




The Impact of External Pressure on Companies' Responses to Sanctions – an International Comparative Study

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Abstract

What explains the strategies firms adopt in response to economic sanctions? Our study argues that different types of external pressure, such as public shaming, the nature of companies' business relationships, and national-level legal-regulatory environments affects how firms respond to the sanctions imposed against Russia after its 2022 invasion of Ukraine. We develop a suite of hypotheses about how external pressure affects firms' compliance behaviors and whether firms adopt reactive and/or proactive strategic responses. We test our hypotheses by analyzing results from a survey of 610 medium-sized companies operating in Germany, Poland, and the United States. Using structural equation modeling (SEM), we find that external pressure is associated with higher levels of compliance and overcompliance with sanctions but is also associated with undercompliant behavior. We also find that compliance with sanctions is associated with a high degree of proactive response, which suggests compliant firms may often seek out legal means of circumventing sanctions. We further observed variation in the effects of external pressure, compliance behavior, and strategic responses on US firms compared to those in European Union members Germany and Poland.

Keywords Economic sanctions · Russia · Firms · Survey · Sanctions busting · Compliance · Overcompliance · Undercompliance

Introduction

Economic sanctions create a mixed set of risks and rewards that alter the business environment for firms to which they can respond either reactively or proactively. Risk-acceptant companies may seek to exploit legal loopholes that allow them to circumvent sanctions

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or engage in deliberate sanctions-busting activities that violate sanctions requirements (Andreas, 2005; Early, 2015). Some firms though may respond cautiously to the risks created by sanctions and limit their business activities with a target state more than sanctions may require (Breen, 2021). In the case of the Western sanctions against Russia following its 2022 full-scale invasion of Ukraine, both behaviors have been observed. For example, a team at Yale School of Management tracked the public announcements of over 1,000 firms that voluntarily committed to cutting back on or ceasing their business relationships involving Russia (Sonnenfeld et al., 2022). At the same time, Russia has formed active sanctions-busting relationships with firms operating in the United Arab Emirates, Turkey, Kazakhstan, and Georgia (Fleming & Mosolova, 2023). What explains firms' adoption of different approaches towards sanctions? What explains whether firms pursue reactive versus proactive adjustment strategies?

This study focuses on corporate responses to the economic sanctions imposed on Russia with the goal of uncovering general insights about why firms respond differently to sanctions. We explore the nature of these corporate responses by studying whether a firm engages in undercompliance, compliance, or overcompliance and whether firms adopt adjustment strategies that incorporate reactive versus proactive behaviors. Undercompliance occurs when firms do not fulfill their obligations to adhere to sanctions requirements, while overcompliance occurs when firms go beyond sanctions regulations by cutting off business relationships with sanctioned or sanctions-exposed parties. Reactive business strategies involve responding to crises as they occur and limiting the costs they inflict, whereas proactive strategies involve anticipating future threats and disruptions and planning how to capitalize on them. Within the context of sanctions, reactive business strategies respond to sanctions by seeking to wind-down sanctions affected businesses and limit exposure to the risks and costs sanctions impose. In contrast, proactive strategies involve identifying and pursuing activities that benefit from the changes and opportunities sanctions create.

Our study investigates how firms' approaches toward complying with sanctions are connected to strategies for surviving and/or thriving in the new business environments they create. Our arguments draw on the literature on sanctions busting (Early, 2015), overcompliance (Batmanghelidj & Moret, 2022; Breen, 2021; Early & Preble, 2020), and how firms adjust to sanctions and other types of crises (Crozet et al., 2021; Lastauskas et al. 2023; Weber & Stępień, 2020). Existing work on overcompliance or de-risking has largely focused on the humanitarian *effects* of overcompliance (Moret, 2015) as targeted sanctions de facto become comprehensive (Portela, 2016). While these studies have highlighted negative externalities generated by firms' de-risking practices, systematic research on what *causes* companies to overcomply is lacking (for exceptions, see Breen, 2021; Giumelli & Onderco, 2021; Early & Peterson, 2023). Similarly, a dearth of research exists on how sanctions affect firms' overarching business strategies.

We focus on how legal enforcement and civic and business partners' pressures – what we term external pressure – affect how companies respond to sanctions. We examine the perceptions of external pressure across companies in the United States and two members of the European Union (EU), Germany and Poland. These cases constitute two of the states with the largest economies involved in sanctioning Russia (the US and Germany) and a front-line state whose sanctions circumventing trade with Russia should typically be greater due to a shared border with Kaliningrad. US investments in sanctions implementation and enforcement are also significantly greater than those in the EU states, which could have a moderating effect on how external pressure influences firm's compliance with sanctions. Lastly, the *type* of customers served by firms – consumers (B2C) or other businesses

(B2B) – may also moderate the strength and nature of the relationship between external pressure and companies' responses to sanctions.

We employ a structural equation model (SEM) to analyze the relationship between external pressure, sanctions compliance behaviors, and the strategic responses of 610 medium-sized companies operating in the agricultural, manufacturing, wholesale/retail trade, and transportation/storage sectors. For each of the countries included in our study – the United States, Germany, and Poland – approximately 200 companies were surveyed in April 2023 by international polling agencies using the CAWI method with an e-questionnaire. Our main SEM analysis draws on data from all three countries. We conduct extensions to our main analysis using simple regressions and split-sample analyses that allow us to explore the potential moderating effects of enforcement environments and primary client-type.

Our analyses indicate that higher levels of external pressure are associated with compliance or overcompliance behaviors as well as undercompliant behavior. The relationships we observe between sanctions compliance behaviors and strategic responses were more nuanced. Undercompliant firms are more proactive in seeking out new business opportunities in response to sanctions. We also found that firms that reported themselves to be compliant with sanctions also indicated that they had adopted very proactive response strategies to the sanctions against Russia. We interpreted the latter to suggest that such companies were proactively seeking out legal means of circumventing sanctions even as they complied with the “letter of law” in their home countries. Our exploratory analyses also indicated that, while a firm's primary client type did not appear to have a significant moderating effect on the relationships between external pressure, sanctions compliance and strategic responses, the respective firm's location did have a moderating effect. Lastly, we found that the compliance behaviors of EU firms and their strategic responses were more strongly affected by sanctions than those of US firms.

The rest of the paper is structured as follows. In the next section, we introduce our theoretical construct – external pressure – based on a discussion of existing work on the impact of government enforcement, public opinion, and stakeholder pressure on firms' actions when facing sanctions. We then proceed to introduce the analytical framework for our paper and provide a breakdown of the hypotheses. The remaining three sections present the methodology, a discussion of the results, and a conclusion that discusses the implication of the results.

