








“Export and exports risks of small and medium enterprises during the COVID-19 pandemic”

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EXPORT AND EXPORTS RISKS OF SMALL AND MEDIUM ENTERPRISES DURING THE COVID-19 PANDEMIC

Abstract

COVID-19 has created an entirely new unknown environment with new risks. Various restrictive national measures seeking to protect health took precedence over economic measures. Moreover, a large number of businesses are entirely dependent on international trade and exports. The aim of this paper is to map and analyze the development of small and medium enterprises' exports during the COVID-19 pandemic in the Czech Republic. Moreover, it identifies the most significant export risks and their perception by small and medium enterprises. The chi-square test, Cramer's coefficient, and exact binomial test were used to verify the statistical dependencies of research questions and hypotheses.

Empirically, the statistically significant impact of the COVID-19 pandemic on the decline in small and medium enterprises' exports was confirmed. In connection with the effectiveness of risk management, it was found that less than 50% of enterprises in the research sample are not ISO 31000-certified. The study concluded that the most significant export risks confirmed by statistical testing were COVID-19 risks and payment morale of foreign trading partners.

Keywords

COVID-19, export, risks, SMEs, international trade, ISO 31000

JEL Classification

M21, G32, L52, L26

INTRODUCTION

Small and medium-sized enterprises (SMEs) are under increasing competitive pressure. SME creates an impulse to optimize and rationalize all business processes. The current trend forces companies to increase flexibility toward suppliers and customers. Because SMEs form the basic building block of the national economy of the Czech Republic, they have an irreplaceable role precisely in exports. The net export indicator is a significant component of gross domestic product and aggregate demand. Just as it is necessary to monitor the internal risks of a company, it is equally important to monitor, analyze, and be prepared for external risks. Recently, businesses have witnessed many significant threats that destabilized the economic environment. One of the most significant unexpected risks of the external environment is COVID-19. The COVID-19 pandemic represented harmful restrictions, even stopping international trade not only for Czech companies. There has been a disruption of continuity in supply chains, with SMEs making up numerous subcontractors. This experience led to the need to learn the principles of risk management in SMEs.

1. LITERATURE REVIEW AND HYPOTHESES

SMEs are an integral part of the business environment. They increase competitive pressure on individual markets and are a significant employer within the entire labor market in the Czech Republic.

SMEs are the prime movers of economic progress (Yasiukovich & Haddara, 2021). The international expansion of SMEs is a crucial decision that may allow enterprises to expand and survive (Dutot et al., 2014). Many studies point to SMEs' importance and role in exports (Steinhäuser et al., 2021; Cabral et al., 2020; Genc et al., 2019; Manzanares, 2019). Internationalization is an essential issue for firms, especially SMEs, compared to large enterprises (Kaushik & Singh, 2021; Hsu et al., 2020). The entry of SMEs into international retail chains is an advantage. However, a disadvantage is the broader range of external risks. The involvement of enterprises in international trade offers many opportunities for the growth and sustainability of SMEs. However, small and medium-sized enterprises face various barriers to pursuing global business activities (Virglerová et al., 2021). SMEs are confronted with various risks, which may be unknown to big enterprises, or perceived as minor (Virglerová et al., 2020; Kljucnikov & Majkova, 2018). SMEs underestimate risk analysis and the implementation of risk management in enterprises (Hudakova et al., 2017). The management of mainly small enterprises comprises experts in the field of business, but economic-managerial knowledge and experience are often lacking. Risk management is the ability to support the development of a business strategy by reducing potential risks. According to Catanzaro and Teyssier (2021), risk management influences the international risk management of SMEs. Hudakova and Masar (2018) state that enterprise risk management in SMEs enhances business performance and cost savings.

