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The role of institutional quality and industry dynamism in explaining firm performance in emerging economies

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Abstract

Research Summary: This study explains how heterogeneity in firm competitiveness and performance in emerging economies is influenced jointly by the institutional quality of countries and interindustry variations in technological and market dynamism. The analysis of 12,888 firms from 16 emerging economies shows that while the performance advantages of institutional quality are strengthened for firms in technologically dynamic industries, the opposite pattern emerges in high market-dynamism industries. The study advances the institution-based view by explaining the mechanisms through which such effects occur and why two industry-specific boundary conditions (technological and market dynamism) influence differently the relationship between institutional quality and firm performance.

Managerial Summary: This study investigates how the performance of firms in emerging economies is influenced by the quality of institutions in each country as well as by the technological and market dynamism in the industry in which each firm operates. To examine these relationships, the study analyzes a sample of

12,888 firms from 16 emerging economies. The results indicate that institutional quality enhances firm performance and that these positive effects are stronger in technologically dynamic industries than in industries that are less technologically dynamic. However, the opposite pattern of results emerges for market dynamism, indicating that the role of institutional quality in enhancing firm performance is weaker in industries that exhibit a high degree of market dynamism than in industries that are less volatile in market demand.

KEYWORDS

institutions, market dynamism, performance, emerging economies, technological dynamism

1 | INTRODUCTION

Strategic management research has long recognized the role of the external environment in determining firm competitiveness and performance and has accordingly built on two distinct perspectives. The first perspective hinges on the role of *institutional quality* in a country—the effectiveness of political, legal, and regulatory institutions in reducing the difficulty of using the market and the transaction costs of market exchange (North, 1991; Williamson, 2000). Institutional quality has a profound impact on how firms in a country compete and collaborate (Chan et al., 2008; Meyer & Peng, 2005). It can therefore affect firms' competitive advantages and performance (Banalieva et al., 2018), particularly in emerging economies that experience significant institutional transitions (Kafouros & Aliyev, 2016a; Lazzarini et al., 2021). The second perspective hinges on industrial organization economics (Alchian & Demsetz, 1972; McGahan & Porter, 1997). It suggests that as technology and market demand conditions differ across industries, they create variations in *industry (environmental) dynamism* (Miller et al., 2006). Industry dynamism not only affects how firms create economic rents in volatile environments (Cui et al., 2005), but also influences technological evolution and how such evolution affects firms. It, therefore, determines the overall competitiveness and performance of firms (Davis et al., 2009).

While these two theoretical approaches have each separately advanced explanations about firm competitiveness and performance, it remains theoretically unclear how interdependencies between the two explain heterogeneity in the performance of emerging economy firms. Indeed, there are studies that consider the direct effects of institutions (Chan et al., 2008) and industry characteristics (structure) (Bamiatzi et al., 2016; Christmann et al., 1999; Mavroudi et al., 2020), or include both institutional and industry attributes in the same model (e.g., government support and industry unfavorableness in Gaur et al., 2018). Yet, little research has theoretically advanced and empirically documented how interdependencies between institutional quality and industry dynamism can jointly explain heterogeneity in the competitiveness and performance of firms across different industries and countries. This limitation is surprising given that firms are influenced simultaneously by both institutional and industry dynamics. This point is

even more salient for emerging economies because although institutional reforms in such contexts lead to certain competitive advantages and disadvantages for firms (Kafouros & Aliyev, 2016b), their influence is not homogenous on firms in different industry contexts. Focusing therefore on either institutional or industry dynamics (rather than on their interdependencies) can only provide a partial explanation of the sources of firm competitiveness and performance in emerging economies.

This study combines these two theoretical perspectives to examine how the relationship between institutional quality and firm performance (profitability) in emerging economies is influenced by the dynamism of each industry. Industry dynamism adds extra layers of volatility and unpredictability in addition to those caused by institutional reforms in emerging economies. Combining the two perspectives is useful for advancing new theoretical explanations about firm competitiveness and performance because industry dynamism influences how much firms need to rely on institutions. Such reliance matters because it determines how and the extent to which firms in each industry context benefit (or are unable to benefit) from high-quality institutions. We expect firms that use institutions more extensively to exploit the advantages of high-quality institutions (e.g., new opportunities as well as easier and less costly access to the market) much more than firms that rely less on institutions. For instance, firms in technologically dynamic industries are highly dependent on institutions given that the diffusion and adoption of technologies are influenced by institutions associated with intellectual property protection, appropriability, and long-term contracting. In contrast, firms in industries with low technological dynamism rely on the exploitation of their own (internal) technologies for longer periods. They are therefore less dependent on institutional quality. This effectively means that industry dynamism and institutional quality *jointly* shift who will be the winners and losers from institutional reforms by strengthening the competitiveness of some firms and weakening that of others.

To support the above reasoning, the study explains that while industry dynamism influences business opportunities and the way in which emerging economy firms compete with their rivals, institutional quality influences the difficulty and cost of using the market to access resources and search for partners. Interdependencies between the two sources of external volatility and unpredictability co-influence constraints and opportunities for firms and, in turn, represent a significant source of heterogeneity in firm competitiveness and performance. The study, therefore, unveils how the combination of these mechanisms and boundary conditions explains inter-firm variations in performance (profitability) across industries and emerging economies. To test these theoretical predictions, we analyze firm-level longitudinal data from 19 industries and 16 emerging economies in Central and Eastern Europe (CEE) over the 2004–2011 period (72,082 observations).

The study contributes to research about the relationship between institutions and firm competitiveness and performance (Banalieva et al., 2018; Meyer & Peng, 2005; Peng et al., 2008) in the context of emerging economies (Wang et al., 2020). It does so by explaining why the technological and market dimensions of industry dynamism influence *differently* the relationship between institutional quality and firm performance.[a] The study's overarching contribution lies in explaining how industry conditions change the reliance of emerging economy firms on institutions and determine to what extent they benefit from (or are disadvantaged by) stronger institutions. It, therefore, clarifies how institutional variations across countries and differences in technological and market dynamism across industries jointly explain heterogeneity in the competitive position and performance of firms in emerging economy contexts.

Furthermore, it is unclear from prior research whether the relationship between institutional quality and firm performance is positive (Cuervo-Cazurra & Dau, 2009; Cuervo-Cazurra, Gaur, & Singh, 2019) or negative (Banalieva et al., 2015). The study advances the institution-based view by clarifying the role of two industry-specific boundary conditions in determining this relationship in emerging economies. Specifically, it shows that (and explains why) the association between institutional quality and firm performance is stronger in technologically dynamic industries than in industries with lower levels of technological dynamism. By contrast, the opposite pattern emerges for market dynamism. That is firms in industries with high market dynamism profit from institutions less than those in industries with lower market dynamism. The study, therefore, clarifies how institutional reforms in emerging economies impact firms unevenly across industries and lead to the "redistribution of economic rents" (which is a central tenet in institutional economics; North, 1990; Williamson, 2000).

2 | THEORY

2.1 | An institution-based explanation of firm competitiveness and performance

Institutional economics (North, 1990; Williamson, 2000) focuses on interactions between firms (Su et al., 2015) and on how business conduct is defined (Cuervo-Cazurra, Mudambi, & Pederson, 2019). As institutions develop, they reduce uncertainty, transaction costs, and market imperfections that can be considerable in emerging economies (Banalieva et al., 2018). They affect firm competitiveness and performance by placing constraints on what can be done in emerging economy contexts and on the way in which such environments facilitate or inhibit certain activities and transactions (Peng et al., 2008). Institutions also influence the pressures and costs that firms face and how they access and use resources. They can therefore augment or constrain a firm's competitiveness and that of its rivals (Aliyev & Kafouros, 2023; North, 1990).

