very High
Probability (likelihood)	Very High	Moderate	Severe	Severe	Critical	Critical
	High	Sustainable	Moderate	Severe	Critical	Critical
	Medium	Sustainable	Moderate	Moderate	Severe	Critical
	Low	Sustainable	Sustainable	Moderate	Severe	Critical
	Very Low	Sustainable	Sustainable	Sustainable	Moderate	Severe

Table 1: Risk map (own based on Duijm, 2015)

The process of creating a risk matrix typically involves the following steps:

1. **Risk identification:** The first step is to brainstorm and identify potential risks that could affect the organization. This involves gathering input from managers, team members, and subject matter experts, to ensure a comprehensive understanding of potential risks.
2. **Risk assessment:** Once the risks have been identified, they need to be assessed based on their likelihood (probability) and potential impact (consequence or

severity). Likelihood refers to the chance that a risk will occur, while impact represents the potential negative effects on the organization or project if the risk materializes.

3. **Categorization:** After assessing the likelihood and impact of each risk, they are categorized on a risk matrix, typically in the form of a grid. The matrix's horizontal axis represents the likelihood, while the vertical axis represents the impact. The intersection of these two values determines the overall risk level.
4. **Risk evaluation:** The risks are then evaluated based on their position within the matrix. Risks that fall into the higher likelihood and impact categories are considered more significant and require greater attention. Organizations can establish risk criteria to determine which risks are considered acceptable, tolerable, or unacceptable.

Risk No.	Type of Risk	Risk Detail			
		Risk Description	Risk Likelihood	Risk Impact	Overall Risk Rating (Evaluation)
R1			High	Medium	Severe
R2			Very High	High	Critical
R3			Low	Very Low	Sustainable
R4			Medium	Low	Moderate
R5					
R6					
R7					
R8					

Table:2: Risk Matrix (copy from own template)

5. **Prioritization:** Based on the risk evaluation, the identified risks are prioritized. This helps organizations focus their resources and efforts on addressing the most critical risks first, ensuring efficient risk management.
6. **Risk treatment:** Once risks have been prioritized, appropriate risk treatment strategies are developed and implemented. These strategies can include risk avoidance, reduction, transfer, or acceptance, depending on the organization's risk appetite and the specific risk at hand.

	Control Detail				
<i>Risk no.</i>	<i>Control No.</i>	<i>Description of Current Control or Process to Mitigate Risk</i>	<i>Control Priority Level</i>	<i>Control Owner</i>	<i>Control Evaluated/ Tested?</i>
R1	C1		Medium-High Priority	all	
R2	C2		High Priority	Sales / Legal dpt	
R3	C3		Medium-High Priority	Sales	
R4	C4		High Priority	SCM dpt	

Table 3: Risk Matrix – Risk Treatment Phase (copy from own template)

7. **Monitoring and review:** The risk matrix should be periodically reviewed and updated to ensure it remains relevant and accurate. This involves monitoring the progress of risk treatment strategies and adjusting them as necessary, as well as identifying new risks and incorporating them into the matrix.

Monitoring & Review phase					
		<i>After control measurements in place</i>			
<i>Monitoring Frequency</i>	<i>Date of Update</i>	<i>Update of Risk Likelihood</i>	<i>Update on Risk Impact</i>	<i>Update on</i>	<i>Next planned revision</i>
weekly		Medium	Very Low	Sustainable	
bi-monthly		Low	Low	Sustainable	
daily		Medium	Low	Moderate	

Table 4: Monitoring Phase of Risk Matrix conduct (copy from own template)

Various tools can be used to create risk matrices and risk maps, with Microsoft Excel being a popular choice due to its versatility and adaptability to different industries and circumstances.

Despite their usefulness, risk matrices have some limitations, such as subjectivity, neglecting the timeframe, or inconsistent interpretation of risks. Nevertheless, they remain a valuable tool for mitigating risks and providing a comprehensive overview of potential hazards.

3 GEOPOLITICS

As Dodds and Atkinson stated (2020), the Swedish political geographer Rudolph Kjellen first used the term 'geopolitics' at the end of the nineteenth century (in Klaus J. Dodds, 2013). Although there is no universally accepted definition of geopolitics, according to Black (2016) all of the existing definitions focus on the relationship between:

- politics (in terms of composition and use of power),
- and geographical factors (such as space, location, distance, and resources).

"Formally, geopolitics is the study of how geography affects politics and the relations among states" (Foster, 2006 and Dijkink, 2009 in Caldara and Iacoviello, 2022).

Tim Marshall has introduces geopolitics in his book "Prisoners of Geography" as follows: "All leaders are constrained by geography. Their choices are limited by mountains, rivers, seas and concrete" (2017). Moreover, he defines geopolitics as a tool to understand international relationships through geographic factors. He elaborates on this thought by explaining that geographical factors such as climate, demography, cultural diversity, and natural resources accessibility cannot be neglected next to the borders, mountains or rivers – we need to think about these as a complex.

"It's time to put the 'geo' back into geopolitics" (Marshall, 2017). Furthermore, World Economic Forum WEF in its 2023 Global Risks Report recognizes "geoeconomic confrontation" as 3rd most severe global risk over short term (2 years).

3.1 Global Geopolitical Risk Index

Political uncertainty on a country level can influence real decisions worldwide. This is proved in the study by Gala, Pagliardi and Zenios which focuses on Global political risk and international stock returns (2023): "Country-level political risk often spills over to other countries and generates a common systematic component affecting global financial markets." According to Caldara and Iacoviello (2022) geopolitical risk is "the threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions among states and political actors that affect the peaceful course of international relations. "

The Geopolitical Risk Index is developed using daily and monthly newspaper-based indices of geopolitical risk (GPR), both globally and for individual countries, and tracks their progression since 1900. This examination is grounded in the textual content of approximately 25 million news articles from top-tier English-language print newspapers.

The index is created through a comprehensive analysis of the most frequently used words and phrases in new papers over time, which describe risks associated with war and peace, as well as acts of war and terrorism. The main goal of the index is to emphasize distinct elements of geopolitical risk and can be broken down both conceptually and geographically.

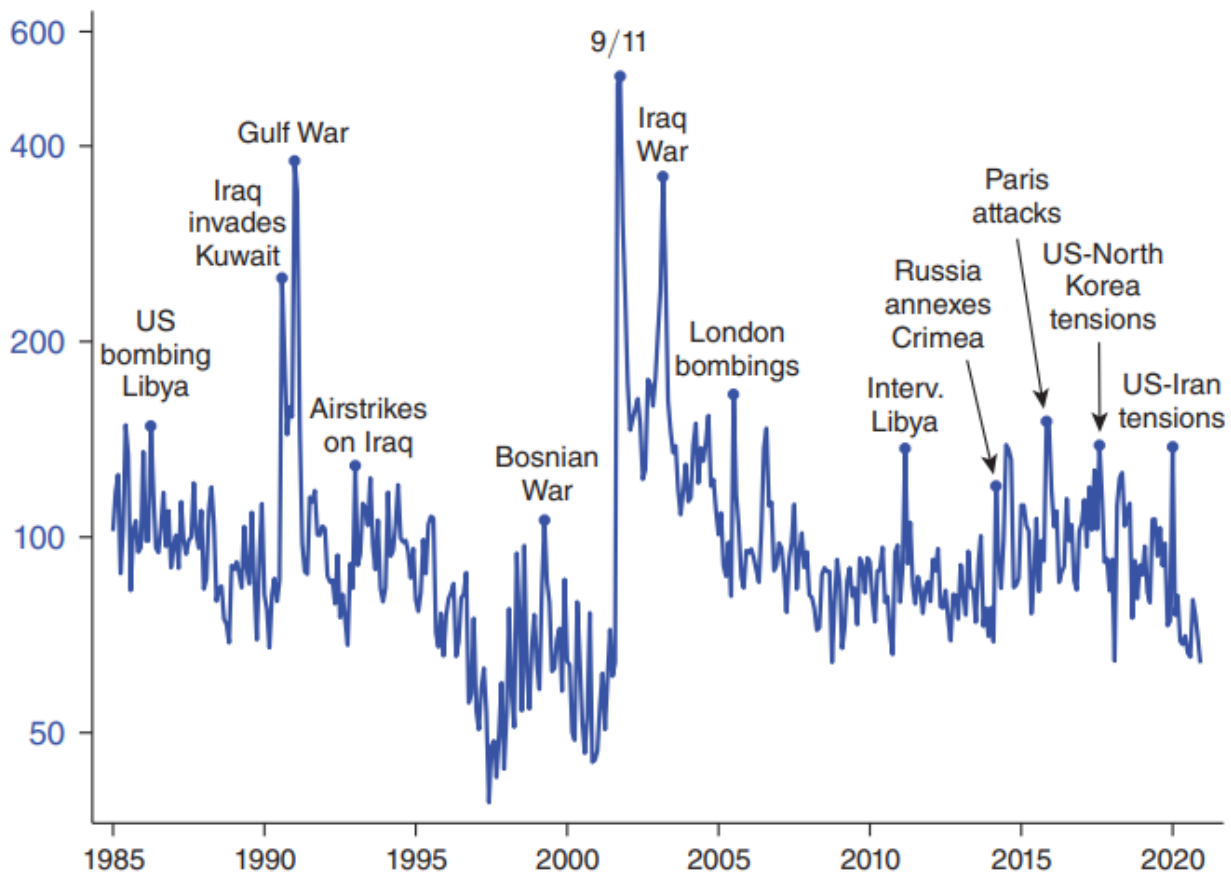


Figure 1: GPR Index 1985-2020 (Caldara and Iacoviello, 2022)

GPR index is constructed of two components:

- geopolitical threats (GPT) are based on searches articles including phrases related to threats and military buildups,
- geopolitical acts (GPA) searches phrases referring to the realization or the escalation of adverse events.

Following figure (Figure 2) shows development trends of GPR combining GPT and GPA.

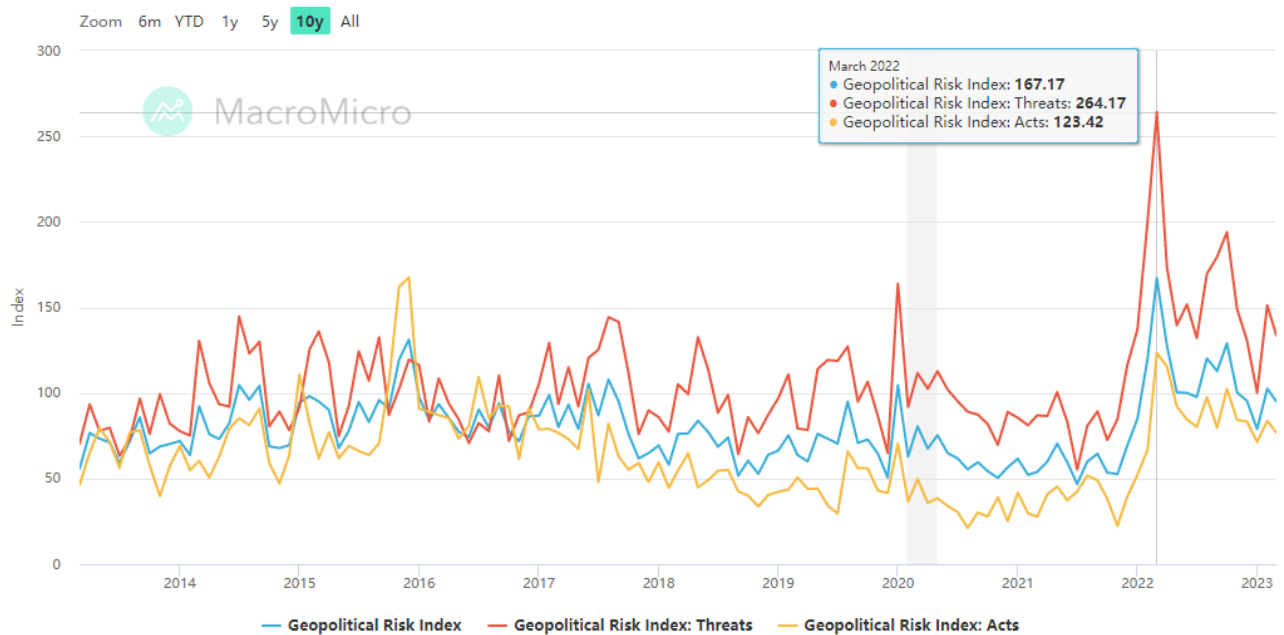


Figure 2: Figure 1 GPR Index Development showing the peak a month after Russian Invasion to Ukraine (MacroMicro.com, 2023)

According to Bouoiyour et al. (2019) political news creates geopolitical impacts, which renews the belief that political risk is a key factor in influencing different asset markets. Das and Yaghoubi suggest in their thesis "Stock Liquidity and Firm-Level Political Risk" (2022) that events such as the Russia-Ukraine war, the Brexit referendum, and the politically motivated trade war between the U.S. and China, illustrate the increasing risk borne by firms due to this uncertainty. Authors also claim that Brexit as "the UK's momentous decision to leave the European Union, exemplifies how political and economic shocks in one country can propagate to affect firms in other countries and across the globe."

Moreover, the findings of above-mentioned thesis suggest that political uncertainty appears to increase information asymmetry among investors in a way that managers cannot fully mitigate. Boubaker et al. (2022) provide evidence that the war has negatively impacted world stock market returns. Z. Beddoes, in an article headlined "Why a global recession is inevitable in 2023," published in *The Economist* (2022), expressed concern that China will be a driver that could worsen economic weakness in terms of geopolitical risk next year.

Higher geopolitical risk is associated with higher probability of economic disasters and with larger downside risks to the global economy. In recent years, the European Central Bank, the International Monetary Fund, and the World Bank have used this index overview frequently. As recently stated in a Harvard Business Review article, "companies not only

need to incorporate a deeper understanding of the impact of geopolitics but also be able to connect the various dots between political risk and other traditional business risk factors." Politics in some form, domestic or geopolitical, now meaningfully impact all forms of business risk today" (Lee & Glosserman, 2022). This is a clear statement confirming the premise of the thesis.

According to Caldara and Iacoviello (2022) entrepreneurs, market participants, and central bank officials view geopolitical risks as key determinants of investment decisions and stock market dynamics. Dr. Nouriel Roubini (2022) recommends that investors will need to find assets to hedge against inflation, political and geopolitical risks, and environmental damage. Baur and Smales (2020) imply in their study that precious metal returns are positively related to changes in geopolitical risk in general and to geopolitical threats in particular. Thus, they suggest precious metals are a hedge against such risks. Furthermore, Triky and Maatoug (2021) also highlights the benefit of using gold in the role of hedging and diversifying investment portfolios in times of geopolitical tensions.

3.2 Current geopolitical situation in Europe

Headline of Regional Economic Outlook report published by International Monetary Fund (IMF) in April 2022 says it all: "War Sets Back the European Recovery." The editors of the Collins English Dictionary have declared "permacrisis" to be their word of the year for 2022, defined as "an extended period of instability and insecurity" (Beddoes, 2022). Steve Rosenberg in his article for BBC (2022) compared the current geopolitical situation in Europe to "jigsaw (puzzle pieces cut into different shapes, author's note), which is incomplete."

Dr. Nouriel Roubini, globally respected economist and consultant, 25 February 2022, also proclaimed: "A major risk now is that markets and political analysts will underestimate the implications of this geopolitical regime shift." He also adds: Today's crisis represents a geopolitical quantum leap. Its long-term implications and significance can hardly be overstated." Furthermore, he shared his concern concerns about "sharply rising risk not only of war among great powers but of a nuclear conflict. In the coming year, Russia's war of aggression in Ukraine could escalate into an unconventional conflict that directly involves NATO" (2022). In his book *Megathreats: Ten Dangerous Trends That Imperil Our Future, and How to Survive Them*, he introduces geopolitics as one of the mega threats, by saying

that geopolitical conflicts and national-security concerns are fueling trade, financial, and technology wars, and accelerating the deglobalization process. Confirming this statement, Fabio Panetta (2023), Member of the Executive Board of the ECB, suggests that geopolitical risks have triggered a flight to safety, and many countries are putting an emphasis on greater autonomy.

Moreover, Christine Lagarde, President of the European Central Bank, warned in February 2020 that the geopolitical conflict in Europe was "a major geopolitical risk" that could harm the global economy. In her keynote speech at Peterson Institute for International Economics (2022), she also commented: "It has recently become clear how much global production relies on critical raw materials sourced from just a few countries – an arrangement that can quickly become a vulnerability when geopolitics change."