Firm-Level Perspectives on Economic Sanctions

Companies exist to maximize their value in the long run via suitable strategies that make use of internal resources and external relations to ensure a long-term competitive advantage on the market (Barney, 1991; Godfrey & Hill, 1995). When sanctions are introduced, the external environment suddenly changes. For firms, sanctions are disruptive and costly; furthermore, difficult-to-implement regulatory policies adversely impact their bottom line (Morgan & Bapat, 2003: 66). Firms in target states have strong incentives to find ways of cost-effectively adapting to the disruption sanctions inflict. Companies bear the costs of sanctions in two ways. The first is the present and future costs of complying with sanctions, while the second is the severity of the costs incurred because of the avoidance of sanctions (Morgan & Bapat, 2003; Weber & Stępień, 2020).

Depending on how companies assess the costs and consequences of sanctions on their performance, they strategically react. Existing work has highlighted different responses. Some firms seek to maintain a low profile or identify new business partners to replace the commercial relationships disrupted by sanctions whereas others attempt to find alternative ways of continuing existing partnerships that circumvent or even violate sanctions restrictions (Barry & Kleinberg, 2015; Early, 2015; Lektzian & Biglaiser, 2013; Meyer & Thein, 2014). These responses entail risks, however, as firms can be punished by governments for violating sanctions (Early & Preble, 2020). Following Weber and Stepien (2020), two types of responses occur: *compliance* and *undercompliance*. Also, some companies engage in “an individual conduct or corporate process that adopts a stricter stance [than ‘compliance’] and goes beyond what is explicitly required to comply with the applicable laws and regulations,” also referred to as *overcompliance* (Breen, 2021: 256). Thus, the response by firms to economic sanctions varies, ranging from undercompliance to compliance and overcompliance. While each response is a distinct behavior with varying motivations, companies may engage in a combination of these different strategies. For example, medium-sized companies in European countries both challenged *and* complied with sanctions imposed on Russia after its annexation of Crimea (Weber & Stepien, 2020).

The strategic response to sanctions is a derivative of the impact that sanctions have on a company’s development and its strategic options for compensating losses with alternative business opportunities. While we know that sanctions generate costs for companies and carry risks, sanctions also represent opportunities for growth; however, it is still unclear what influences the outcome of such cost–benefit calculations in companies and what response strategies it may generate.

External Pressure and its Impact on Companies’ Responses

To understand firms’ strategic response to sanctions, we develop a compound construct, which we term *external pressure*. This measure of external pressure consists of three components:

1. a formal apparatus for creating and enforcing sanctions laws and regulations (North, 1990; Scott, 2014);
2. an informal system of public pressure for certain types of behavior, manifesting convictions grounded and operating in a society (Donaldson & Preston, 1995; Kostova et al., 2008);
3. the impact of stakeholders on a firms’ attitudes towards sanctions compliance and consecutive strategic responses (DiMaggio & Powell, 1983; Weber & Stepien, 2020).

Existing research suggests that firms’ responses to sanctions is likely to be influenced by these different dimensions of external pressure.

Legal Pressure

Emerging research argues that overcompliance is more likely in some regulatory environments rather than in others, with such environments being determined by the quality of instructions provided by state authorities and their capacity to monitor the implementation

of such decisions (Giumelli, 2017). Since sanctions enforcement limits the ability of firms to engage in economic transactions with target states, imposing them undercuts the competitiveness of domestic companies when foreign competitors are willing to take the risk of violating economic sanctions (Bapat & Kwon, 2015). Such competition may emerge as third-party states' firms engage in sanctions busting, effectively undermining the coercive potential of economic sanctions to achieve their goals (Early, 2015; McLean & Whang, 2010).

Firms are also wary of being targeted and fined by sanctions regulators, yet the ability and practice of enforcing sanctions regulations varies both across active Western sanctions senders, the US and EU and among EU member states. The United States has one of the most extensive and wide-reaching programs for sanctions enforcement that encompasses both civil and criminal penalties. After the US Office of Foreign Assets Control (OFAC) acquired more robust enforcement powers in 2008–2009, it began imposing fines upon sanctions violators that totaled tens and even hundreds of millions of dollars (Early & Preble, 2020). Its enforcement of sanctions has been effective at promoting compliance with US sanctions. OFAC's aggressive approach encourages firms to voluntarily self-disclose violations and cooperate with OFAC investigations to benefit from the lower penalties OFAC imposes (Early & Preble, 2020). Significant fines imposed as part of OFAC sanctions enforcement actions have also been shown to discourage trade with the targets of US sanctions (Early & Peterson, 2022).

With EU sanctions, member states are responsible for their implementation and for identifying breaches and imposing penalties. In 2022, the European Commission created a whistleblower tool to help regulators identify sanctions violators with the aim to facilitate investigations in member states (European Commission, 2022). Yet, the implementation and enforcement of the EU's co-called restrictive measures still lags. One potential reason is that the imposition of fines in the case of sanctions violations is still not a common practice (European Council, 2022). Furthermore, the EU's rapidly changing sanctions legislation presents a pronounced challenge for firms with limited capabilities for monitoring in the absence of a central agency such as OFAC. The EU adopted no less than 13 sanctions packages thus far in response to Russia's invasion of Ukraine, which is a burden not only for small and medium-sized companies to keep track of, but also for many EU governments struggling to keep abreast of monitoring and enforcing frequently changing obligations. Not all EU members keep up as effectively (Jakab & Kochenov, 2017).

These layers of economic sanctions regulations and enforcement play a role in firm activity. First, they may increase the benefits of capitalizing on opportunities created when sanctions are imposed and the potential costs when violations are detected. Second, they may also raise the costs of adjustment to the new environment. However, we still lack in-depth cross-national research on how diverse regulatory environments shape a firm's response to sanctions.

Public Pressure

Governments respond to the public pressure to “do something” about other countries' severe violations of human rights or international law by imposing sanctions – especially if the wrongdoing is highly visible (Von Soest & Wahman, 2015). In the case of Russia's war against Ukraine, which has dominated news since February 2022, public attention has forced governments and private actors to respond, particularly since criticism of firms that initially remained in Russia was widespread (Sonnenfeld et al., 2022). Such “public

shaming” has the potential to influence a firm’s responses to the sanctions (Giumelli & Onderco, 2021).

For some firms, corporate brands represent valuable assets that they work hard to protect. Engaging in business with sanctioned states or being caught violating sanctions can damage a firm’s brand. Gowin et al. (2021) find that the stock values of firms punished for violating sanctions were lower after the disclosures took place relative to other companies. Similarly, a survey demonstrated the critical role of compliance as a first line of defense to protecting companies’ reputations and profits (Nasdaq & Greenwich Associates, 2019, 2021). As a result, firms may be willing to accept near term losses to protect their brands and the longer-term profits they provide.

US fast food chain McDonalds, for example, caved to public pressure and began ‘de-archiving’ its restaurants in Russia, noting how “ownership of the business in Russia is no longer tenable, nor is it consistent with McDonald’s *values*” (Chappell, 2022; emphasis added). Public pressure constitutes a potent force that can compel firms to take steep losses, especially when faced with the possibility of boycotts. In the case of the French firm Decathlon, protesters held photos of Ukrainian victims from the war outside Decathlon stores in response to its initial decision to remain in Russia (Morton, 2022; Vidalon, 2022), forcing it to backtrack.