The quality of institutions in emerging economies is on average lower than that in developed countries. To enhance institutional quality, countries implement fundamental political, legal, and economic changes, improve rule enforcement, and the development of various markets (Williamson, 2000). Nevertheless, as not all emerging economies can successfully implement such reforms, institutional quality varies considerably across emerging economies (Kafouros & Aliyev, 2016b). Given these variations, institutional economics can help us explain differences in firm competitiveness and performance that cannot be attributed to firm-specific characteristics. Indeed, one of the theoretical boundaries of firm-specific perspectives is that they cannot fully explain firm performance in changing environments as one of their core assumptions is that strategic decisions are made based on the effectiveness of a stable market and environment (Bamiatzi et al., 2016).

Furthermore, while prior empirical studies have established that there is a strong association between institutions and firm performance (Chung & Beamish, 2005; Kafouros & Aliyev, 2016a), their results are mixed (Cuervo-Cazurra, Gaur, & Singh, 2019). Some studies find a positive association (Banalieva, 2014) due to lower transaction costs (Park et al., 2006), more efficient capital markets, and better regulatory frameworks (Cuervo-Cazurra & Dau, 2009). Other studies point to a negative association (Banalieva et al., 2018), find a U-shaped relationship because rule enforcement is initially inadequate (Chari & Banalieva, 2015), or show that institutional quality is positively associated with firm performance up to a point,

after which it fails to further reduce transaction costs, thus deteriorating firm performance (Chan et al., 2008). They also show that the relationship between institutional quality and firm performance is not uniform across organizations and that is often more negative for foreign firms (Kafouros & Aliyev, 2016b). In sum, improvements in institutions are not necessarily positively associated with firm performance as they can in fact put some firms in a disadvantageous position.

2.2 | An industry-based explanation of firm competitiveness and performance

The second theoretical perspective postulates that a firm's surrounding industry environment determines various activities within and outside of the firm and therefore its competitiveness and performance (Porter, 1980). One of its key premises is that three structural conditions in an industry (namely, technological evolution, market changes, and rivalry between firms) determine the opportunities and challenges that firms face vis-à-vis their rivals and can have a profound effect on their competitive position and performance (Su et al., 2013; Su et al., 2015). Indeed, the role of industry can account for over 50% of variance in firm performance (Chang & Singh, 2000; Short et al., 2009), and its explanatory power can be stronger than that of firm-specific factors (Hawawini et al., 2003). This perspective, therefore, is useful for explaining why firms *across* industries perform differently (Christmann et al., 1999).

This perspective also postulates that industry contexts differ from each other in terms of "dynamism." Industry (or environmental) dynamism refers to the instability (or volatility) of the industry's environment (Keats & Hitt, 1988). It, therefore, depends on the magnitude and frequency (rate) of such changes (Miller et al., 2006). Prior research about dynamism and the role of industry has shown their significant role in explaining interfirm performance variations (Rumelt, 1991; Schmalensee, 1985). However, prior findings for such direct effects on firm performance are contradictory. For instance, Kovach et al. (2015) examine 3857 publicly traded US firms in 19 industries. They show that industry unpredictability and instability are negatively associated with firm profitability because they make firms less able to respond to changes in demand. By contrast, Chung et al. (2021) have found that environmental dynamism has a positive effect on return on assets (ROA) for a sample of 180 firms from New Zealand. They argue that environmental dynamism motivates firms to reduce manufacturing costs, and adopt more efficient production techniques and new management practices.

Recognizing that the industry environment comprises interconnected, but distinct, aspects (Miller et al., 2006), our analysis focuses on two key dimensions of dynamism (*technological* and *market dynamism*) that reflect technology and market demand conditions in an industry, respectively. We distinguish between the two dimensions because while technological dynamism is driven by the nature of the technologies prevalent in the industry, market dynamism is driven by consumer preferences, income, and demand (Davis et al., 2009).

Technological dynamism refers to the magnitude and rate of technological changes, which can vary significantly across industries (Li & Calantone, 1998). Technologically dynamic industries are characterized by intensive technological evolution and frequent introduction of new technologies. Technological change requires firms to continuously enhance their capabilities by engaging in collaboration and by accessing markets for resources and knowledge. Such access enables firms to improve their product offerings, processes, and efficiency and, in turn, increase their competitiveness and performance. By contrast, less technologically dynamic industries

exhibit technological stability, infrequent and subtler changes, and longer technological life cycles (Zahra, 1996).

Market dynamism refers to variations in the sales (or demand) within an industry due to changes in customer needs and preferences (Keats & Hitt, 1988; Lepak et al., 2003). Industries that exhibit high levels of market dynamism are characterized by volatility in consumer demand (i.e., sales), accelerated obsolesce of products, and a higher probability of demand shocks (Schilke, 2014). In such environments, firms often prioritize shorter-term goals (e.g., inventory, operation, and production scheduling) as unstable market demand and volatile product life cycles affect firm competitiveness and performance (Su et al., 2013). By contrast, firms in less dynamic (and therefore more stable) markets experience less volatile consumer demand (Zhou, 2006), which may allow them to build organizational slack and search for new opportunities.

Market dynamism in each industry is affected by a country's consumer demand and therefore differs from country to country. By contrast, the nature of a technological domain and the technological (rather than market) opportunities that exist in it will be highly similar across countries (i.e., a high-tech industry will remain a high-tech industry irrespective of the country). For example, while the car industry is characterized by similar technological changes in all countries, it exhibits highly volatile demand from country to country. For instance, car sales[b] in Hungary decreased by 75% between 2004 and 2011, were relatively stable in Slovenia, and increased significantly (by 45%) in Russia.

3 | CONCEPTUAL MODEL AND HYPOTHESES

Our framework focuses on how industry dynamism affects the usefulness and challenges of institutions and, in turn, their association with firm competitiveness and performance (profitability) in emerging economies. This requires us to consider *interactions* between variations in the institutional quality of countries and inter-industry variations in technological and market dynamism. Accordingly, the next sections initially identify key mechanisms that determine the relationship between institutional quality and firm performance. We subsequently theorize how technological and market dynamism influence such mechanisms and, thereby, the association between institutional quality and firm performance.

3.1 | Institutional quality and firm performance in emerging economies

Although institutional quality is associated with pro-market reforms and better functioning of the market, it does not influence all firms in emerging economies in a similar way. While institutional reforms can be advantageous for some firms, they can challenge the competitive position of other firms. They, therefore, lead to the redistribution of economic rents and, thereby, create winners and losers (North, 1990; Williamson, 2000). For example, while firms in emerging economies often rely on nonmarket strategies (e.g., ties with government), such strategies might become less useful or even redundant in institutionally stronger contexts that offer better access to factor markets (Wang et al., 2022). High-quality institutions may reduce barriers to entry and oligopolistic practices, decreasing once again the competitive advantage of some firms (Kafouros & Aliyev, 2016b). They can also lead to higher competition in various strategic factor

markets (e.g., a larger number of firms might be able to compete for talent as labor markets become more efficient). Similarly, studies show that the development of the institutional context may lead to hyper-competition, which makes it difficult for some firms to sustain superior competitive positioning and economic performance (Hermelo & Vassolo, 2010).