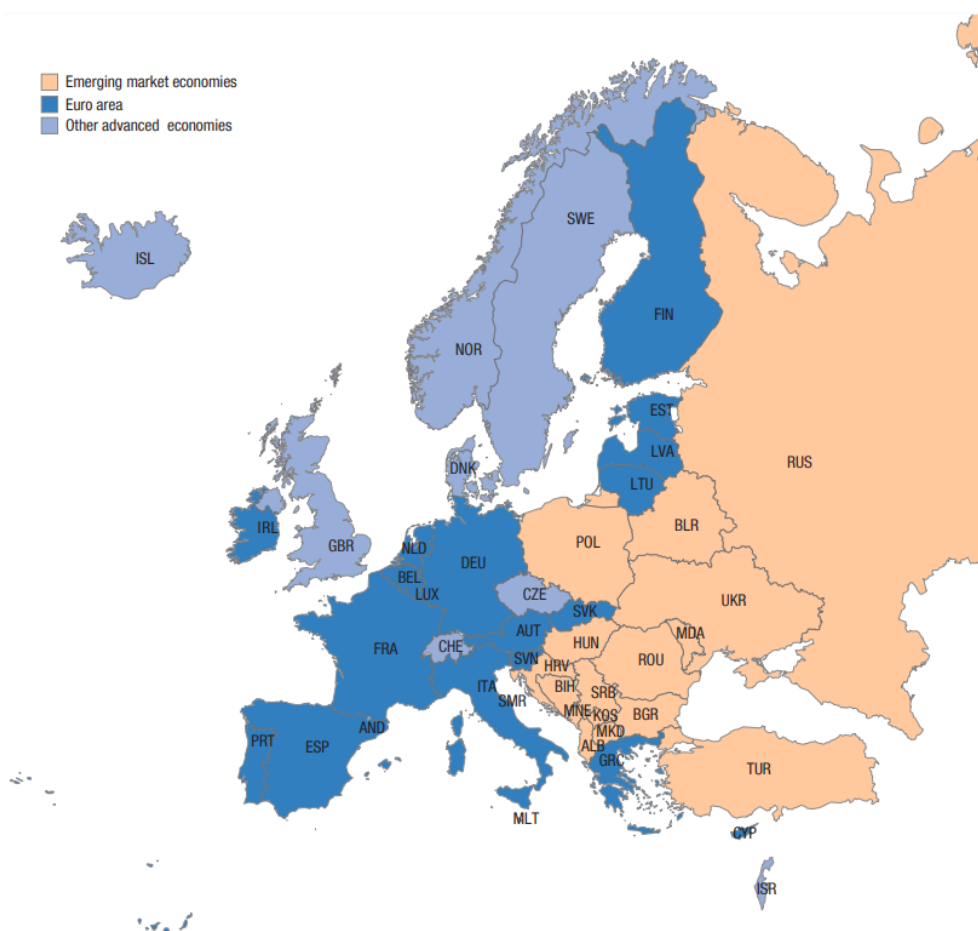


Figure 3: Map of Europe. (IMF report, 2023)

Russia has used gas as a political weapon during past two decades (Lawson, 2022). Discussions about "What happens if Russia turns off Europe's gas" started in July 2022.

According to European Council on Foreign Relations (2023) "EU countries in 2021 imported 155 billion cubic meters of Russian gas, which accounted for about 45 per cent of total gas imports." Also, Alex Lawson (2022) said for The Guardian: "the further eastern you go in Europe, the more dependent on Russian gas the countries are because of that physical link through huge pipelines." He further elaborates on the reason behind Germany, huge manufacturing economy, being so dependent on Russian gas, has been influenced by very strong anti-nuclear movement in the energy industry during the 70s (nuclear reactor accidents in Pennsylvania, Chernobyl and Fukushima). However, as Kardaś (2023) states, Europeans made remarkable progress in removing Russian gas from their energy mix in 2022", hence "Moscow failed in its effort to blackmail EU member states through withholding gas." Although, this statement might bring some light into these dark times, energy crisis has been ranked "a number one currently manifesting risk" by WEF (2023).

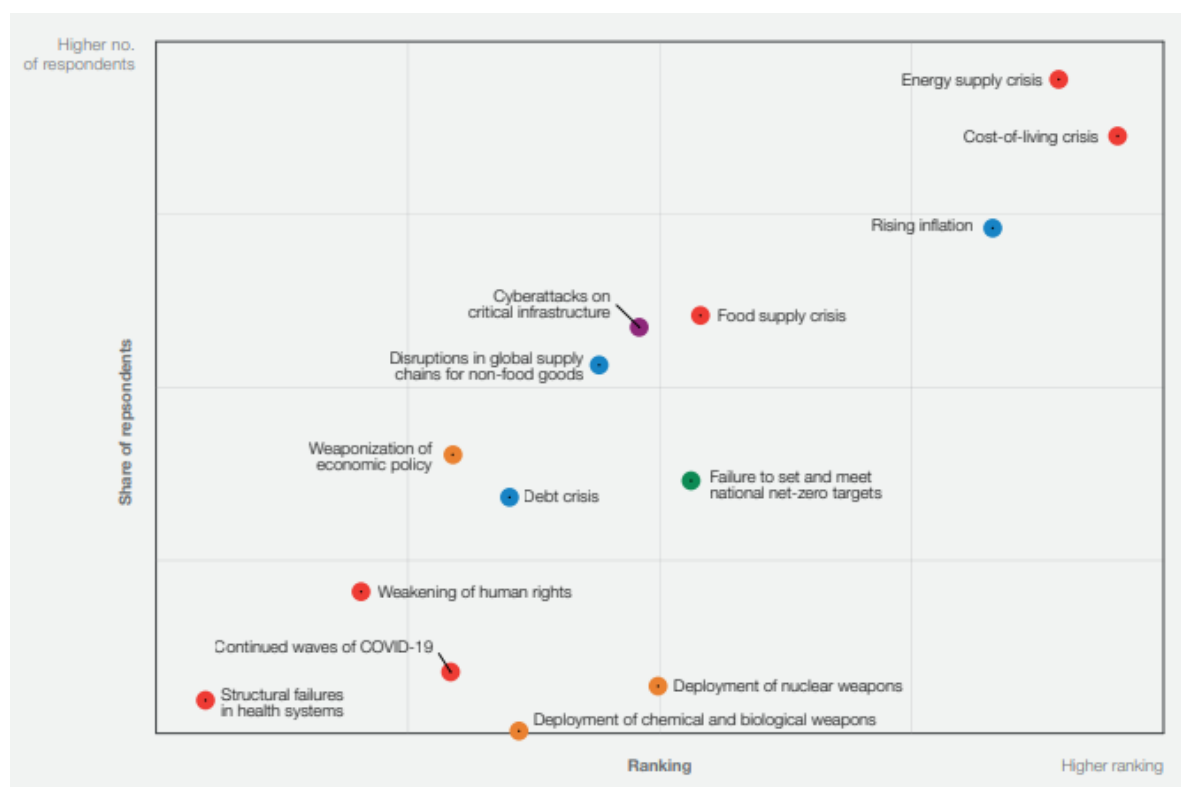


Figure 4: Ranking of current crisis done by WEF Global Risk Perception Survey 2022-2023 (WEF – Global Risks Report, 2023)

Following the rule "protect the consumer at all costs" chemical industries (manufacturing sector included) are the most threatened by potential governmental restrictions on energy consumption, being the first ones on the list to shut down their manufacturing plants.

Particularly in Germany, this would lead to recession and consequently impact the whole of Europe tremendously.

In the context of the further negative impact of the current situation, one of the Economist's articles published in November 2022, suppose that energy inflation impacting Europe was presented as a "dilemma for the European Central Bank, that needs to raise interest rates to control prices, but if it goes too far, it could destabilize the euro zone's weaker members."

3.2.1 Manufacturing Sector's Response to Geopolitical Issues

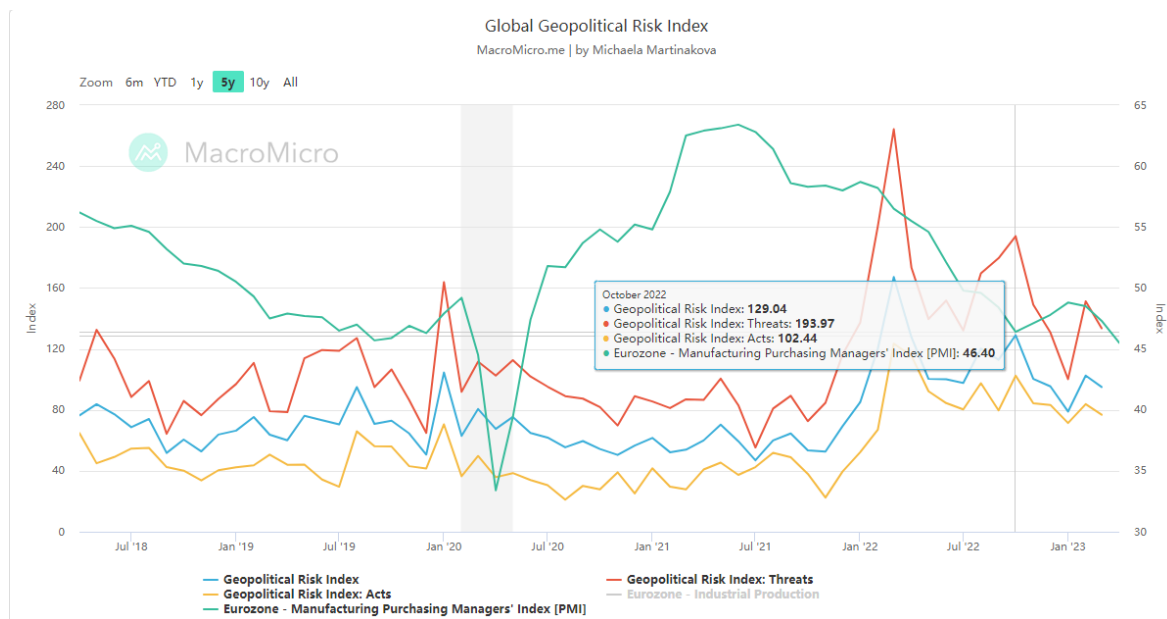


Figure 5: Graphics combining GPR and PMI development in Europe generated via MacroMicro.com (MacroMicro.com, 2023)

Integrating the understanding of geopolitical risks faced by European nations with insights into manufacturing processes allows for a more comprehensive perspective on the interconnectedness between these two factors.

The Purchasing Managers Index (PMI) serves as an indicator of the current economic trends in the manufacturing sector, offering valuable data on present and future business conditions to corporate decision-makers, analysts, and investors. As described by Investopedia (2020), PMI represents an index that reflects the dominant economic trends in both manufacturing and service industries. It is based on a monthly survey administered to senior executives from over 400 companies across 19 primary industries, which are weighted according to their contribution. Consequently, PMI offers an overview of market conditions as perceived

by purchasing managers, indicating whether these conditions are expanding, stagnant, or contracting. The Institute for Supply Management, a leading non-profit professional organization in supply management, compiles and publishes the PMI on a monthly basis. Established in 1915, ISM boasts more than 50,000 members in over 100 countries and offers certification, professional development, education, and research services for individuals and companies involved in the supply management and purchasing fields (ISM, 2023).

Commodity prices that rose sharply following Russia's invasion of Ukraine have moderated, but the war continues, and geopolitical tensions are high. They also warn that "the war in Ukraine could intensify and lead to more food and energy price spikes, pushing inflation up." Looking into specific commodity for manufacturing sector, Brandt and Gao (2019) study proves that geopolitical news such as terrorism, war and conflict, civil unrest and natural disasters exerts an immediate, statistically and economically significant impact on the crude oil returns. Consequently, IMF report (2022) reflects on the importance of Russia and Ukraine in global commodity markets and claims that "war brought about large increases in the prices of oil, wheat, nickel, and palladium", which are widely used in the manufacturing sector. In March 2022, Theo Leggett in his analysis for BBC claimed: "The conflict (Russia-Ukraine war) has already pushed the prices of these goods sharply upwards, amid fears supplies could be disrupted - and if they remain high, that will cause economic pain, particularly in Europe" (2022). World Economic Forum (WEF, 2023) based on the 42 globally surveyed countries recognize geoeconomic confrontation – including sanctions, trade wars and investment screening as a top-five threat over the next two years.

3.3 Sanctions, Restrictions and Export Controls

The European Union (2023), in collaboration with other like-minded partners, has adopted a statement reserving the right to cease treating Russia as a most-favored-nation within the World Trade Organization (WTO) framework. Sanctions are diplomatic actions taken by governments or multilateral organizations against other states to protect international law and safeguard against security threats, whether real or perceived (BBC, 2022). They can take various forms such as military, diplomatic, sport, and economic sanctions.

Economic sanctions typically involve restrictions or bans on trade, currency flows, investments, or corporate governance. They can target specific industries, groups, or individuals, as evidenced by the sanctions imposed on more than 1,000 Russian individuals

and businesses in March 2022 by the US, EU, and UK (European Council, 2023; Foreign, Commonwealth and Development Office, 2023).

Sanctions differ from regular trade restrictions in that their motivation is political rather than economic. While the WTO can intervene in cases of trade restrictions stemming from economic reasons, it will not do so for political or militaristic reasons. Sanctions are generally more severe than trade restrictions, with far-reaching consequences for global economies. The sanctions imposed on Russia last year are the most aggressive ever placed on major global economy:

- purchase of high-tech goods (computers and machinery from participating nations) was banned,
- purchase of military equipment from participating nations was blocked,
- assets were frozen and place travel restrictions were placed on particular Russia native individuals,
- major Russian banks were blocked from international transfers to, and from participating nations
 - o this was followed up with restricted access to SWIFT network.

These restrictions make it difficult for both Russian and European companies to conduct business, impacting their financial performance significantly. Banking restrictions cut entrepreneurs off from the financial services necessary for selling their goods, which can hit vulnerable nations particularly hard. Sanctions may also hurt the sanctioning economies themselves. The EU, for example, placed restrictive measures on certain imports and exports without increasing import tariffs on Russian goods, while the UK imposed a 35-percentage point hike on current import tariff rates (UK Government Press Release, 2022).

To limit Russia's access to money, Western nations excluded key Russian banks from the UK financial system and removed them from the international financial messaging system SWIFT (BBC, 2022). The EU banned imports of Russian coal in August 2022, resulting in revenue losses of around 8 billion euros per year for Russia, though adapting to the ban could prove challenging for the EU, which imports 70% of its thermal coal from Russia (Reuters, 2022). The International Monetary Fund (IMF) recommended supervisors ensure banks account for increased default risks, compliance risks from sanctions, cyberattacks, and liquidity risks in its Regional Economic Outlook for Europe (2022).

any part of the supply chain, leading to failures or violations at the operational, tactical or strategic levels" (Ho et al., 2015). For instance, Samvedi et al. (2013) identify political instability, terrorism, natural disasters, and economic downturns as macro-factors affecting supply chain, which could potentially create negative impact on micro-factors (demand, manufacturing, supply, transportation and financing issues) such as demand uncertainty, forecast errors, competition, market and technological change, resource breakdown and quality issues as well as supplier bankruptcy or insolvency, sudden hike in costs. Sequentially, Hosseini (2019) introduces supply chain resilience (SCR) as the network that is capable to withstand, adapt, and recover from disruptions to meet customer demand and ensure performance." WTO director, Ngozi Okonjo-Iweala adds that "more diversified international markets remain our best bet for supply resilience" (Global Supply Chains Forum, 2022).

According to IMF (2022) large increases in commodity prices and continued supply-side disruptions are now pushing inflation to higher levels, cutting into household incomes and firm profits. Also, Dr. Roubini (2022) suggests that the global economy is being battered by persistent short- and medium-term negative supply shocks that are reducing growth and increasing prices and production costs. These shocks are caused mostly by the pandemic's disruptions to the supply of labor and goods, and the impact of Russia's war in Ukraine on commodity prices. Roubini (2022) further elaborates on this argument by comparing current situation to global issues arising from the COVID-19 pandemic: "No one could have anticipated how much the initial COVID-19 shock would curtail the supply of goods and labor and create bottlenecks in global supply chains. The same goes for Russia's brutal invasion of Ukraine, which caused a sharp spike in energy, food, fertilizers, industrial metals, and other commodities." He also adds: "negative supply shocks and demand factors in the medium term will cause inflation to persist. On the supply side, I count eleven negative supply shocks that will reduce potential growth and increase the costs of production."