Public naming and shaming can exert significant pressure on firms to comply with sanctions or go beyond existing regulations by voluntarily ceasing business activities in target states. Most existing research and case evidence has tended to focus on how multinational companies and well-known brands are subject to public demands to withdraw and disinvest. There is also generally less academic literature on how small or medium-sized companies have been impacted by economic sanctions.

Business Partners’ Pressure

While sanctions research has tended to focus on how states—and to a lesser extent—the public affect a firm’s responses to sanctions, the business literature serves as a powerful reminder that a firm’s stakeholders shape how firms strategically react to disruptions of their business environment.

The concept of stakeholders broadly refers to any group or individual influencing or influenced by the respective company’s objectives and strategy. These can be co-operating businesses, clients or customers, workers, neighboring public and private organizations or individuals living close to the companies’ premises (Freeman et al., 2010; Friedman & Miles, 2006). Yet, this paper more narrowly focuses on one sub-group of stakeholders: a firm’s business partners for two reasons. First, public pressure that customers or citizens articulate is analytically distinguished from the pressure that business partners exert. Second, we consider a company’s workforce, which constitutes another group of stakeholders, an internal factor influencing firms’ strategic responses rather than being a component of external pressure.

Stakeholders are linked to the company’s goals, strategy, and performance as their livelihood and development – to some extent – depend on its operation. The more a company depends upon a stakeholder’s status and performance, the greater the pressure that company is under to act in a way that protects its stakeholder’s interests (Spitzeck & Hansen, 2010). However, perceptions of dependence can differ. Stakeholders of a company operating in an area where there are no alternative business options will exert more pressure on the company compared to a situation with several alternatives.

Therefore, the strength of stakeholders' influence on the company is proportional to the dependence of their fate on the company's operations and development. However, it is worth bearing in mind that the company's response does not always take full account of stakeholder pressure (Plouffe et al., 2016; Post et al., 2002). In a sanctioning situation, stakeholders will prefer a strategic response that protects their own interests but may be at odds with the survival and protection of the interests of the main contracting company. In such a context, Mitchell and Singh (1996) show that cooperation between firms may have conflicting effects on their business and chances of survival.

Companies benefit from cooperation with other firms but at the same time face the risk of increasing dependence on said business partners. This research shows that business partners as one important sub-group of stakeholders exert significant pressure on firms, especially when crises disrupt the overall business environment. But how sanctions as a major source of disruption affect business partners' pressure on firms dealing with sanctions needs further research.

Types of Strategic Responses

Sanctions disrupt the way companies operate. To understand firms' different types of strategic responses, we draw on work examining general coping strategies of companies that face institutional change. According to Oliver (1991), firms respond with one of the following actions: acceptance, compromise, avoidance, defiance, or manipulation. Regarding firms dealing specifically with sanctions, Meyer and Thein (2014) identified three types of responses: disengagement, business-as-usual, and low-profile strategies.

Stepień and Weber (2019) build on this research and found several proactive and passive strategic responses by companies to economic sanctions. Proactive adjustment involves activities such as finding new markets, relocation of operations to non-sanctioned countries or increasing investment in sanctioned markets or shifting more operations to sanctioned markets. It encompasses the whole spectrum of behaviors leading firms to comply, undercomply, and overcomply with sanctions. Reactive adjustment takes the form of cost reduction or business activity withdrawal. It can consist of leaving the sanctioned market, reducing operations, selling assets, stopping investments, withdrawing from investments, reducing staff in the sanctioned market, or using financial reserves to survive the sanction period while exercising the "low profile" strategy sketched out by Meyer and Thein (2014).

Research on survival strategies by medium-sized companies during external crises reveals the use of both reactive and proactive strategic responses. Companies tend to employ mixed adaptation strategies involving a combination of activities that reduce the scope of its business, activities that maintain the status quo, as well as activities aimed exploring new opportunities, including far-reaching innovations that permanently change their business models (Gittins et al., 2022; Kraus et al., 2020; Wenzel et al., 2021). A Polish manufacturer dealing with sanctions against Russia may choose to wind down its business relations in Russia and may simultaneously decide to invest in new business opportunities in Turkey. Eggers' (2020) meta-analysis of 68 studies on the behavior of small and medium-sized companies during various types of crises finds that successful survival strategies are of a proactive nature with a strong emphasis on market and entrepreneurial orientation.

This raises the question of how corporate survival strategies vis-à-vis sanctions will affect a firm's behavior in target states. Huynh et al. (2022) note how firms in target states are impacted by sanctions due to the increased cost of capital and the additional political

risks, although they note that firms more closely tied to the Russian government and/or oligarchs were less affected than other firms. Survival strategies may also vary across sectors (Huynh et al., 2022). While the impact of a firm's strategic responses on export or import volumes is beyond the scope of our study, existing work on the sanctions imposed against Russia since 2014 over its annexation of Crimea provides important insights. Firm level data for Germany (Görg et al., 2023) shows that these sanctions had a significant negative effect on extensive and intensive margin of German exports (for a similar pattern regarding Dutch firms, see Kohl et al., 2023). While these effects were strongest for firms with exports directly subject to sanctions, there are also indirect effects (Krozet and Hinz 2020).

Trade linkages may also matter. Ngo et al. (2022, 570) note that trade linkages play a role. It could be that less public support for sanctions is found in economies highly dependent on trade with Russia. This nexus between consumer sentiment and policy preferences may have an impact on political and policy decisions by governments as well as commercial and business decisions by firms. However, firms are likely to bear significant costs in remaining economically engaged with Russia. The post-2022 sanctions have demonstrated that companies remaining in the Russian market generally underperformed the leaving firms and also faced higher selling pressures (Tosun & Eshraghi, 2022).

Analytical Framework

Our research seeks to examine the impact of external pressure on companies' level of compliance with sanctions and the strategic responses in which the respective company engages. As research on sanctions that puts companies' behavior center stage remains scarce (Bapat et al., 2020), we have opted for a broad analytical framework that incorporates a variety of factors potentially shaping a firm's responses to sanctions in this analysis.

In this section, we introduce the analytical framework (Fig. 1) that links these actions and briefly describe each of our constructs:

1. External pressure is used as an umbrella term to describe legal, public and business partners' pressure. External pressure is presented here as a force that affects the adaptive behavior of companies when the rules of the game suddenly change because of sanctions. In such a situation, external pressure pushes firms to react to the imposition of economic sanctions, which results in strategic responses by firms (see #3).
2. Compliance level functions as an aggregate construct divided into three sub-constructs differing in the scale of adjustment to sanctions: from avoidance and circumvention of sanctions ("undercompliance"); to full adjustment ("compliance"), and voluntary restriction of activities on the Russian market that go beyond existing regulations ("overcompliance").
3. Strategic response is a compound construct divided into two adjustment strategies: reactive and proactive. *Proactive* adjustment strategies include relocating activities to non-conflict countries, re-exporting/re-importing to/from Russia or Belarus through new, third countries, establishing new export/import markets outside Russia/Belarus, and/or establishing new supply/sub-contracting chain links outside Russia/Belarus. *Reactive* adjustment strategies focus on winding down or refraining from production/distribution/purchase/sale activities in Russia/Belarus, selling off infrastructure there, withdrawing or freezing investments in Russia/Belarus, and/or cutting or reducing labor costs.