Despite these negative consequences for firm competitiveness and performance, higher institutional quality and pro-market reforms can help some emerging economy firms become more competitive than others and improve their performance. We argue that such performance-enhancing advantages occur when high-quality institutions affect the following three mechanisms: (1) the ease and cost of identifying and establishing business partnerships and collaborations; (2) the effectiveness of the legal framework, including its enforcement through the judicial system (Gelbuda et al., 2008), in determining non-collaborative interfirm relationships and contracts (e.g., with suppliers and competitors); and (3) the effective "exchange" between firms that facilitates the functioning of markets for various resources (Williamson, 2000), that is, noncontractual exchange.

Regarding the first mechanism, higher institutional quality in an emerging economy makes it easier for some firms to identify and establish partnerships and collaborative agreements that help them access expertise, implement new initiatives, and develop products and services that they could not develop alone (Capron & Mitchell, 2009; Puranam et al., 2009; Singh, 1997). As high-quality institutional settings are effective in bringing firms together, they enable wider knowledge exchange and opportunities for collaboration that improve the competitiveness and performance of those firms that can exploit such benefits (Wu et al., 2016). Institutional quality also decreases the costs of identifying and establishing such partnerships, the costs of writing and enforcing contracts for these partnerships (Gelbuda et al., 2008), and the cost of replacing untrustworthy partners. They also discourage opportunistic behavior, increase trust and commitment, and facilitate productive relationships.

Regarding the second mechanism, a stronger legal framework protects intellectual property rights (IPR), settles disputes more effectively, and motivates firms to invest in innovation-based strategies (Khoury et al., 2014). Firms can also capture higher returns from their intangible resources as they can use litigation to protect themselves from imitators and unfair competition (Kafouros et al., 2021; Teece, 1986). Furthermore, it reduces opportunism in (non-collaborative) firm relationships, while reducing corruption in courts typically raises costs and causes delays (Williamson, 2000), which is a typical problem in emerging economies.

Regarding the third mechanism, while factor markets in many emerging economies are inefficient and noncontractual exchange between firms can be problematic (Williamson, 2000), high-quality institutions improve the overall functioning of markets. They can facilitate better and less costly access to markets for resources, including technology and talent that help emerging economy firms that face a scarcity of resources engage in new product development and pursue new profitable opportunities (Wang et al., 2020). Institutional reforms also make labor markets more competitive and increase talent mobility (Cuervo-Cazurra & Dau, 2009), enabling some firms to implement new initiatives and improve their competitiveness (Cuervo-Cazurra & Dau, 2009).

In sum, higher institutional quality creates both benefits and challenges for firms. Given that high-quality institutions strengthen the competitive advantages of some firms while putting other firms in a disadvantageous position, it is difficult to predict what the association between institutions and performance is without taking industry conditions into consideration. The next sections explain how two industry-specific boundary conditions (technological and market dynamism) shift the association between institutional quality and firm performance towards a

more positive or negative side. These variations arise because the advantages of institutional quality (such as lower costs and better access to technology) outweigh its disadvantages (such as intense competition) for some firms, but the opposite pattern occurs for other firms.

3.2 | Institutional quality and technological dynamism

Firms in emerging economies often face unfavorable conditions, intense competition, and shortages in technological resources that are needed to move up the value chain and increase competitiveness and performance (Cuervo-Cazurra & Dau, 2009; Gaur et al., 2018; Wang et al., 2020). Accordingly, our first hypothesis theorizes that the association between institutional quality and the performance of emerging economy firms is stronger in industries that exhibit higher levels of technological dynamism than in industries that are less technologically dynamic. The reasoning for this prediction relies on how technological dynamism influences the three mechanisms that determine the relationship between institutional quality and firm competitiveness.

According to the first mechanism, high-quality institutions are associated with lower costs of identifying and establishing collaborations and contracts (Gelbuda et al., 2008). Rapid technological change means that firms in technologically dynamic industries cannot do everything internally. Instead, they must heavily rely on external partnerships and collaborative agreements (Kafouros et al., 2022). By contrast, reliance on collaborators is considerably lower in less technologically dynamic industries as firms face less pressure to change their capabilities and product offerings quickly. As a result, dynamic industries such as pharmaceuticals and IT account for over 50% of strategic alliances (Covin & Slevin, 1989), while the corresponding figure in less technologically dynamic industries is as low as 5% (Hagedoorn, 2002). This phenomenon is particularly prominent in emerging economies. For instance, firms in CEE countries rely heavily on a diverse network of collaborators to commercialize new products (Stojčić, 2021). About 37% of firms in CEE countries are involved in formal partnerships with R&D centers, universities, suppliers, and customers, with such collaborations being much more pronounced in technologically dynamic industries (Stojčić, 2021). Hence, as firms in technologically dynamic industries need to use institutions more intensively, we expect the performance-enhancing advantages of high-quality institutions to be stronger for these firms than for firms in less technologically dynamic industries.

Regarding the second mechanism (the effectiveness of the legal framework), because technologies in dynamic industries change frequently and evolve in unpredictable ways, it is uncertain which technologies will dominate and become more profitable (Dosi & Nelson, 1994). In such instances, firms develop broader portfolios of products and services to position themselves in different technological areas so that they can pursue new market opportunities (Zahra, 1996) that arise frequently in emerging economies. Nevertheless, because protection from imitation is more challenging when such portfolios are diversified (Kafouros et al., 2021), firms must rely heavily on a developed legal framework. Such legal framework is particularly important in emerging economies as it protects firms from imitation and corruption and assists in the appropriation of economic rents between partners (e.g., from co-developed products) (Aliyev & Kafouros, 2023; Teece, 1986; Williamson, 2000). For example, an emerging CEE country, Poland, has set up four specialized courts to protect IP and broaden the power of attorneys (Rzążewska & Gajek, 2020). Given the importance of legal protection for emerging economy

firms in industries that are highly dynamic, we expect such firms to profit from institutional quality considerably more than their counterparts in less technologically dynamic industries.

Regarding the third mechanism (the effective exchange between firms and the better functioning of markets), due to strong evolutionary forces, existing technologies and knowledge in technologically dynamic industries become obsolete quickly as new ones are introduced (Bessen & Maskin, 2009; Dosi & Nelson, 1994). Given that such evolutionary forces further increase technological complexity and costs (Nelson, 2009), firms in technologically dynamic industries must continually augment their capabilities and adjust their product offerings (Hagedoorn & Duysters, 2002; Nelson, 2009). Prior research (Tushman & Anderson, 1986; Zahra, 1996) suggests that in technologically dynamic environments, firms rely heavily on external markets to deal with the above challenges, enhance their internal technological capabilities, and manage the considerable risks associated with bringing new products to the market. Such reliance is stronger in emerging economies as firms do not typically possess strong internal capabilities. To keep up with rapid changes and challenges, firms in such industries must continuously seek for high-quality external expertise (Bessen & Maskin, 2009), and access capabilities and resources that either they do not possess or cannot develop in a cost-efficient and timely manner (Swan & Allred, 2003).

In summary, technological dynamism increases emerging economy firms' need to access external knowledge and resources (Hagedoorn & Duysters, 2002) and their overall reliance on external markets. Given that institutional quality improves the availability, functioning, and quality of external markets for resources as well as the exchange and interactions between firms in such industries, we expect a stronger (positive) association between institutional quality and firm performance (profitability) for firms in technologically dynamic industries than for firms in industries that are less technologically dynamic. Hence:

> **Hypothesis 1.** The relationship between institutional quality and firm performance (profitability) in emerging economies will likely be positive and stronger in industries with high levels of technological dynamism than in industries with low levels of technological dynamism.