During the Global Supply Chains Forum at which WTO members and stakeholders from every part of the supply chain participated on 21st March 2022, the following supply chain disruptions were chosen and participants were asked to rank them based on the most concerning from their perspective:

1. high transportation costs,
2. transportation congestion and delays,

3. difficulties accessing critical inputs,
4. lost/disrupted transportation routes,
5. labour/skills shortages,
6. access to digital technology,
7. availability of affordable trade finance.

For a broader understanding of possible supply chain disruption and its impact on economic subjects, Appendix XVIII provides a comprehensive overview created by Ho et. al (2015). Following the Russian invasion in Ukraine, oil prices spot anticipation of disruptive supplies. Russia is a major oil producer, but since they cannot export it anymore, bidding "war" in international markets can cause skyrocketing of prices of crude oil, consequently disrupting supply chains even more. A study done by Brandt and Gao (2019) found that global news of both geopolitical and macroeconomic types has an impact on the oil price in the short run and significantly predicts oil returns in the long run.



Figure 7: Price development of Crude Oil December 31, 2020 – December 31, 2022 (tradingeconomics.com, 2023)

4 SUMMARY

First part of the thesis aimed to provide understanding of basic terminology regarding financial analysis, risk management and geopolitics. It's assumed this created a solid ground to level up in the analytical part to examine theoretical knowledge in practical environment.

Based on the literature research, it has been concluded that for conducting a financial analysis, it is crucial to consider its context and objectives. Selecting the right financial indicators based on the analysis' goal influence its outcome. Moreover, it was settling that integrated approach of financial analysis is always a right choice for manufacturing sector and taking qualitative indicators into account provide a better insight into company's financial health.

More than ever before, risks managers nowadays need to be more agile and flexible, given the complex and rapidly changing global business environment. Integrating ERM frameworks into the risk management approach seems to be critical on order to stay ahead of the curve. Continuous revision of existing risk matrices is a key to robust risk management to achieve financial health and the long-term success of a company. While traditional risks, such as financial, operational or market risks, remain essential, the growing geopolitical instability demands a focus on this critical area of risk management. By combining both approaches – risk management and geopolitics- the aim is to support the idea that concentrating on geopolitical risks is critical in creating an effective company contingency plan.

Geopolitics refers to the impact of political factors, including relationships between countries, on businesses and economies. As for the current situation in Europe, more than a year after Russia's invasion of Ukraine and the outbreak of more contagious COVID-19 variants, many economies are still absorbing the shocks. Based on the findings in the literature, one of the most significant impacts of the geopolitical crisis on financial risks is the disruption of supply chains. Fluctuations in exchange rates and commodity prices impacted the cost of raw materials and finished goods. Such unpredictability can make it difficult for manufacturers to develop long-term plans and can discourage investment, which could have long-term consequences for the sector. Geopolitical crises can create uncertainty in financial markets, which can have a significant impact.

In conclusion, the first part of this thesis has provided a comprehensive understanding of financial analysis, risk management, and geopolitics. The literature review has underscored the importance of context and objectives in financial analysis, an integrated approach to financial analysis in the manufacturing sector, the significance of ERM frameworks in effective risk management, and the critical focus on geopolitical risks in risk management practices.

II. ANALYSIS

5 COMPANY INTRODUCTION

Due to sensitive and strictly confidential information and data shared in the thesis, company as a subject of analytical part of this thesis is referred to as "Multinational Corporation". This *Multinational Corporation* claims by itself that it "develops pioneering technologies and services for sustainable and connected mobility of people and their goods. We offer safe, efficient, intelligent, and affordable solutions for vehicles, machines, traffic, and transportation." The baseline for analysis conducted further is manufacturing sector. *Multinational Corporation* is the parent company of the *Multinational Corporation Group*, which comprises 472 companies, including non-controlled companies. The *Multinational Corporation's* team is made up of:

- almost 200, 000 employees at a
- total of 527 locations in the areas of production, research and development, and administration,
- in 58 countries and markets,
- and total of around 5,200 franchises and operations.

Last year (in 2022) this *Multinational Corporation* underwent a reorganization resulting in new structure systematically divided into 4 Group Sectors (based on core industry focus), 17 Business Areas dedicated to specialization of each Group Sector, separated further into Segments based on their regional performance of Business Units, that are formed by Operational Units being the smallest piece of puzzle creating the valued offered under *Multinational Corporation's* brand worldwide. A Group Sector or Business Area with overall responsibility for a business, including its results, is classified according to product requirements, market trends, customer groups, and distribution channels.

Overall responsibility for managing the company is borne by the Executive Board. Three out of the 4 group sectors are each represented on the Executive Board, which comprises 5 members. The Supervisory Board comprises 20 members and appoints the members of the Executive Board; supervises and advises it in managing the company.

The Supervisory Board is directly involved in decisions of material importance to the company. The chairman of the Supervisory Board coordinates its work and represents it vis-à-vis third parties. He maintains regular contact between meetings with the Executive Board,

and in particular with its chairman, to discuss issues relating to the company's strategy, business development, risk management, and compliance.

Apart from the organizational chart mentioned above, this *Multinational Corporation* is also supported by its Central Functions. These include, in particular, finance, controlling, compliance, law, IT, human relations, sustainability, as well as quality and environment. *Multinational Corporation* processes a wide range of raw materials and semi-finished products. The purchasing volume in the previous year (2022) was €23.2 billion in total, €15.7 billion of which was for production materials. The manufacturing sectors use primarily steel, aluminum, precious metals, copper, and plastics; electronics and electromechanical components (around 37% of the *Multinational Corporation Group's* purchasing volume); mechanical components (15%); natural rubber and oil-based chemicals such as synthetic rubber and carbon black are key raw materials for one of the group sectors (around 23% of the total volume for production materials). Production and sales are organized across regions.

Graphics (*Figure 7*) of the organizational structure of a *Multinational Corporation* is provided for a better understanding of the approach followed in the thesis. Due to its complexity, only selected parts of the *Multinational Corporation's* structure are shown.

Selected financial indicators of Multinational Corporation

€ millions	2020	2022
Sales /Total Revenues/	37 722,30	394 089,00
EBITDA	3 033,80	3 966,00
in % of Sales	8,00	10,10
Net Income attributable to the shareholders of the parent company (Multinational Corporation Group)	- 961,90	66,60
EBIT	- 718,10	754,80
Average Operating Assets	22 536,60	20 272,90
Research&Development expenses (net)	3 381,80	2 871,40
Total Assets	39 638,00	37 926,70
Non-current Liabilities	12 743,10	7 359,90
Current Liabilities	14 255,80	16831,80

Table 5: Prepared based on Appendices. (Internal documentation of Multinational Corporation's Annual Reports 2020 & 2022)

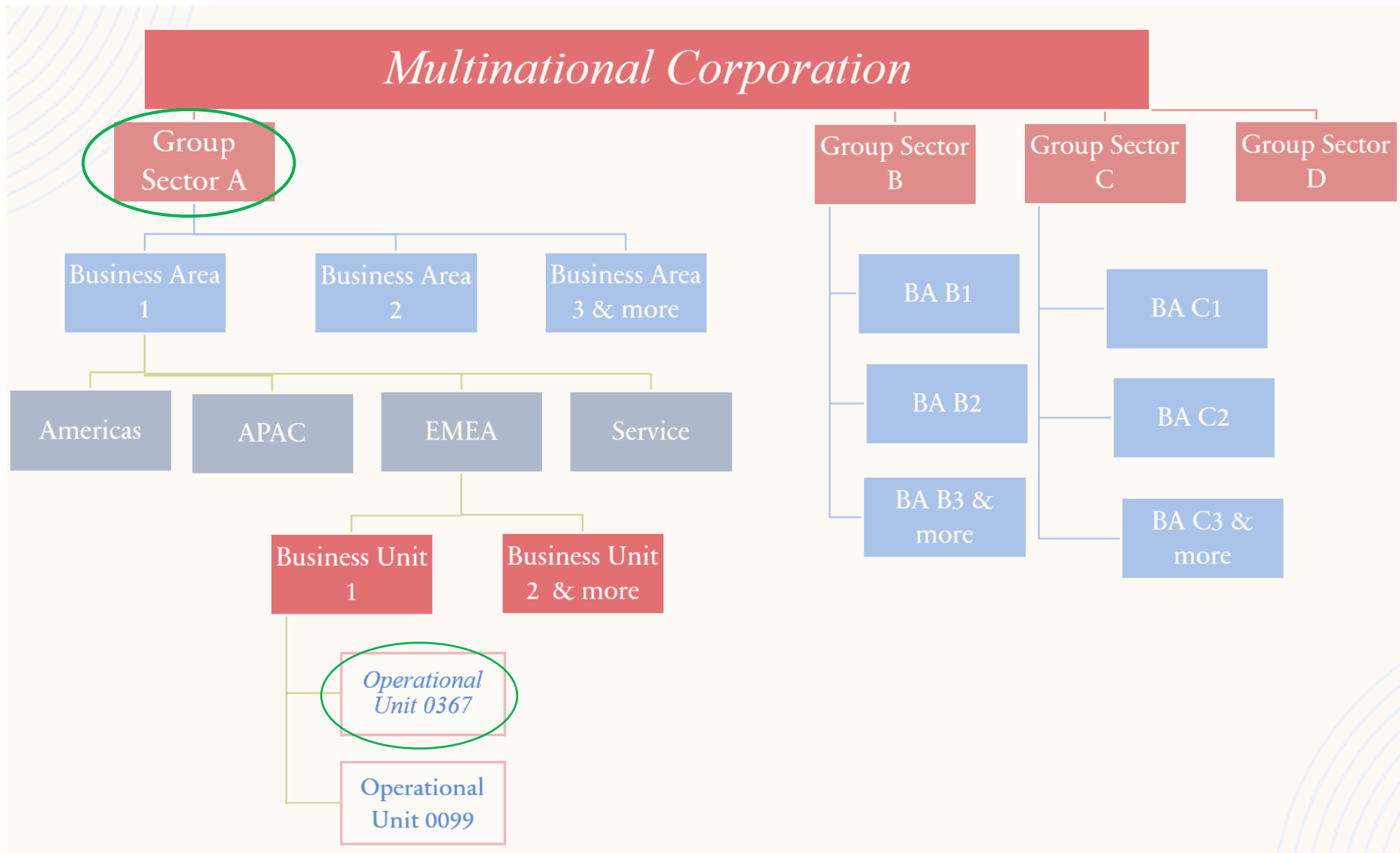


Figure 8: Simplified organizational chart of Multinational Corporation (own)

Group Sector A is considered one of the world's leading specialists in conveying solutions. Its customers can be found in key industries such as mining, agriculture, automotive and plant engineering. Business Area 1 consists of overall 68 locations (administration, R&D, production) in 18 countries across the world. From a manufacturing perspective, there are 18 production plants in 12 countries worldwide. The below picture shows the portfolio offered by *Business Area 1*.

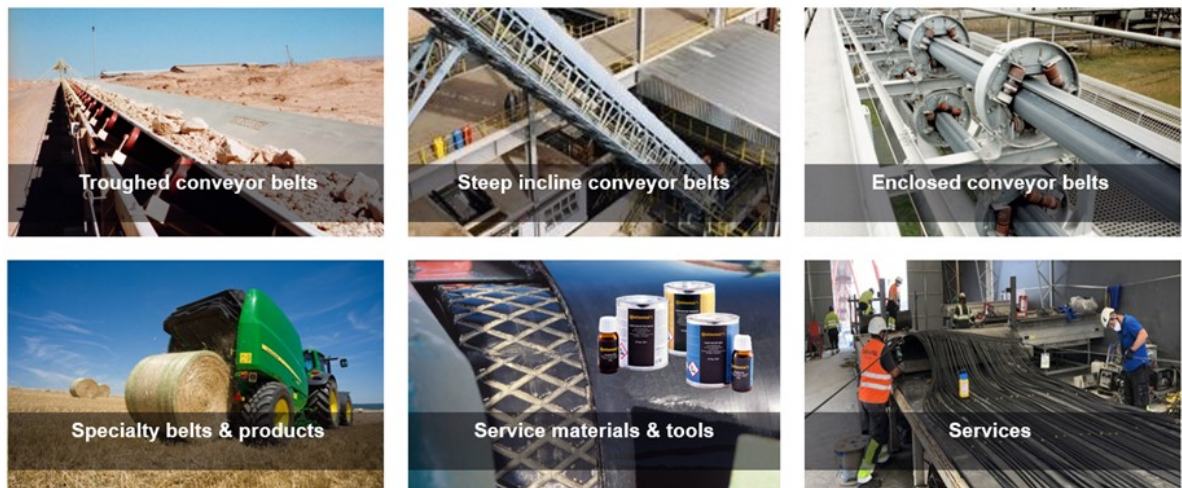


Figure 9: Business Area 1 portfolio (company's internal documentation)

Additional focus on Business Unit 1 is part of this thesis, consequently, the key product for further analyzing is textile conveyor belt.



Figure 10: Conveyor belts waiting to be shipped to the customer at Operational Unit 0367 (own)

5.1 Selected financial indicators

This thesis aims to examine financial stability of a *Multinational Corporation* while simultaneously looking into the financial performance by comparing financial results from 2 different time periods (year 202 compared to year 2022) on the following operational levels:

- financial health of Multinational Corporation,
- financial performance of Group Sector A,
- financial performance of Operational Unit 0367 (in *Chapter 7.2*).

**all values are in € millions*

Return on Sales (ROS) Multinational Corporation year 2020

$$ROS = \frac{EBIT}{Revenues} = \frac{718,10}{37722,30} = -1,90\%$$

(10)

A negative ROS is generally a cause for concern as it shows the company was not generating profit from its core business operations and was losing 1.9% of its sales revenue to operating expenses. This suggests operational inefficiencies and difficulty in covering expenses or generating profit for shareholders.

Return on Sales (ROS) Multinational Corporation year 2022

$$ROS = \frac{EBIT}{Revenues} = \frac{754,8}{39408,9} = 1,92\%$$

(11)

The company generated an operating profit of 1.92% of its sales revenue. This improvement demonstrates that the company has become more efficient in managing its operating expenses and increased its profitability.

Return on Capital Equity Multinational Corporation year 2020

$$ROCE = \frac{EBIT}{Average Operating Assets} = \frac{718,10}{22536,6} = -3,19\%$$

(12)

ROCE -3,19% indicating that the company was not efficiently utilizing its capital to generate earnings. A negative ROCE suggests that the company was not able to cover its cost of capital and was losing value for its investors and shareholders, what is also shown in Table

1 as "Net Income attributable to the shareholders of the parent company (Multinational Corporation Group)" almost – 962 million €.

Return on Capital Equity of Multinational Corporation year 2022

$$(13) \quad ROCE = \frac{EBIT}{Average Operating Assets} = \frac{7\,54,80}{20\,272,9} = 3,72\%$$

showing that the company has become more efficient in using its capital to generate earnings. This improvement implies better management of resources and a more effective allocation of capital.

Return on Equity of Multinational Corporation year 2020

$$(14) \quad ROE = \frac{Net\ Income}{Shareholder's\ Equity} \times 100 = \frac{782,90}{10\,784,70} \times 100 = 7,26\%$$

Return on Equity of Multinational Corporation year 2022

$$(15) \quad ROE = \frac{Net\ Income}{Shareholder's\ Equity} \times 100 = \frac{983,40}{7880,70} \times 100 = 12,48\%$$

ROE shows how effectively the company is using the investments made by its shareholders to generate profits. An improvement of 5,22% seems to be significant, mirroring better operational efficiency, increased revenue and more effective use of assets in 2022.

Current Liquidity Ratio of Multinational Corporation year 2020

$$(16) \quad Current\ Liquidity\ Ratio = \frac{Current\ Assets}{Current\ Liabilities} = \frac{16\,520,10}{14\,255,8} = 1,16$$

Current Liquidity Ratio of Multinational Corporation year 2022

$$(17) \quad Current\ Liquidity\ Ratio = \frac{Current\ Assets}{Current\ Liabilities} = \frac{19\,138,00}{16\,831,80} = 1,14$$

A current ratio above 1.0 indicates that the company has more current assets than current liabilities, which means Multinational Corporation was able to meet its short-term obligations without facing significant liquidity issues during both years under review.

