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How do formal and informal institutions influence firm profitability in emerging countries?

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Abstract

Drawing from institutional economics, we examine how the quality of formal institutions (e.g. protection of property rights, efficiency of the judicial system and government regulations) and a particular aspect of informal institutions, trust, influence the profitability of small and medium-sized enterprises (SMEs) vis-à-vis large firms. Our theoretical framework, which is supported by an analysis of over 205,000 observations in 16 emerging countries in the Central and Eastern European (CEE) region, explains why informal and formal institutions have a considerably different effect on the profitability of SMEs and large firms, and indicates that while SMEs benefit from formal institutional quality more than large firms do, large firms benefit from trust in society more than SMEs. It further shows that formal institutions and trust substitute each other in influencing firm profitability and that this substitution effect is stronger for large firms.

Keywords: Institutional quality, Firm performance, Formal institutions, Informal institutions, SMEs, trust.

1. Introduction

Although it is theoretically accepted that institutions influence firm performance (North, 1990; Peng, 2004; Peng et al., 2008), a more challenging research endeavor is to explain why they influence firms in different ways. Prior research has examined the effects of formal and (to a lesser extent) informal institutions on firm performance (e.g., Kafouros and Aliyev, 2016; Sheng et al., 2011; Wang et al., 2020). However, with few exceptions that have recently started examining how formal and informal institutions affect MNEs' foreign investment decisions (Fuentelsaz et al., 2020), location choices (Li et al., 2019), post-acquisition performance (Zhu et al., 2017), and the implications of certain governance arrangements (Abdi and Aulakh, 2012), previous research has paid less attention to the interplay between formal and informal institutions, how such interplay shapes firm performance, and in what ways such effects differ between small and medium-sized enterprises (SMEs) and large firms. Such insufficient attention is surprising. Institutions, by definition, consist of formal and informal elements (Crossland and Hambrick, 2011; Fuentelsaz et al., 2020; Garrone et al., 2019; Meyer and Peng, 2005; Peng et al., 2009; Scott, 2008) that jointly affect economic outcomes (North, 1990). In fact, a key theoretical prediction in institutional economics is that firm performance and behavior are best explained by considering the influence of formal and informal institutions *together* (North, 1990), because both forms of institutions determine various opportunities and constraints that can change how firms behave and perform.

Examining interactions between formal and informal institutions is theoretically useful because the same formal rules imposed in different societal contexts may result in different outcomes due to variations in informal institutions (North, 1990, p. 36). Such contingencies may explain why empirical studies find positive (Ngobo and Fouda, 2012), negative (Chan et al., 2008), and U-shape relationships (Chari and Banalieva, 2015) between

the quality of formal institutions and firm performance. Hence, considering both formal and informal institutions in combination may help us understand prior conflicting findings and enrich the knowledge of the nature of relationships between institutions and firm performance.

Informal institutions are shared rules among members of society, often unwritten, that guide human behavior (Helmke and Levitsky, 2004; Kshetri, 2018; Stephan et al., 2015). Building on the theoretical importance of informal institutions, we employ societal *outgroup trust* as a central aspect of informal institutions (Williamson, 2009). We have chosen to focus on outgroup trust for two key reasons. First, outgroup trust extends beyond the boundaries of individuals' close social relationships, incorporating people whom one has never met. It is therefore the dimension of informal institutions that facilitates *impersonal* exchange, which is the key desirable outcome of high quality formal institutional environments (North, 1991). Second, outgroup trust is an important factor that benefits economic activities in a society by facilitating free flow of information across social groups and individuals and by reducing transaction costs associated with creating contracts and monitoring compliance (Delhey et al., 2011; Knack and Keefer, 1997). For these reasons, outgroup trust can play a profound role in moderating the relationship between formal institutional quality and firm performance. Accordingly, we examine the different effects of the quality of formal institutions, outgroup trust, and their interaction on the profitability of SMEs vis-à-vis large firms.

Institutional quality refers to the overall effectiveness and efficiency of formal institutions in helping firms to engage in and gain from market transactions (North, 1991). Formal institutions affect the enforcement of laws and the protection of property rights that can help firms rely on market transactions and enable widespread impersonal exchange (Dixit, 2004; North, 1991). The quality of formal institutions is reflected in how effectively they protect property rights, the level of corruption, execution of undue influence by

government officials, government efficiency, security, and corporate ethics and accountability (Kafouros and Aliyev, 2016; Shaner and Maznevski, 2011; WEF, 2012).

Outgroup trust refers to the general belief that other actors will cooperate without behaving opportunistically. An environment of trust forms the basis of exchanges within a society when its members share an expectation of consistent, honest behavior (Fukuyama, 1995). Trust can benefit economic activity by helping information transmission and cooperation within the realms of impersonal transactions (Putnam, 1993). While formal institutions increase efficiency in market transactions, contracts are inherently incomplete. Informal institutions can influence firms' willingness to engage in market transactions. Therefore, it is essential to consider the interaction of formal and informal institutions, and whether they substitute or complement one another in affecting firm performance.

Distinguishing between SMEs and large firms helps us overcome the implicit assumption that is often made in the literature that all firms are affected by institutions equally. Institutional quality results in the redistribution of economic rents and, therefore, into winners and losers (Kafouros and Aliyev, 2016). Building on this premise, we argue that institutions affect the competitive advantages of SMEs and large firms differently, leading therefore to different profitability outcomes.[1] The distinction between these two types of firms is important because they vary in terms of their resources and how much they rely on formal and informal institutions. In addition, we expect that variations in the quality of formal and informal institutions can create different advantages and disadvantages for SMEs and large firms.

To test our theoretical framework, we employ firm-level data for the 2003–2011 period from 16 emerging economies of Central and Eastern Europe (CEE), consisting of

[1] Based on European Union's (EU) recommendation 2003/361/CE, we define SMEs as firms with fewer than 250 employees.

22,651 SMEs and 13,041 large firms. Transition CEE economies have experienced significant institutional transformation following the shift from a socialist orientation to a market economy. Therefore, these countries provide a rich empirical testbed for enhancing theoretical understanding of how variations in institutional contexts affect firm performance. Our study contributes to research that has examined the relationship between formal institutions and firm performance (e.g., Kafouros and Aliyev, 2016; Ngobo and Fouda, 2012; Shinkle and Kriauciunas, 2010) by clarifying the ways through which formal and informal institutions *jointly* determine firm performance and by identifying their differential effects on SMEs and large firms. Extant literature often assumes that there are informal-context-independent associations between formal institutions and firm performance. Our analysis shows that this is not always the case and explains why firm profitability depends on the interplay between informal and formal institutions. In doing so, it enhances scholarly understanding of the influence of informal institutions and, in particular, why in combination with formal institutions can generate relative advantages to some firms, but disadvantages to other firms.

2. Theoretical Background

2.1 Informal and Formal Institutions

Formal institutions are the sets of explicit and codified rules of the game that include law, political and economic regulations, and contracts that define the structure of property rights and transactions in a society (North, 1990: 47). Constraints that come as part of formal institutions can be arranged in a hierarchy that ranges from general rules to particular specifications (North, 1990)—for example, hierarchically starting with constitutions, common laws, to domain-specific laws, and finally to individual contracts. Formal institutions adhere to the larger function of institutions in reducing uncertainty by providing

structure to human interaction and therefore facilitate economic transactions (Akerlof, 1970; North, 1990; Williamson, 1991, 2000).