3.3 | Institutional quality and market dynamism

In contrast to the moderating effect of technological dynamism (H1), we contend that the relationship between institutional quality and firm performance in emerging economies is less positive (i.e., weaker) in industries that exhibit strong market dynamism than in industries that exhibit a lower degree of fluctuations in demand. Once again, our reasoning is rooted in the way in which market dynamism affects the three aforementioned mechanisms. The overarching logic is that market volatility encourages firms in such industries to adopt strategies that do not heavily rely on the external environment and institutions. As a result, they do not take full advantage of the opportunities created by more effective institutions to improve their competitiveness.[c]

With respect to the first mechanism (the ease and cost of establishing collaborations), highly volatile demand makes it very difficult for firms to forecast market trends and consumer behavior. Extant research emphasizes that, in such situations, firms must maintain organizational flexibility (Davis et al., 2009). When market demand is changing quickly, firms must retain a flexible structure and be ready to adapt to such variations. Volatility also makes it harder to work with external partners and, thereby, firms become less active and engage in fewer strategic

initiatives (Davis et al., 2009). Under these conditions, firms tend to "sit back and watch" (Zhou, 2006), rather than actively initiating and pursuing new opportunities and collaborations. To reduce their exposure to fluctuations in the environment (Tokar et al., 2014), firms may also insulate themselves by internalizing certain organizational functions whenever it is possible (i.e., they keep certain functions within the firm). In summary, firms in such situations naturally focus on strategies and practices that are easier to control.

The above reasoning suggests that in industries with higher levels of market dynamism, firms are reluctant to engage in long-term contractual agreements and partnerships that require considerable coordination efforts and ongoing commitment, which reduce firms' operational flexibility and ability to modify their actions quickly (Parmigiani, 2007). In such situations, firms also avoid prioritizing the frequent renewal of their product portfolios given that demand is uncertain and it is, therefore, unclear whether there will be sufficient time to launch new products before changes in customer demand occur again (Slater & Narver, 1994). Hence, as firms in industries with high market dynamism tend to be more internally oriented, they rely less on (and therefore benefit less from) high-quality institutions that assist in establishing partnerships more easily and in a less costly manner (Capron & Mitchell, 2009; Puranam et al., 2009; Singh, 1997). Therefore, firms in such industries benefit less from a high-quality institutional environment.

With respect to the second mechanism (the effectiveness of the legal framework), although many firms may benefit from a more developed legal framework, firms operating in stable (less dynamic) markets in terms of demand have wider opportunities for engaging in contractual agreements. By contrast, volatility in market demand makes long-term contractual agreements less useful and less desirable as these require ongoing commitment that reduces operational flexibility (Davis et al., 2009). In such cases, firms choose to engage in fewer initiatives (Davis et al., 2009). The legal enforcement of such agreements also becomes more difficult as unpredictability in market dynamics (rather than the opportunistic behavior of partners) drives unexpected demand shocks. This is a more manageable problem in industries that are characterized by stable demand given that future planning is easier and the development and enforcement of contractual relationships are more meaningful. Put differently, when demand is stable, interfirm relationships and the behavior of partners becomes more important, but these relationships and behaviors can be effectively governed through contracts (Williamson, 2000) and litigation (Kafouros et al., 2021) under a strong legal framework. Therefore, firms operating in industries with stable market demand benefit from high-quality legal institutions more than firms operating in industries with volatile demand.

Regarding the third mechanism (effective interfirm exchange and functioning of markets), institutional improvements in highly volatile industries are overshadowed by unpredictability in demand. In such punishing environments, new initiatives and improvisation are challenging, the number of opportunities that can be successfully executed decreases, and mistakes can be many, large, and fatal (Davis et al., 2009). Hence, as prior research suggests, volatility in demand motivates firms to perform certain organizational tasks internally (Davis et al., 1991). Therefore, firms invest significant resources and managerial attention in improving internal functions; for instance, they engage in pricing adjustments, promotions, and inventory management (Gagnon & López-Salido, 2020; Tokar et al., 2014). Limited slack also reduces firms' ability to search for and access high-quality external expertise and resources that they do not themselves possess. Hence, the advantages of institutional quality will be weaker for firms in such industries.

In sum, we expect the association between institutional quality and firm performance to be negatively conditioned by an industry's market dynamism (or put differently, high-quality institutions are more beneficial for the competitiveness of firms in industries with stable demand). Hence:

> **Hypothesis 2.** The relationship between institutional quality and firm performance (profitability) in emerging economies will likely be positive but weaker in industries with high levels of market dynamism than in industries with low levels of market dynamism.

4 | DATA AND METHODS

4.1 | Data sources and sample

To test the hypotheses, we need firm-level data, industry-specific information on technological and market dynamism, and data on how institutional quality varies across countries. We collected firm-level longitudinal data for 16 emerging economies from CEE (Figure A1 in the Appendix lists all countries). These countries have transitioned from centrally planned economies towards market-based systems that facilitate economic exchange and reduce transaction costs. In addition to those reforms (which occur at varying levels and rates), these countries also experience turbulence in the structural characteristics of their industries (Maksimov et al., 2017; Peng, 2003). The transitionary nature of institutions in the CEE region creates opportunities for investigating the performance implications of institutional differences (Cuervo-Cazurra, Gaur, & Singh, 2019; Cuervo-Cazurra, Mudambi, & Pederson, 2019; Meyer, 2001). CEE countries experienced significant variation in institutional quality in the 2000s (Figure A1 in the Appendix reports various trends in institutional quality). There is strong cross-country variation with Estonia demonstrating the highest institutional quality (while Ukraine and Russia are the lowest). Countries cluster into three groups (four low-performer countries, four mid-level, and eight high-performers). Interestingly, although institutions change slowly, these countries show significant changes over time (with some countries more than others, e.g., Serbia, Poland, and Estonia).

Following previous research (Breschi et al., 2000), we collected firm-level data for selected industries identified in past studies as those with high and low technological dynamism (Breschi et al., 2000; Malerba & Orsenigo, 1995, 1996). We collected data from the Amadeus database of Bureau van Dijk (BvD) for the 2004–2011 period for all the observations corresponding to these industries in the database. To avoid the effect of extreme values, following previous studies we excluded observations with a loss or profit exceeding 100% in return on sales (ROS) (e.g., Chang et al., 2013; Kafouros & Aliyev, 2016a). We ended up with a sample of 72,082 observations for 12,888 firms. We provide the distribution of firms across industries in the Appendix (Table A1).

4.2 | Dependent variable

To measure the performance of each firm in terms of profitability, we use ROS calculated as profits before tax divided by sales. ROS is a widely used measure of firm profitability as

it reflects the level of firm profitability relative to the scale of operations (Chan et al., 2008; Makino et al., 2004). Due to industry diversity in the sample, there is high variation in the dependent variable. Using the logarithms of variables would improve normality of distribution and down-weight the effects of diverse values. However, because logarithms can handle only positive values, we employed the inverse hyperbolic sine (IHS) transformation[d]: $\mathrm{IHS}(x) = \ln\left(x + \sqrt{(x^2)+1}\right)^2$ (Burbidge et al., 1988; Heugens et al., 2020).