Analytical Framework

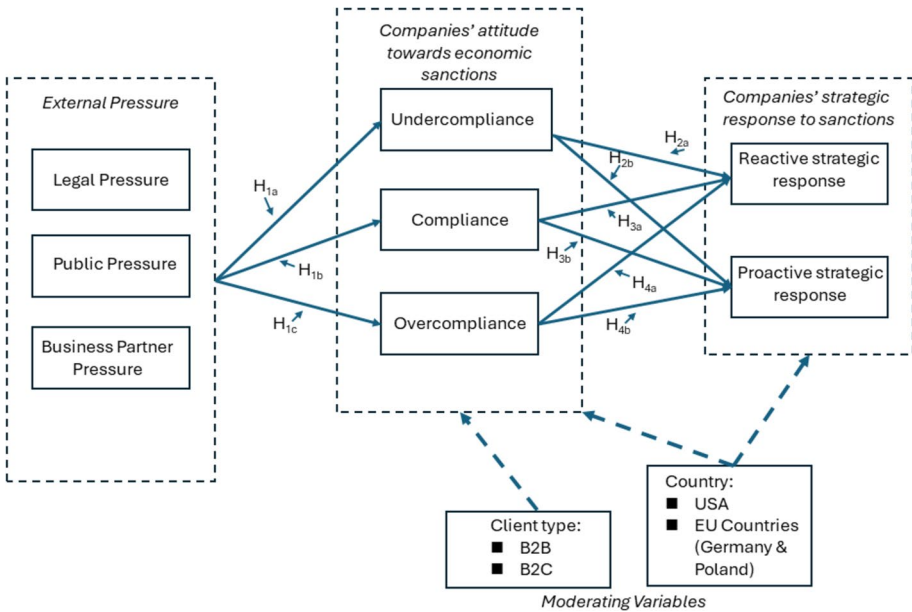


Fig. 1 Analytical framework

Based on this framework, the next section provides a series of testable implications for how external pressure – mediated by the companies’ locations and the sector in which they operate – can influence whether firms undercomply, comply, or overcomply with the economic sanctions against Russia.

In response to Russia’s full-scale invasion of Ukraine, the West imposed a broad set of sanctions against Russia. These measures were not only adopted quickly, but they were also accompanied by a vocal condemnation of Russia’s illegal war of aggression against Ukraine. Policymakers focused on determining sanctions that would legally obligate firms to disrupt their business with Russia and increasingly also invested in the enforcement of these measures. Policymakers achieved these goals by issuing compliance notes (in the case of the US Departments of Justice, Commerce and Treasury) or sanctions packages specifically aimed at implementation and enforcement (in the case of the EU), thereby creating legal pressure to comply.

Concurrently, the media, NGOs, and activists turned the spotlight on companies that had ongoing business ties with Russia. Reflecting the outrage over the invasion and Russian atrocities, public pressure pushed firms to suspend or cease those relations in Russia. Efforts were made to track firms committed to giving up business interests in Russia versus maintaining those activities (Sonnenfeld et al., 2022). Some firms that refused to divest themselves of their Russian business relationships were subjected to shaming and threats of boycotts.

This pressure to suspend or cease business activities was exerted not only by the public and customers but also by business partners. As firms chose to suspend or cease their economic activities in Russia, some required business partners to also disinvest

and withdraw from the Russian market. We expect that these different types of external pressure played a significant role in firms' strategic response to sanctions.

Hypothesis₁: External pressure leads to both compliance (H_{1b}) and overcompliance (H_{1c}) but is negatively related to undercompliance (H_{1a}).

Firms respond to this external pressure by adjusting their business strategies. While large businesses, such as major banks, can anticipate sanctions before they are imposed,¹ medium-sized companies often lack such information and capacity to foresee or influence sanctions policies against states in which they operate. Their compliance strategies usually focus on reacting to sanctions regulations imposed on them. Firms that responded by overcomplying with the requirements of their governments' sanctions should adopt reactive responses than proactive ones. In contrast, it has been shown that sanctions evasion (undercompliance) requires a variety of innovative strategies (Early, 2015; Grauvogel, 2015) that may force companies to adjust their business relations proactively.

1. Hypothesis₂: Undercompliance is correlated more with proactive than reactive strategic responses.
2. Hypothesis₃: Compliance is correlated more with reactive than proactive strategic responses.
3. Hypothesis₄: Overcompliance is correlated more with reactive than proactive responses.

Methodology

Following Weber and Stępień (2020), we focus on medium-sized enterprises. While multinational companies are better positioned to anticipate—and potentially even shape—sanctions policies, medium-sized enterprises possess fewer capacities and resources to monitor sanctions or predict changes in sanctions regulations. Therefore, medium-sized enterprises are more likely to combine reactive and proactive responses to sanctions.

We designed our study to identify the impact of external pressure on the attitude of companies toward sanctions compliance in relation to their business activities with firms in both Russia and Belarus along with the relationship of this attitude to firms' strategic response. We assume that there exists a significant moderating effect on the indicated dependencies of the country of operation and the type of market served by companies. We employ structural equation modeling (SEM) to create several latent factors – legal pressure, public pressure and stakeholder pressure along with reactive and proactive strategic responses – from a survey questionnaire developed and deployed in Germany, Poland, and the United States. We then utilize these latent factors to understand whether medium-sized firms in our sample undercomply, comply, and/or overcomply with the economic sanctions against Russia and Belarus.

¹ Author's interview with a large German bank, 7 May 2021.

Sample Description and Data Gathering

Medium-sized companies directly or indirectly impacted by economic sanctions on Russia and Belarus serve as the unit of analysis. These medium-sized companies have 50 to 250 employees and were surveyed in Germany, Poland, and the United States.

We focus on these three countries for two main reasons. First, existing work on sanctions enforcement and circumvention (inter alia Giumelli & Onderco, 2021; Weber & Stepień, 2020) suggests that the regulatory environment influences firms' responses to sanctions. More specifically, sanctions enforcement in the US is more developed and centralized compared to the EU (Olsen & Kjeldsen, 2022). Therefore, we opted to survey firms in the US and (two) EU member states. The US is the most active sanctions sender in the world, characterized by the most effective enforcement of sanctions regulations—both at home and abroad. As in Germany, a large majority of the public is in favor of existing sanctions against the Putin regime and even supports tougher measures. Moreover, we also chose two European countries with varying degrees of sanctions enforcement: Poland, which did not have specific procedures for enforcement of sanctions or penalties for sanctions violations until recently (Jaskiewicz, 2023) and Germany, where the enforcement of EU sanctions against Russia appears to be taken seriously when compared to other EU member states (Thoms et al., 2023). Moreover, public support for sanctions in Germany has been consistently high since the beginning of Russia's war of aggression against Ukraine (Statista, 2022).