As in the European Union, the influence of SMEs on fundamental performance indicators and the economy's competitiveness is growing in the Czech Republic. According to the OECD (2017), SMEs comprise a significant share of employ-

ment, employing approximately 70% of the workforce. Moreover, they contribute significantly to value creation, on average 50 to 60%. Many other scientific studies discuss the importance of SMEs in job creation and added value for national and European economies (Yasiukovich & Haddara, 2021; Belas et al., 2020; European Commission, Directorate-General for Employment, Social Affairs and Inclusion et al., 2020; Kotásková et al., 2020; Kristanti et al., 2019; Ivanova, 2017; Virglerová et al., 2017). Foreign trade has several traditional forms. These include export, import, re-export, and re-import. Freeman and Styles (2014) added that exports positively affect nations' trade balance, job creation, and living standards.

As mentioned above, this area poses some potential threats to SMEs. The causes of the crisis may be diverse, whether of an internal or external nature. Among other things, pandemics and other natural disasters can be considered as the external nature of a crisis. For example, the COVID-19 pandemic hit Europe and its businesses hard in 2020 (Čepel et al., 2020; Tröster & Küblböck, 2020), including the impact on foreign trade (Winarsih et al., 2021). Čepel et al. (2020) found that SMEs were most exposed to the COVID-19 pandemic. As the pandemic progressed, restrictive measures began to be introduced in various countries. The scope and severity of these measures were intended to balance the health, economic, and social consequences. However, such restrictions can also have a crushing economic impact, as noted by Mena et al. (2022) and Curran et al. (2021). The effect of these measures, labeled the "great lockdowns," has been compared to the Great Depression (Gopinath, 2020). This situation affected not only fundamental macroeconomic indicators but also employment, demand, and supply, negatively affecting international trade.

The COVID-19 pandemic brought about several restrictions on the foreign trade of Czech enterprises. As a result, COVID-19 is decimating international trade (Verbeke & Yuan, 2021). Currently, the economic impact of the COVID-19 pandemic is still being evaluated. Above all, micro-enterprises and small businesses felt these impacts more significantly (Otavová et al., 2021). In this context, there is a need to exert pressure

to reduce the administrative burden of micro-enterprises, as stated by European Commission, Directorate-General for Employment, Social Affairs and Inclusion et al. (2020). However, it should be added that SMEs, which are successfully diversifying into export markets, are generally considered a substantial source of socioeconomic prosperity (Mansion & Bausch, 2020).

In recent years, the EU has targeted significant support for the small and medium-sized enterprise sector in its decisions. The responsible EU authorities in the field of economic policy have allocated funds between 2014 and 2020, amounting to more than 450 billion euros, to support Member States through the European Structural and Investment Funds (of which there are several) (Halasi et al., 2019). Scientific sources concerning the specificity of exports and COVID-19 are emerging. The negative consequences on the enterprise activities of SMEs are widely documented (Dai et al., 2021; Xia et al., 2021; Barbero et al., 2021; Minondo, 2021; Sun et al., 2021; Verschuur et al., 2021). Terminology associated with risk and uncertainty in the social sciences refers to the possibility of unexpected events that can change the outcomes of human activities in an unpredictable way (Settembre-Blundo et al., 2021). Organizations are building their competitiveness and performance in a turbulent socioeconomic environment. These activities require monitoring and risk management. Therefore, risk and its management have assumed a central part regarding the best practices in business management (Tavares et al., 2021).

Risk management is a proactive approach that identifies, analyzes, and manages all risks (Cano-Olivos et al., 2019; Lai & Lau, 2012). The development of risk management and related key functions has evolved over the years (Biolcheva, 2020). Risk management consists of three key activities: identification, classification, and risk assessment (Abdel-Basset et al., 2019; Prakash et al., 2017; Cagliano et al., 2012). Anything that threatens success in achieving set business goals can be considered a business risk from a business perspective. Settembre-Blundo et al. (2021) divide business risks into internal and external. This study classifies risks associated with the international market environment and trade as external

risks. External risks are those events that occur without the direct control of the enterprise because they originate from the external environment (Belinskaja & Velickiene, 2015). The risks arising from the international environment are much more severe for SMEs than for large enterprises. As a result, SMEs are confronted with various types of risks, with risk analysis and the implementation of risk management being underestimated (Virglerová et al., 2020; Čepel et al., 2020; Kljucnikov & Majkova, 2018).