4.3 | Independent variables

To measure *institutional quality*, we used the rule of law (RoL) index from the World Bank World Governance Indicators (Kaufmann et al., 2010). We confirmed the validity of the measure by examining the construction methodology of each dimension. Following North (1991), we conceptualize institutional quality as the effectiveness of political, legal, and regulatory institutions in reducing the difficulty of using the market and the transaction costs of market exchange. We identified the definition and the measures used for the construction of the RoL index as the closest representation of the quality of the market institutions we intend to capture. The RoL index captures "perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence" (Kaufmann et al., 2010, p. 4).

In measuring the technological characteristics of industries, prior research used surveys of CEOs and managers' perceptions of environmental dynamism (Cui et al., 2005; Li & Calantone, 1998; Sarkar et al., 2001) or the R&D intensity in each sector (Thornhill, 2006). The former measure is not feasible in multicounty longitudinal settings. The latter measure reflects the behavior of firms rather than the characteristics of technologies in the industry. In this study, to measure *technological dynamism*, we followed the literature that classified industries into *widening* and *deepening* patterns of innovation[e] (Breschi et al., 2000; Malerba & Orsenigo, 1995, 1996), and created a dummy variable that takes the value of 1 for industries classified as deepening (Schumpeter Mark II) as provided in Malerba and Orsenigo (1995, p. 58). Building on this distinction, we classify industries with frequent shifts in technological paradigms (e.g., pharmaceuticals, computers, electrical equipment, motor vehicles, telecommunications, and chemicals) as industries with high technological dynamism. Conversely, industries with a stable technological base and fewer changes in innovative patterns (e.g., manufacture of food products, beverages, textiles, leather, furniture, and basic metals) represent low technological dynamism.

Market dynamism reflects the degree of market volatility and sales variability in an industry over time. To measure this variable, we employed the methodology commonly used in the literature (Connelly et al., 2016; Lepak et al., 2003). The calculation involves two steps. First, sector-level sales are regressed against the year variable: $S_{ict} = b_{0ic} + b_{1ic}Y + e_{ict}$. S represents sector-level sales of industry i in country c in time (year) t. Variable Y represents time, that is, year. e_{ict} is the error term. In our sample, the year ranges between 2004 and 2011. The purpose of this variable is to capture customer demand shifts and other fluctuations. Put differently, the measure captures the volatility or fluctuation around the trend, rather than the trend itself. Given that customer preferences vary across countries, this equation is estimated for each country-industry combination. We defined industry at the NACE

four-digit level, which resulted in 1725 country-industry combinations. Hence, the same number of separate regressions was estimated. These regressions produced 1725 country-industry-specific coefficient estimates $\widehat{b}_{1ic}$. In the second step, the *standard errors* of the coefficients $\widehat{b}_{1ic}$ were divided by the mean sales for each country industry combination. This normalizes the standard errors as sectors may strongly vary in scale (Lepak et al., 2003). Formally, $D_{ic} = \frac{\mathrm{SE}(b_{1ic})}{\frac{1}{N}\sum S_{ict}}$, where D_{ic} is the measure of market dynamism for industry i in county c; $\mathrm{SE}(b_{1ic})$ is the standard error of the coefficient from the estimation in the first stage of the calculation (represents volatility). The denominator represents the mean of sales within the industry-country combination over time, with N representing the number of years.

4.4 | Control variables

Following the strategy tripod perspective (Peng et al., 2009), the empirical model includes control variables from three different levels: firm, industry, and country (Lazzarini et al., 2021). First, we included the number of employees to control for labor resources, which also reflects firm size (Maksimov et al., 2017). Second, we control for leverage by including the debt-to-equity ratio in the estimation models (Lazzarini et al., 2021). Large values of debt-to-equity ratio mean the firm is taking a lot of debt relative to the shareholder equity. Third, we account for the availability of liquid assets by including the *current ratio*, measured as current assets over current liabilities (Lazzarini et al., 2021). Fourth, to account for firm experience we controlled for firm *age*. Fifth, we account for *product diversification* (Lee et al., 2008) using the count of primary and secondary industry codes registered by the firm.

Sixth, we controlled for ownership types by identifying MNE subsidiaries, other foreign ownership, and state ownership (Lazzarini et al., 2021). To identify MNE subsidiaries, we used data on the Global Ultimate Owner (GUO) identified by BvD. We categorize a firm as MNE subsidiary if the country of the GUO is different from the country of the focal firm/subsidiary. We created a dummy variable that equals 1 if the firm is an MNE subsidiary. We also created a foreign ownership dummy variable as "Other foreign owned," which equals 1 for firms with over 50% foreign ownership but did not have GUO as "Industrial company." We identified 2956 MNE subsidiaries and 2243 "Other foreign owned" firms. Lastly, to control for state ownership, we added a control dummy variable "State ownership" that equals 1 for state-owned enterprises (SOEs). To identify SOEs, we examined data on "Domestic Ultimate Owner" (DUO). We label firms as SOEs if the "DUO type" is indicated as "Public authority, State, Government". In our sample, 649 firms were SOEs.

Finally, we include a number of country and industry-specific controls. To control for industry differences in their competitive structure, we used the reverse measure of the *Herfindahl index*. 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. To transform the index into a measure of competition, we subtracted the Herfindahl index from one. Hence, it is calculated as $CI_j = 1 - \sum_{i=1}^{n} s_{ij}^2$, where s_{ij} is the market share of firm i in industry j. We calculated the index for each industry defined at industry-country-year combination (at the four-digit industry level). GDP per capita was included to control for differences in *economic development*. Year-specific dummy variables were included to capture time-specific shifts. Descriptive statistics and correlations are presented in Table 1.

5 | ANALYSIS AND RESULTS

5.1 | Hypotheses testing

As firms are clustered within countries and industries, we employ a multilevel mixed model estimator (Bliese & Ployhart, 2002). Following prior studies (Guo, 2017; Karniouchina et al., 2013), country and industry levels were specified as cross-level effects because firms are clustered across countries and industries. Following Guo (2017), we also included a separate level for the combination between country and industry because industry effects may vary across countries. Finally, we included the firm as the lowest level.

Table 2 reports the regression results. Model 1 includes control variables only, while Model 2 also includes the direct relationship between institutional quality and firm performance (profitability). Models 3 and 4 include the interaction terms between industry dynamism variables and institutional quality, testing Hypotheses 1 and 2. Model 5 includes the two interactions simultaneously. The coefficient for institutional quality is positive and statistically significant in all models, suggesting that on average there is a positive association between institutional quality and emerging economy firms' performance. Models 3 and 5 show that the interaction between institutional quality and technological dynamism is positively (and significantly) associated with firm performance. These results provide support to H1. Firms in technologically dynamic industries benefit significantly more from institutional quality than firms operating in industries with low technological dynamism.

To present the effect sizes, we plot the predicted margins from the estimated models. Figure 1 shows the differential relationship between institutional quality and firm performance in two different groups of *technological dynamism*. The horizontal axis shows the range of institutional quality in our sample. The solid line shows that the performance of firms in industries with *low technological dynamism* can increase from 0.53% to 1.63% on average (at the means of other variables). First, this is an economy-wide increase in profits by 3.08 times attributable to institutional quality, indicating a substantial economic significance. Second, the dashed line shows that firm performance in *high technological dynamism* industries increases from 0.62% to 2.50%. This is an increase by a factor of 4.03 attributable to institutional quality. The difference in the slopes of the two lines represents the effect size difference of institutional quality in *high* and *low* technological dynamism industries.

