10. Firm capabilities, export diversification, and crisis affectedness: A study of Polish exporters during the COVID-19 pandemic in 2020–2021[1]

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Abstract

Purpose: This chapter investigates the factors influencing a company's vulnerability to economic crises, particularly focusing on the role of firm capabilities and export diversification. In light of the unprecedented COVID-19 pandemic, the study explores how these variables interact to shape a company's resilience in the face of crisis.

Design/methodology/approach: This study utilises primary data collected from Polish exporters in 2022, allowing for a retrospective analysis of the COVID-19 pandemic's impact. Drawing on the resource-based view and firm internationalisation theories, the research formulates hypotheses concerning the relationships between firm capabilities (marketing and technological) and crisis affectedness, moderated by export diversification.

Findings: Both marketing and technological capabilities have a negative impact on a company's vulnerability to economic crises. However, this effect is more pronounced for companies with lower export diversification. In contrast, highly diversified exporters show reduced sensitivity to firm capabilities in mitigating crisis affectedness.

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Research limitations/implications: This study focuses on Polish exporters in a post-transition economy, which may differ from firms in other economic contexts. Additionally, the research explores a specific crisis, the COVID-19 pandemic, and its effects on export-oriented companies. Further research is needed to generalize these findings to other crises and regions.

Practical implications: The findings suggest that companies should invest in marketing and technological capabilities to enhance resilience during crises, especially if they have a limited international diversification strategy. Highly diversified exporters may need to balance their focus on capabilities with broader market approaches.

Originality and value: This research contributes to the understanding of how firm capabilities and export diversification interact to influence a company's vulnerability to economic crises, with practical implications for exporters navigating turbulent times in a globalized world. The study sheds light on the complexities of resilience-building strategies in post-transition economies and underlines the importance of adaptability in international business.

Keywords: firm capabilities, crisis affectedness, export diversification, exporting firms, COVID-19 pandemic.

Introduction

The importance of understanding how companies adapt their strategies to sudden changes in their surroundings has been emphasised by economic downturns (Cerrato et al., 2016; Gorynia & Trąpczyński, 2022d,e). As a result, the notion of resilience has gained attention among researchers (Calabrò et al., 2020; Fombella et al., 2022; Tsiapa & Batsiolas, 2019). Resilience is often described as an organization's ability to survive in the face of unexpected and unfavorable circumstances caused by major disruptions or a series of smaller ones (Linnenluecke, 2017; Linnenluecke & Griffiths, 2010). The COVID-19 pandemic has recently underscored the critical role of organizational resilience in times of crisis (Alves et al., 2020; Gorynia & Kuczewska, 2022; Rapaccini et al., 2020). It is important to note that COVID-19 had an unparalleled impact on both supply and demand in the global economy (Buckley, 2020). According to UNCTAD data, global GDP fell by 3.1% in 2020 compared to 2019. In 2021, global GDP rose by 6.1% year on year despite the second wave of the COVID-19 pandemic (UNCTAD, 2022, p. 5).

Although economic crises can have negative effects on a company's performance, some companies are able to increase their competitiveness even in unfavorable external conditions. The extent to which a crisis affects a company and its economic situation may depend on various factors, including the country of origin (Berrill & Kearney, 2011), the age of the company (Burlita et al., 2011), the industry sector (Vissak, 2011; Zelek & Maniak, 2011), the competitive strategy pursued (Latham & Braun, 2010), the size of the company (Burlita et al., 2011), the resources available (Türel et al., 2012), and the degree of internationalisation (Antonioli et al., 2011). The long-term success of international operations during a crisis may depend on factors such as cooperation with international partners (Vissak, 2011) or international experience (Figueira de Lemos & Hadjikhani, 2011), which often come with greater exposure to international operations. While several studies have examined the relationship between economic crises and company internationalisation (Massaro et al., 2017), little research has been done on how international diversification moderates a company's resilience (Gorynia & Trąpczyński, 2022b,c).