Quick Liquidity Ratio of Multinational Corporation year 2020

$$\text{Quick Liquidity Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}} = \frac{4\,557,10}{14\,255,8} = 0,32$$

(18)

*Quick Assets = cash and cash equivalents + net account receivable + marketable securities

Quick Liquidity Ratio of Multinational Corporation year 2022

$$\text{Quick Liquidity Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}} = \frac{4\,261,60}{16\,831,80} = 0,25$$

(19)

A quick ratio below 1.0 indicates that the company's cash, cash equivalents, and accounts receivable are not sufficient to cover its current liabilities. This might signal potential difficulties in meeting short-term obligations.

Gearing ratio (debt-to-equity) of Multinational Corporation year 2020

$$\text{Gearing Ratio} = \frac{\text{Net Indebtness}}{\text{Total Equity}} \times 100 = \frac{4\,139,10}{12\,639,10} \times 100 = 32,70\%$$

(20)

Gearing ratio (debt-to-equity) of Multinational Corporation year 2022

$$\text{Gearing Ratio} = \frac{\text{Net Indebtness}}{\text{Total Equity}} \times 100 = \frac{4\,499,40}{13\,735,00} \times 100 = 32,90\%$$

(21)

These values indicate that the company has a relatively low level of financial leverage, with its debt making up a little under one-third of its total capital. A low gearing ratio can be seen as a positive sign, as it suggests that the company is less exposed to the risks associated with high levels of debt, such as higher interest expenses and the risk of default.

Liabilities-to-Assets Ratio of Multinational Corporation 2020

$$\text{Liabilities to Asseets} = \frac{\text{Total Liabilities}}{\text{Total Assets}} = \frac{26\,998,9}{39\,638,8} \times 100 = 68,11\%$$

(22)

The company's assets were financed by liabilities (debt), with the remaining 32% financed by equity. A high ratio indicates higher financial risk, as a larger proportion of the company's assets are financed by debt.

Liabilities-to-Assets Ratio of Multinational Corporation 2022

$$\text{Liabilities to Assets} = \frac{\text{Total Liabilities}}{\text{Total Assets}} = \frac{24191,7}{37926,7} \times 100 = 64\%$$

(23)

The decrease in the Liabilities-to-Assets Ratio also suggests a reduction in financial risk. These improvements indicate that the company has become more profitable, better at managing resources, and has lowered its reliance on debt financing.

To better understand the overall financial health of a Multinational Corporation, it is advised to compare its financial ratios with industry benchmarks. However, that falls outside the scope of this thesis. Interestingly, the analysis of the Corporation as a whole does not confirm the hypothesis of a negative impact from geopolitical turmoil. In fact, the Corporation improved its financial situation during the crisis year of 2022 compared to the period before the crisis (2020). It is suggested that the negative results of 2020 were primarily due to the severe impact of COVID-19, considering that the majority of the Multinational Corporation's business is within the automotive industry, which was significantly disrupted during the pandemic. Consequently, if it were not for the geopolitical crisis in Europe, the Corporation might have experienced even better financial performance. Nevertheless, proposition needs to be confronted with yet another analysis which is not the goal of the thesis.

To gain a more detailed understanding of the selected manufacturing sector, an additional analysis is conducted based on the financial results of *Group Sector A*. Further financial analysis reveals the financial performance of Group Sector A, which operates with a narrower portfolio compared to the Multinational Corporation as a whole. It is important to note that this analysis of selected financial indicators still focuses on a global scale and is not limited to Europe. This contrasting analysis aims to highlight that while the Corporation as a whole experienced better results in the year during geopolitical crisis (2022), Group Sector A is expected to show a decrease in financial performance during the same year.

Selected financial indicators of Group Sector A of Multinational Corporation

in mil €	2020	2022
Sales /Total Revenues/	5578,6	6 594,30
EBITDA	628,7	486,40
in % of Sales	11,3	7,40
EBIT €	254,1	166,50
Average Operating Assets	3281,2	3 275,80
Research&Developmend expenses (net)	149,7	163,80

Table Error! No text of specified style in document.4: Financial Results of a Group Sector A 2020 and 2022 as a part of Multinational Corporation Group based on Appendices XVI- XVII, (own based on Annual reports of Multinational corporation)

Return on Sales (ROS) Group Sector A year 2020

$$ROS = \frac{EBIT}{Revenues} = \frac{254,1}{5578,6} = 4,55\%$$

(24)

Return on Sales (ROS) Group Sector A year 2022

$$ROS = \frac{EBIT}{Revenues} = \frac{166,5}{6594,3} = 2,52\%$$

(25)

Return on Capital Equity Group Sector A year 2020

$$ROCE = \frac{EBIT}{Average Operating Assets} = \frac{254,1}{3281,2} = 7,74\%$$

(26)

Return on Capital Equity Group Sector A year 2022

$$ROCE = \frac{EBIT}{Average Operating Assets} = \frac{166,5}{6594,3} = 5,08\%$$

(27)

These figures confirm the expectations that Group Sector A would experience a decline in financial performance in 2022, despite the overall improvement of the Multinational Corporation during the same year. This suggests that the geopolitical crisis had a more

significant impact on Group Sector A than on the Corporation as a whole. The contrasting results between the Corporation and Group Sector A highlight the importance of conducting a more detailed, sector-specific analysis to better understand the effects of external factors such as geopolitical crises on different segments within a Multinational Organization. Along the lines of this statement, further analysis is conducted in the subchapter 7.2. focusing solely on the smallest legal entity of Group Sector A operating on CEEU&Russia markets.

6 RISK MANAGEMENT AT A *MULTINATIONAL CORPORATION*

A *Multinational Corporation* defines risk as the possibility of internal or external events occurring that can have a negative influence on the attainment of its strategic and operational targets. As a global corporation, they are exposed to a number of different risks, in particular due to the transformation in the mobility industry, that could impair business and, in extreme cases, threaten the company's existence. At the same time, this transformation also presents opportunities that a *Multinational Corporation* intends to consistently seize, as described in their Strategy Document. Also, they accept manageable risks if the resulting opportunities are expected to result in sustainable growth in value.

The overall situation is analyzed and managed corporate-wide using the risk and opportunity management system. The risk management approach is a comprehensive system that enables the company to identify, assess, and manage risks effectively. The organization's opportunity management activities involve evaluating market and economic analyses, monitoring changes in legal requirements such as fuel consumption, emission standards, and safety regulations, and addressing their effects on the particular Group sectors, other relevant markets, production locations, and product development.

A company continuously refines its risk aggregation procedures. The risk inventory aggregated using a Monte Carlo simulation, is compared with the risk-bearing capacity determined on the reporting date, taking into account possible interactions. The GRC Committee (governance, risk, and compliance) supplements this analysis with a qualitative assessment of non-quantifiable risks to determine the potential risk to the organization.

6.1 GRC Policy

The company's risk management system operates based on the **governance, risk, and compliance (GRC) policy**, which is approved by the Executive Board. In other words, it is represented by:

- the internal control system,
- the risk management system,
 - o the compliance management system (as a part of risk management system).

Multinational Corporation defines integrated GRC policy as a crucial component of its risk management system, focusing on risk identification, assessment, reporting, and documentation. This approach enhances risk awareness throughout the organization and

establishes a framework for a consistent risk culture. This system encompasses all aspects of risk reporting and evaluates the effectiveness of financial reporting controls. Risks are managed at the appropriate organizational level and involve a multi-stage assessment process that includes higher-level organizational units. Consequently, the GRC system covers all reporting levels, from the company level (Operational Units) to the top corporate level.

6.1.1 Internal Control System

Important aspects of an effective corporate-wide internal control system include the clear allocation of responsibilities and the controls within the respective process flows. The two-person rule and the separation of functions serve as the basic principles of such an organization. The management of the *Multinational Corporation* issues guidelines to make sure that all business processes are carried out in an organized, cost-effective, and legally compliant manner. However, it is important to note that an internal control system cannot provide complete protection, especially if internal controls and guidelines are intentionally bypassed. In order to proactively prevent and detect such bypassing, the *Multinational Corporation* has established monitoring functions at various levels of the internal control system. The Internal Audit Group plays a particularly important role in this respect. Internal monitoring of compliance with internal controls is complemented by information from external audits, such as those conducted during ISO certifications, customer and supplier audits, corporate audits, customs audits, and IT audits. These findings are considered when updating and making necessary adjustments to the *Multinational Corporation's* internal control system.

Based on these basic principles and the globally applicable guidelines, the internal control system at the *Multinational Corporation* follows the **Three Lines Model**:

1. In the first line of defense in a *Multinational Corporation's* internal control system, system-inherent controls are integrated within the organization's IT infrastructure to facilitate the systematic and cost-effective management of all process flow transactions in compliance with company-wide guidelines. Concurrently, these transactional controls aid in the identification of risks and deviations that demand separate attention.
2. In the second line of defense for internal control systems, process flow guidelines are created, implemented, and revised, while making sure they're followed. The main

responsibility falls on group functions, business areas, and group sectors, overseeing risk management and compliance systems. An integrated reporting system, including Financial Reporting, general risk management, compliance risk management, and tax compliance systems, is used for monitoring. Supervision is based on regular reports, self-audits, and evaluations.

3. The third line of defense in internal control is the Internal Audit Group. It's an independent auditing and advisory function that helps review and improve the organization's governance systems. The Executive Board allows it to audit any part of the corporation globally. They create a yearly risk-based audit plan that needs the board's approval. They also do special investigations if they get tips about fraud. They report their findings to the Executive Board and the Audit Committee, including any risks and possible improvements.

Risk reporting

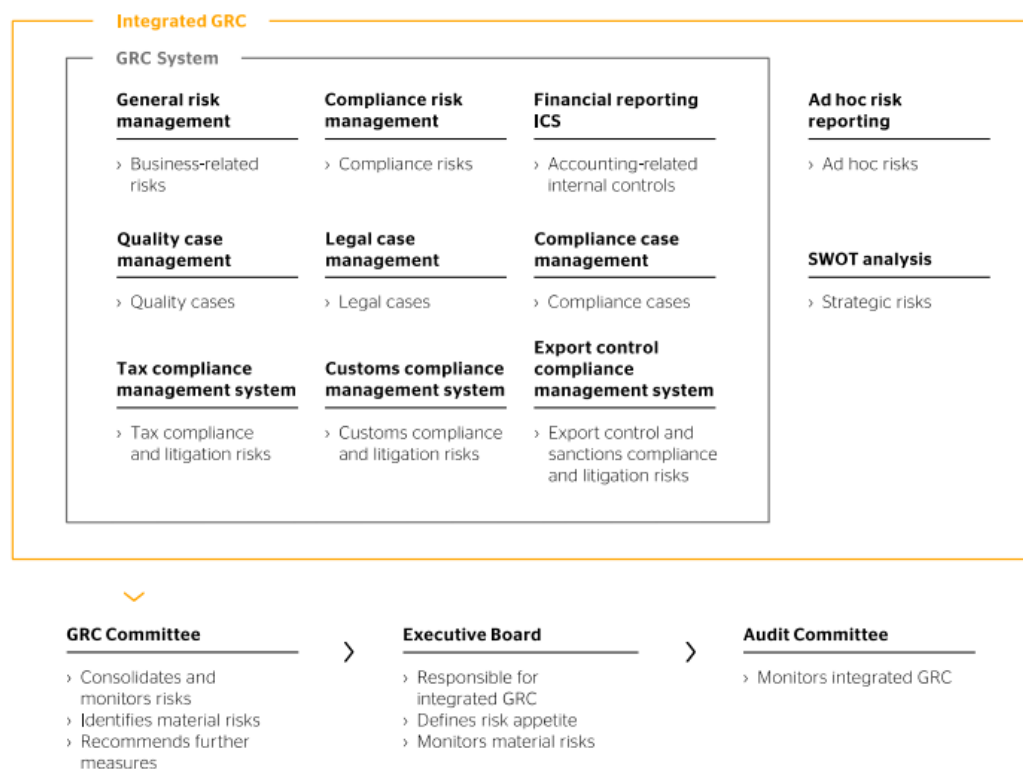


Figure 11: Risk management structure graphics of Multinational Corporation (company's internal documentation)

6.2 Risk Identification, Assessment & Monitoring

When assessing risks and opportunities, *Multinational Corporation* applies a one-year evaluation period. The organization uses an end-to-end gross and net assessment methodology to assess risks and their effects, helping identify the impact of risk-minimizing measures. Risks are primarily assessed according to quantitative criteria in various categories. If a risk cannot be quantified, it is assessed qualitatively based on potential negative effects on corporate goals and other qualitative criteria, such as the company's reputation, for instance.

Local management uses various tools for risk assessment, such as predefined risk categories (e.g., exchange rate risks, product liability risks, legal risks) and assessment criteria, centrally developed function-specific questionnaires, and the Financial Reporting ICS's process and control descriptions. Key controls in business processes (purchase to pay, order to cash, asset management, Human Resources, IT authorizations, financial statement closing, and sustainability reporting) are tested for effectiveness.

Major subsidiaries perform semiannual business-related risk assessments and annual compliance risk assessments in the GRC system's IT-aided risk management application. Quality, legal, and compliance cases are considered when assessing risks. Quarterly Financial Reporting Statements complete regular GRC reporting.

Strategic risks are identified and assessed, such as in a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats). New material risks arising between regular reporting dates must be reported immediately and considered by the GRC Committee, including risks identified in group function audits.

The risk of compliance violations primarily stems from organizational structures and workflows, the existing market conditions, and operations in specific geographical regions. Additionally, insights from inquiries by the Group Internal Audit group function, as well as consultations with management and employees across all hierarchical levels, are considered. This risk analysis is conducted annually and is consistently updated, rather than being a one-time procedure. In addition to reporting unit risk analyses as part of integrated GRC, audits are performed by the Group Internal Audit. The central controlling function analyzes key figures at corporate and group-sector levels to assess potential risk effects. If quantitative information isn't provided, qualitative criteria are used for assessment.

6.3 Financial Risks

Individual risks are identified based on the probability of occurrence and the potential damage during the evaluation period. Quantified risks are measured based on the EBIT effect and free cash flow effect. Material risks and aggregated risks are described in the report on risks and opportunities if they exceed €100 million in the evaluation period or have a significant negative impact on corporate goals. Unless a specific group sector is emphasized, potential risks introduced in this subchapter, apply across the whole *Multinational Corporation*. The risk categories presented below reflect the current assessment of relative risk exposure for the *Multinational Corporation*. Although, many of those risks do not have a first-hand financial background, they might result in a tremendous impact on the overall financial health and stability of a corporation.

Syndicated Loan Agreement Risk

In order to finance current business operations, as well as investments and payment responsibilities, a syndicated loan agreement has been established for the *Multinational Corporation*, from which potential risks may emerge. Simply put, as defined by Investopedia (2020) "a syndicated loan is financing offered by a group of lenders who work together to provide funds for a single borrower. The loan can involve a fixed amount of funds, a credit line, or a combination of the two." According to the conditions of the syndicated loan agreement, the lending institutions possess the authority to request reimbursement of the loan if a change of control occurs within the *Multinational Corporation*. The committed portion of the syndicated loan is valued at €4.0 billion (due in December 2026). At the end of the 2022 fiscal year, €300.0 million had been utilized.

Exchange-rate Fluctuation Risk

The *Multinational Corporation* operates globally and is exposed to financial risks resulting from fluctuations in currency exchange rates. These risks can impact the company's financial performance, as variations in exchange rates may affect the value of assets, liabilities, and raw material costs. To manage these risks, the corporation identifies transaction currencies with significant exchange-rate risk within the next 12 months. These exchange-rate risks are generally hedged using suitable derivative instruments, such as currency forwards, currency swaps, and cross-currency interest rate swaps. Although these hedging transactions can help mitigate risks, they may also result in losses. The potential negative impact on the

Multinational Corporation's financial performance is estimated based on the current net exposure and a 10% change in the current closing rate.