Hudakova et al. (2021) stated that risk management takes place in enterprises only in the event of emergencies. Another claim is that enterprises often implement risk management initiatives too late (Hoke et al., 2022). It then follows that risk management deals with the consequences rather than prevention. This situation is mainly due to the underestimation of enterprise risks and the lack of knowledge and practical experience in the application of risk management, i.e., general approaches of managers to risk management (Hudakova et al., 2018). Studies declare that correct risk management prevents problems and increases competitive advantage and business value (Dvorský et al., 2021; Belas et al., 2020). Malca et al. (2020) concluded that SMEs need to spend their resources on carrying out activities that lead to exports and overcoming various export barriers (Malca et al., 2020). Therefore, risk management is becoming a necessary activity. There are financial risks, but also business, export, marketing, production, personnel, and, for example, development risks (Havlíček & Břečková, 2015). Risk perception in SMEs is associated primarily with external influences characterized by turbulent and dynamic changes. However, the cause of most crises in enterprises is not the risks and threats in the external environment but their late detection by managers and mostly incorrect and ineffective ways of responding to them (Mika, 2017). Managers' roles are to identify these risks, express potential threats with the help of financial indicators, and propose solutions to eliminate them in advance.

Thus, foreign trade is becoming not only an extraordinary opportunity for SMEs to strengthen their positions but is undoubtedly a considerable risk that needs to be managed in advance

(Havlíček & Břečková, 2015). Entry into foreign markets entails some specific risks arising from exchange rate changes and economic and political changes (Machková et al., 2014). The threats of transnational economic relations represent a relatively diverse group. Risk sharing and terminology in this area are not well established. The typology of export risks is abundant. For this analysis, the breakdown of risks according to the Association of Small and Medium-sized Enterprises (ASMEs) was used. The biggest problems for export enterprises are exchange rate risk, lack of qualified staff, rising costs, and also COVID-19 (ASMEs, 2021). Exports are also associated with additional costs, such as marketing, administration, and logistics. In addition, an enterprise faces a significant financial risk during its export activities, as receiving payments from abroad is more complex and time-consuming (Waisová, 2014). Therefore, financial risk management in SMEs is fundamental (Belas et al., 2020; Oláh et al., 2019; Písar & Bilková, 2019; Kozák & Danchuk, 2016). According to Oláh et al. (2019) and Bartram et al. (2015), there are many categories of financial risks, including liquidity risk, loan risk, credit risk, asset-backed risk, foreign investment risk, market risk, and operational risk. The international competitive environment and pressure from customers and stakeholders force enterprises to implement new systems and tools to eliminate risks. Businesses can use the internationally valid ISO 31000 standard for risk management. Like other ISO-type standards, it applies to any organization. Implementing a systematic and structured risk management process is essential – this risk management method results from using this standard (Lalonde & Boilar, 2012). ISO 31000 also includes five areas for a risk management framework: integration, design, implementation, evaluation, and improvement (Rampini et al., 2019).

Therefore, this study aims to map and analyze the development of SMEs' exports during the COVID-19 pandemic. Furthermore, it identifies the most significant export risks and their perception by SMEs.

Scientific questions (Q1, Q2, and Q3) were formulated and elaborated into hypotheses (null – H0 and alternative – H1).

Q1: Did the COVID-19 pandemic affect SME exports?

H1.0: 50 % of SMEs did not experience a significant export drop during the COVID-19 pandemic.

H1.1: More than 50 % of SMEs experienced a significant export drop during the COVID-19 pandemic.

Q2: Are SMEs certified by ISO 31000?

H2.0: 50 % of SMEs hold an ISO 31000 certificate.

H2.1: Less than 50 % of SMEs hold an ISO 31000 certificate.

Q3: Which export risk is most significant with a decline in SME exports?

H3.0: COVID-19 risk does not depend on SME exports decline.

H3.1: COVID-19 risk depends on SME exports decline.