Accordingly, the aim of this chapter is to explore the antecedents of crisis affectedness, taking into account the interplay of firm capabilities with export diversification. We address this objective by using firm-level primary data collected in 2022 after two waves of the COVID-19 pandemic, which allowed the exporters under study to take a retrospective at the pandemic and its effects. More specifically, we conduct regression analyses with the PROCESS macro to investigate how the level of export diversification moderates the relationship between firm capabilities and crisis affectedness.

The remainder of the chapter is structured as follows. First, by drawing on the resource-based view and the theoretical foundations of firm internationalisation, a number of propositions are formulated. Further, the research design is described in detail, followed thereafter by a presentation of empirical results and their summary.

10.1. Theoretical overview and hypotheses

10.1.1. Firm capabilities and crisis affectedness

Firm capabilities, particularly unique managerial abilities, can transform financial and physical resources into competencies that are essential for a company's international competitiveness through organizational routines (Teece et al., 1997). Spanos and Lioukas (2011) and Ruiz-Ortega et al. (2013) focus on the technological and marketing capabilities involved in key stages of the value chain. Technological capabilities refer to a company's ability to perform any relevant technical or technological function, including the development of new products and processes that improve operational efficiency (Spanos & Lioukas, 2001). These capabilities include technological knowledge, trade secrets, know-how developed through R&D activities, and other specific technological intellectual capital (Dollinger, 1995). Marketing capabilities are directly related to gaining advantages in relationships between companies and their customers (Teece et al., 1997). Day (1994) defined marketing capabilities as the skills that enable a company to not only understand the behavior of the factors that determine its markets but also to operate more effectively within them.

We anticipate that marketing and technological capabilities will have a positive impact on a company's resilience in hostile environments. In fact, companies need key capabilities to survive in such conditions (Ruiz Ortega et al., 2013). In more hostile environments, companies with strong marketing capabilities are more likely to focus on developing their own markets and exploiting their existing customer base by trying to meet their needs and maintain their market share. In situations of high demand uncertainty, companies with strong marketing capabilities may devote them to developing new products and markets (Perez-Luno et al., 2011). In the context of exports, Yeoh and Jeong (1995) found that exporters who operate in hostile international environments and rely on their entrepreneurial capabilities tend to perform better than other companies. Since competitive advantages in hostile environments tend to be short-lived and predicting the future becomes more difficult, a more pronounced entrepreneurial approach can increase an exporter's sustainable success (Balabanis & Spyropoulou, 2017).

In a hostile environment, having technological capabilities can also enable a company to adapt to emerging opportunities. The key is the suitability of the company's technological capabilities to meet the challenges of the environment and take advantage of it (Ruiz-Ortega et al., 2013). Companies operating in challenging environments are more likely to use their technological capabilities to create new products than those operating in stable environments (Perez-Luno et al., 2011). In an unstable environment, companies with technological strengths can be more successful in dynamic environments by taking on the risks associated with generating and developing innovations and exploiting them in the market. As a result, companies will use their technological skills and knowledge to develop new products, enter new markets early, and take on higher levels of risk to cope with hostile environmental conditions.

In line with the above argumentation, as well as earlier evidence that capabilities positively interact with internationalisation on performance (Chiao et al., 2008), as well as the evidence that also comes from countries of the post-transition region of Central and Eastern European (Bekteshi, 2020; Ruzzier & Ruzzier, 2015), we argue that exporters with more pronounced marketing and technological capabilities will be better positioned to resist the economic crisis. Accordingly, we formulate the following hypothesis:

H1: Firm capabilities have a negative effect on exporter affectedness by the crisis.

10.1.2. The moderating role of export diversification

When examining the factors that influence how a crisis affects a company, it's important to take into account the company's level of international diversification (Vissak, 2011). The Uppsala model suggests that companies gradually expand their international presence in stages as they learn more about foreign markets and gain experience in international operations. Initially, companies may start with low-commitment entry modes, such as exporting to nearby countries, and eventually progress to high-commitment modes, such as establishing production facilities in more distant countries (Johanson & Vahlne, 1977). In a more recent version of the model, the authors recognise the complexities of modern internationalisation and introduce the concepts of liability of foreignness and liability of outsidership to account for the challenges and uncertainties that companies face when doing business abroad (Johanson & Vahlne, 2009).