Risks in Connection to Cash and Cash Equivalents

To minimize default risk associated with cash, cash equivalents, derivatives, and interest-bearing investments, *Multinational Corporation* typically utilizes banks that meet specific criteria and are classified as core banks. These banks are required to possess at least one investment-grade credit rating from a global rating agency, ensuring a very low default risk. Both core banks and other banks engaged in investments, loans, or derivatives trading for operational or regulatory reasons are continuously monitored for creditworthiness. *Multinational Corporation* monitors not only credit ratings but also pays attention to premiums for insuring against credit default risks when available. The company also establishes investment and trading limits for each bank and derivative instrument, based on the bank's creditworthiness. Compliance with these limits is consistently monitored.

Risks Emerging from Information-technology Threats

In relation to its business and production processes, the *Multinational Corporation* heavily relies on centralized and standardized information technology systems and networks. These systems are potentially vulnerable to various forms of cybercrime. In hacker attacks, unauthorized parties may attempt to access confidential information and data stored, processed, or communicated within these systems and networks. Moreover, data, products, and systems could be blocked, damaged, controlled, or destroyed if infected by viruses or malware. In a cyberattack discovered in August 2022, intruders accessed parts of the corporation's IT systems and copied several terabytes of data before the attack was stopped. The corporation later received ransom demands from the attackers, who threatened to release the copied data. The corporation did not comply with the demands, and the hacker group published a list of the data it claimed to possess. With help from external cybersecurity experts, the corporation is still to this day investigating the incident and the affected data. It's possible that the incident could lead to fines and potential damage claims due to existing data protection laws and nondisclosure agreements. The corporation's business activities were not impacted by the attack, and it maintains full control over its IT systems.

Although the *Multinational Corporation* has implemented appropriate measures to manage risks associated with system and network disruptions and related attacks, a prolonged outage in a computer center or telecommunication network, or a similar incident, could cause

systems or networks to become unexpectedly unavailable for an extended period. Measures taken to minimize such risks include technical and organizational precautions like duplicated data storage and contingency plans, as well as ongoing training efforts, particularly to increase awareness of the growing cybercrime threats.

Financial Risks Associated with Warranty and Product Liability Claims

Multinational Corporation's quality approach establishes guidelines for all quality-related activities, prioritizing high standards. However, the corporation frequently encounters product liability claims and legal actions, alleging negligence, warranty breaches, material flaws, and contract violations due to recalls or government interventions. These events could increase expenses for a company, potentially resulting in lost sales and weakened customer and market trust. Although the corporation insures these risks to economically reasonable levels, coverage might be inadequate in some instances. Additionally, defects in Multinational Corporation's products, particularly tires and safety-related items, could severely damage the company's reputation and market image, possibly affecting sales and revenue negatively. Vehicle manufacturers increasingly demand supplier contributions for potential product liability, warranty, and recall claims.

Multinational Corporation also faces ongoing customer efforts to alter contract terms concerning contributions to warranty and recall costs. The company manufactures many products following OEM customer specifications and quality standards. If a company doesn't fulfill these requirements by the agreed delivery date, production might be halted until the defect's root cause is identified and rectified, possibly resulting in lost sales and revenue. Failing to meet quality expectations could also negatively impact the market reception of a corporation's other products and harm its reputation in various market segments.

Financial Risks Originated in Legal Area

Multinational Corporation may face fines and damage claims due to alleged or actual unlawful behavior. Despite having a compliance management system, the global scope of the corporation's business activities means there's potential for unlawful conduct (e.g., corruption, fraud, antitrust and competition law violations, money laundering) in individual cases. Currently, there are multiple ongoing investigations by public prosecutor's offices that involve significant costs and effort. Fines may be imposed with the total amount, consisting of a levy and penalty component. Additionally, reputational damage cannot be dismissed. To cover risks and costs arising from these proceedings, a nine-figure sum was set aside as

of December 31, 2022. Given the scale of national and international investigations against automotive manufacturers and suppliers, further proceedings by public authorities, civil legal actions, and claims by third parties, along with associated financial risks, cannot be excluded.

Environmental and Safety Requirements Risk

Multinational Corporation might be affected by more challenging environmental or safety regulations. Operating globally, *Multinational Corporation* has to follow many different rules in various countries that change frequently and are constantly getting stricter, especially about the environment, chemicals, dangerous materials, and health rules. This is also true for rules about air, water, and soil pollution and waste, which have recently become tougher because of new laws, mainly in the EU and the USA. Also, *Multinational Corporation's* sites and operations need various permits, and it's important to follow the requirements in those permits. In the past, getting used to new requirements has meant making investments, and the company thinks that more investments like this will probably be needed in the future.

Protecting Intellectual Property and Technical Expertise

Multinational Corporation might struggle to protect its intellectual property and technical expertise effectively. The company's products and services rely heavily on its technological knowledge and exclusive rights. It has many patents and industrial property rights but getting patent protection can be time-consuming and expensive. Also, patents might not provide enough protection or commercial advantage. A significant portion of the Corporation's know-how and trade secrets aren't patented or can't be protected through industrial property rights. As a result, there's a risk that some of the company's know-how and trade secrets could be shared with partners, customers, and suppliers, including machinery suppliers or plant vendors. This creates a risk that competitors might copy the company's knowledge without any costs for themselves. *Multinational Corporation* has signed several agreements with customers, competitors, and other parties that grant its rights to industrial property and know-how from third parties. However, license agreements could be terminated in certain situations, leaving Corporation with limited access to intellectual property rights to commercialize its technologies.

7 GEOPOLITICAL CRISIS

Previous chapter introduced numerous types of potential risks that selected corporation might be exposed to in case of various internal or external scenarios occur. The list goes on and the impact of geopolitical situation imposes another potential risk categories, which Multinational Corporation officially recognizes within its scope of business.

7.1 Risks caused by geopolitical instability in Europe

Executive Board of Continental amended its report on risks and opportunities dated February 22, 2022, as follows: "Current geopolitical developments such as the war in Ukraine, the conflict between China and Taiwan, and the recent disputes between China and Lithuania could have an impact on Continental's sales and procurement markets. These include sanctions and other risks in supply chains as well as unforeseeable effects on the global economy. The corporation keeps an eye on these developments and thinks about possible scenarios and necessary actions."

Adverse consequences might arise from political unrest or instability, terrorism, fire, natural disasters, power outages, or other disturbances at the corporation's production sites or within its supply chain - involving customers and suppliers - could lead to substantial damage and losses. The *Multinational Corporation* further faces risks connected to unpredictable energy supplies, especially gas and electricity in many countries where it operates. If supply restrictions last for a long time, it could hurt the corporation's earnings, financial situation, and net assets position. The *Multinational Corporation* also faces risks related to extra or higher tariffs. Because of the growing trend of protectionism and increasing trade conflicts worldwide, the corporation might have to deal with additional or higher tariffs on automobiles and the products, components, and raw materials it supplies or purchases. These tariffs could lower the demand for the corporation's products and raise costs, which would negatively affect its business and earnings situation.

7.1.1 Risks Related to the Markets in which *Multinational Corporation* Operates

The Multinational Corporation may face considerable risks due to a global financial and economic crisis. With the automotive industry representing 61% of consolidated sales, it serves as the corporation's main customer group. The rest of the sales come from replacement or industrial markets of rest of the Group Sectors. During the analyzed year (2022), the global automotive markets recovered more slowly than expected, with high volatility and

uncertainty resulting from supply chain disruptions and increased raw material, energy, and logistics costs. A delayed economic recovery could negatively affect the corporation's sales and earnings. In that year, the corporation's top five OEM customers accounted for about 32% of sales. Losing one or more OEM customers or experiencing early termination of a supply contract could lead to a complete or partial loss of the corporation's original investments. Additionally, the corporation generated 47% of its total 2022 sales in Europe, with 18% from Germany. In comparison, North America contributed 27%, Asia-Pacific 22%, and other countries 4%. Consequently, an economic downturn in Europe could significantly impact the corporation's business and earnings.

Vehicle production and, consequently, sales to OEMs can experience significant fluctuations, influenced by various factors such as general economic conditions, disposable income, household consumer spending and preferences, and fuel costs. These fluctuations in automotive production directly impact the demand for Multinational Corporation's products. Predicting future market developments and estimating production capacity requirements is challenging. The *Corporation's* business is characterized by high fixed costs, exposing it to the risk of not fully covering fixed costs in the event of decreased demand and underutilization of facilities. On the other hand, if the markets grow faster than anticipated, there may be insufficient capacity to meet customer demand. To mitigate the potential risk stemming from dependence on the automotive industry, the Multinational Corporation is focusing on strengthening its replacement and industrial businesses (other Group Sectors), including acquisitions.

7.1.2 Risk of Fluctuations in the Raw Material Prices

The Multinational Corporation is vulnerable to fluctuations in raw material and component prices, as well as rising energy and logistics costs. Group Sector A primarily uses natural and synthetic rubber and oil-based raw materials, which are subject to considerable global price fluctuations. Currently, the corporation does not actively hedge against rising component or raw material prices using derivative instruments. Significant increases in energy and logistics costs may also occur. If the company cannot offset or pass these increased costs onto customers, its earnings could be reduced significantly.

The ongoing COVID-19 pandemic, especially in China, presents a risk of substantial and lasting negative effects on sales and procurement markets, potentially impacting the availability of raw materials and components as well as the corporation's sales volumes in both OEM and industrial businesses. The duration of the economic downturn and its effects

on global supply chains and the corporation's various business units largely depend on the success of containment measures and the effectiveness of relief packages and fiscal stimulus measures. While the Multinational Corporation has implemented measures to improve its cost structure and ensure supply chains, there is a general risk of long-term negative effects on the corporation's earnings.

7.1.3 Risk Related to the Business Operations of the *Multinational Corporation*

The *Multinational Corporation* relies on a limited number of key suppliers for specific products, which exposes it to the potential risk of certain raw materials and production materials being unavailable. Although the corporation generally tries to source product components from various suppliers, single sourcing is sometimes unavoidable, making it dependent on certain suppliers, particularly for some products acquired based on intercompany business (supplies among different Business Units). With procurement logistics mostly organized on a just-in-time or just-in-sequence basis, supply delays, cancellations, strikes, insufficient quantities, or inadequate quality can cause production interruptions and negatively impact the corporation's business operations. The corporation attempts to minimize these risks by carefully selecting and regularly monitoring suppliers. However, if one of the corporation's suppliers cannot meet its delivery obligations (e.g., due to insolvency, production plant destruction from natural disasters, refusal to perform following a change in control, or the far-reaching effects of the COVID-19 pandemic) or if deliveries are affected by geopolitical dispute-related sanctions, the corporation may be unable to quickly source input products from other suppliers in the required volume. Such developments and events can cause delays in the delivery or completion of the corporation's products or projects and could result in higher costs for purchasing products or services from third parties or even financially supporting its own suppliers. Additionally, many OEM customers have approval rights regarding the suppliers used by the corporation, which could make it impossible to quickly source input products from other suppliers if the relevant OEM customer hasn't already approved other suppliers. This situation could lead to order cancellations. Significant damage claims cannot be ruled out, and the corporation's reputation among OEM customers might suffer, potentially causing them to choose a different supplier.

7.1.4 Risks Associated with Trade Restrictions, Sanctions, and Export Controls

Multinational Corporation faces risks associated with trade restrictions, sanctions, and export controls due to its global economic activity. The corporation has business relationships with customers and partners in countries that may be currently or potentially subject to export limitations, embargoes, economic sanctions, or other trade restrictions. Besides the fundamental impact these restrictions have on Multinational Corporation's operations, violating relevant provisions could result in substantial penalties, administrative sanctions, reputational damage, and damage claims. Currently, trade restrictions forced a company to limit or cease business activities in specific countries or regions. The financial impact of these limitations is presented in the following chapter, where financial analysis was conducted based on the lowest corporation level – the Operational Unit 0367.

7.2 Impact of the Geopolitical Crisis on the Financial Results of Operational Unit

A financial analysis was conducted, drawing upon data from an Operational Unit 0367 (OU) of a *Multinational Corporation* as detailed in earlier chapters. Figure 1 (page 34) illustrates the role of this particular OU within the larger corporate structure. Analysis of the networks perspective on global trade conducted by Maluck a Donner (2015) reveal that specific industrial sectors choosing geographically close country pairs is remarkably high. Consequently, the rationale for selecting this OU is its operational presence in a region (Eastern Europe) affected by the geopolitical crisis, and its close business relationships with customers and countries directly impacted by the unstable geopolitical situation.

The objective of this analysis is to compare two distinct time periods: the year 2020, designated as the "pre-crisis" period, and the year 2022, regarded as the "during-crisis" period. By examining financial indicators at the country, business channel, and customer levels, it is hypothesized that overall financial performance declined in 2022 (the "during-crisis" period).

The primary data source for this analysis was the SAP system, supplemented with a Key Figure report. The financial analysis was conducted step by step as follows:

1. Transaction KE30 in the SAP system was utilized, filtering based on Operational Unit 0367 and the selected time periods (years 2020 and 2022, analyzed separately) (*see Appendices PI and P VII*).
2. Total revenue (Net Sales) and margin levels for the Operational Unit were extracted from the report for further analysis, examining years 2020 and 2022 separately (*see Appendices PI and P VII*).
3. Leveraging the analyst's knowledge about the region and customer orientation, selected countries were further filtered, focusing individually on:
 - a. Direct channel – sales made directly to countries affected by geopolitical uncertainty (*see Appendices PII and PVIII*).
 - b. Distribution channel – sales made via distributors contracted with end users located in countries impacted by geopolitical instability (*see Appendices PIII, PIX, and PX*).
 - i. 51 A cross-check was conducted using transaction SQ01 by creating a specific query allowing to see requested data and examining the "ship-to-country" column for specific distributors (*see Appendix PIV*), making sure the data are correctly extracted.
4. Furthermore, the value of receivables at the conclusion of the analyzed years (2020 and 2022) was extracted from the Key Figures report (*see Appendices PXII and PVI*).
5. Transaction in the SAP system was employed to examine overdue payments at the end of the years subjected to this analysis (*see Appendices PXI and PV - Table 1*)
 - a. Only selected countries were considered, utilizing a customer cross-check based on the previously provided data in the KE30 report (*see Appendices PXI and PV - Table 2*).
6. The final step of this analysis involved using the same transaction to concentrate on overdue payments as of March 31, 2023, from a specific customer (refer to Appendix PXIV).
7. After gathering all the data, a summary table was prepared in order to further calculate and interpret the key findings.

	2020	share % of total sales	2022	share % of total sales	Δ in %	31.3.2023
TOTAL REVENUE €	20 303 563		11 362 690		-44,04%	
REVENUE - DIRECT CHANNEL /SELECTED COUNTRIES/	5 162 891	25%	378 448	3,33%	-92,67%	
REVENUE - DISTRIBUTION CHANNEL /SELECTED COUNTRIES/	4 478 037	22%	-	-	-100,00%	
TOTAL MARGIN €	5 163 244		1 609 973		-68,82%	
MARGIN €	2 225 526		32 824		-98,53%	
MARGIN % /SELECTED COUNTRIES/	23,66%		8,67%			
RECEIVABLES €	2 106 000		1 916 000		-9,02%	
% OF SALES	10,20%		16,80%			
OVERDUES	21 649		338 692			338 692
% OF RECEIVABLES	1,03%		18%			
ALLOWANCES			66 666			66 666

Table 5: Financial Analysis of Selected Indicators of Operational Unit 0367 (own -based on Appendix PI- P XI)

7.2.1 Analysis Interpretation

The objective of this financial analysis is to assess the influence of geopolitical events on the financial performance of Operational Unit 0367 by comparing two distinct timeframes: 2020 as the pre-crisis period and 2022 as the during-crisis period.

Table 1's empirical data reveals a 44% decline in **Total Revenues** in 2022 (during-crisis) compared to 2020 (pre-crisis). However, the analysis goes beyond this observation. Examining sales channels offers a more comprehensive understanding of the geopolitical crisis's effects. In order to determine the relationship between geopolitical impact and revenues, it is crucial to consider the percentage share of different channels on Total Revenues. Appendix PI demonstrates that the analysis centers on revenues originating from the Czech Republic, Slovakia, Kazakhstan, and Ukraine. This information highlights that 47% of the Operational Unit's Total Revenues in the pre-crisis period (2020) came from countries currently affected by geopolitical crises. Furthermore, a 93% reduction in direct channel revenues was observed, along with €0 sales through the distribution channel during the crisis period, resulting in a 100% decline compared to the pre-crisis period.