H3.1.0: The risk of payment morale of foreign partners does not depend on SME exports decline.

H3.1.1: The risk of payment morale of foreign partners depends on SME exports decline.

2. METHODOLOGY

The primary research was focused on the analysis and acquisition of data from the field of SMEs in the Czech Republic. The classification of SMEs according to the European Commission was used for this analysis. The structured questionnaire was sent electronically through the Survio tool. The categorization criterion for the selection of enterprises was the processing industry. The data were collected in the period from December 2021 to January 2022. The contact directory was obtained through the Albertina Database. Questionnaires were sent to 423 enterprises; the research sample comprised 84 enterprises (return rate 19.8 %).

Table 1. Essential characteristics of surveyed enterprises

Variable	Stats/Values	Freq (% of Valid)	Valid	Missing
Length of Business	15-25 years	17 (20.2 %)	84 (100.0 %)	0 (0.0 %)
	5-15 years	4 (4.8 %)		
	More than 25 years	62 (73.8 %)		
	Less than 25 years	1 (1.2 %)		
ISO 9001 Certification	Yes	75 (85.3 %)	84 (100.0 %)	0 (0.0 %)
	No	9 (10.7 %)		
ISO 31000 Certification	Yes	17 (20.2 %)	84 (100.0 %)	0 (0.0 %)
	No	67 (79.8 %)		
Exports' Share in Turnover	25 %-50 %	16 (19.0 %)	84 (100.0 %)	0 (0.0 %)
	51 %-75 %	24 (28.6 %)		
	75 % +	34 (40.5 %)		
	Less than 25 %	10 (11.9 %)		

Basic descriptive statistics were used for the statistical processing of the data to show the main characteristics of the research sample. In addition, the Chi-square test, Cramer's coefficient, and exact binomial test were used to verify the statistical dependencies of research questions and hypotheses.

As part of a questionnaire survey focused on SMEs in the manufacturing industry, identification questions were created to categorize individual respondents. The frequencies of risks and their management were hypothesized to be related to the length of business, ISO 9001 certification, and ISO 31000 certification. Another criterion was exports' share in turnover. The essential characteristics of the surveyed enterprises are presented in Table 1.

3. RESULTS

Based on the analysis of statistical materials of the Czech Association of SMEs and available domestic and foreign professional resources, the most common risks related to export were defined. Furthermore, scales were determined for the frequency of occurrence of the mentioned risks.

Figure 1 shows the average value of the respondents' risk perception. A value of 1 represents a low-risk perception; a value of 2 is a medium-risk perception, and a value of 3 represents a high degree of risk perception. Figure 1 ranks the defined risks according to the frequency of occurrence. The risk with the highest frequency is understaffing. This fact is also evidenced by Deloitte (2022).