Second, the three countries are characterized by different degrees of trade linkages with the target of sanctions, Russia.² Compared to the US, both EU countries in our study, Germany and Poland, have greater trade and financial ties to Russia (Stefanov et al., 2023) that makes decoupling from Russia more difficult. Germany is politically and economically engaged with Russia as an important trade partner which has supplied Germany with gas and fuel prior to the war, and Russia is a place where Germany has substantially invested (Karnitschnig & Nöstlinger, 2022). Poland, as a neighbor of both Ukraine and Russia, has been severely affected by the war. Poland is known for its dependence on Russian gas supplies for energy (Szeptycki, 2021) and its historical oscillation between amity and enmity with Russia (Ozbay & Bulent, 2008). Moreover, research has shown that a country's position in the global trade network determines the effects of sanctions as a state's vulnerability and leverage play an important role in determining those effects (Peterson, 2020). Accordingly, we included both large economies with considerable leverage (US and Germany) and a smaller and potentially vulnerable economy sharing a border with Russia/Kaliningrad.

Within each of these countries, we focused on the following economic sectors (the share of the sample is indicated in parentheses): wholesale/retail trade (37.7%), manufacturing (29.7%), transportation/storage (18.9%) and agriculture (13%). Our survey sample consists of 610 responses with participant firms recruited from three countries in our study with 200 US, 210 German, and 200 Polish firms. The summary statistics for the sample are presented in Table 1.

The rationale for selecting medium-sized companies is that their adaptation behavior in the face of crisis has not been sufficiently studied. Larger companies, significant players in the international area, are more frequently studied given their greater exposure in economic and media spaces. Medium-sized companies, which constitute

² We thank reviewer 2 for encouraging us to discuss this important aspect of our case selection in more detail.

Table 1 Summary statistics of survey sample

Criteria	USA	%	Germany	%	Poland	%	Total	%
1 <i>Country</i>	200	32.80%	210	34.40%	200	32.80%	610	100%
2 <i>Industry</i>								
– Agriculture	16	8%	40	19%	23	11.50%	79	13%
– Manufacturing	59	29.50%	58	27.60%	64	32%	181	29.70%
– Wholesale/Retail Trade	97	48.50%	60	28.60%	73	35.60%	230	37.70%
– Transportation/Storage	28	14.00%	52	24.80%	35	17.50%	115	18.90%
– Other	0	0%	0	0%	5	2.50%	5	0.80%
3 <i>Size (Number of Employees)</i>								
– 50–99	57	28.50%	113	53.80%	115	57.50%	285	46.70%
– 100–249	143	71.50%	97	46.20%	85	42.50%	325	53.30%
4 <i>Main client</i>								
– B2B Sector	45	17.20%	65	25%	152	58%	262	43%
– B2C Sector	23	23.47%	61	62%	14	14%	98	16%
– B2B & B2C	132	52.80%	84	33.60%	34	13.60%	250	40.98%

the backbone of almost every national economy, engage in international economic activities that can be heavily impacted by economic sanctions. Studying their strategic responses provides important insights into how firm-level activity impacts sanctions effectiveness.

We also selected the industries in which these firms operate purposely to represent most-likely cases for the effect of sanctions on strategic responses. These industries have been directly affected by sanctions in terms of transport or the ban on cooperation with public entities in Russia and Belarus. Also, value chains within these industries are internationally dispersed, resulting in a multidimensional and multidirectional impact of sanctions on their operations.

Our survey was carried out using the CAWI method with the help of an e-questionnaire, which we translated into Polish and German from English. The surveys were conducted from March–April 2023 and were carried out by two market research agencies: the SAGO Group, which conducted the surveys of US and German companies, and the INDICATOR Agency, which conducted the survey of Polish companies. The survey potentially suffers from the same limitations and biases as all self-reported data—most notably regarding two aspects. First, respondents may provide the more socially acceptable answer rather than responding truthfully. This could be a concern when it comes to admitting sanctions circumvention. Yet, existing research has shown that companies indeed admit trying to bypass sanctions if surveys are anonymous (Weber & Stępień, 2020). Also, social desirability bias should lead to an under-reporting of sanctions circumvention—but since a significant number of respondents reported undercompliance in the survey, we are confident that this does not constitute a major concern. Second, respondents may not be able to answer the questions due to a lack of information. However, a great majority of those surveyed are company CEOs, owners, or higher levels of management (see Appendix), who are likely to have knowledge of their company’s business conduct and thus likely to provide factually correct answers.

Method of Data Analysis

The data obtained was analyzed as follows. The first step was to check the logical and statistical consistency of the constructs introduced in the conceptual section using confirmatory factor analysis (CFA). Subsequently, we conducted multivariate correlation analysis between the constructs and then turned to multivariate Structural Equation Model Analysis. Structural equation modeling (SEM) in Stata was then used to test the conceptual framework, following a two-step approach (Anderson & Gerbing, 1988) whereby the measurement model was examined first and followed by the assessment of the structural model used to test the hypothesized relationships.

We opted for SEM for several reasons. First, it is particularly suited for analyzing complex relationships between observed and latent variables, which allowed us to model the multiple and interrelated dependence relationships between the various types of external pressure (legal, public, and business partners' pressure) and firms' strategic responses to sanctions (compliance, undercompliance, overcompliance) detailed above. Second, SEM enabled us to include latent variables, which is key because concepts like 'external pressure' and 'strategic response' are latent constructs. Third, SEM is well-suited for survey data as it allows researchers to better handle measurement error. Lastly, we opted for SEM due to the comprehensive diagnostics and fit indices that enabled us to evaluate the overall fit of the proposed model with the observed data. Initially, this model was validated for the whole sample (610 cases).

Three types of validity—convergent, discriminant, and nomological—were considered in this test. Convergent and discriminant validity were assessed using several measures, including average variance extracted (AVE), composite reliability (CR), and the critical ratio. Accordingly, convergent validity is assumed if three requirements are met. First, the standardized factor loading for each tested item should exceed 0.7. Second, the AVE should be higher than 0.5. Third, the CR values should be 0.7 or higher (Cheah et al., 2018; Hair et al., 2017). All these conditions have been met except for *Compliance*. Standardized item loadings across constructs ranged from 0.25 to 0.92, composite reliabilities from 0.34 to 0.97 and the AVE for all latent constructs surpassed the 0.50 critical values (except for compliance, which performs poorly as a latent variable), providing evidence of reliability with just one exception (see Table 2). Survey responses for all the variables (with one exception) were captured using a Likert scale from 1–5 (see note in Table 2) with a value of 1 indicating “Never” or “Complete Disagreement” and a value of 5 indicating “Very Often” or “Complete Agreement.” The exception, our variable for *Undercompliance*, is coded differently: a response of 1 indicates “Very Often” or “Complete Agreement” while a response of 5 indicates “Never” or “Complete Disagreement.” This means that lower scores of undercompliance reflect non-compliance while high(er) scores indicate more compliant behavior.