The **profitability** trend continues with a 10% decrease in net profit margin, likely due to rising production costs. However, this analysis does not delve into this specific business operation because of Operational Unit 0367's complex nature. The explanation is based on the customized production facility type, which creates a time and cost gap between submitting a quotation to the customer and the actual production date. Purchasing raw materials after clarifying technical requirements for a conveyor belt on both sides can lead to negative raw material variations and negative production variations (caused by energy and machinery price fluctuations).

Return on Sales of Operational Unit in 2020

$$ROS = \frac{EBIT}{Revenues} = \frac{5\,163\,244}{20\,303\,563} \times 100 = 25,43 \%$$

(28)

Return on Sales of Operational Unit in 2022

$$ROS = \frac{EBIT}{Revenues} = \frac{1\,609\,973}{11\,362\,690} \times 100 = 14,17 \%$$

(29)

The Return on Sales (ROS) decreased from 25.43% in 2020 to 14.17% in 2022, also indicating a decline in profitability. Consequently, this also reveals that sales to selected countries, presumably negatively impacted by the geopolitical crisis, have experienced an outstanding decline. This decrease in sales might be detrimental to smaller companies, potentially leading to bankruptcy or insolvency.

Liquidity examination for the Operational Unit follows the aforementioned trend. A 9% decrease in Accounts Receivable (also called Sales Outstandings) in 2022 is insufficient given the 44% drop in total revenues for that year. The critical implication is that the Receivables' percentage in relation to Total Revenue increased by 7%, negatively affecting the company's overall liquidity. Notably, of the €11 million Total Revenues in 2022, nearly €2 million are Receivables. Higher Receivables compared to Revenues may result in an inability to meet short-term obligations. This is confirmed by the following calculation of Days Sales Outstandings (Accounts Receivable):

Day Sales Outstandings of Operational Unit in 2020

$$DSO = \frac{\text{Accounts Receivable}}{\text{Revenues}} \times 360 = \frac{2\,106\,000}{20\,303\,563} \times 360 = 0,10 \times 360 = 37,34 \text{ days}$$

(30)

Day Sales Outstandings of Operational Unit in 2022

$$DSO = \frac{\text{Accounts Receivable}}{\text{Revenues}} \times 360 = \frac{2\,191\,600}{11\,362\,690} \times 360 = 0,17 \times 360 = 60,71 \text{ days}$$

(31)

Overdues in the pre-crisis period account for only 1% of Receivables, while during-crisis Overdues make up 18% of Receivables. This situation exacerbates the company's financial performance during geopolitical crises, confirming its negative impact. Reviewing the most recent period (31/03/2023) revealed that the same Overdues remain unpaid. The SAP report indicates that the expected payments are from customers in countries directly affected by the geopolitical crisis. Consequently, an Allowance has been created since the overdue period exceeds one year, and market information suggests that these customers will never pay due to facility destruction during the Russian invasion in Ukraine.

This financial analysis could be extended by examining the fixed costs, overheads, and period expenses of the Operational Unit to calculate the need for external financing to cover the missing €338,000. However, that is not the objective of this analysis.

Although COGS (Costs of Goods Sold) were not incorporated into this analysis, quick look into the price development of crude oil is provided below. Data come from the Central Purchasing department and show the price level at which Multinational Corporation purchased crude oil during a given period. A correlation with general global price development provided in the first part of this thesis can be observed.

In conclusion, it is evident that Operational Unit 0367 has been significantly affected by the geopolitical crisis, resulting in decreased profitability and substantial revenue losses. The impact is particularly noticeable in sales to countries directly affected by the crisis, which highlights the importance of understanding the influence of external factors on the financial performance of individual operational units within a company.

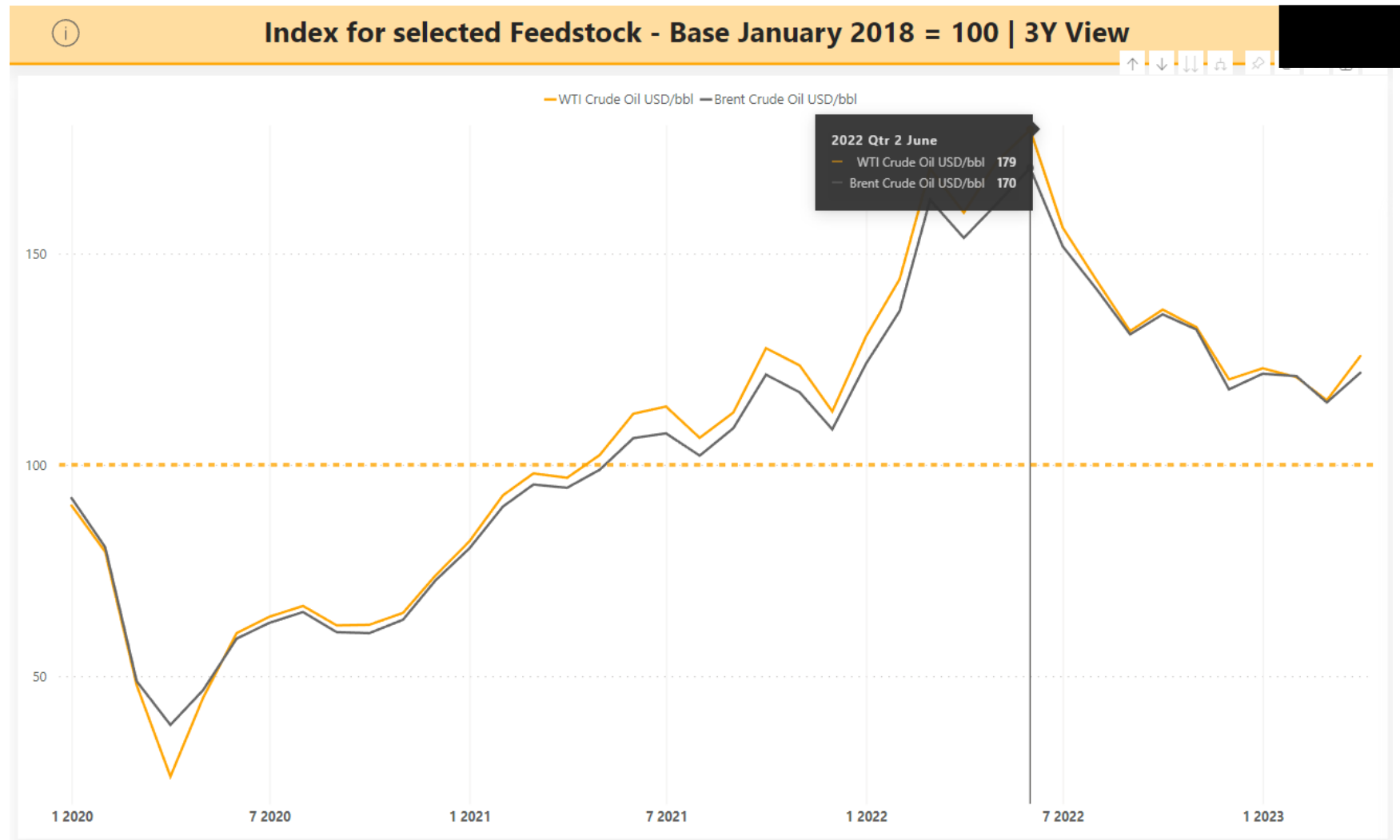


Figure 12: Price development of crude oil reported by Group Sector A (Internal Feedstock report of Central Purchasing department of Multinational Corporation)

7.3 Risk Matrix

For the purpose of conducting a Risk Matrix applicable for Operational Unit 0367, the team of competent people involved in daily business operations, was created as follows:

- 1) Head of Regional Sales (CEEU&Russia) End User Channel
- 2) Head of Regional Sales (CEEU&Russia) Distribution Channel
- 3) Senior Controller of Operational Unit 0367
- 4) Head Accountant of Operational Unit 0367
- 5) Sales responsible person CEEU&Russia region in End User Channel
- 6) Sales responsible person CEEU&Russia region in Distribution Channel
- 7) Tactical Pricing responsible person CEEU&Russia region in End User Channel
- 8) Tactical Pricing responsible person CEEU&Russia region in Distribution Channel
- 9) Foreign Trade Officer at Slovakian Legal Entity (Operational Unit 0367)
- 10) Lawyer specialized in business operations at Operational Unit 0367
- 11) Contract Manager for Slovakian Legal Entity (Operational Unit 0367)
- 12) Credit Manager Slovakian Legal Entity (Operational Unit 0367)

Above mentioned colleagues are part of EMEA Segment Group Sector A based on the organizational chart provided at the beginning of this part of the thesis (Figure 7).

Due to the current hybrid work style, which combines remote and in-office work, numerous online meetings, including brainstorming sessions, were organized. The objective of each meeting was established before selecting the participants, as per the previously mentioned team. *Table 2* below illustrates the systematic approach followed in conducting these meetings.

Besides risk identification and assessment, the Senior Controller emphasized the significance of revising forecast reports to account for anticipated revenue declines. This recommendation was further supported by the Credit Manager's suggestion to review credit limits for specific customers. Consequently, it was proposed that the sales department complete the Credit Limit Request Form (Appendix XXI) as needed. Although these two actions may not be directly reflected in the control measures within the Risk Matrix, they are equally important and require adequate attention.

<i>Date</i>	<i>Objective</i>	<i>yes</i>	<i>not fully</i>	<i>no</i>	<i>notes</i>	<i>Participants (available/invited)</i>
14.12.2022	Topic introduction - introduction and agreement on main goals & expected results	x				12/12
19.12.2022	Risk Identification - open discussion about direct and indirect risk of current geopolitical situation on Operational Unit 0367		x		<i>not enough participants to complete the task fully</i>	6/12
25.1.2023	Risk Identification part 2	x				10/12
25.1.2023	Risk Evaluation - ranking all identified risks based on probability of occurrence and severity of its consequences		x		<i>need to finish next time (only 3 of 8 risks evaluated)</i>	12/12
17.2.2023	Risk Evaluation part 2		x			11/12
	Risk Response & Mitigation Recommendations - are we willing to accept particular risks? What steps need to be taken in order to minimize the risk impact?		x		<i>need to finish next time (only 3 of 8 risks evaluated)</i>	10/12
8.3.2023	Risk Response & Mitigation Recommendations part 2	x				10/12
15.4.2023	Review of prepared outcome	x			<i>approved</i>	12/12

Table 6: Objectives and Structure of Meetings and Brainstorming Session (own)

		Risk Detail			
Risk No.	Type of Risk	Risk Description	Risk Likelihood	Risk Impact	Overall Risk Rating
R1	Legal/ Compliance Risk	Not following the sanctions ended up being "prosecuted"	Medium	High	Severe
R2	Legal/ Compliance Risk	Not fulfilling existing contracts with sanctioned countries (cannot ship already produced, or soon-to-be produced goods)	High	High	Critical
R3	Liquidity Risk	Not fulfilling existing contracts with sanctioned countries (cannot ship already produced goods)	Very High	Medium	Severe
R4	Financial Risk	Not fulfilling existing contracts with sanctioned countries (cannot ship already produced, or soon-to-be produced goods)	High	High	Critical
R5	Financial Risk	Negative raw material and energy variations caused by supply chain disruptions	High	Medium	Severe
R6	Liquidity Risk	Negative raw material and energy variations caused by supply chain disruptions - not being able to sell goods at such high price (due to increased costs)	High	Low	Moderate
R7	Financial Risk	Losing a market position - customers - revenues decrease	Very High	Medium	Severe
R8	Market Risk	Losing a market position - customers - decreased revenues due to measurement in place (pre-payment before order valid for particular customers located in geopolitical instable countries) losing competitive advantage	Medium	High	Severe
R9	Operational Risk	Services are not available (truck drivers avoid the routes to/through specific countries due to geopolitical situation)	Medium	Very Low	Sustainable
R10	Financial Risk	Payment discipline of customers (long overdues)	Low	Low	Sustainable
R11	Financial Risk	Competitors more aggressive with their pricing policy (our goods not competitive enough)	Medium	Low	Moderate

Table 7: Risk Identification, Assesment and Evaluation in Risk Matrix Template (own)

	Control Detail			
<i>Risk no.</i>	<i>Control No.</i>	<i>Description of Current Control or Process to Mitigate Risk</i>	<i>Control Priority Level</i>	<i>Control Owner</i>
R1	C1	internal process carefully set and followed through Checklist	Medium-High Priority	all
R2	C2	involve lawyers when negotiating with customers to find a way how to legally end the contract without penalties	High Priority	Sales / Legal dpt.
R3	C3	find suitable distributors who are able to redistribute goods to the end customer without additional legal burden, involving lawyers when negotiating with customers	Medium-High Priority	Sales
R4	C4	involve lawyers when negotiating with customers to find a way how to legally end the contract without penalties	High Priority	Sales / Legal dpt.
R5	C5	incorporate "Price Gliding Clause" when issuing a new frame contract and renegotiate an existing one	Medium-High Priority	Tactical Pricing / Sales dpt.
R6	C6	find markets that are not price-sensitive, but quality oriented	Medium-High Priority	Tactical Pricing / Sales dpt.
R7	C7	Re-focusing sales activities on market/countries where are more opportunities rather than risks (find white spots on the market - find specific customers)	Medium-High Priority	SCM /Sales dpt.
R8	C8	Re-focusing sales activities on market/countries where are more opportunities rather than risks (find white spots on the market - find specific customers)	High Priority	Sales dpt.
R9	C9	Negotiate Incoterms FCA only	Low Priority	Sales / customer service dpt.
R10	C10	Apply restrictions in contracts (penalties)	Low Priority	Legal/ Sales/ Customer Service dpt.
R11	C11	Find markets that are not price-sensitive, but quality oriented	Medium Priority	Tactical Pricing / Sales dpt.

Table 8: Control measures for each identified risk (own)

7.4 Opportunities

Keeping in mind that conveyor belt business is closely linked to the mining industry, an interesting shift was recently observed – an increased using of fossil fuels. In countries like Germany, the UK, and Italy, some coal plants have even been reactivated (Lawson, 2022). Consequently, the mining sector might be affected too, despite the long-term plans of European countries to move away from coal in order to combat climate change.

The Risk Matrix mentioned that one way to mitigate the risk of revenue loss is to actively search for new opportunities or "white spots" in different markets. This idea is directly related to the aforementioned observation. With the right market strategy, it's quite likely that some of the lost revenue could be regained in places like Italy or the UK. However, it's also necessary to point out since Operational Unit is a part of Multinational Corporation, operating on numerous markets in different countries, in order to avoid internal competition, an alignment within the company is crucial at this point.

Moreover, it is emphasized that maintaining relationships with customers in Ukraine is crucial, even if they are not currently conducting business. Once the invasion is over, a significant demand for conveyor belts across the country is expected in order to help rebuild the infrastructure that has been destroyed. Thus, the potential benefits of nurturing these customer relationships now could be realized later on.

8 RECOMMENDATIONS FOR THE CONTINGENCY PLAN

Apart from control measurements proposed within the Risk Matrix, this thesis has concluded, that a solid contingency plan in place could make a difference. Taking into account that the previously specified Operational Unit 0367 is a part of a large international company, it is reasonable to assume that a contingency plan has already been implemented. Nevertheless, based on the findings, it is strongly recommended to review and update the existing Contingency plan to ensure comprehensive coverage of all geopolitical aspects and risks arising from this factor.

A survey conducted by McKinsey (2022), a trusted advisor to many of the world's most influential businesses, aimed to understand the frequency of supply chain disruptions in various sectors, particularly automotive, pharmaceuticals, aerospace, and computers and electronics. Respondents reported that on average, their industries experienced material disruptions lasting a month or longer every 3.7 years. Consequently, no crisis can be deemed inevitable, especially amid the current geopolitical turmoil. The following suggestions are proposed as a robust strategy to ensure business continuity in the manufacturing sector.

8.1 Group of Experts

Knut and Strigel (2020) observed that companies often react to sudden supply-chain disruptions by forming temporary task forces to manage issues on an ad hoc basis, which can lead to the loss of precious time due to insufficient preparedness. To address this, it is suggested that the development of a risk management team composed of cross-functional expertise and the creation of tools to ensure efficient and rapid information flow could be game-changers during periods of negative external factors impacting the company's operations. In today's highly dynamic environment, a swift response is essential. The power of information technologies and the rise of artificial intelligence have made it possible to monitor changes within hours or even minutes. Staying informed about world news and ensuring seamless information and communication flow within the organization could potentially save millions of euros.