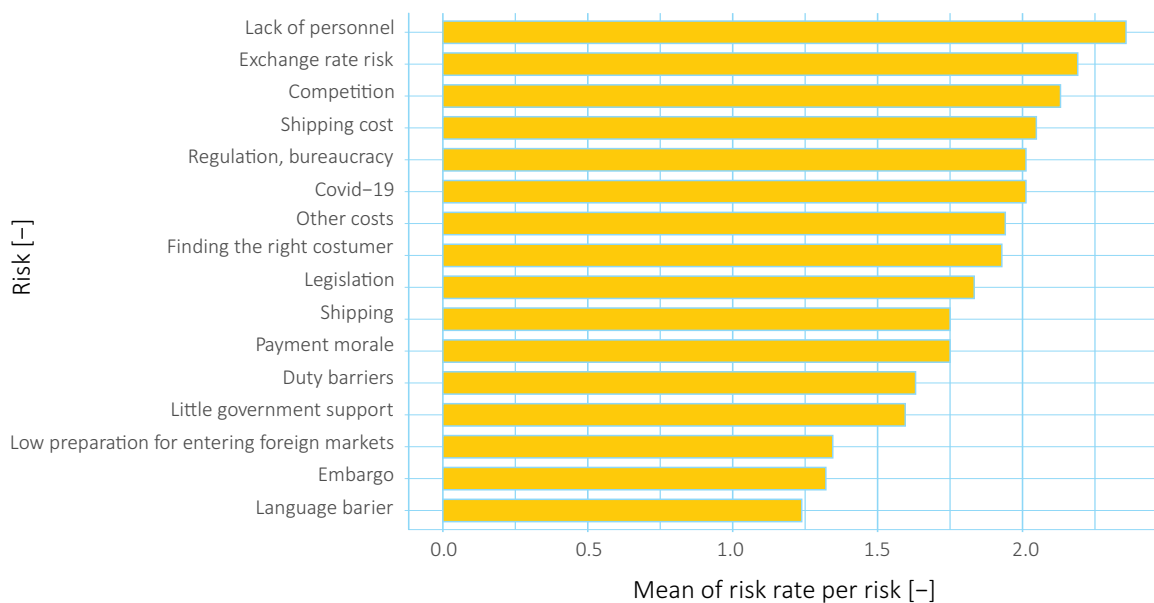


Figure 1. Average value of risk perception

The personnel risk in the form of a capacity crisis will continue to deepen. It will fundamentally influence the transformation and rationalization of production and non-production processes. The other significant risks associated with export are exchange rate risk, competition, and shipping cost. Next, the study statistically tested the dependencies of the examined variables.

3.1. Testing Q1

The exact binomial test was used to answer this question. The test results are $\text{prob}(44, N = 84) = 0.52, p > 0.05$. The findings did not show sufficient evidence to reject the null hypothesis of equality of proportions based on the test result. Further, it is assumed that a significant decline in exports was recorded by just 50% of enterprises.

3.2. Testing Q2

The exact binomial test was used to answer this question. The test results are $\text{prob}(17, N = 84) = 0.2, p < 0.01$. Based on the test result, the study found sufficient evidence to reject the null hypothesis of equality of proportions. Further, it is assumed that more enterprises may not be ISO 31000-certified.

3.3. Testing Q3

The relationship between the decline in exports during the COVID-19 pandemic and the oc-

currence of export risk frequencies was examined. The dependence was between the risks of COVID-19 and the payment morale of the foreign trading partner. The results of statistical tests are presented in Tables 2 and 3.

Based on statistical tests, the decline in exports could depend on the frequency of COVID-19 risk and payment morale. However, for the other risks listed in the questionnaire and the theoretical search, dependence was not confirmed and was abstracted.

The test result (Table 2) is $\chi^2(2, N = 84) = 16.8, p < 0.01$. The results show sufficient evidence to reject the null hypothesis. Further, it is assumed that there is a statistically significant dependence between the characteristics of the decline in exports and the frequency of occurrence of COVID-19 risk. The value of the strength of the dependence is $V(df = 2) = 0.45$, which indicates a medium dependence.

The test result (Table 3) is $\chi^2(2, N = 84) = 8.67, p < 0.01$. The findings found sufficient evidence to reject the null hypothesis. Further, it is assumed that there is a statistically significant dependence between the signs of a decrease in exports and the frequency of the occurrence of payment morale risk on the part of a foreign partner. The value of the force of dependence is $V(df = 2) = 0.32$, which indicates the mean dependence.

Table 2. COVID-19 risks and the decline in exports

Decrease turnout	Frequency of COVID-19 risk			Total
	Low	Middle	High	
Yes	8 (12.05; -1.17)	15 (19.38; -1)	21 (12.57; 2.38)	44
No	15 (10.95; 1.22)	22 (17.62; 1.04)	3 (11.43; -2.49)	40
Total	23	37	24	84

Note: $\chi^2 = 16.8$; $df = 2$; Cramer's $V = 0.45$; Fisher's $p = 0.001$.

Table 3. Payment morale and the decline in exports

Decrease turnout	Frequency of COVID-19 risk			Total
	Low	Middle	High	
Yes	15 (17.29; -0.55)	18 (20.43; -0.54)	11 (6.29; 1.88)	44
No	18 (15.71; 0.58)	21 (18.57; 0.56)	1 (5.71; -1.97)	40
Total	33	39	12	84

Note: $\chi^2 = 8.67$; $df = 2$; Cramer's $V = 0.32$; Fisher's $p = 0.0$.