The results differ significantly for the interaction between institutional quality and *market dynamism*. The corresponding interaction effect in Models 4 and 5 is negative, supporting H2. Institutional quality appears to be more strongly associated with firm performance in more stable industries. This moderating effect is also presented in Figure 2, which shows the change in performance attributable to institutional quality at the minimum (volatility at 0.51% of industry mean) and the maximum (volatility at 37.5% of industry mean) levels of market dynamism. Industries with high market dynamism (volatile) do not benefit from institutional quality, while the average firm performance in industries with the least market dynamism (the most stable) can change from 0.79% to as high as 5.60% due to variation in institutional quality (while keeping other things constant).

Although our research design uses technological and market dynamisms as moderators of the role of institutional quality, the results also provide insights into how industry dynamism matters when institutions vary in quality. Figures 1 and 2 show that industry dynamism does not matter in low-quality institutional contexts. When institutional quality is very low, firms struggle to exploit opportunities that arise in industry contexts with high technology dynamism

TABLE 1 Descriptive statistics.

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Return on sales (%)	2.93	13.24													
2	Tech. Dynamism (TD)	0.43	0.49	0.04												
3	Market dynamism (MD)	3.49	2.68	−0.09	−0.02											
4	Institutional quality (IQ)	−0.15	0.71	0.05	0.04	0.15										
5	Number of employees	557.88	1,776	0.03	0.02	−0.01	−0.14									
6	Debt-to-equity ratio	0.11	200.20	−0.02	0.00	0.00	0.01	0.00								
7	Current ratio	1.78	136.20	0.16	0.02	0.01	0.05	−0.04	0.05							
8	Firm age	20.17	24.41	0.00	−0.08	0.04	0.03	0.27	−0.03	−0.10						
9	Diversification	3.12	2.79	0.09	0.08	−0.08	−0.10	0.07	0.00	0.01	−0.04					
10	MNE subsidiary	0.23	0.42	0.02	0.08	0.05	0.17	0.05	0.01	0.31	−0.09	−0.03				
11	Other foreign ownership	0.18	0.38	0.02	−0.05	0.03	0.02	−0.08	0.04	0.35	−0.11	−0.07	−0.25			
12	State ownership	0.05	0.22	−0.04	0.21	−0.09	−0.13	0.13	−0.01	−0.15	0.03	−0.02	−0.13	−0.10		
13	Herfindahl index	0.76	0.24	0.02	0.01	−0.35	−0.26	0.09	0.00	−0.05	−0.02	0.05	−0.09	−0.03	0.07	
14	GDP per capita	8,717	5,155	0.11	0.09	−0.05	0.69	−0.09	0.02	0.06	0.03	0.30	0.12	−0.06	−0.09	−0.12

Note: $N = 72{,}082$.

TABLE 2 Regression results.

	M1	M2	M3	M4	M5	M6 [ROA]	M7 [PBT]	M8 [FE]	M9 [EU adj]	M10 [lagIQ]	M11 [Dom.]
Technological dynamism (TD)	0.224	0.222	0.219	0.219	0.216	0.217	0.659		0.218	0.220	0.305
	(.004)	(.004)	(.005)	(.005)	(.006)	(.004)	(.001)		(.005)	(.005)	(.000)
Market dynamism (MD)	−0.405	−0.406	−0.398	−0.405	−0.397	−0.396	−0.957		−0.373	−0.401	−0.492
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)		(.000)	(.000)	(.000)
Institutional quality (IQ)		0.465	0.401	1.046	0.970	1.024	3.080	5.334	0.725	0.624	0.962
		(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
H1: TD x IQ			**0.160**		**0.149**	**0.141**	**0.444**	**0.389**	**0.158**	**0.162**	**0.226**
			(.013)		**(.021)**	**(.028)**	**(.009)**	**(.065)**	**(.017)**	**(.014)**	**(.007)**
H2: MD x IQ				**−0.307**	**−0.299**	**−0.326**	**−0.890**	**−2.773**	**−0.307**	**−0.272**	**−0.446**
				(.000)	**(.000)**	**(.000)**	**(.000)**	**(.000)**	**(.000)**	**(.000)**	**(.000)**
Number of employees	0.099	0.098	0.099	0.098	0.098	0.083	0.474	0.092	0.098	0.098	0.077
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.003)	(.000)	(.000)	(.000)
Debt-to-equity ratio	−0.026	−0.026	−0.026	−0.026	−0.026	−0.034	−0.066	−0.019	−0.026	−0.026	−0.042
	(.002)	(.002)	(.002)	(.002)	(.002)	(.000)	(.007)	(.118)	(.002)	(.002)	(.001)
Current ratio	0.662	0.664	0.664	0.665	0.664	0.723	1.651	0.610	0.662	0.663	0.204
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Firm age	0.086	0.088	0.088	0.086	0.086	0.050	0.241	0.470	0.086	0.085	0.054
	(.000)	(.000)	(.000)	(.000)	(.000)	(.010)	(.000)	(.000)	(.000)	(.000)	(.020)
Diversification	0.086	0.086	0.085	0.087	0.086	0.051	0.200		0.086	0.086	0.117
	(.008)	(.008)	(.009)	(.008)	(.008)	(.130)	(.019)		(.009)	(.008)	(.005)
MNE subsidiary	−0.395	−0.397	−0.400	−0.398	−0.400	−0.491	−0.957		−0.401	−0.399	
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)		(.000)	(.000)	

(Continues)

TABLE 2 (Continued)

	M1	M2	M3	M4	M5	M6 [ROA]	M7 [PBT]	M8 [FE]	M9 [EU adj]	M10 [lagIQ]	M11 [Dom.]
Other foreign ownership	−0.299	−0.300	−0.301	−0.302	−0.303	−0.335	−0.767		−0.303	−0.302	
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)		(.000)	(.000)	
State ownership	−0.197	−0.196	−0.191	−0.194	−0.189	−0.372	−0.551		−0.191	−0.189	−0.174
	(.009)	(.009)	(.011)	(.010)	(.013)	(.000)	(.006)		(.011)	(.012)	(.025)
Herfindahl index	−0.113	−0.090	−0.088	−0.096	−0.094	−0.065	−0.428	0.033	−0.104	−0.107	−0.149
	(.207)	(.312)	(.325)	(.282)	(.294)	(.476)	(.077)	(.853)	(.243)	(0.232)	(.210)
GDP per capita	0.122	0.083	0.082	0.080	0.079	0.028	0.493	−0.004	0.118	0.116	0.338
	(.137)	(.305)	(.311)	(.322)	(.328)	(.749)	(.031)	(.967)	(.156)	(.158)	(.001)
Constant	−1.027	−0.754	−0.765	−0.707	−0.718	0.269	−5.063	−1.644	−0.997	−1.000	−2.703
	(.226)	(.362)	(.355)	(.394)	(.387)	(.762)	(.029)	(.130)	(.243)	(.234)	(.010)

Note: Dependent variable: Return on sales (except in models 6 and 7). Number of observations: 72,082 (12,888 firms). M11 has 42,470 observations, representing a sub-sample of domestic firms only. *p*-values in parentheses. Year-specific dummy variables are included in all models.
Bold indicates the significant level and bold indicates the hypothesis level.