Informal institutions, on the other hand, reflect collective meanings arising from the traditions, customs, and norms in the society that shape cooperation and coordination among people in a community (North, 1990). Informal institutions are socially constructed, implicitly communicated, and transmitted through cultural and social norms (Estrin and Prevezer, 2011; Helmke and Levitsky, 2004; North, 1990). In comparison to formal institutions, informal institutions tend to be rooted very deeply and, therefore, are resistant to radical changes (Knack and Keefer, 1997). Hence, informal institutions permeate and influence the nature of transactions occurring in society (Scott, 2008). Prior studies have documented significant variations across societies in terms of altruism, openness to cooperation, and punishment toward those who do not follow the norms (Henrich, 2010). Informal institutions are important for understanding firm outcomes because these informal institutional forces can limit or constrain certain opportunities or strategic choices of a firm. Williamson (1979) suggests that even in well-developed institutional environments, due to the complex nature of economic transactions, contracts cannot be fully specified and enforced, leaving informal institutions to fill the significant role of reducing opportunistic behavior.

Informal institutions associated with cooperative norms and trust have a problem-solving role in assisting economic interactions and, therefore, influence the efficacy of the interactions. In this study, we consider the level of trust in a society, specifically *outgroup trust*, as an informal institutional factor. Trust is an important ingredient for cooperative exchanges in a society (Brunetto and Farr-Wharton, 2007). Repeated exchanges mean that actors must rely on the future actions of partners. These come with various costs, especially when they are developed quickly (Hashai et al., 2018). They incur a lower cost in high trust

environments that reduce the need for costly monitoring (Dakhli and De Clercq, 2004). Outgroup trust within a society is important because it concerns trust between an individual and a wider circle of unfamiliar others (Delhey et al., 2011). As people rely on general beliefs concerning cooperation and helping others while evaluating the trustworthiness of a partner outside their close circle, outgroup trust in society positively informs the beliefs about the trustworthiness of others with respect to particular matters. Furthermore, outgroup trust in societies promotes not only personalized transactions within close physical proximity but also fosters economic exchange among people who have not met. In summary, it is theoretically valuable to pay attention to both formal and informal rules.

2.2 Interactions between Informal and Formal Institutions

North (1990) identified both formal and informal aspects of institutions as important drivers in shaping behavior of economic actors within a society. In the last two decades, scholars have called for increased focus on a variety of institutional contexts that can be broadly classified as formal and informal institutions to understand firm behavior and performance (Peng et al., 2008). More recently scholars started looking at the relative importance of formal and informal institutions. An empirical study by Williamson and Kerekes (2011) shows that informal institutions (culture) explain private property protection better than some formal institutional mechanisms do. However, empirical work on explaining the interaction between formal and informal institutions is limited.

Understanding the influence of both formal and informal institutions taken together is very important (Wang et al., 2020). For example, in the absence of an efficient legal framework within a country, firms might have to rely on informal institutions that serve as a barrier toward theft of intellectual property or the opportunistic behavior of partners. Prior work shows that firms in high trust societies tend to use simple contractual arrangements relative to those in low trust societies who predominantly rely on forming equity joint

ventures (Shane, 1994). However, it is still unclear whether trust within a society can have a substitutive effect for the lack of an efficient Intellectual Property Rights (IPR[2]) regime. We argue that societal trust can help substitute for the lack of efficient formal institutions, but the extent of such effects depends on firm size. A large firm can internalize certain aspects of operations that lend better protection against institutional flaws and still engage in partnerships with other firms, while SMEs may lack the capacity to do so.

2.3 Effects of Formal and Informal Institutions on Firm Performance

Under the umbrella of a country's formal institutions, we consider property rights, judicial independence, efficacy of the legal system, quality of government regulation, and accounting and reporting standards. We focus on outgroup trust as one of the key aspects of informal institutions. We synthesize prior theoretical and empirical work and contend that there are five key mechanisms that explain institutions' influence on firm performance (Delhey et al., 2011; Kafouros and Aliyev, 2016; Khanna and Palepu, 2000; La Porta et al., 1999; Wang et al., 2020). In identifying these mechanisms, we build on the premise that institutions shape firms' transactions with economic actors in terms of establishing and managing relationships with business partners (1 and 2), employees (3), and government bodies (4), and coordinating internal transactions of firms (5). Accordingly, these five mechanisms are: 1) the degree to which firms can source additional capabilities via finding partners and developing partnerships; 2) the efficiency and effectiveness of legal frameworks and its enforcement; 3) labor market policies and regulation that affect hiring and firing costs; 4) government services that promote growth and innovation; 5) institutions have a bearing on the efficiency of the coordination activities within the boundaries of the firm. We clarify each of these mechanisms below.

[2] World Trade Organization define IPR as the property rights given to persons and organizations for the creations.

First, efficient institutions in a country decrease uncertainty in the market in establishing and managing business partner relationships (North, 1990). In other words, the costs associated with identifying reliable partners and establishing efficient contracts tend to be lower in developed institutional environments (Gelbuda et al., 2008; Liedong et al., 2020). In such environments, partners have institutional tools that facilitate collaboration and long-term investments (Berrone et al., 2007; Hsieh et al., 2018). Hence, better quality institutions help firms form alliances and partnerships more easily to gain resources in the form of knowledge and skills from outside the firm (Capron and Mitchell, 2009; Elia et al., 2020; Kafouros et al., 2018; Puranam et al., 2009). Reliable institutional tools facilitate long-term investments among partners, bringing additional resources from stakeholders (Berrone et al., 2007).

Second, as part of a legal framework, stronger IPR, including patent and copyright laws, are accompanied by institutional quality to help firms appropriate value from their innovations (Teece, 1986). A more robust IPR protection regime encourages firms to innovate. Apart from weak IPR laws, corruption can reduce firms' incentives to invest in R&D because of the risk of appropriation (De Rosa et al., 2015). However, as legal systems develop, they reduce corruption that can provide a basis for unfair competition. Thus, a high-quality legal framework facilitates firm growth by reducing uncertainty in the business environment and encouraging long-term business interests.

Third, less developed institutional environments are accompanied by a lack of transparency and a higher prevalence of opportunistic behavior (Williamson, 2000). As institutions develop, they allow firms to have greater flexibility with respect to managing their workforce. This flexibility results in competitive labor markets that are largely driven by talent (Cuervo-Cazurra and Dau, 2009). In turn, talent-driven demand for managers tends to curb opportunism and agency-related issues among managers that directly improve

profitability (Coughlan and Schmidt, 1985; Cuervo-Cazurra and Dau, 2009). The labor market flexibility of an economy can influence the efficacy of firms. For example, flexibility in hiring, firing, and compensation can benefit small-sized firms to remain lean and quickly respond to changing market conditions. When the institutional environment lacks such flexibility, large firms are able to cope better because of their larger pool of resources.

Fourth, well-developed institutional settings are accompanied by state investment in public infrastructures, such as education, which directly facilitates the development of human capital and ease of knowledge transfer. Moreover, such environments provide firms with resources and know-how from the network of knowledge clusters surrounding those (Wu et al., 2016). Thus, stronger institutions help firms broaden their innovation networks and strengthen their technological capabilities (Prabhu, 1999).

Fifth, stronger informal institutions in the form of trust decrease transaction costs by reducing the need to invest in costly monitoring between transacting partners. A larger societal environment of trust is imported into organizations and helps reduce coordination inefficiencies within firms (Fukuyama, 1995). Thus, outgroup trust within a society relates to economic growth due to the increase of efficiencies (Knack, 2002; Uslaner, 2002).