In light of the updated Uppsala model, recent studies have shown that the relationships established by exporters prior to a crisis can play a significant role in their ability to withstand it (Fath et al., 2021). Evidence suggests that companies with more international experience and a greater degree of internationalisation may even see improved performance during an economic crisis due to the knowledge gained from foreign expansion and the ability to leverage their business contacts (Figueira de Lemos & Hadjikhani, 2011). The strategic position of a company's foreign ventures prior to a crisis can also be an important factor in supporting continued expansion during difficult times (Filippov & Kalotay, 2011). Additionally, having diversified operations across multiple countries can increase a parent company's flexibility and resilience during a crisis (Lee & Makhija, 2009).

Therefore, it can be expected that with increasing export diversification, the alleviating effect of firm capabilities on the affectedness by the crisis will be less pronounced. In fact, it can be argued that owing to a stronger international engagement, exporters will be able to compensate for external shocks to a larger extent by recurring to different sources of demand (Gorynia & Trąpczyński, 2022a,b,c). On the other hand, they may benefit from a more diversified sourcing and production base. Therefore, it can be expected that with greater involvement of companies in international activities, the ability to withstand and reduce the degree of impact of the crisis will be higher in the case of more internationalised companies.

Thus, we propose the following:

H2: The relationship in H1 is moderated by export diversification such that for higher export diversification it becomes weaker (less negative).

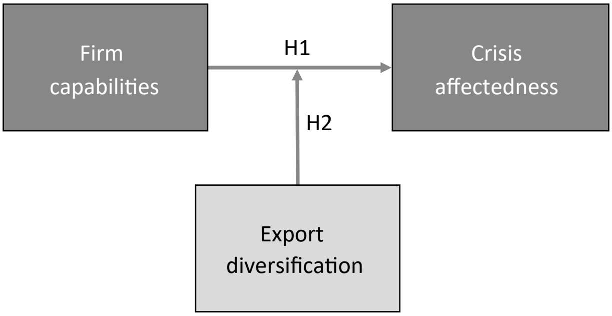

Figure 10.1. Analytical framework of the study
Source: own work.

The above research hypotheses are summarised in the conceptual framework shown in Figure 10.1.

10.2. Research methods

10.2.1. Data collection and sample

The sampling for the study was based on data on Polish exporters from the BISNODE database and embraced firms meeting inter alia the following criteria:

- majority-owned by Polish shareholders;
- active in manufacturing sectors;
- exporting to at least two countries and showing at least 10% of foreign sales to total sales (FSTS);
- employing at least ten people.

Based on the criteria, 358 randomly selected firms with an equal split of small, medium and large enterprises and low, mid and high-tech manufacturing were contacted by a professional market research agency. Primary data were gathered from computer assisted telephone interviews (CATI) with owners, top managers or sales or export-related managers of 120 firms, conducted between June and July 2022. This resulted in a response rate of 34%.

The study follows up on an earlier survey from 2020 by Gorynia and Trąpczyński (2022a), who explored some first descriptive statistics pertaining to the affectedness and responses to crisis by Polish exporters with diverse levels of internationalisation. The current sample characteristics are presented in Table 10.1. The

Table 10.1. Sample characteristics (*N* = 120)

Employment (as of 2021)	# firms	Manufacturing sectors	# firms
10–49 employees	41	Low–tech	40
50–249 employees	39	Mid–tech	40
50–249 employees	40	High–tech	40
#export markets		**FSTS (%)**	**# firms**
1–10	89	10–19	44
11–20	25	20–30	51
>21	6	>30	25

Source: own work.

respondents answered a number of questions on export strategy, business models and internationalisation performance, as well as a block of questions devoted to the COVID-19 pandemic, which is the focus of the present paper.