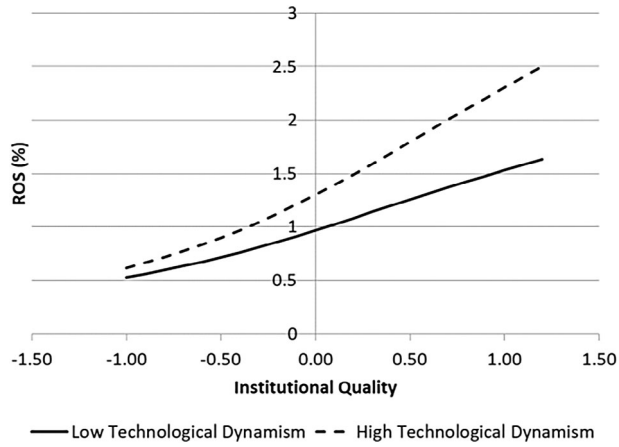

FIGURE 1 The role of institutional quality at low and high levels of technological dynamism.

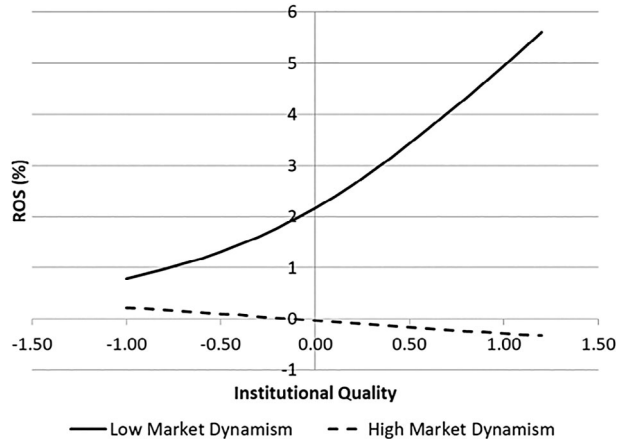

FIGURE 2 The role of institutional quality at low and high levels of market dynamism.

as well as in industries with low market dynamism. In such situations, technology and market dynamism matter less.

5.2 | Robustness tests

We conducted several robustness tests using the full model. First, we used ROA instead of ROS as the dependent variable (Makino et al., 2004). ROA is calculated relative to employed assets, rather than as a margin on the sales. The results remained unchanged as reported in Model 6 (Table 2). Second, prior studies on firm performance suggest that ratio measures as dependent variables in multivariate regression analysis may exaggerate the effects (Barnett & Salomon, 2012). Accordingly, we estimated the models using profit before tax (PBT) as the dependent variable. Once again, the results were similar to the original results (Model 7).

We also checked the robustness of the results using the fixed effects (FE) estimation method. Since the two main variables of *technological dynamism* and *market dynamism* are time-invariant industry characteristics, the FE regression drops these main effects. The FE model also leads to a loss of information in the data as the between-firm variation is removed. The issue is particularly prevalent in large-N-small-T samples where most of the variation comes from between firms, rather than within firms. With these caveats in mind, we ran a robustness test to check how the results hold in the FE specification. The results held when the interaction terms were introduced one by one (equivalents of M3 and M4, not reported), while the coefficient for the H2 in the full model was less statistically significant (reported as Model 8 in Table 2; the *p*-value was .065). However, it still indicates the presence of the effect, although weakened by the removal of cross-section variation.

Furthermore, we considered the possibility that EU membership may influence the measure of market dynamism by making exporting to the EU easier. Numerous countries in our dataset obtained access to the EU during our sample period.[f] We, therefore, estimated an EU-adjusted measure of market dynamism by including a dummy variable (=1 for years when a country is an EU member) in the first stage regression when calculating market dynamism. We re-estimated the models using the adjusted measure of market dynamism. The results are similar to the main findings (Model 9).

In addition, we re-ran the analysis by lagging the institutional quality measure by 1 year (see Model 10). We have also considered an alternative measure of institutional quality, where we replaced the measure with the Institutions pillar of the Global Competitiveness Indices (WEF, 2012). The results supported the hypotheses (the results of some robustness tests are not reported due to space constraints). We have also investigated the possibility that firm diversification influences the role of industry dynamism. We created firm-specific measures of industry dynamism by assigning a 50% weight to the primary industry code, and a 50% weight split between all secondary industry codes. The new results confirmed the original findings.

Furthermore, we undertook several sub-sample analyses. First, we undertook a robustness test after excluding firms in the food industry (which accounts for 24% of the sample observations). The results remained consistent with the main findings. Second, we examined the sensitivity of the results after removing Russia (the biggest country in the sample). While H1 was supported, the coefficient for H2 was statistically insignificant. Russia represents the bottom of the distribution of institutional quality, accounting for 24% of the sample, falling in the bottom 10% of the range of institutional quality. This indicates that firms from Russia play a significant role in providing variation in the data (i.e., as a comparison group for countries with better institutional quality). Hence, research on transition economies must include Russia as a core representative of the post-socialist world.

Third, as our sample includes both domestic and foreign-owned firms, we re-run the analysis after removing MNE subsidiaries and other firms with foreign ownership (Section 4.4 provides their description). In Model 11, the coefficients became larger and increased in statistical significance, implying that industry dynamism and institutions in the local market have stronger and more streamlined impact on domestic firms than on foreign-owned ones. Finally, we used an alternative measure of technological dynamism. One possibility was to collect patent data for the countries in our sample. However, patenting in CEE economies does not accurately reflect the industry's technological characteristics we are trying to capture. Although the institutional environment in CEE countries is improving, it is not yet at the stage that can fully motivate firms to protect their IPRs through patent litigation as firms do in developed economies.

Hence, patent data in these countries reflect firms' patenting behavior, rather than the exogenous characteristics of the technology that is dominant in each industry.

Nevertheless, with this caveat in mind, we undertook an additional analysis based on patent applications in the countries of our sample. We used patent application data from the OECD REGPAT Patent Database (January 2020) (Maraut et al., 2008). In our sample, 12 out of 16 countries were covered in the database, excluding Bosnia and Herzegovina, Slovenia, Ukraine, and Montenegro. We collected patent applications that were made between 2004 and 2011. Using the algorithmic links with probabilities methodology developed by Lybbert and Zolas (2014), we calculated weighted patenting in each four-digit NACE class and matched it to the firms in each country-industry-year grouping. Hence, we calculated the alternative measure of technological dynamism as weighted patents divided by firm assets (in billions) in the country-industry-year grouping. The results supported the hypothesized relationships.

6 | DISCUSSION AND CONCLUSION

6.1 | Theoretical contributions

To advance explanations about the determinants of firm performance, the strategy literature has examined the direct effects of institutions (Chan et al., 2008; Cuervo-Cazurra & Dau, 2009) and industry attributes (Bamiatzi et al., 2016; Christmann et al., 1999; Mavroudi et al., 2020), or consider both aspects in the same model (Gaur et al., 2018). A key theoretical implication of our analysis is that the influence of institutions on firms is not homogenous in different industry contexts. Hence, theory that considers either institutional or industry dynamics (rather than interdependencies between the two) can provide only a partial explanation of the sources of firm competitiveness and performance in emerging economies. In addressing this limitation, our overarching contribution lies in showing how heterogeneity in firm performance can be explained *simultaneously* by both institutional and industry dynamics.