Discriminant validity can be assessed using several methods. One approach is to compare the average variance extracted (AVE) to the squared correlation between constructs (Fornell & Larcker, 1981). Table 3 provides detailed descriptive statistics, correlations, and squared correlations between constructs (above the diagonal). The highest squared correlations were observed between *compliance* and *reactive strategic response* (i.e., 0.98).

Nomological validity is assumed if the correlation between the measured constructs proposed by the research model is significant. As shown in the correlation matrix (Table 3), several correlations existed between the dependent variables and independent

Table 2 Standardized factor loadings with goodness-of-fit

Variables and items	Standardized factor loading	AVE	Composite reliability	Cronbach's Alpha
External Pressure		0.82	0.97	0.95
EP1	Our company has experienced legal pressure (sanctions) to withdraw from activities with/in Russia and/or Belarus	0.90		
EP2	Our company has experienced legal pressure to adopt more robust corporate compliance procedures to conform with sanctions	0.90		
EP3	Our company has experienced political pressure to withdraw from activities with/in Russia and/or Belarus	0.92		
EP4	Our company has experienced pressure from the general public to withdraw from activities with/in Russia and/or Belarus	0.91		
EP5	Our company has experienced pressure from clients/consumers to withdraw from activities with/in Russia and/or Belarus	0.92		
EP6	Our company has experienced pressure from our business partners to withdraw from activities with/in Russia and/or Belarus	0.89		
Undercompliance		0.81	0.90	0.95
UC1	We continue business with/in Russia despite sanctions	0.89		
UC2	We try to circumvent sanctions by various means	0.91		
Compliance+		0.23	0.34	0.95
C1	Because of fear of penalties, we comply with sanctions	0.64		
C2	We fully comply with the sanctions imposed on Russia and/or Belarus	0.25		
Overcompliance		0.55	0.70	0.97
OC1	We have voluntarily limited our activities related to Russia and/or Belarus	0.59		
OC2	We withdrew from activities related to Russia and/or Belarus even before sanctions were imposed/enforced	0.87		
Proactive Strategic Response		0.66	0.89	0.95
PS1	Relocated activities to non-conflict countries due to the war between Russia and Ukraine	0.87		

Table 2 (continued)

Variables and items	Standardized factor loading	AVE	Composite reliability	Cronbach's Alpha
PS2	0.88			
PS3	0.75			
PS4	0.74			
Reactive Strategic Response		0.73	0.93	0.96
RS1	0.73			
RS2	0.89			
RS3	0.89			
RS4	0.85			
RS5	0.91			

Notes: + for Compliance indicates that similarity validity and composite reliability were *not achieved*. Measurement for constructs were based on a five-point scale where 1 = "Completely disagree" and 5 = "Completely agree" or 1 = "Never" and 5 = "Very often", depending on the question posed in the survey

Table 3 Correlation matrix

Latent variables	External pressure	Under compliance	Compliance	Over-compliance	Proactive response	Reactive response
<i>External Pressure</i>						
<i>Undercompliance</i>	-0.85*		0.96*	0.86*	0.96*	0.92*
<i>Compliance</i>	0.96*	-0.81*	-0.81*	-0.76*	-0.92*	-0.83*
<i>Overcompliance</i>	0.86*	-0.76*	0.85*	0.85*	0.97*	0.98*
<i>Proactive Response</i>	0.96*	-0.92*	0.97*	0.89*	0.89*	0.89*
<i>Reactive Response</i>	0.92*	-0.83*	0.98*	0.89*	0.97*	0.97*

* Correlation is significant at $p < 0.05$

Table 4 Parameter estimates—Overall Model

Independent Variable (IV)→Dependent Variable (DV)	Estimate	<i>z</i>
H _{1a} : External Pressure→Undercompliance	-0.80***	-43.52
H _{1b} : External Pressure→Compliance	0.93***	80.25
H _{1c} : External Pressure→Overcompliance	0.79***	30.47
H _{2a} : Undercompliance→Proactive Strategic Response	-0.38***	-10.45
H _{2b} : Undercompliance→Reactive Strategic Response	-0.14***	-3.56
H _{3a} : Compliance→Proactive Strategic Response	0.58***	11.90
H _{3b} : Compliance→Reactive Strategic Response	0.68***	12.62
H _{4a} : Overcompliance→Proactive Strategic Response	0.14**	3.00
H _{4b} : Overcompliance→Reactive Strategic Response	0.22***	4.20

Notes: *** = $p < 0.001$; ** = $p < 0.01$

variables. Overall, six variables remained in the final measurement model showing a good model fit with $\chi^2 = 1342.76$, $df = 180$; ($\chi^2/df = 7.46$; GFI = 0.89; CFI = 0.91; RMSEA = 0.10).

Examining the Overall Structural Equation Model

We proceeded to the estimation of the structural model for the survey sample. The model has an acceptable overall fit, and all the indices exceeded the recommended thresholds: coefficient of determination ($CD = 0.974$), standardized root mean squared residual (SRMR = 0.073) comparative fit index (CFI = 0.91), Tucker-Lewis index (TLI = 0.892), Root mean squared error of approximation (RMSEA = 0.103). We report the coefficients with their respective z scores in Table 4. The visualization of the structural model can be viewed in the online appendix/supplementary material.

Main Results

The SEM analysis of the overall model depicted in Table 4 yields several key insights. To begin with, our study demonstrates that external pressure positively impacts both *Compliance* (H_{1b}) and *Overcompliance* (H_{1c}). Contrary to our expectations, though, we found that external pressure was also associated with higher levels of undercompliant behavior (H_{1a}).

The positive coefficients for compliance and overcompliance denote that as external pressure increases, the firms' reported levels of sanctions compliance and overcompliance increase. The negative sign for *Undercompliance* should be interpreted as follows: as external pressure increases, firms engage more strongly in undercompliant behaviors (*note*: 1 = Always undercomplying; 5 = Never undercomplying). These findings support our theoretical expectations that external pressure is associated with compliance and overcompliance, but some firms also appear to respond to external pressure with undercompliance.

External pressure was thus associated with companies trying to comply with the legal requirements of sanctions or even going beyond the requirements of sanctions in restricting their business activities with Russia. For some more risk-acceptant firms, the external pressure to comply with sanctions or even cease doing business with Russia created lucrative opportunities for competing firms unwilling to bow to external pressures generated

by economic sanctions. This suggests that some firms may see significant opportunities in violating sanctions even when pressure exists to go along with them. Our multifaceted approach for capturing external pressure allowed us to capture the myriad of ways that companies' internal decisions related to complying with the sanctions against Russia were shaped by outside forces.