The above mechanisms relate predominantly to the effects of formal institutional quality. Informal trust facilitates exchange but relies on mechanisms that differ from those related to formal institutions. Research on trust is grounded in the seminal work of Arrow (1972) and Putnam (1993) about the potential positive impact of trust on economic growth. As Arrow (1972) suggested, most economic interactions in society are facilitated by "an element of trust". Trust can reduce the costs of a transaction by reducing uncertainty regarding partner behavior. It can also reduce the need for formal contracting and the costs of enforcement. Trusting a stranger or a casual acquaintance is qualitatively different from trusting a friend. Outgroup trust has also been referred to as "depersonalized trust" (Yuki et

al., 2005), "generalized trust" (Yamagishi and Yamagishi, 1994), "altruistic trust" (Mansbridge, 1999), and "moral trust" (Uslaner, 2002). Outgroup trust in a society facilitates impersonal interactions and exchanges among individuals (Coleman, 1988; Ostrom, 1994; Putnam, 1993), and is an important predictor of what is good and valuable in society.

3. Hypotheses Development

We expect that although institutions influence all firms, the relative influence of institutions can vary between SMEs and large firms. Even though SMEs and large firms might be competing in the same market, there are important differences between these firms. SMEs differ in their strategies, structures and needs in comparison to large firms (Brouthers and Nakos, 2004; Erramilli and Rao, 1993; Nakos and Brouthers, 2002; Porter 1980; Sarkar et al., 2001). SMEs possess limited financial and human resources that restrict them from internalizing certain functions. SMEs are less able to exploit economies of scale and scope and are highly dependent on market transactions. However, SMEs react and adapt quickly to changes in the environment (Thornhill, 2006).

The logic for our hypotheses relies on the following three premises. First, low-quality formal institutions increase the costs of contracting and enforcement. Second, large firms have higher resource endowments (relative to SMEs) that can be used for contracting. Third, large firms have stronger bargaining power than SMEs, particularly in relational exchange.

3.2 Effects of Formal Institutions on SMEs and Large Firms

Previous research has documented a positive relationship between the quality of formal institutions and firm performance, based on the view that well-developed formal institutions enhance contract enforcement and reduce transaction costs (Chari and Banalieva, 2015; Meyer and Peng, 2005; Peng et al., 2008). However, changes in institutions lead to the redistribution of economic rents across economic actors (North, 1990), which means that the

impact of institutional quality on firm performance can be positive for some firms and negative (or less positive) for others. We argue that as institutions improve in quality and become more effective, they benefit all firms through lower levels of corruption, better protection of IPR, and better facilitation of private exchange. However, we expect the benefits of institutional development to vary across SMEs and large firms. In other words, we argue that institutional development leads to different competitive advantages depending on the size of the firm.

Therefore, we expect the relationship between institutional quality and firm performance to vary between the two categories of firms. Formal institutional quality that fosters collaborations by easing the difficulty of evaluating and finding new partners is likely to be beneficial for SMEs more than for large firms because such institutional environments help build on partnerships, thus compensating for limited resources (Koh and Venkatraman, 1991; Teece, 1986). For example, countries with lower quality institutions are characterized by a lack of developed regulatory systems and contract-enforcing mechanisms (Khanna and Palepu, 1997). Large firms that have abundance of resources can internalize various functions to avoid inefficiencies, whereas SMEs with limited resources predominantly rely on market transactions. Therefore, SMEs are more vulnerable in institutionally underdeveloped environments than large firms, i.e., large firms tend to have a competitive advantage over rivals in institutionally weak contexts.

Given that the cost of contract enforcement is high in low-quality institutional environments, large firms can afford formal contracting in either situation, while SMEs' use of formal contracting is likely to be more sensitive to the costs and risks of contracting and its enforcement. Therefore, SMEs are likely to benefit more from changes in the cost of contracting compared to large firms. As a result, the impact of institutional quality on the use of formal contracting is expected to be stronger in SMEs than in large firms.

Stronger property rights encourage investment as they mitigate the risks for the lender. For example, SMEs in well-developed institutional environments find it easier to access external financing in comparison to large firms (Beck et al., 2005). Therefore, it helps SMEs alleviate growth constraints due to a lack of finance. Beck et al. (2005) suggest that it is the small firms that grow faster than large firms in societies with better financial and institutional quality. Yet, the opposite is true in countries that lack institutional quality (Sleuwaegen and Goedhuys, 2002). Well-developed legal systems are accompanied by stronger competition laws that preserve property rights and encourage competition that is based on innovation. This helps SMEs as they are more responsive and flexible.

Institutional quality also increases the extent to which SMEs reinvest profits, as these environments allow for secure property rights and easier access to credit (Cull et al., 2009). Similarly, as institutional quality improves flexibility in terms of hiring and firing, it can provide a relative advantage to SMEs as these laws ease the firms' reliance on the market for acquiring human capital at a lower cost. Furthermore, SMEs that depend on the market do well in an environment in which the government provides support services to encourage innovation and knowledge sharing among firms in the ecosystem. Based on the above reasoning, we introduce the following hypothesis:

Hypothesis 1. *The positive effect of institutional quality on firm performance is stronger for SMEs than it is for large firms.*

3.3 Effects of informal institutions on SMEs and large firms

Informal outgroup trust promotes cooperative norms, improves efficiency and minimizes opportunistic behavior, thus lowering the monitoring costs of exchange (Knack and Keefer, 1997). We focus on outgroup trust based on Fukuyama's (1995) work that called for differentiating the strength of trust from the radius of trust (the circle of people among

whom cooperative norms are operative). The circle of trust can be classified into two forms: in-group trust and outgroup trust (Delhey et al., 2011). *In-group trust* involves trust among a narrow circle of people based on familiarity, such as the family and the social group a person belongs to. *Outgroup trust* refers to the trust among unfamiliar individuals. Unfamiliarity refers to people interacting for the first time and trust between individuals belonging to different groups. Thus, outgroup trust conveys a set of expectations that form the basis of impersonal economic exchange in a society. We argue that such expectations facilitate exchange and partly alleviate the deficiencies of formal institutions. We also expect outgroup trust to be important for market transactions that are accompanied by risk and interdependence among transacting partners (Rousseau et al., 1998). Outgroup trust can serve as an alternative basis of rule development and enforcement in a society. Building on this reasoning, we expect outgroup trust to be positively associated with firm performance (Knack and Keefer, 1997; La Porta et al., 1997; Luo, 2005; Zak and Knack, 2001). However, we also expect this positive relationship to be stronger for large firms than for SMEs.

The way in which societal trust affects firm performance depends on two aspects: firstly, on how societal trust facilitates market transactions and secondly, on how trust facilitates information flow and coordination within firm boundaries. Taking both aspects into consideration and applying them comparatively with respect to SMEs and large firms, we hypothesize that the advantages of outgroup trust are stronger for large firms than for SMEs. Both SMEs and large firms can benefit from outgroup trust due to lower levels of uncertainty in relational exchanges. For instance, higher outgroup trust can facilitate the flow of information across group boundaries (Saxenian, 1996) and allow for valuable information transmission (Granovetter, 1985). We expect both large firms and SMEs to benefit from such advantages, but not to the same extent. To identify the relative difference in how much the

two groups benefit, we must comparatively consider how (and to what extent) the advantages of outgroup trust are distributed.

The mechanisms through which informal trust affects market exchange differ from those of formal institutions (Alesina and Giuliano, 2015). Formal institutions help reduce uncertainty related to inter-firm relationships through rule-based mechanisms, including formal documents of procedures, commitments, rights, and obligations (La Porta et al., 1999; Kaufmann et al., 2018). Well developed formal institutions facilitate market transactions as they offer official third-party enforcement in the form of an efficient independent judicial system (Luo, 2005; North, 1990). In contrast, informal institutions can facilitate the reduction of uncertainty within inter-firm relationships by setting the expectations of behavioral norms of cooperation. Although informal institutional factors such as outgroup trust motivate firms to engage in transactions across firms in general, it might not be efficient in addressing exchange hazards that can come up during repeated exchange between partners. Given that informal rules and expectations in a market transaction are typically enforced through relational mechanisms (Abdi and Aulakh, 2012; Gulati, 1995; Zucker, 1986), the outcomes of informal control mechanisms vary between firms.