4. DISCUSSION

The COVID-19 pandemic caused economic upheavals in all countries, significantly affecting both domestic and foreign trade. Empirically, the statistically significant impact of the COVID-19 pandemic on the decline in SMEs' exports was confirmed. Many studies are already clearly demonstrating the negative consequences of the COVID-19 pandemic on export volumes (Cengiz & Manga, 2022; Barbero et al., 2021; Minondo, 2021; Sun et al., 2021; Verschuur et al., 2021). Barbero et al. (2021) claimed that world trade volumes decreased by 21% between March and April 2020. Sun et al. (2021) determined the importance of measuring the impact of COVID-19 on international flows. In connection with the effectiveness of risk management, it was found that less than 50% of enterprises in the research sample are not ISO 31000-certified. According to Brustbauer (2016), based on Tavares et al. (2021), one of the possible ways to the success of SMEs is the perception of the whole range of risks related to business. Therefore, setting up a comprehensive approach to identifying, assessing, and monitoring risks is vital, facilitating their understanding and adaptation to the business environment. However, SMEs underestimate risk analysis and the implementation of risk management (Virglerová et al., 2020; Čepel et al., 2020) and need to adopt a risk management strategy and methodology (Oláh et al., 2019).

The attention of this analysis was focused on the perception of export risks by the addressed respondents. The portfolio of export risks was compiled according to ASMEs (2021) for the questionnaire survey. The study concluded that the most significant export risks confirmed by statistical testing were COVID-19 risks and payment morale of foreign trading partners. The research results are also confirmed by Mena et al. (2022), who analyzed the export risks related to foreign trade during the COVID-19 pandemic in more detail. The aforementioned risks can be successfully eliminated in advance by, for example, carefully selecting business partners. Implementing ISO 31000 also provides a prerequisite for accurately identifying and managing potential risks. The effectiveness of this standard in implementing risk management procedures and systems in an organization is also demonstrated (Dias et al., 2021; de Oliveira et al., 2017; Olechowski et al., 2016). The key priorities include the knowledge of the foreign business partner (customer), a precise and secure contract, securing payment of the purchase price, specification of the required product quality and methods of its control, or clear delivery terms and insurance. Hariharan (2021) and Machková et al. (2014) discussed the management of export-related risks. Insurance is the most effective and necessary tool for protection against risks when exporting to these markets (Hoke et al., 2019).

CONCLUSION

This investigation sought to map and analyze the export development of small and medium-sized enterprises during the COVID-19 pandemic. Small and medium-sized enterprises have a significant share in creating gross domestic product and employment within the Czech economy. On the other hand, they cannot face crises and risks as well as large enterprises, especially those from an international environment. Therefore, another goal was to identify the most significant export risks and their perception by SMEs. The secondary research objective was to demonstrate the impact of the ISO 31000 standard on export risk management in small and medium-sized enterprises. The ISO 31000 standard is one of the new tools for risk management and is applicable in both private and public sector organizations.

From the available professional studies, as well as the conducted research analysis, it follows that awareness of the effectiveness of this standard still needs to be improved. The results confirm that the pandemic significantly affected the decline in exports of small and medium-sized enterprises. At the same time, these types of businesses perceive COVID-19 as the most serious risk, along with payment morale. Among other things, it can be stated that implementing ISO 31000 needs to be improved in small and medium-sized enterprises. In the future, the priority of Czech small and

medium-sized enterprises should be to increase the certification of this standard, as foreign studies demonstrate the effectiveness of this standard in risk management. A limitation of this paper was that it focused only on the Czech Republic. Future research could be extended to compare results with neighboring countries, e.g., within V4.

AUTHOR CONTRIBUTIONS

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Data curation: Romana Heinzova, Eva Hoke, Tomas Urbanek.

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