10.2.2. Variables operationalisation

With regard to the dependent variable, the affectedness by the crisis, according to some earlier studies on the effects of the economic crisis (e.g., Burlita et al., 2011; Gorynia & Kuczewska, 2022; Zelek & Maniak, 2011) the authors asked the respondents about the susceptibility of their company to the limitation or suspension of sales due to changes in regulations, supply disruptions, delays in payments by customers or business partners, increased employee concerns, difficulties in access to external financing (of operating activities, investment projects, etc.), increased costs of debt servicing and increased costs of supplies (Cronbach alpha of 0.91). The respondents were hereby asked to rate the related statements on a 7-point Likert scale, where 1: does not apply to our company; 7: largely concerns our company.

In order to measure our independent variable, firm capabilities we have referred to two types of capabilities, technological and marketing, as proposed by the Spanos and Lioukas (2001). Technological capabilities refer to the necessary technical and technological abilities/skills needed to transform inputs into products. We decided to include scales proposed by Spanos and Lioukas (2001) and used *inter alia* by Ruiz-Ortega et al. (2013) which includes seven items in terms of a firm's strength relative to competition. These items are linked to expenditure on research and development, modern equipment and devices, economies of scale, effective production department, patents held, technological knowledge possessed. Marketing capabilities refer to the output-based competences with regard to advantages in relationships with clients, customer base, control and access to distribution channels, market knowledge, motivated and well educated employees, and experienced management team (Ruiz-Ortega et al., 2013; Spanos & Lioukas, 2001). Respondents were asked to evaluate all items on 1-7 Likert scale, where 1 is definitely worse than the closest competitor, and 7 is definitely better than the closest competitor (Cronbach alpha value of 0.91).

As far as the moderating variable is concerned, export diversification was measured with the number of export markets served by the firm. Finally, in line with extant literature, a number of control variables were defined and integrated into the analysis in order to neutralize influences of economy-level, industry-level and firm-level components in the regression equations as these could distort the empirical findings. These comprised: firm size, firm age, technological intensity of the industry, length of international operations, as well as family ownership.

10.3. Results

In order to check whether the export diversification as a dichotomous variable (low level: $N = 58$; 48.3% vs. high level: $N = 62$; 51.7%) is a significant moderator of the relationship between firm capabilities and the affectedness by the crisis, a moderation analysis was performed using a macro PROCESS 3.4.1. The following variables were controlled: the technological intensity of the sector, the status of the family business, the size of the company, years of operation on the international market and the age of the company. Table 10.2 shows the results of this analysis.

The moderation model was found to fit the data well: F (9, 107) = 11.50; $p < 0.001$. This model explains 38% of the variance of the crisis affectedness ($R^2 = 0.377$). Adding the interaction of firm capabilities and the export diversification contributed to a significant increase in the explained variance by 2% ($\Delta R^2 = 0.024$): F (1, 107) = 4.06; $p = 0.047$.

Conditional effects showed that there is a negative relationship between firm capabilities at a low level of export diversification. At a low level of export diversification, with an increase in firm capabilities by one unit, the level of crisis affectedness will be reduced by 0.39 units. In the case of a high level of export diversification, there is no relationship between firm capabilities and the crisis affectedness (see Table 10.3 and Figure 10.2). Therefore, both hypotheses were supported.

Table 10.2. Regression results ($N = 120$)

	b	*SE*	*t*	*p*	95% *CI*	
					LL	*UL*
Constant	45.76	6.23	7.45	<0.001	33.42	58.11
Firm capabilities	–0.86	0.39	–2.18	0.032	–1.64	–0.08
Export diversification	–5.67	2.00	–2.83	0.006	–9.64	–1.70
Firm capabilities × Export diversification	0.47	0.23	2.01	0.047	0.01	0.93
Medium technology	–0.22	1.80	–0.12	0.903	–3.79	3.35
High tech	–0.57	1.67	–0.34	0.734	–3.89	2.75
Family company	–3.73	2.89	–1.29	0.199	–9.46	1.99
Company size (lg10)	–5.06	2.35	–2.15	0.034	–9.72	–0.40
Years of activity on the international market	–0.03	0.11	–0.27	0.790	–0.25	0.19
Company age	0.12	0.08	1.50	0.137	–0.04	0.27

Source: own work.