One distinct feature of informal relationships is the importance of power balance between transacting partners. While informal institutions facilitate relational exchange, the distribution of economic rents from each transaction is determined by the power balance between transacting parties (Emerson, 1962; Pfeffer and Salancik, 2003). Informal relationships are governed by informal enforcement mechanisms (Peng, 2003). Such mechanisms work in favour of those firms that set the rules of enforcement (Peng, 2003), which is likely to be large firms.

This is a salient point, because imperfect agreements (especially trust-based dealings) leave room for *ex post* renegotiations after various contingencies (Williamson, 1979).

Although outgroup trust reduces uncertainty in dealing with parties outside closed groups, ex post renegotiations would still depend on the relative bargaining power of the parties involved. In high trust environments, large firms can set the rules of informal exchange and are less limited to the closed set of exchange partners. This allows large firms to ascertain their power advantage as a partnership norm. Large firms can also maintain power advantages by engaging in market transactions with multiple partners (Chipty and Snyder, 1999; Snyder, 1998). They have the resources and capacity to maintain relationships with multiple partners and in high trust environments provide a lower cost for engaging in market transactions. Hence, the higher the extent to which transactions rely on informal trust, the higher the returns for large firms will be.

Furthermore, high trust environments can provide comparative advantages to large firms by enhancing their *internal* efficiency. High trust environments foster cooperation and favor delegation of decisions down the organizations' managerial hierarchy (Bloom et al., 2012; Rajan and Zingales, 2001). This delegation is limited to hired managers within the organization and between principals (e.g., owners) and agents (e.g., managers). The delegation of decision-power along the organizational hierarchy of large firms has several advantages in high trust societies. Greater delegation for decision authority helps firms more effectively manage human capital within the organization (Rajan and Zingales, 2001) and effectively respond to market challenges and opportunities (Thesmar and Thoenig, 2000). In low trust environments, such practices of delegation can intensify agency-related issues between the principal and the agent. High-trust environments also reduce the cost of information exchanges within large organizations (Bolton and Dewatripont, 1994).

In summary, while the advantages of outgroup trust can benefit both large firms and SMEs, we expect the performance-enhancing effects of trust to be relatively stronger for large firms. Therefore, we predict the following:

Hypothesis 2. *The positive effect of societal outgroup trust on firm performance is stronger for large firms than for SMEs.*

3.4 Interaction effects of formal and informal institutions

Building on the view that society's outcomes are shaped jointly by formal and informal institutions (Scott, 2008), we argue that informal institutions substitute for and alleviate the shortcomings of formal institutions. As the role of institutions is "to reduce uncertainty establishing a stable structure to human interaction" (North, 1990, p. 6), we expect informal and formal institutions to partly substitute each other due to underlying commonalities in their functions. Substitution effects are echoed by Granovetter's (1985) argument that formal institutions are a functional substitute for informal institutions.

Grzymala-Busse (2010) argues that informal institutions can compensate for the shortcomings of formal institutions in three critical roles. First, when formal institutions lack stringent legal regulations and enforcement, informal practices such as social sanctions based on informal monitoring serve as a constraint on people. Second, when there is a lack of formal channels of information (e.g., official statistics and stock reports), people within the society tend to rely on informal practices such as seeking information through personal networks. Thirdly, when formal institutions have shortcomings in welfare state and taxation, informal arrangements such as funding through family and personal networks can compensate for such shortcomings. Thus, informal institutions become more important when formal institutions are absent or weak (Peng et al., 2009).

We argue that there is a substitution effect of formal institutions and societal trust based on the premise that outgroup trust serves as a constraint on opportunism and enhances the reliability of information available through informal channels. Previous work by Lu et al. (2018) in the context of foreign subsidiary performance found support for the substitution effect of formal institutional quality and societal trust. To this effect, informal institutions

evolve as an adaptive response to formal institutions' constraints and limitations (Tsai, 2006, 2016). Hence, informal institutions solve the same problems as formal institutional factors (Méon and Sekkat, 2015), thus reducing demand for (and therefore unsatisfied deficiency of) formal contracting.

A social norm of outgroup trust can support cooperation without the added complexity and costs incurred with formal agreements. In fact, scholars have noted the possibility of crowding-out effects of formal rules in cooperation in a trusting environment (Puranam and Vanneste, 2009). Supporting this view, empirical work suggests that formal mechanisms of constraints can signal absence of trust, thereby framing the relationship as strictly economic (Gächter and Falk, 2002; Lubell and Scholz, 2001; Malhotra and Murnighan, 2002; Tenbrunsel and Messick, 1999). Similarly, Dearmon and Grier (2011) suggest that institutional reforms fail to boost investments in countries with high levels of trust. Therefore, in a high-trust environment, the role of formal institutional quality may be less pronounced because informal institutions are already business oriented and provide certain functions. Conversely, the positive effects of formal intuitional quality are most pronounced in low-trust environments. Therefore, we expect a substitution effect between institutional quality and informal trust:

Hypothesis 3a. *The positive effect of formal institutional quality on firm performance is stronger in environments with lower levels of outgroup trust than in environments with higher levels of outgroup trust.*

Given the differential influence of formal institutions and outgroup trust on large firms and SMEs, the substitution effect is also likely to be different for the two categories of firms. We expect the substitution effect between informal and formal institutions to be stronger for large firms in comparison to SMEs. Following from the argumentation of H3a,

high levels of outgroup trust facilitate market exchange by reducing the need for formal contracting. Such advantages occur because the culture of outgroup trust embedded within the society can alleviate the need for documenting agreements, i.e., in many cases informal relational agreements can suffice to undertake a transaction (Peng, 2003). In contrast, improvements in the quality of formal institutions reduce the cost of writing and enforcing a contract (for a given level of need for contracting). In other words, outgroup trust and formal institutions can often result in easier transactions, but this occurs in different ways: by alleviating the need for formal agreements in the case of outgroup trust and by alleviating the costs of formal agreements (and their enforcement) in the case of institutional quality. The success of the firms depends on their ability to successfully manage the ongoing and recurrent relationships with partnering firms. The proposed differences in the substitution effects between trust and formal institutions for SMEs and large firms are best explained by the nature of the influence of both institutional factors.

As we previously argued, outgroup trust brings significant advantages to large firms. It allows for engagement in relational governance mechanisms between partnering firms that provide large firms with relative power and, therefore, reduce transaction costs (i.e., the costs of information, monitoring, and enforcement). The ease of transaction due to outgroup trust provides advantages to large firms allowing them to exploit the size and scope of market transactions that naturally come with their bargaining power. Although outgroup trust can on average improve the ease of transacting without the need of complex and inefficient formal contracts, the repeated transactions between partners still needs to be managed through relational governance arrangements that help maintain and resolve issues in the partnership (Abdi and Aulakh, 2012). The threshold costs of setting up and maintaining such relational governance arrangements are more cost-effective for large firms due to the larger size and scope of transactions. Therefore, large firms experience (in relative terms) lower transaction

costs than SMEs in high trust societies. In societies with well-developed formal institutions, firms experience lower transaction and enforcement costs (Meyer and Peng, 2005). Hence, for large firms, the overall costs of contracting tend to reduce due to societal trust and formal institutional quality. The two changes represent a strong substitutional effect for large firms, in the sense that one reduces the marginal effects of the other. We therefore expect a more substantial functional equivalence of formal and informal institutions for larger firms.