Our findings related to how firms' overarching response strategies are shaped by their compliance behaviors are nuanced. All three compliance-related behaviors – undercompliance, compliance, or overcompliance – can produce a combination of reactive and proactive strategies. We hypothesized that sanctions undercompliance (H_2) would be more strongly associated with proactive rather than reactive strategies. The negative signs with respect to *Undercompliance's* relationship to proactive and reactive strategies mean that firms being *less* undercompliant with sanctions were associated with less reactive and proactive responses. Put another way, being more undercompliant is associated with more proactive and reactive strategic responses on the part of firms. As hypothesized, the magnitude of this effect was larger for proactive response strategies. In other words, undercompliant companies *were more proactive* in seeking out new business opportunities in response to the sanctions than pulling back from and shutting them down.

We also hypothesized that compliance would be more strongly associated with reactive response strategies (H_3). Compliance with sanctions has strong, positive correlations with both reactive and proactive responses, with effect on the former being only slightly greater. Many firms whose businesses were affected by sanctions did respond reactively by pulling back from doing business in Russia directly, but they may have also been actively seeking out new opportunities that did not violate their home governments' sanctions requirements. Our findings could reflect how firms obeyed their home governments' legal sanctions requirements while also seeking loopholes and legal means of circumventing sanctions. This finding is consistent with reports that many companies have shifted their trade to Russia's neighbors not participating in the sanctions, which allows sanctions-busting to take place.

Lastly, we found that overcompliance has positive correlations with both reactive and proactive responses, but the size of both coefficients was far less than for compliance. We expected that overcomplying firms would be much more inclined to have reactive response strategies rather than proactive ones, but the difference between the two was negligible. Overall, our findings indicate that all three compliance behaviors result in a mixture of proactive and reactive responses. Our most significant finding is that firms deciding to comply with the letter of the law when it comes to sanctions requirements may also be quite proactive in seeking out the means to circumvent them legally (i.e., exploiting loopholes and third parties). We now explore the potential moderating variables, a firm's location and the type of clients served.

Extending Our Analysis to Account for Enforcement Environment and Client Type.

Our main model provides insights into the interconnected relationships between external pressure, compliance behavior, and a firm's strategic responses to economic sanctions. Variation in the enforcement environments firms operate in and who their primary clients are could also moderate the relationships we explore. We lack enough observations to run disaggregated analyses using SEM. In this section, we therefore present exploratory analyses using bivariate regression models to uncover differences between firms operating in the US and EU countries and firms that have primarily B2B versus B2C business models. Our analyses seek to uncover ways that moderating factors could condition the relationships between the variables in our model for theory-building purposes, which could be explored in future analyses with more data.

Table 5 Split sample regression analysis for US and EU members Germany & Poland

Independent variable (IV)→Dependent variable (DV)	US	EU	z	p
External Pressure→Undercompliance	-0.573***	-0.723***	2.671***	0.007
External Pressure→Compliance	0.300***	0.282***	0.326	0.744
External Pressure→Overcompliance	0.322***	0.485***	-2.210**	0.027
Undercompliance→Proactive Strategic Response	-0.500***	-0.943***	7.446***	0.001
Undercompliance→Reactive Strategic Response	-0.413***	-0.865***	6.799***	0.001
Compliance→Proactive Strategic Response	0.436***	0.924***	-3.679***	0.001
Compliance→Reactive Strategic Response	0.518***	0.950***	-3.769***	0.001
Overcompliance→Proactive Strategic Response	0.405***	0.964***	-5.803***	0.001
Overcompliance→Reactive Strategic Response	0.525***	0.922***	-4.566***	0.001

Note: * denotes statistical significance at the 0.1 level, ** at the 0.05 level, and *** at the 0.01 level

Enforcement Environments: Comparing Firm Responses in the US and EU.

The behavior of companies towards sanctions can be influenced by the country where it operates (Early, 2015), effects that our cross-national surveys allow us to explore. Extant research suggests that the effectiveness of law-making and enforcement plays a role (Weber & Stepień, 2020). In countries where both governmental law-making and enforcement regimes operate efficiently, Weber and Stepień (2020) showed that a firm's propensity to challenge sanctions was lower than in countries where legislative and enforcement regimes fail. In 2009, OFAC gained a robust set of new authorities to impose significant civil penalties for violating US sanctions. The agency used those new powers to pursue numerous record-shattering cases against sanctions violators, resulting in hundreds of millions of dollars in fines. In the US, both individuals and corporate entities can be subject to civil and criminal penalties for violating sanctions. OFAC's aggressive sanctions enforcement strategy in the 2010s drove many firms to become more risk-averse towards the violation of US sanctions, encouraging many firms to adopt risk-based compliance strategies. This aggressive behavior on the part of US authorities discouraged US and foreign firms from doing business with targets of US sanctions (Early & Peterson, 2022, 2023; Early & Preble, 2020). The US constitutes an extreme case of the potential legal and enforcement pressure that a sanctioning government can place upon firms to comply with its sanctions.

The EU has also emerged in recent years as an autonomous sender of economic sanctions in response to budding foreign policy challenges. The EU's ability to enforce its sanctions, however, lags substantially behind US capabilities. The EU leaves the responsibility for enforcing sanctions to individual member states. Significant variation exists among EU members in whether they investigate and/or punish sanctions infractions (e.g., Giumelli & Onderco, 2021; Giumelli et al., 2022). For Germany and Poland, Giumelli et al. (2022: 40) found that Poland has only administrative penalties for violating sanctions while Germany has both administrative and criminal penalties for individuals violating sanctions. Firms are not subject to criminal penalties for sanctions violations in either country. Based upon these differences, our strongest expectation is that the effects of external pressure on compliance and overcompliance will have a greater impact on US firms than EU firms located in Germany and Poland. These differences focus mainly on one type of pressure (legal) our *External Pressure* variable captures, but we think that difference could be significant.

In Table 5, we present the results from running individual regressions between our variables using a split sample analysis of firms from the US and from Germany and Poland.