Foreign Trade Officer

Within the context of this thesis, the formation of a Group of Experts comprising cross-functional positions is strongly recommended. Firstly, the Foreign Trade Officer is likely to be the most crucial individual during times of sanctions and trade restrictions. To ensure that

inquiries from politically unstable countries do not jeopardize the company's financial health, a vigilant, strong-minded, and dynamic officer in the Foreign Trade area is essential.

Lawyers

To support the knowledge of international trades and cross-border contract signing, having an experienced lawyer on hand can make a significant difference when reacting to changes promptly. Given the number of tasks that the legal department should support – based on the measures mentioned within the Risk Matrix – assembling a team of legal experts is necessary to ensure the quality of their input. Managers must determine the appropriate size of the legal team to avoid overloading the department while considering the tasks they must handle, such as reviewing contracts and re-negotiating terms on a case-by-case basis.

Supply Chain Manager

Moreover, export control is not the only consequence of supply chain disruption. Another vital position that needs to be covered is that of the supply chain manager, who ensures a smooth process. It is crucial to identify the company's dependencies on each raw material and their sources. Given the size of a multinational corporation, the intercompany business could be an option in the case of material shortages in stock. Implementing state-of-the-art software to monitor stock availability in manufacturing plants and compare it to production plans could lead to significant differences when mitigating risks. Being able to redistribute raw materials from one manufacturing plant (which doesn't have enough capacity for production, but enough raw materials at the same time) to another in order to fulfill customer's demands is the main goal of SCM department in review contingency plan.

Salespeople

Salespeople, who serve as the company's face, ears, and eyes, play a crucial role in maintaining contact with the external world. Their primary responsibility is to ensure that each team member, from the Foreign Trade Officer to the lawyer and supply chain manager, has successfully fulfilled their duties. Salespeople are well-positioned to confirm whether these internal measures have been implemented to the necessary extent.

Given the importance of the sales team, it is strongly recommended to develop a comprehensive process checklist and incorporate it as part of the contingency plan. This checklist will serve as a valuable tool for the sales department, guiding them through the

necessary steps to verify that all team members have appropriately addressed the company's risks arising from geopolitical instability. In the next subchapter, a detailed process checklist will be introduced, outlining the essential items and actions required of the sales team to ensure smooth communication and coordination among all key stakeholders, including the Foreign Trade Officer, lawyer, and supply chain manager. This checklist will also cover specific information that salespeople should be aware of, such as updates on international trades, changes in contracts or negotiation terms, and any legal support that may be required in specific cases.

Logistics

Additionally, it is important to consider the roles of logistics and transportation professionals when forming the Group of Experts. These individuals must navigate the challenges of supply chain disruptions, export controls, and shipping goods through politically unstable countries. A well-informed logistics team can help mitigate risks by staying up-to-date with the latest regulations, route changes, and available transportation options, ensuring that goods are delivered to customers in a timely and efficient manner. Might be effective to outsource this service, but more input data are needed in order to be able to make such decision.

Risk Manager

Furthermore, the Group of Experts should also include professionals with expertise in risk assessment and management, who can continuously monitor and evaluate potential geopolitical risks that might affect the company. By incorporating the input of these professionals, the contingency plan can be adapted and improved as needed, ensuring that the company remains prepared for any unforeseen geopolitical events.

Lastly, it is essential to invest in the continuous training and development of the Group of Experts, as the geopolitical landscape is always changing. By staying informed and adapting to new risks and challenges, the team can help the company navigate through any crisis and maintain its competitive edge in the global market.

In conclusion, forming a comprehensive and well-rounded Group of Experts is a vital component of a robust contingency plan, which can help mitigate the risks associated with geopolitical instability. By assembling a team of skilled professionals from various areas, including foreign trade, legal, supply chain management, sales, logistics, and risk

assessment, the company can better prepare for and respond to any disruptions that may arise, ultimately ensuring business continuity and success.

8.2 Checklist

As mentioned before company should establish and improve the internal control system when mitigating the above-mentioned risks. In order to make sure internal processes are followed properly, following Checklist is created as a part of the Contingency plan revision.

PART no.	Step no.	Process	Owner	Done
I.	1	Inquiry received from customer located in specific country	Sales	
		-Russia, Belarus, Kazakhstan, Ukraine, Uzbekistan		
	2	Embargo Request issued (<i>Appendix XIX</i>)	Sales	
	(3)	Credit Limit request for specific customer issued (<i>Appendix XXI</i>)	Sales	
		if credit manager already updated the approval since 01/2023 - this step might be skipped		
	(4)	Credit Limit Approval & Score Card created (<i>Appendix XXII</i>)	Credit Manager	
	5	Foreign Trade Officer approval	Foreign Trade Officer	
		- customer or the bank of a customer are not sanctioned		
	6	Offer submitted only if customer agrees with the terms	Sales	
		- FCA Incoterms only, 100% pre-payment before production starts/ or Price Gliding Clause accepted		
II.	7	Order received from a customer located in a specific country	Sales	
		-Russia, Belarus, Kazakhstan, Ukraine, Uzbekistan		
	8	BEFORE ORDER CONFIRMATION! End Use Certificate (<i>Appendix XX</i>) has to be signed by the customer	Sales	
	9	Order confirmation sent	Sales	
III.	8	Participating in regular Group of Experts meetings	Sales +	
	9	Staying close to the customer	Sales	
	10	Monitoring external and internal developments	Sales +	

Table 9: Checklist integrated into Contingency Plan (own)

8.3 Price Gliding Clause

As highlighted in the Risk Matrix, one method to reduce the risk of negative fluctuations in raw material or energy prices is to incorporate a "Price Gliding Clause" into contracts or legal agreements with customers. Sara Gunton (2022) explains that this is typically used in long-term contractual arrangements due to setup costs, lead times, or the specialized nature of the services provided. Given the potential for supply chain disruptions leading to rising material costs, it is reasonable to include mechanism for price increases in both commercial and consumer contracts. This approach future-proofs business terms by allowing for price escalation that reflects current market conditions.

By including a price gliding clause when outlining terms with customers, both parties have clarity on price increases, eliminating the need for mid-contract price negotiations. Generally, it is advised to adopt a system of quarterly (and semi-annual) adjustments based on a three-month rolling average of publicly available data. Both parties must agree on a public data source, such as destatis.de, which provides global price development for raw materials. Once a reliable source has been chosen, the next step is to calculate the weight of each price component (e.g., as shown in Table 10). Subsequently, each component's weight is multiplied by the price development index provided by the statistical portal (resulting in the index $PB_n\%$). Finally, Formula [32] is applied, where CN_n represents the newly calculated price and CB_0 is the original contracted price. $CN_n = CB_0 \times PB_n$

COMPONENTS AND WEIGHTS

NAME	Weight
NATURAL RUBBER	6,74%
SYNTHETIC RUBBER	18,24%
STEEL CORD	30,45%
LABOR	14,74%
GAS	3,66%
ELECTRICITY	5,76%
CHEMICALS	11,67%
FABRICS	0,00%
CARBON BLACK/FILLERS	8,74%

Table 10: Components and Weights of Price calculation used or Price Gliding mechanism (own)

CONCLUSION

This thesis aimed to examine the impact on financial risks of manufacturing company caused by geopolitical issues while simultaneously not neglecting any existing traditional business risks. The goal was to analyze a financial health of a selected manufacturing company and show the importance of incorporating geopolitical risks into the risk management approach.

However, it's necessary to point out this research has its limitations. First of all, the focus is on a multinational corporation operating in manufacturing sector. Therefore, the conclusions are based on the selected company, not the manufacturing sector as a complex, hence further research integrating wider range of manufacturing firms is recommended to gain a better insight.

Nevertheless, it was concluded that global risks pose a serious challenge to the success of international businesses due to the direct impact of risks on business operations. It's expected the number of research on the topic combining geopolitical situation and financial performance of companies, will grow exponentially in the upcoming months and years. The aim of this thesis is to contribute to this topic by showing the negative impact of geopolitical crisis impacting Eastern Europe. Analyzed data of Operational Unit 0367 comes from Slovakian legal entity, therefore the war zone (Russian invasion to Ukraine) is just "next door". By comparing selected financial indicators during two different time periods – year 2020 as a pre-crisis period and year 2022 as a during-crisis period – this thesis shows how much selected subject was directly negatively impacted by geopolitical situation – hence the hypothesis has been proved. Though, looking into same financial indicators for whole Multinational Corporation, the results are not that drastic. Therefore, it's assumed that Operational Unit 0367 would face either bankruptcy, or insolvency, having not been "under the umbrella" of a huge international corporation. Having a diversified and globally divided portfolio seems to be crucial to survive such geopolitical uncertainty. Industry at which Operational Unit operates has been impacted, but in the scope of a Multinational Corporation covering three other different industries, the results are not that fatal. However, Operational Unit as an entity of Multinational corporation is bound to perform at certain level and monthly report its development to headquarters.

To identify and evaluate potential risks arising from current geopolitical turmoil in Europe, a Risk Matrix was conducted. Most of the potential risks were in regard to supply chain disruptions. To mitigate the impact of negative external factors, it is recommended to

strongly focus on robust internal processes. While a contingency plan is a necessity, creating a whole contingency plan as an outcome of this thesis would be too complex. Therefore, improvements and recommendations on a Contingency plan are suggestions for future research. However, multiple recommendations were made, that should be integrated into revised contingency plan.

A process Check List has been created to avoid internal discrepancies that could worsen the current financial situation. The main goal of the Check List is to provide people with a comprehensible guide during day-to-day operations, with an emphasis on the sales department.

Creating a team of experts who continuously monitor external developments, introduce necessary internal adaptations, and ensure smooth information flow within an organization is also strongly recommended instead of building ad hoc teams when crises occur. It has been recognized that positions such as foreign trade officer, lawyer, supply chain manager, customer support, and risk manager possess crucial, on-point knowledge to implement suggested control measures.

To mitigate the risks of negative raw material and energy variations, the implementation of a price gliding clause is a tool worth considering. By including this price escalation mechanism in frame contracts, countless negotiations and monetary losses might be avoided.

In conclusion, this thesis has presented strong arguments supporting the idea that geopolitical risks are crucial in risk management nowadays. By considering financial analysis focused on the manufacturing sector combined with statements on geopolitical matters, the importance of incorporating geopolitical risks into enterprise risk management has been demonstrated. This thesis has also demonstrated integral steps in creating and implementing a contingency plan considering the unpredictable evaluation of the geopolitical situation in Europe.

BIBLIOGRAPHY

Books

BRAGG, Steven M., 2017. *Financial Analysis: A Business Decision Guide*. 3rd Edition. Centennial, Colorado: Accounting Tools. ISBN 978-1-938910-96-8.

BRIGHAM, Eugene F. and Michael C. EHRHARDT, 2016. *Financial Management: Theory and Practice*. 15th edition. Boston, MA: Cengage Learning. ISBN 978-1-305-63229-5.

BOUTEILLÉ, Sylvain and Diane COOGAN-PUSHNER, 2013. *The handbook of credit risk management: Originating, Assessing, and Managing Credit Exposures*. Original. Hoboken, New Jersey, U.S.: John Wiley. ISBN 978-1-118-30020-6.

FRIDSON, Martin S. and Fernando ALVAREZ, 2022. *Financial Statement Analysis: A Practitioner's Guide*. 5th Edition. Hoboken, New Jersey, U.S.: John Wiley. ISBN 13-978-1119457145.

HASHIMZADE, Nigar, Gareth MYLES and John BLACK, 2017. *A Dictionary of Economics*. 5th Edition. UK: Oxford University Press. ISBN 978-0-19875-94-30.

ITTELSON, Thomas R., 2022. *Financial Statements: A Step-by-Step Guide to Understanding and Creating Financial Reports*. 3rd edition. Newburyport, MA: Career Press. ISBN 978-1-632651-75-4.

JURY, D. H. Timothy, 2012. *Cash Flow Analysis and Forecasting: The Definitive Guide to Understanding and Using Published Cash Flow Data*. Hoboken, NJ: Wiley. ISBN 978-1-119962-65-6.

KONEČNÝ, Jiří, 2010. *Podniková ekonomika*. Zlín: Univerzita Tomáše Bati ve Zlíně,. ISBN 9788073187712.

LAM, James, 2017. *Implementing Enterprise Risk Management: From Methods to Applications*. Original. Hoboken, New Jersey, U.S.: John Wiley. ISBN 978-0-471745-19-8.

MARSHALL, Tim, 2017. *V zajatí geografie: Desať máp, ktoré vám povedia všetko, čo chcete vedieť o globálnej politike*. Translated by Igor OTČENÁŠ. Bratislava: Premedia. Civilizácia. ISBN 978-80-8159-513-4.

MILES, Matthew B., A. M. HUBERMAN a Johnny SALDAÑA, 2020. *Qualitative data analysis*. ISBN 978-1-544371-85-6.

REZAEI, Zabihollah, 2015. *Business Sustainability: Performance, Compliance, Accountability, and Integrated Reporting*. New York, NY: Routledge. ISBN 978-1-783534-90-6.

ROBINSON, Thomas R., 2020. *International Financial Statement Analysis*. 4th edition. Hoboken, NJ: Wiley. ISBN 978-1-119-62805-7.

RŮČKOVÁ, Petra, 2021. *Finanční analýza: metody, ukazatele, využití v praxi*. 7th edition. Praha 7: Grada Publishing. ISBN 978-80-271-3124-2.

SHERMAN, Eliot H., 2015. *A Manager's Guide to Financial Analysis: Powerful Tools for Analyzing the Numbers and Making the Best Decisions for Your Business*. 6th edition. AMA Self-Stud, 2015. ISBN 978-0-761215-62-2.

SCHMIDLIN, Nicolas, 2014. *The art of company valuation and financial statement analysis: A value investor's guide with real-life case studies*. Hoboken, NJ: Wiley. ISBN 978-1-118843-09-3.

QUIRY, Pascal, et al., 2018. *Corporate Finance: Theory and Practice*. 5th Edition. Hoboken, NJ: John Wiley. ISBN 978-1-119-42448-2.