On the other hand, as we argued in H2, outgroup trust can benefit SMEs but to a smaller extent compared to large firms. Hence, outgroup trust does not reduce SMEs' need for contracting. As a result, the substitution effect between formal institutional quality and outgroup trust (i.e., the extent to which outgroup trust can reduce the impact of higher quality formal institutions) would be stronger for large firms than for SMEs. Accordingly, we introduce the following hypothesis:

Hypothesis 3b. *The substitution effect between formal institutional quality and societal outgroup trust is stronger for large firms than for SMEs.*

4. Methodology

4.2 Data and Sample

The main dataset for the analysis included firm-specific data on both SMEs and large firms based in 16 Post-socialist CEE economies. These countries have been experiencing institutional transformation and economic growth for the last two decades, and this aspect provides sufficient variance in the quality of the formal and informal institution, therefore offering an appropriate setting to investigate the interplay of informal and formal institutions on firm profitability. We collected firm-level data from the Amadeus database of the Bureau van Dijk. The sample contained 24,394 firms operating in non-manufacturing sectors and 11,298 firms in manufacturing sectors (NACE class C). The sample covers the period

between 2003–2011, consisting of 205,772 observations (35,962 firms), involving 122,522 SMEs' and 83,250 large firms' observations. Based on the definition adopted by prior studies and also recommended by the European Union (EU), we define SMEs as firms with fewer than 250 employees (e.g., Nunes et al., 2012; Rodríguez and Nieto, 2016; Roza et al., 2011; Wiklund and Shepherd, 2003).

We followed previous research for measuring formal institutional quality based on the cross-country survey by the World Economic Forum (Chan et al., 2008; Shaner and Maznevski, 2011). To measure societal outgroup trust, we aggregated measures from the survey from the European Social Survey (ESS) survey (Reeskens and Hooghe, 2008). We followed the previous studies which measured the construct using individuals' responses to social surveys based on the 'aggregate trait hypothesis' theoretical perspective. Based on this perspective, societal outgroup trust is an aggregate measure of trust for individuals in a society (Davidsson and Wiklund, 1997; Stephan et al. 2015). Tables 1 and 2 present information regarding the distribution of firms and descriptive statistics, respectively.

Table 1
Distribution of firms by countries.

		Observations		
Countries	**Firms**	Large	SME	**Total**
Bosnia and Herzegovina	925	1,083	4,070	5,153
Bulgaria	1,289	3,011	4,247	7,258
Czech Republic	3,332	5,670	14,131	19,801
Estonia	501	665	2,672	3,337
Croatia	1,241	2,788	6,002	8,790
Hungary	1,949	2,588	5,204	7,792
Lithuania	592	1,193	2,411	3,604
Latvia	589	1,233	2,819	4,052
Poland	6,040	11,400	22,071	33,471
Russian Federation	10,853	29,812	29,318	59,130
Slovenia	843	1,051	3,176	4,227
Slovakia	1,035	1,530	3,845	5,375
Ukraine	6,503	21,226	22,556	43,782
Total	**35,692**	**83,250**	**122,522**	**205,772**

4.3 Dependent variable

We employed the widely used measure of return on sales (ROS) to capture firms' financial performance (Chan et al., 2008; Makino et al., 2004). ROS is a direct reflection of firm profitability, taking into account the scale of operations. We calculated ROS by dividing the firm's profits before tax by sales. We employed the Inverse Hyperbolic Sine (IHS) transformation on the dependent variable to improve the normality of the dependent variable and down-weight extreme values. The IHS transformation has its advantages over traditional logarithmic methods of transformation in handling negative ROS values (Burbidge et al., 1988; Nyberg et al., 2010). Formally, $IHS(x) = ln(x + \sqrt{(x^2) + 1})^2$. We controlled for the outliers by dropping the extreme ROS values (higher than 100% and lower than -100%) based on a similar approach by earlier works (Chang et al., 2013).

4.4 Independent variables

Institutional quality. To measure the level of institutional quality, we follow prior studies and use the measure of the quality of institutions reported in the Global Competitiveness Reports published by the World Economic Forum (WEF) (Kafouros and Aliyev, 2016; Shaner and Maznevski, 2011). WEF's institutional quality measure takes into account many aspects of formal institutions, including protection of property rights, ethics and corruption, undue influence by government officials, efficiency of the government, security, and corporate ethics and accountability (please see Appendix A for a detailed description of the components that form the basis of the aggregate institutional quality measure; see WEF, 2012, for further details).

Outgroup trust. We constructed the measure of outgroup trust using the European Social Survey (ESS), a collection of surveys administered to representative samples of individuals in 24 European countries biannually between 2002 and 2016. Consistent with the previous research that employed the measures, we use three ESS items to assess the degree of

generalized social trust in different countries (Brehm and Rahn, 1997; Kwon et al., 2013; Reeskens and Hooghe, 2008; Rosenfeld et al., 2001). The ESS includes three items to tap generalized trust that reflects a perception of general trust towards others, not being taken advantage of by others, and the view that people are helpful to each other. We aggregated the responses on the three trust items at the country level as a measure of societal outgroup trust in each country. Although this measure reflects the overall level of outgroup trust, the measure may be influenced by formal institutions (perceptions of respondents about the trustworthiness of outgroup members of society may be affected by the quality of legislation). To ensure that we can separate the informally-driven level of outgroup trust from the effect of formal institutions, we regressed the level of outgroup trust on the measure of the quality of formal institutions and predicted the residuals. We used these residuals as a measure of informally driven societal outgroup trust.

SMEs versus large firms. Our hypotheses are about the different effects of institutions on SMEs and large firms. Therefore, we split the sample into two categories, specifying a dummy variable that takes the value of 1 if a firm fits the criteria of a SME, i.e., has less than 250 employees, zero otherwise. The 250 threshold is a common way of identifying SMEs in the literature (e.g., Akbar et al., 2018; Onkelinx et al., 2016). The coefficient of the dummy variable therefore shows how the effect differs for the two groups of firms, allowing to directly test the hypotheses[3].

4.5 Control variables

We also included a number of control variables at the firm, industry and country-level that may affect firm performance. First, firms vary in their efficiency or capability with which

[3] An alternative measure could be the use of a continuous measure of size, such as the number of employees. A coefficient of a continuous variable, however, would represent the effect of marginal increase in employees, rather than the difference between the two categories of firms. Such alternative model would still enable us to infer the effect by calculating predicted margins, but this would be indirect inference, rather than direct test of the hypotheses.

they convert resources into outputs and services (Amit and Schoemaker, 1993; Dutta et al., 2005). As a measure of a firm's capability to convert inputs into outputs, we employed the translog production function with sales, the number of employees, and fixed assets as a measures of output, labor, and capital, respectively (Coe and Helpman, 1995; Kafouros and Aliyev, 2016). We calculated a separate production function for each NACE industry class, and thereby we excluded the industry-level differences in capability. Second, previous work has shown that potential slack influences firm performance (Bradley et al., 2011; Bromiley, 1991; George, 2005), especially in emerging markets (Tan and Peng, 2003). We therefore controlled for this effect by following the literature and including the debt-to-equity ratio (Bradley et al., 2011; Bromiley, 1991; George, 2005).

Third, firm age (years since inception) was also included as a control variable. Fourth, we included firm diversification, measured by counting distinct NACE codes, as a control measure. Fifth, we included a measure of GDP per capita to control for the differences in the economic development of each country. Sixth, we entered each firm's market share in the industry-country-year level as a proxy for the firm's market power, because market power can directly contribute to the profitability levels of especially the large firms. Seventh, we used the *Herfindahl index* to control for industry differences in their competitive structure. The Herfindahl index is a sum of squared market shares of firms in the industry and measures the level of market concentration ranging between zero and one, where a larger value means stronger concentration. Formally, it is calculated as $CI_j = \sum_{i=1}^{n} s_{ij}^2$, where s_{ij} is the market share of firm i in industry j. To ensure variation across countries and over time, we calculated the index for each industry defined at industry-country-year combination (at the four-digit industry level). Finally, we included year specific dummy variables to control for year-specific effects.