Table 10.3. Contingent effects for the moderation of export diversification

	b	*SE*	*t*	*p*	95% *CI*	
					LL	*UL*
Low level of export diversification	–0.39	0.19	–2.03	0.045	–0.78	–0.01
High level of export diversification	0.08	0.17	0.45	0.651	–0.25	0.40

Source: own work.

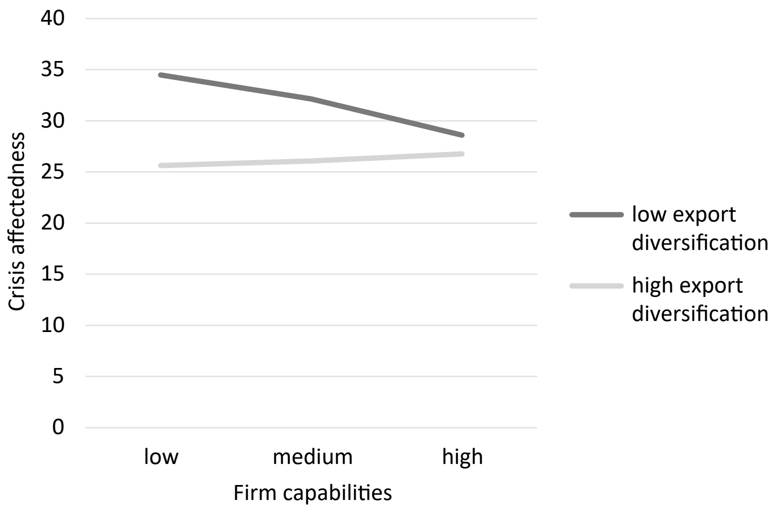

Figure 10.2. Visualisation of the moderating effect
Source: own work.

Conclusions

The COVID-19 pandemic crisis emerged during a period when the accomplishments of globalization in the previous decade were being scrutinised by some academics and national identities were becoming more prominent than ever. Notably, the pandemic exposed vulnerabilities in global value chains and thus the limitations of globalization. However, restricting global economic connections would also reduce the ability of the global economy to address global challenges, including the pandemic.

At the microeconomic level, our preliminary study presents a series of statistical analyses that show that firm capabilities can aid in building resilience during times of crisis, in line with some earlier evidence (Balabanis & Spyropoulou, 2017; Perez-Luno et al., 2011). However, this factor is less significant for more diversified exporters who can take advantage of market differences to maintain or enhance their competitive position. Our findings resonate with some earlier showing that international diversification can offset the effects of an economic crisis (Figueira de Lemos & Hadjikhani, 2011; Filippov & Kalotay, 2011). On the other hand, our findings can be contrasted with the notion that capabilities positively interact with internationalisation on performance (Chiao et al., 2008), as we find a kind of "substitution" effect of international diversification which offsets the crisis affectedness, making firm capabilities less relevant in the case of more intensive exporters. This learning is also important to note for managers in exporting firms, particularly during times of international turbulence, first amplified by the COVID-19 pandemic, and subsequently reinforced by the war in Ukraine and calling firms to revisit their international strategy even further.

It should be noted that the empirical analysis presented in this chapter pertains to firms from a post-transition economy. As a result, these firms may have different characteristics and behaviors than typical firms from emerging markets or developed economies. Due to their limited scale of operations, limited experience in international markets, and low levels of intangible assets compared to their counterparts in more developed countries, firms from post-transition economies provide a valuable context for studying the relationships discussed in this chapter, as they focus on markets with different levels of economic and institutional development in their export activities. Our finding that export diversification may help firms, regardless of the possessed capabilities, in sustaining international economic crises, is a useful indication for managers and policy makers alike.

The present study presents a rather simplistic view of international diversification, measuring it with the number of export markets. Future research should look into the structure of export market portfolios in order to investigate whether an expansion focused on more or less developed countries will have similar resilience effects for exporters.

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