Podcasts

SAFI, Michael and Alex LAWSON, 2022. *What happens if Russia cuts off Europe's gas*. In: Podcast: Today in Focus: by The Guardian [online]. Spotify: The Guardian [cit. 2023-04-28]. Available at: <https://open.spotify.com/episode/51GUEEwn3IYASTzMZOZdNW?si=Rd1E0NojT5Sg9FB4mtmgCQ>

Standards

ISO Guide 73 (2009) Risk Management Vocabulary

ISO 31000 (2018). Risk Management Guidelines

ISO/IEC 27001 (2022) Information security management systems (ISMS)

ISO/IEC 23894 (2023) Information technology - Artificial intelligence - Guidance on risk management

Online sources

AHMED, Idris and Norlida Abdul MANAB, 2016. *Influence of Enterprise Risk Management Success Factors on Firm Financial and Non-financial Performance: A Proposed Model*. International Journal of Economics and Financial Issues [online]. 2016(6(3)), 830-836 [cit. 2023-04-02]. ISSN 2146-4138. Available at: <https://www.econjournals.com/index.php/ijefi/article/view/1993/pdf>

ALDUNEIBAT, Khalid Ali, 2023. *The Effect of Risk Management Committee Characteristics on a Company's Performance in an Emerging Country*. Journal of Governance and Regulation [online]. 2023(12), 376-386 [cit. 2023-04-03]. ISSN 2306-6784. Available at: doi:10.22495/jgrv12i1siart16

BAUR, Dirk G. and Lee A. SMALES, 2020. *Hedging geopolitical risk with precious metals*. Journal of Banking & Finance [online]. 2020(117), 1-22 [cit. 2023-04-28]. ISSN 1872-6372. Available at: doi:10.1016/j.jbankfin.2020.105823

BBC, 2022. *What are the sanctions on Russia and are they hurting its economy?*. In: BBC [online]. Europe: BBC News [cit. 2023-04-10]. Available at: <https://www.bbc.com/news/world-europe-60125659>

BEDDOES, Zanny M., 2022. *Why a global recession is inevitable in 2023?* The Economist [online]. London, 2022(4), 16 [cit. 2023-02-27]. Available at: <https://www.economist.com/the-world-ahead/2022/11/18/why-a-global-recession-is-inevitable-in-2023>

BLACK, Jeremy, 2016. *Geopolitics and the Quest for Dominance*. ISBN 9780253018687. [cit. 2023-02-27] Available at: <https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&an=1092425&scope=site>

BOUBAKER, Sabri et al., 2022. *Heterogeneous impacts of wars on global equity markets: Evidence from the invasion of Ukraine*. Finance Research Letters [online]. 2022(48) [cit. 2023-04-22]. ISSN 1544-6131. Available at: doi:10.1016/j.frl.2022.102934

BOUOIYOUR, Jamal et al., 2019. *What are the categories of geopolitical risks that could drive oil prices higher? Acts or threats?*. Energy Economics [online]. 2019(84), 1-14 [cit. 2023-04-18]. ISSN 1873-6181. Available at: <https://www.sciencedirect.com/science/article/pii/S0140988319303184>

BRANDT, Michael W. a Lin GAO, 2019. *Macro fundamentals or geopolitical events? A textual analysis of news events for crude oil*. Journal of Empirical Finance [online]. 2019(51), 64-94 [cit. 2023-04-25]. ISSN 1879-1727. Available at: doi:10.1016/j.jempfin.2019.01.007

BRENDE, Børge, 2022. *How to accelerate and strengthen the global economy*. In: World Economic Forum [online]. [cit. 2023-05-01]. Available at: <https://www.weforum.org/agenda/2022/02/accelerate-and-strengthen-the-global-economy-borge-brende/>

BRUN, Alessandro, 2017. *Supply Chain Management in the Luxury Industry. New Luxury Management: Creating and Managing Sustainable Value Across the Organization* [online]. Springer Nature, 2017, 189-216 [cit. 2023-04-17]. ISSN 978-3-319-41727-1. Available at: doi:10.1007/978-3-319-41727-1_11

CALDARA, Dario and Matteo IACOVIELLO, 2022. *Measuring Geopolitical Risk*. American Economic Review [online]. 2022(112/4), 1194-1225 [cit. 2023-04-22]. ISSN 1944-7981. Available at: doi:10.1257/aer.20191823

DAS K. Kuntal and YAGHOUBI, M., 2022. *Stock Liquidity and Firm-Level Political Risk*. Working Thesiss in Economics 22/18, University of Canterbury, Department of Economics and Finance. [online]. 2022 November, 1-24 [cit. 2023-04-03]. Available at: Microsoft Word - Political Risk (WP 18-2022, Part 0).docx (canterbury.ac.nz)

DICUONZO, Grazia et al., 2019. *Risk Management 4.0: The Role of Big Data Analytics in the Bank Sector*. International Journal of Economics and Financial Issues [online]. 019(9(6), 40-47 [cit. 2023-04-07]. ISSN 2146-4138. Available at: <https://doi.org/10.32479/ijefi.8556>

DODDS, Klaus J., 2013. *Global Geopolitics: A Critical Introduction*. ISBN 9780273686095. [cit. 2023-03-15]. Available at: <https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&an=782974&scope=site>

DUIJM, Nijs J., 2015. *Recommendations on the use and design of risk matrices*. Safety Science [online]. 2015(76), 21-31 [cit. 2023-04-22]. ISSN 1879-1042. Available at: doi:10.1016/j.ssci.2015.02.014

EUROPEAN COMMISSION, 2021. Commission Staff Working Document: *Strategic dependencies and capacities; Accompanying the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and*

the Committee of the Regions Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery [online]. 352 final. Brussels [cit. 2023-03-01]. Available at: https://commission.europa.eu/system/files/2021-05/swd-strategic-dependencies-capacities_en.pdf

EUROPEAN COUNCIL, 2023. *EU sanctions against Russia explained*. In: Council of the EU and the European Council [online]. Brussels: General Secretariat of the Council [cit. 2023-04-25]. Available at: <https://www.consilium.europa.eu/en/policies/sanctions/restrictive-measures-against-russia-over-ukraine/sanctions-against-russia-explained/>

FANG, Fang. 2016. *A Study of Financial Risks of Listed Manufacturing Companies in China*. Journal of Financial Risk Management, 5, 229-245. online. ISSN 2167-9541. [cit. 2023-03-01]. Available at: <http://dx.doi.org/10.4236/jfrm.2016.54022>

FONG, Kingsley Y. L., Craig W HOLDEN and Charles A. TRZCINKA, 2017. *What Are the Best Liquidity Proxies for Global Research?*. Review of Finance [online]. 2017(21), 1355–1401 [cit. 2023-04-17]. ISSN 1573-692X. Available at: doi:10.1093/rof/rfx003

GALA, Vito D., Giovanni PAGLIARDI and Stavros A. ZENIOS, 2023. *Global political risk and international stock returns*. Journal of Empirical Finance [online]. 2023(72), 78-102 [cit. 2023-04-25]. ISSN 1879-1727. Available at: doi:10.1016/j.jempfin.2023.03.004

GLOBAL SUPPLY CHAINS FORUM, 2022. *Easing supply chain bottlenecks for a sustainable future: Event Report*. In: World Trade Organization [online]. Geneva, Switzerland [cit. 2023-04-19]. Available at: https://www.wto.org/english/news_e/events_e/report-gscforum2022_e.pdf

GUNTON, Sarah, 2022. *Increasing your prices: Contract clauses and notification*. In: Harper James: Business Legal Services [online]. UK [cit. 2023-05-02]. Available at: <https://harperjames.co.uk/article/price-contract-clauses-and-notification/>

HASSAN, Tarek, A. & Tony ZHANG, 2021. *The Economics of Currency Risk*. Annual Review of Economics [online]. Annual Reviews, 2021(13-1), 281-307 [cit. 2023-04-20]. ISSN 1941-1383. Available at: doi:10.1146/annurev-economics-092220-103354

HO, William et al., 2015. *Supply chain risk management: a literature review*. International Journal of Production Research [online]. Taylor & Francis, 2015((53) 16), 5031-5069 [cit. 2023-04-17]. Available at: <https://doi.org/10.1080/00207543.2015.1030467>

HOSSEINI, S., IVANOV, D., DOLGUI, A., 2019. *Review of Quantitative Methods for Supply Chain Resilience Analysis*. Transportation Research E: Logistics and Transportation Review, 125, 285-307. [cit. 2023-04-17]. Available at: https://aquila.usm.edu/fac_pubs/16043

CHEONG, Carol and HOANG H. V., 2021. *Macroeconomic factors or firm-specific factors? An examination of the impact on corporate profitability before, during and after the global financial crisis*. Cogent Economics & Finance [online]. 2021(Volume 9), 1-24 [cit. 2023-04-13]. Available at: doi:10.1080/23322039.2021.1959703

INTERNATIONAL MONETARY FUND, 2022. *Regional economic outlook. Europe: War sets back the European recovery: World economic and financial surveys*. In: Imf.org [online]. Washington, DC: International Monetary Fund [cit. 2023-04-22]. Dostupné z: <https://www.imf.org/en/Publications/REO/EU/Issues/2022/04/20/regional-economic-outlook-for-europe-april-2022>

INTERNATIONAL MONETARY FUND, 2023. *World economic outlook 2023: A rocky Recovery*. In: IMF [online]. Washington, DC [cit. 2023-04-18]. Available at: <https://www.imf.org/en/Publications/WEO/Issues/2023/04/11/world-economic-outlook-april-2023>

INVESTOPEDIA, 2023. *Understanding Liquidity Ratios: Types and Their Importance*. In: Investopedia.com [online]. Dotdash Meredith [cit. 2023-04-14]. Available at: <https://www.investopedia.com/terms/l/liquidityratios.asp>

JEDYNAK, Piotr a Sylwia BĄK, 2020. *Understanding Uncertainty and Risk in Management*. Journal of Intercultural Management [online]. 2020(12), 12-35 [cit. 2023-05-01]. ISSN 2543-831X. Available at: doi:10.2478/joim-2020-0030

KARDAŚ, Szymon, 2023. *Conscious uncoupling: Europeans' Russian gas challenge in 2023*. In: European Council on Foreign Relations [online]. Berlin: ECFR [cit. 2023-04-18]. Available at: <https://ecfr.eu/article/conscious-uncoupling-europeans-russian-gas-challenge-in-2023/#:~:text=Before%20Russia%20invaded%20Ukraine%2C%20the,cent%20of%20total%20gas%20imports.>

KNUT, Alicke and Anna STRIGEL, 2020. *Supply chain risk management is back: Operations Practice by McKinsey & Company report* [online]. 2020(1), 9 [cit. 2023-02-22].

Available at:
<https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Operations/Our%20Insights/Supply%20chain%20risk%20management%20is%20back/supply-risk-management-is-back.pdf>

LEE, -C.-C., Chen, M.-P., & Ning, S.-L., 2017. *Why did some firms perform better in the global financial crisis?* Economic research - Ekonomska Istraživanja, 30(1), 1339–1366. [online]. [cit. 2023-04-17]. Available at: <https://doi.org/10.1080/1331677X.2017.1355258>

LEGGETT, Theo, 2022. *Russia hits back at Western sanctions with export bans*. In: BBC [online]. Moscow: BBC News [cit. 2023-04-15]. Available at: <https://www.bbc.com/news/business-60689279>

MALUCK, Julian a Reik V. DONNER, 2015. *A Network of Networks Perspective on Global Trade*. PLOS ONE [online]. 2015 [cit. 2023-04-17]. Available at: [doi:10.1371/journal.pone.0133310](https://doi.org/10.1371/journal.pone.0133310)

Marharyta Honcharenko, 2019. "Formation of a Profit Management Mechanism for Commercial Enterprises," *Oblik i finansi*, Institute of Accounting and Finance, issue 2, pages 154-158, June.

MCKEEVER, P. Mike (2018). *How to write a business plan*. 14th edition. Berkeley, California: Nolo, one online. ISBN 9781413325461. [cit. 2023-03-01]. Available at: <http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&AN=1840225&authtype=ip,shib&custid=s3936755>

MOOSAVI, Javid et al., 2021. *Blockchain in supply chain management: a review, bibliometric, and network analysis*. Environmental Science and Pollution Research [online]. 2021, 1-15 [cit. 2023-04-17]. Available at: doi: <https://doi.org/10.1007/s11356-021-13094-3>

MULLANE, Michael A., 2023. *How to manage the risks of using artificial intelligence*. In: E-Tech: News & Views from the IEC [online]. Geneva, Switzerland [cit. 2023-04-15]. Available at: <https://etech.iec.ch/issue/2023-02/how-to-manage-the-risks-of-using-artificial-intelligence>

NISSAN, 2016. *The Current State of Nissan's Risk Management*. In: Nissan Motor Corporation [online]. [cit. 2023-04-02]. Available at: <https://www.nissan->

global.com/EN/SUSTAINABILITY/LIBRARY/SR/2016/ASSETS/PDF/SR16_E_RiskMgnt.pdf

PANETTA, Fabio, 2023. *United we stand: European integration as a response to global fragmentation: Speech at an event on "Integration, multilateralism and sovereignty: building a Europe fit for new global dynamics"*. In: ECB [online]. Brussels: European Central Bank [cit. 2023-04-25]. Available at: <https://www.ecb.europa.eu/press/key/date/2023/html/ecb.sp230424~67a4af298c.en.html>

PODGÓRSKA, Joanna, Katarzyna MORMU a Janusz MAKSYMOWICZ, 2022. *The risk identification and assessment on the example of companies from the automotive industry in Poland*. Financial Internet Quarterly [online]. 2022(18 (4), 89-99 [cit. 2023-05-01]. ISSN 2719-3454. Available at: [doi:doi.org/10.2478/fiqf-2022-0030](https://doi.org/10.2478/fiqf-2022-0030)

ROSENBERG, Steve, 2022. *Ukraine crisis: Vladimir Putin's geopolitical jigsaw*. In: BBC [online]. Moscow: BBC News [cit. 2023-04-18]. Available at: <https://www.bbc.com/news/world-europe-60152007>

ROUBINI, Nouriel, 2022. *Russia's War and the Global Economy*. In: Nouriel Roubini [online]. New York: WordPress.org [cit. 2023-04-10]. Available at: <https://nourielroubini.com/russias-war-and-the-global-economy/>

ROUBINI, Nouriel, 2022. *The Age of Megathreats*. In: Nouriel Roubini [online]. New York: WordPress.org [cit. 2023-04-22]. Available at: <https://nourielroubini.com/the-age-of-megathreats/>

ROUBINI, Nouriel, 2022. *The Unavoidable Crash*. In: Nouriel Roubini [online]. New York: WordPress.org [cit. 2023-04-22]. Available at: <https://nourielroubini.com/the-unavoidable-crash/>

SAMVEDI, Avinash, Vipul JAIN and Felix T.S. CHAN, 2013. *Quantifying risks in a supply chain through integration of fuzzy AHP and fuzzy TOPSIS*. International Journal of Production Research [online]. Taylor&Francis Online, 2013(51), 2433-2442 [cit. 2023-03-22]. ISSN 1366-588X. Available at: [doi:10.1080/00207543.2012.741330](https://doi.org/10.1080/00207543.2012.741330)

SEGAL, Troy, 2020. *Syndicated Loan: What It Is, How It Works, Examples*. In: Investopedia.com [online]. Dotdash Meredith [cit. 2023-04-14]. Available at: <https://www.investopedia.com/terms/s/syndicatedloan.asp>

SPIEGELHALTER, David, 2017. *Risk and Uncertainty Communication*. Annual Review of Statistics and Its Application [online]. 2017(4), 31-60 [cit. 2023-04-17]. ISSN 2326-831X. Available at: [doi:doi.org/10.1146/annurev-statistics-010814-020148](https://doi.org/10.1146/annurev-statistics-010814-020148)

SHERMAN, Eliot H., (2015). *A Manager's Guide to Financial Analysis: Powerful Tools for Analyzing the Numbers and Making the Best Decisions for Your Business*. 6th edition. ISBN 9780761215622. [cit. 2023-03-01]. Available at: <https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&an=1520883&scope=site>

TALITHA, N. Nariswari and Nugi, M. Nugraha, 2020. "Profit Growth: Impact of Net Profit Margin, Gross Profit Margin and Total Assets Turnover," International Journal of Finance & Banking Studies, Center for the Strategic Studies in Business and Finance, vol. 9(4), pages 87-96, October.

TRIKI, Mohamed Bilel and Abderrazek Ben MAATOU, 2021. *The GOLD market as a safe haven against the stock market uncertainty: Evidence from geopolitical risk*. Resources Policy [online]. 2021(70), 126-145 [cit. 2023-04-24]. ISSN 1873-7641. Available at: [doi:10.1016/j.resourpol.2020.101872](https://doi.org/10.1016/j.resourpol.2020.101872)

UK GOVERNMENT, 2022. Press release: *UK announces new economic sanctions against Russia*. In: GOV.UK [online]. UK: OGL [cit. 2023-04-02]. Available at: <https://www.gov.uk/government/news/uk-announces-new-economic-sanctions-against-russia#:~:text=alongside%20G7%20allies,-,The%20UK%20Government%20has%20today%20announced%20a%20ban%20on%20ex,ports,point%20hike%20on%20current%20rates>

WORLD ECONOMIC FORUM, 2023. *The Global Risks Report 2023: 18th Edition, Insight Report*. ISBN-13: 978-2-940631-36-0 [online]. Geneva, Switzerland [cit. 2023-04-14]. Available at: https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.pdf

LIST OF ABBREVIATIONS

AI	Artificial Intelligence
APAC	Asia Pacific region
CEEU&Russia	Central, Eastern Europe & Russia
COGS	Cost of Goods Sold
dpt.	department
DSO	Days Sales Outstandings
EBIT	earnings before interest and tax
ECB	European Central Bank
EMEA	Europe, Middle East, and Africa
ERM	Enterprise Risk Management
EU	European Nation
FA	Financial Analysis
FR	Financial Risk
GPA	Geopolitical Acts
GPR	Geopolitical Risk Index
GPT	Geopolitical Threats
GRC policy	Governance, risk, and compliance policy
IMF	International Monetary Fund
ISM	Institute for Supply Management
ISO	International Organization for Standardization
IT	Information Technology
NATO	North Atlantic Treaty Organization
OEM	Original Equipment Manufacturer
OU	Operational Unit
PMI	Purchasing Managers Index
ROCE	Return on Capital Employed
ROE	return on equity
SAP system	Systems, Applications, and Products
SMEs	Small and medium size enterprises
UK	United Kingdom
WEF	World Economic Forum
WTO	World Trade Organization

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