Table 2
Descriptive statistics and correlations.

	Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10
1	Return on sales (%)	3.54	14.10										
2	Capability	-0.01	0.82	0.11									
3	Potential slack	-0.22	479.51	-0.02	0.01								
4	Age	18.49	22.35	0.01	-0.09	-0.02							
5	Diversification	3.33	2.83	0.09	-0.01	0.00	-0.08						
6	GDP per capita	9,273.62	5,285.66	0.11	0.02	0.02	0.09	0.28					
7	Herfindahl index	0.20	0.23	0.00	0.03	0.00	0.03	-0.03	0.11				
8	Market share	0.12	0.23	0.04	0.17	0.01	0.06	-0.03	0.14	0.78			
9	SME	0.60	0.49	0.01	0.02	0.00	-0.20	-0.07	0.12	0.04	-0.06		
10	Instit-l dev. (ID)	3.47	0.43	0.06	0.02	0.01	0.12	-0.17	0.69	0.23	0.26	0.16	
11	Societal Outgroup Trust	0.01	0.25	0.02	-0.01	0.00	-0.14	0.35	0.18	-0.03	-0.03	-0.04	0.01

Number of observations = 205,772

5. Results

Table 1 shows the distribution of firms across different countries included in the sample. Table 2 reports the descriptive statistics. Given that the observations in our sample are clustered within countries and within industries, we employed a Hierarchical Linear Model (HLM, also known as multilevel mixed model), specifying country and industry (NACE two-digit level, 84 industries) as hierarchical levels. Table 3 reports the results. Model 0 is a baseline model, while Models 1 and 2 interact Institutional Quality and Trust with *SME* to test hypotheses H1 and H2, respectively. The positive coefficient of the interaction between *institutional quality* and *SME* in Model 1 shows that the marginal effect of *institutional quality* on the profitability of SMEs is *stronger* than the marginal effect on the profitability of large firms. This finding therefore supports H1. A negative coefficient for the interaction effect between *outgroup trust* and *SME* suggests that the positive effect of *outgroup trust* on profitability is *weaker* for SMEs than it is for large firms.

In Model 3a, we test H3a by including an interaction term between *institutional quality* and *outgroup trust*. The negative coefficient of the interaction term supports the substitutive effect between the two variables. This means that the marginal effect of

institutional quality *weakens* at higher levels of outgroup trust. Model 3b tests hypothesis H3b using a three-way interaction among *outgroup trust*, formal *institutional quality*, and *SME*, with all two-way interactions also included between the three variables. Having identified a negative coefficient (rate of substitution) between *institutional quality* and *formal institutions*, a positive coefficient for the three-way interaction term means that the negative rate of substitution is weaker for SMEs (or stronger for large firms). Thus Model 3b supports hypothesis H3b. This table also reports Wald χ^2 specification tests for each model, which confirm that the models are specified appropriately. We also report LR tests of nested models. M3b is the full (unconstrained) model and models M1-M3a are treated as nested within the full model. The LR tests confirm the joint significance of the coefficients in the full model.

Table 3
Results.

Dep. Var.: Return on sales (%)	**M0**	**M1**	**M2**	**M3a**	**M3b**
Firm capability	0.265***	0.264***	0.266***	0.265***	0.265***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Organizational slack	-0.045***	-0.045***	-0.045***	-0.045***	-0.045***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Age	0.108***	0.103***	0.108***	0.107***	0.103***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Diversification	0.049***	0.050***	0.048***	0.049***	0.049***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
GDP per capita	-0.119†	-0.104	-0.147*	-0.150*	-0.165*
	(0.067)	(0.067)	(0.067)	(0.068)	(0.068)
Herfindahl index	-0.396***	-0.415***	-0.404***	-0.397***	-0.425***
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Market share	0.694***	0.727***	0.704***	0.695***	0.741***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
SME	0.009	-1.884***	0.019†	0.010	-1.598***
	(0.010)	(0.173)	(0.011)	(0.010)	(0.181)
Institutional quality (IQ)	1.397***	0.771***	1.404***	1.326***	0.823***
	(0.128)	(0.140)	(0.128)	(0.130)	(0.143)
Outgroup trust	0.135**	0.133**	0.376***	2.305***	3.630***
	(0.045)	(0.045)	(0.052)	(0.635)	(0.784)
H1: IQ*SME		0.978***			0.837***

		(0.089)			(0.093)
H2: Outgroup trust *SME			-0.401***		-2.955***
			(0.042)		(0.712)
H3a: IQ* Outgroup trust				-1.096***	-1.662***
				(0.320)	(0.397)
H3b: IQ* Outgroup trust *SME					1.308***
					(0.359)
Year effects	Included	Included	Included	Included	Included
Constant	-1.123†	-0.055	-0.854	-0.637	0.471
	(0.674)	(0.680)	(0.678)	(0.691)	(0.699)
Wald χ^2	4915.54	5038.45	5006.62	4927.43	5138.25
p-values	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
LR test of nested models	217.69	97.70	128.58	205.94	Full model
p-values	*0.000*	*0.000*	*0.000*	*0.000*	

Note. Multilevel model with country and industry as levels. Standard errors in parentheses. Number of observations: 205,772 (35,692 firms). *** p< 0.001; ** p< 0.01; * p< 0.05 and † p< 0.10. LR tests of nested models are made relative to full model M3b.

These effects are also presented graphically. Figures 1 and 2 illustrate the interaction effects noted in Model 1 and Model 2, respectively. The variations in the formal institutional quality are noted in the horizontal axis. The vertical axis indicates the predicted values of ROS for a given level of formal institutional quality (in Figure 1) and outgroup trust (in Figure 2) at the means of all other covariates. Figure 1 shows that the slope is steeper for SMEs than it is for large firms. One interesting aspect of the finding is that the intercept of the predicted line for SMEs lies below the intercept of the line for large firms. However, due to the significantly stronger impact of institutional quality on the ROS of SMEs than on the ROS of large firms, after the threshold, the improvements in institutional quality push the profitability of SMEs above that of large firms. This pattern implies that SMEs are slightly worse off than large firms in very weak institutional environments, but because of the disproportionately strong impact of institutional quality on SMEs (in comparison to large firms), SMEs overtake large firms in terms of profitability.

The figure also demonstrates the economic significance of institutional quality, i.e. we can see how large the size of the effect of institutional quality is. To demonstrate significance of effect sizes with examples, we can compare the predicted average profitability levels

between specific countries located in the boundaries of the range of institutional score (i.e. all observations are located in the range of those scores). Namely, we looked at differences in predicted average profitability between Bosnia and Herzegovina (in 2008) which shows the lowest score of *institutional quality* in the sample, and that in Estonia in (2010) which shows the highest score of *institutional quality*. On average, firms in Bosnia had ROS of 0.94% (predicted from Model 0, calculated at the means of all other variables), while firms in Estonia had ROS of 2.3% on average. This is more than a twofold increase in firm profitability attributable to the differences in institutional quality between the two countries, keeping other things equal. Calculating profitability measures for the two countries for SMEs and large firms separately suggests that *large firms* in Bosnia and Estonia earned ROS of 1.05% and 1.75%, respectively, while *SMEs* 0.86% and 2.64%, respectively. Thus, large firms show 1.67 times difference in profitability, while SMEs show over threefold difference, attributable to *institutional quality*.