Table 6 Split sample regression analysis for B2B and B2C primary clients

Independent variable (IV)→Dependent variable (DV)	B2B	B2C	<i>z</i>	<i>p</i>
External Pressure→Undercompliance	-0.667***	-0.762***	1.467	0.143
External Pressure→Compliance	0.248***	0.353***	-1.547	0.121
External Pressure→Overcompliance	0.397***	0.513***	-1.413	0.157
Undercompliance→Proactive Strategic Response	-0.828***	-0.824***	-0.039	0.968
Undercompliance→Reactive Strategic Response	-0.727***	-0.756***	0.319	0.749
Compliance→Proactive Strategic Response	0.617***	0.910***	-1.847*	0.064
Compliance→Reactive Strategic Response	0.698***	0.800***	-0.695	0.486
Overcompliance→Proactive Strategic Response	0.735***	0.766***	-0.247	0.804
Overcompliance→Reactive Strategic Response	0.742***	0.728***	0.118	0.905

Note: * denotes statistical significance at the 0.1 level, ** at the 0.05 level, and *** at the 0.01 level

The table presents regression coefficients obtained from separate models for the US and the two EU countries, alongside the *z*-statistics and corresponding *p*-values. The *z*-statistic is calculated to test the hypothesis that there is no significant difference in the coefficients of a specific variable between the two models. It quantifies the discrepancy in terms of standard deviations. A higher absolute value of the *z*-statistic indicates a larger difference between the coefficients. The accompanying *p*-value helps in determining the statistical significance of this difference. A low *p*-value (typically less than 0.05) suggests that the difference in coefficients is statistically significant, indicating that the effect of the variable may vary substantially between the US and the EU contexts.

Our results illustrate that our findings are consistent in terms of the direction and significance of the correlations across our two samples. Interestingly, though, there seem to be sizable differences in the strength of those correlations across most of the factors in our analysis except for external pressure's effect on compliance behavior. Running contrary to our initial expectations, external pressure has approximately the same effect on US and EU firms' compliance levels, but a greater effect on EU firms' overcompliance levels. Firms' willingness to undercomply with sanctions in the EU in the face of external pressure is also much higher than in the US. This suggests that the other factors incorporated into our concept of external pressure beyond just legal pressure play a larger role in influencing the behavior of German and Polish firms.

Client Type: Comparing B2B and B2C Firms

Public pressure can affect a company's response to sanctions, and existing work suggests that this effect is particularly pronounced for firms whose primary consumers are individuals (B2C) compared to firms whose primary consumers are businesses (B2B). In the case of the embargo against South Africa in 1986, for example, Coca-Cola disinvested from its holdings in South Africa after facing threats of boycotts in the US over its operations (Sing, 1986). Other well-known customer centric companies also experienced "consistent and significant positive announcement effects" when publicly declaring their withdrawal (Posnikoff, 1997).

Citizen consumers exert an influence similar to public pressure on the activities of companies, while business customers are more likely to behave similarly to companies operating in a supply chain that has been affected by sanctions (directly or indirectly). Based

upon these differing incentives, our strongest expectations are that firms operating in the B2B sector are likely to undercomply when faced with external pressure to a greater extent than companies operating in the B2C sector. We also expect that companies operating in the B2C sector are likely to overcomply to a greater extent than those in the B2B sector.

In Table 6, we compare two subsets of firms from our sample whose primary clients are customers versus other businesses. Our split sample regression analyses exclude companies that service both types of clients to illuminate potential differences based on clientele. Contrary to our initial expectations, our regression analyses do not suggest that there are significant differences in how external pressure affects compliance behavior or strategic responses when firms service customers versus other businesses. All the signs and correlations are very similar across each relationship we analyze, but our z -statistic does not achieve significance at 0.05-level for any of the variables.

Discussion of the Findings

Our SEM analysis suggests that a firm's sanctions compliance behavior is shaped by external pressure. Also, how firms comply with sanctions influences their response strategies in complicated ways. The impact of external pressure was most strongly associated not only with compliance but also undercompliance and overcompliance at similar levels.

On the balance, external pressure does appear to have led firms more toward disengaging with Russia, but some firms saw opportunities in violating the sanctions despite significant pressures not to engage. Firms undercomplying with Russian sanctions proactively seek out ways to profit from the sanctions. We also find somewhat surprising evidence that compliant firms reported adopting proactive business strategies in high numbers, suggesting that they may seek legal means of circumventing sanctions via third-party countries not participating in the sanctions.

By conducting our survey across three different countries, our findings have greater generalizability in that they include a more varied sample of firms facing different types and levels of external pressure than had we analyzed one country alone. Our exploratory analysis further suggests that external pressure appears to have a much stronger set of effects on firms in Poland and Germany than those located in the US. While our intuition suggested that the enforcement environment would play a decisive role in shaping potential differences between US and EU firms, we observed that the magnitude of *External Pressure's* effects was much greater in the EU. The public and business pressure in Germany and Poland to respond to Russia's invasion of Ukraine, two countries with significant trade linkages to Russia, appear to have had a larger impact. Conducting future cross-national surveys of firms with larger sample sizes from each country would be a worthwhile investment to explore country-level differences. Also, such future research would be better able to disaggregate between the different forms of external pressure.

Conclusion

Our analysis has shown that external pressure significantly influences how firms comply with sanctions. A firm's compliance decisions have a much more nuanced effect on whether they adopt reactive or proactive response strategies—with firms appearing to adopt elements of both. We found that undercompliant firms are more likely to pursue proactive strategies for responding to sanctions and that compliant firms also appear to be

proactive when seeking out legal options for circumventing sanctions. Our extended analyses further suggest that the effects of external pressure were more significant on EU firms than US firms. This suggests that geographic, economic, and institutional profiles of countries play an important role in shaping their firms' responses to sanctions.

Our approach for operationalizing external pressure incorporates three different types of pressure (legal, public, and business partner) that firms face when economic sanctions are imposed. Unfortunately, we did not have sufficient observations in our sample to conduct SEM using the individual types of pressure that our umbrella concept captured. In the future, disaggregated analyses of larger-sized surveys could generate new insights on each of these factor's effects on firms' compliance behaviors.

Further, internal factors within firms may also mediate the effects of external pressures and influence how firms respond to sanctions. While evaluating such factors is beyond the scope of this study, exploring the impact of firm-level factors, most notably internal compliance culture and compliance programs, would be an important complement to our work's focus on understanding the impacts of external pressure. Our comparative analysis has explored the responses of firms in three different Western countries that adopted robust sanctions in response to Russia's invasion. We found significant differences between the role of external pressure in shaping firms' compliance behaviors between US and EU firms. Future work could explore firms in other countries where less comprehensive sanctions against Russia are in place. Seeking to obtain larger samples of firms within each country surveyed would also benefit future SEM by allowing for the exploration of finer-grained concepts as well as differences between sub-samples.

For policymakers, our findings suggest some optimistic as well as pessimistic news in how firms respond to sanctions. On the one hand, we observe how firms are more likely to comply or overcomply with sanctions when they perceive significant external pressure from governments, the public, and their business partners. This finding suggests that firms are more likely to abide by sanctions when they are imposed in response to salient crises where there is unity among senders to implement economic sanctions. A pessimistic takeaway from our analysis, though, is that even compliant firms may be proactively seeking ways to circumvent sanctions through legal means. Furthermore, some firms may perceive high pressure environments as opportunities, especially if lucrative sanctions-busting activities emerge. Even when strong external pressure to comply with sanctions exists, governments still face steep challenges in obtaining compliance of firms both in and outside their jurisdictions.

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Data Availability Data and stata code available on request from corresponding author or via Harvard dataverse.

Declarations

Conflict of interest The authors have no competing interests to declare.

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