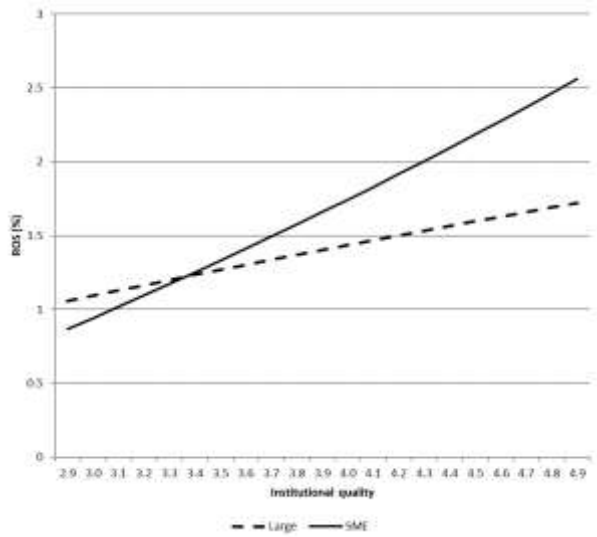

Fig. 1 Plot depicting the effects of formal institutional quality on the return on sales (profitability measure) of SME and Large Firms.

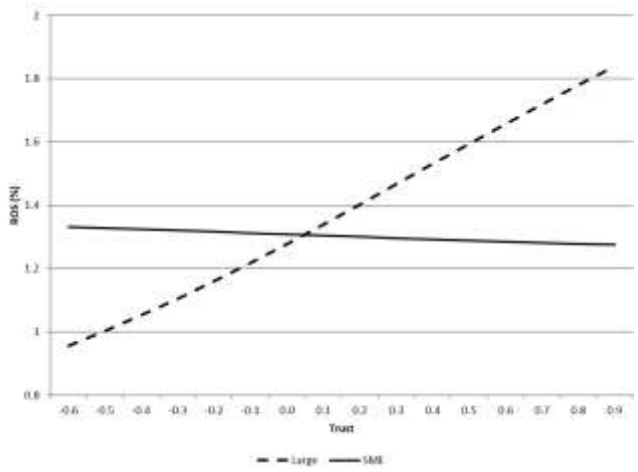

Fig. 2 Plot depicting the influence of societal trust on the return on sales (profitability measure) of SME and Large Firms.

Figure 2 shows the opposite effect: the main beneficiaries of societal outgroup trust in the environment are large firms. The slope for SMEs is negative (but insignificant), while for large firms it is strongly positive. Regarding the effect size, as societal outgroup trust increases, the average ROS of *large firms* increase from 0.96% to 1.84%, whereas the corresponding range for SMEs range between 1.33% and 1.28%. Despite the negative slope of the line for SMEs, up until approximately the mean value of outgroup trust (0.01), *SMEs* on average have higher profitability than *large firms*, however, due to the steep positive slope of the line for *large firms*, they overtake *SMEs* in terms of profitability by a large margin as the level of outgroup trust increases.

Again, we can demonstrate the differential effects more clearly by comparing the predicted average firm profitability levels in specific countries, namely in Bulgaria (a low trust country) and in Latvia (a high trust country). Using Model 2, SMEs on average achieved ROS of 1.33% and 1.28% in Bulgaria and Latvia, respectively, showing almost similar profitability outcomes. Large firms, on the other hand, achieved average ROS of 0.96% and 1.58% in Bulgaria and Latvia, respectively, showing significant difference in profitability attributable to the difference in outgroup trust between the two countries.

Figure 3 plots the *marginal effects* of formal institutional quality on ROS at varying levels of societal outgroup trust. The vertical axis depicts the marginal effect of formal institutional quality on firm performance. The horizontal axis depicts the level of societal outgroup trust (the vertical bars along the fitted line represent the 95% confidence intervals). This figure shows that the positive marginal effect of *institutional quality* declines at higher levels of *outgroup trust*. For example, the marginal effect of institutional quality in Bulgaria (a low trust country) is estimated at 1.92, while the marginal effect of institutional quality in Latvia (high trust country) at 0.84. Hence, there is a more than twofold decline in the marginal effect attributable to differences in the levels of trust between the two countries.

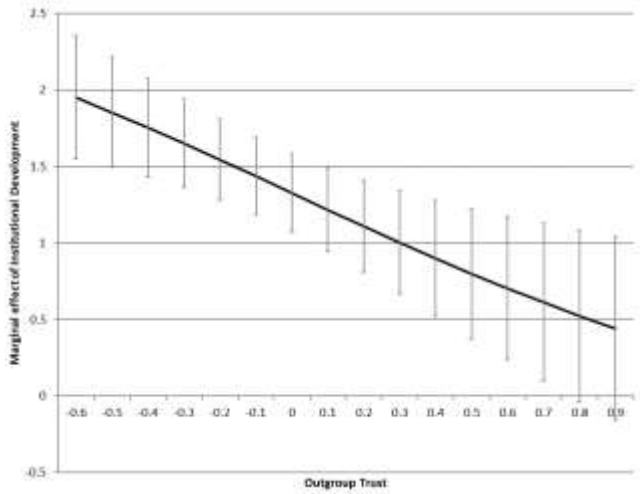

Fig. 3 The impact of societal outgroup trust on the marginal effect of formal institutional quality on firm performance

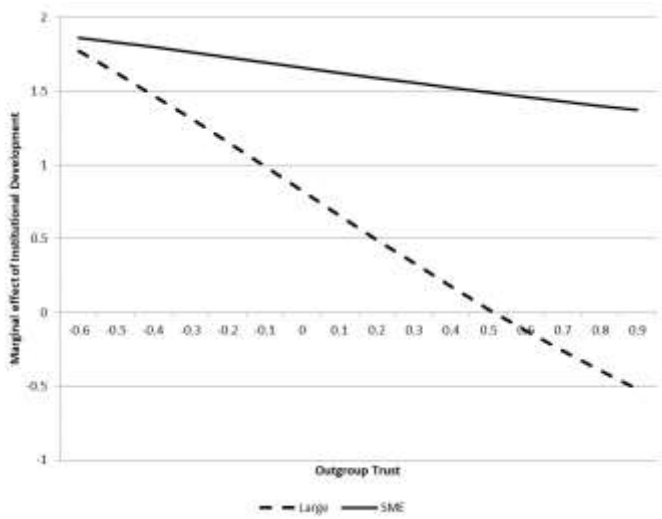

Fig. 4 The impact of societal trust on the marginal effect of formal institutional quality on firm performance of SME and Large Firms.

Figure 4 shows the marginal effects of *institutional quality* at different levels of societal outgroup trust for SMEs and large firms separately. The marginal effect for large firms declines faster than that for SMEs. These results provide empirical support for the view that the substitution effect between societal outgroup *trust* and *institutional quality* is stronger for large firms than for SMEs. For example, the marginal effects of institutional quality for *large firms* in Bulgaria and Latvia are 1.72 and 0.083 respectively, while the marginal effects for *SMEs* are 1.85 and 1.50, respectively in the two countries. The differences in the extent of the cross-country differences show that there is a significantly stronger substitution effect for *large firms* than for *SMEs*.

As a final note, Table 2 shows that two correlation coefficients between control variables are high, raising the possibility of multicollinearity issues: the correlation between Market share and Herfindahl index (0.78) and that between GDP per capita and Institutional Quality. Although high correlations do not necessarily warrant issues related to multicollinearity in large samples, ruling them out is difficult too because VIFs are not valid in multilevel models. To make sure that high correlations do not interfere with the findings, we undertook robustness tests by dropping the control variables with high correlations

(Market share and GDP p/c). The results remained in the same pattern with the same levels of statistical significance.

6. Discussion

6.1 Theoretical contributions and managerial implications

Our study offers a refined understanding of the relationship between institutions and firm performance, and the way in which this relationship differs between large firms and SMEs. We show that differences in the competitive advantages and performance of SMEs and large firms are best explained by considering the joint influence of formal and informal institutions. The empirical analysis of a large number of firms over 205,000 observations from 16 CCE countries supports our theoretical predictions. By documenting the effects of institutions in such economies, we contribute to research about the relationship between institutions and organizations in a number of ways.

First, we contribute to the institution-based view (Meyer and Peng, 2005; Peng, 2004; Peng et al., 2008; Williamson, 2000). Our study extends the view that the effects of institutions on firm profitability are not uniform (e.g., Chari and Banalieva, 2015; Kafouros and Aliyev, 2016). Specifically, we examined both formal and informal aspects of institutions and argued that both aspects of the institutions affect the competitive advantages of large firms and SMEs in a different way. Our analysis shows that the quality of formal institutions improves firm profitability, but these positive effects are stronger for SMEs than for large firms. By contrast, outgroup trust has a stronger positive effect on the profitability of large firms. Our analysis suggests that informal institutions (in the form of trust) play an important role in explaining why SMEs and large firms differ in their profitability across countries. It is often presumed that trust is uniformly helpful to all firms. Outgroup trust may reduce the difficulty and cost of findings partners for all firms, including SMEs. While our analysis aligns with this premise indicating that trust exerts a very important direct influence on firm

performance, it further shows that large firms benefit from high trust environments significantly more than SMEs do.

Our analysis also helps us understand why institutions matter to different types of firms, but to a different extent. When formal institutions improve, they facilitate market transactions by reducing corruption and uncertainty while providing better protection of property rights. High-quality formal institutions bring greater advantages for SMEs than large firms, as SMEs rely considerably on the market to compensate for limited resources and capabilities. For example, due to their size constraints, smaller firms cannot always engage in internalization to cope with challenges in capital and labor markets that often characterize underdeveloped institutional environments (Khanna and Palepu, 1997). By contrast, when developed institutional markets facilitate market transactions in the form of alliances and partnerships, SMEs can cope with resource constraints more effectively by relying on market transactions. Furthermore, developed institutional environments that offer protection of property rights provide a larger set of investors willing to support SMEs. In contrast, outgroup trust as an informal institutional factor helps facilitate market transactions and enhances efficiency within the organizations by improving delegation and information sharing (Bloom et al., 2012; Rajan and Zingales, 2001). As such, the associated benefits of societal trust are more significant for large firms.

Second, we revisit a central tenet in new institutional economics (North, 1990) that recognizes that informal and formal institutions influence outcomes jointly. Although it is theoretically accepted that institutions influence firm performance, understanding of the interdependencies of such effects is limited. Recent studies in International Business called for research into more nuanced understanding of institutions and how they influence firm behaviour and performance (Earl and Michailova, 2021; Kothari et al., 2013). We contribute to research on institutions (Peng, 2003) by explaining why the nature of the relationship

between institutional quality on firm profitability varies depending on firm size. Although prior research considers that institutions can be a barrier to innovation in SMEs (Zhu et al., 2012), there is a gap in the literature in investigating the advantages and disadvantages of institutions for SMEs vis-à-vis large firms. To this end, we integrate the role of informal institutions and their contribution to the performance of SMEs and large firms. A key insight from our analysis is that the effects of formal and informal institutions on firm performance cannot be fully understood in isolation. This instead requires consideration of their joint effects on firm performance.

Third, we contribute to the literature on the determinants of SME performance. Although SMEs are a major contributor to employment and value creation in many economies around the world, much of the work explaining SME performance has tended to focus on firm-specific factors, with a few exceptions (e.g., Foreman-Peck, 2013; Kanu, 2015). Even those studies that examine the effects of macro institutional factors on SME performance, they tend to focus on SMEs without contrasting them with other types of firms. We contribute to the literature by explaining the relative competitive advantages and disadvantages of formal and informal institutions on SME performance. We also enrich extant research that examines the implications of firm size for firm performance by theorizing and empirically testing the mechanisms through which institutional environments shape the relationship between firm size and performance. To this end, we explain the differential influence of macro-level institutions on the comparative advantage of firms based on their size.

Lastly, our study helps us understand the effects of institutions by analyzing firm-level performance in Central and Eastern European (CEE) countries that are in the process of transition from state-controlled economies to free-market economies. Our analysis highlights the importance of institutions in transition economies in explaining firm performance. To

improve the clarity of the implications of our findings, we predicted these effects for some countries. Specifically, we compared Bosnia and Herzegovina to Estonia, as representatives of low and high quality institutional settings, respectively. We also compared the effects for Bulgaria and Latvia as representatives of low and high trust environments, respectively. These comparisons underscore the economic significance of the findings, and allows us to explain the relative dynamics between SMEs and large firms as institutions within these countries continue to improve over time.

Our results also mirror the theoretical assertions of Peng (2003) that, as formal institutions develop within a country, institutional transactions move from relationship-based structure to rule-based structure. Large firms in lower quality formal institutional environments that rely on relationship-based structure gain a relative advantage due to their size. By contrast, in rule-based environments, firm size may bring limitations such as a lack of flexibility and efficiency.

Our analysis implies that managers of large firms that compete with SMEs have to recognize that there might be a loss of competitive advantage when formal institutions gradually improve. Managers of large firms should understand that the improvements in the formal institutions lead to loss of size-related competitive advantages of their firms. As formal institutions evolve, large firms face stronger competition from smaller firms and new entrants to the market. Managers of large firms may respond to such challenges by reconsidering the boundary of the firm (Khanna and Palepu, 2000). Although firms cannot change the overall trust levels in the countries they already operate, managers of large firms that consider expanding into new markets can choose to enter into high outgroup trust countries that allow these firms to exploit size-related advantages, especially in markets that do not have developed formal institutions.

6.2 Limitations and future research

Certain limitations in our study present avenues for future research. First, we have considered only one aspect of informal institutions, i.e., outgroup trust. Future research may examine other forms of trust or other types of informal institutions on firm performance, or on other outcomes such as innovation (Kafouros et al., 2012, 2018; Mavroudi et al., 2020). Second, both measures of formal and informal institutions are an aggregate measure at a country level. These measures do not take into consideration the variations within regions of a country (Ma et al., 2013). By considering measures of formal and informal institutions at the country level, we are ignoring the institutional differences within regions of a country (Wang et al., 2012, 2020). Scholars can address this shortcoming in future studies by taking into account the institutional variations within and across national boundaries influence the results. Third, although our analysis included cross country analysis across 16 CEE countries which share the context of transition economies, future research can examine data from other countries and continents.

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Appendix A

Description of the Institutional Quality measure by WEF (source: Global Competitiveness Report 2012–2013)

Institutional quality:	Weight[a]
A. Public institutions	**75%**
1. Property rights (1.01 Property rights; 1.02 Intellectual property protection)	20%
2. Ethics and corruption (1.03 Diversion of public funds; 1.04 Public trust in politicians; 1.05 Irregular payments and bribes)	20%
3. Undue influence (1.06 Judicial independence; 1.07 Favoritism in decisions of government officials)	20%
4. Government efficiency (1.08 Wastefulness of government spending; 1.09 Burden of government regulation; 1.10 Efficiency of legal framework in settling disputes; 1.11 Efficiency of legal framework in challenging regulations; 1.12 Transparency of government policymaking; 1.13 Provision of government services for improved business performance)	20%
5. Security (1.14 Business costs of terrorism; 1.15 Business costs of crime and violence; 1.16 Organized crime; 1.17 Reliability of police services)	20%
B. Private institutions	**25%**
1. Corporate ethics (1.18 Ethical behavior of firms)	50%
2. Accountability (1.19 Strength of auditing and reporting standards; 1.20 Efficacy of corporate boards; 1.21 Protection of minority shareholders' interests; 1.22 Strength of investor protection)	50%

[a] As used by the source.