To this end, the study advances the institution-based literature (Banalieva et al., 2018; Cuervo-Cazurra, Gaur, & Singh, 2019; Cuervo-Cazurra, Mudambi, & Pederson, 2019; Lazzarini et al., 2021) by explaining why two industry-specific boundary conditions (technological and market dynamism) influence *differently* the relationship between institutional quality and firm performance. Although firms can benefit from stronger institutions, this relationship is much stronger in technologically dynamic industries than in industries with lower technological dynamism. By contrast, the opposite pattern is revealed for the role of market dynamism. Firms in industries that exhibit high levels of market dynamism benefit from institutional quality less than firms in industries with lower market dynamism. This significant heterogeneity in firm performance and the corresponding asymmetric relationships underscore the value of thinking simultaneously about inter-industry contextual differences *and* institutional variations across countries when theorizing about firm performance. It thus adds to institutional economics theory (North, 1990; Williamson, 2000) by clarifying how industry dynamism and institutional quality *jointly* result in the redistribution of economic rents, strengthen the competitiveness of some firms and weaken that of others, and create winners and losers.

The study also highlights the value of theorizing about the different dimensions of dynamism (technological vis-à-vis market). Our reasoning hinges on the premise that the relationship between institutional quality and firm performance depends on three advantages associated with (1) the ease and cost of collaboration; (2) the effectiveness of the legal

framework, and (3) the effective interfirm (non-contractual) exchange and the better functioning of markets. While institutional improvements might be useful for all firms, a salient point in the study is that industry dynamism determines how much firms rely on institutions and, in turn, how and the extent to which they benefit from (or are disadvantaged by) such reforms relative to other firms. For instance, we argue that the nature of technologically dynamic industries makes firms in these contexts to use institutions intensively. They can therefore exploit these three advantages much more than firms in less technologically dynamic industries, enhancing their competitiveness and performance considerably. By contrast, when volatility in market demand is high, the opposite association emerges and the role of this boundary condition is reversed. In such instances, because firms typically internalize certain functions, they rely less on collaborations and external markets and, therefore, benefit less from stronger institutions.

Hence, our study contributes to research about institutions and emerging economies (Banalieva et al., 2018; Wang et al., 2020) by unveiling how industry-specific volatility in addition to that generated by institutional forces can jointly explain heterogeneity in the competitiveness and performance of those firms. While our analysis does not contradict the view that improvements in institutions are desirable, it explains why certain industry conditions enhance or reduce the benefits of institutional quality and more importantly alter firms' competitive advantages. In showing how the relationship between institutional quality and performance differs across industry contexts, our analysis also partly explains why prior empirical findings are mixed (Chan et al., 2008; Chari & Banalieva, 2015; Cuervo-Cazurra, Gaur, & Singh, 2019; Meyer & Peng, 2005). It is clear from our analysis that this relationship is complex as it affects the revenue-generating opportunities for firms as well as the cost of market exchange (Wang et al., 2020). It, therefore, re-emphasizes the need to consider interdependencies between institutional and industry dynamics.

6.2 | Managerial and policy implications

The first implication for management concerns the fact that two different aspects of industry dynamism set the boundary conditions for determining the relationship between institutional quality and firm performance. As institutions in each country gradually improve, managers of emerging economy firms should understand that such conditions can provide their firms with strong competitive advantages and superior performance, but equally, they can put their firms into a disadvantageous position by increasing the competitiveness of other companies. The revenue-enhancing and cost-reducing advantages of stronger institutions are conditional on the degree to which firms rely on external factor markets and such institutions. When industry dynamism forces managers to pursue highly internalized business models, the competitive advantages of their firms will not improve as much as the advantages of other firms that due to the nature of their industry rely heavily on institutions. Although firms cannot influence the technological and market characteristics of their industries, the results help managers identify which product categories their firms should choose to enter (or avoid) in the future. For instance, entering technologically dynamic domains will be rather beneficial as institutions improve (but the opposite is true for markets with high market dynamism).

Second, the results have implications for MNEs' global strategy. When MNE managers identify locations for their subsidiaries in emerging economies, they should know that countries with high-quality institutions will not guarantee superior performance and, equally, MNEs will

not necessarily experience lower performance when institutions are weaker. Nevertheless, the benefits of institutional quality for their subsidiaries are more likely to be realized in technologically dynamic industries. Similarly, given that firms in industries with highly volatile markets tend to internalize functions and do not benefit as much from stronger institutions, affiliates of MNEs and business groups that can rely on a network of fellow affiliates will have a competitive advantage over independent firms in industries with high market dynamism that must rely heavily on themselves.

Third, industry dynamism influences how far each country and its industries benefit from government efforts to reform institutions and may, in turn, result in different performance outcomes. The findings, therefore, have implications for how governments should shape their policies and support of specific industries and for understanding how institutional reforms lead to rent redistribution and winners and losers. Improvements in institutional quality (particularly in transition CEE economies) will lead to different performance outcomes in a country because such benefits depend on the industrial structure of the economy, that is, economies that are weighted more heavily towards technologically dynamic industries will experience stronger performance. Put differently, as governments undertake institutional reforms, they should understand that such improvements influence firms across industries unevenly. The findings also underscore how governments should think about linking institutional reforms to policies aimed at enhancing firm competitiveness and performance. They show that high-tech industries not only contribute to a country's innovation ecosystem but can also grow faster because they benefit disproportionately from institutional reforms. As our additional analysis indicates, these effects and implications, are stronger and more streamlined for domestic rather than for foreign-owned firms. They, therefore, become even more important for emerging economies that seek to catch up globally.

6.3 | Limitations and future research

First, given that our framework is tested in the context of 16 CEE countries, we expect the findings to be applicable to other emerging economies that are characterized by similar quality of formal institutions as well as countries that are transitioning, including Central Asian countries (e.g., Uzbekistan, Kazakhstan, etc.) and countries in the Southern and Eastern Mediterranean region (e.g., Egypt, Lebanon, Tunisia, etc.) (EBRD, 2021). However, as CEE countries occupy a specific section in a wider continuum of institutional quality, the magnitude of the results might change for countries that differ in the development of their institutions. For instance, in economies that exhibit very weak formal institutions (e.g., some nations in Africa), institutional improvements might not play an important role until the quality of institutions reaches a certain threshold. Indeed, as our analysis shows, when institutional quality is particularly low, firms face difficulties in exploiting the opportunities available in their industry contexts (i.e., technology and market dynamism matter less). Similarly, the role of institutions might differ in developed economies that are typically characterized by high institutional quality. For example, the benefits of institutional quality in countries, such as the US, the UK, and Germany, may be weaker because institutional improvements may play a less significant role for transactions after a certain level of institutional quality. To gain a deeper understanding of such variations, future research should examine whether the findings hold across other emerging countries (e.g., African countries, Brazil and India) or conduct a comparative analysis between developed and emerging countries.

Furthermore, although institutions do not change quickly, we should recognize that there might be variations over time. While we do not expect over-time variations in institutional quality and industry dynamism to change the key premises developed in the study, they may affect certain aspects that future research should incorporate including the international openness of countries, de-globalization, and how governments reconfigure their economies (e.g., some countries focus on services while other countries seek to expand their manufacturing capabilities). Similarly, extant research shows that advances in digitalization have enabled firms with platform business models to become more prominent in many sectors, disrupt industries and capture market share globally (Stallkamp & Schotter, 2021). We, therefore, expect the ability of emerging economy firms to use institutions and develop their digital strategies to play a crucial role in determining their global competitiveness and performance.

The influence of institutional quality may also depend on other qualitative country characteristics. For instance, the varieties of capitalism (VoC) literature suggests that institutions across countries differ not only in the dimension of quality, but also in the arrangement and organization of institutions including corporate governance, accountability, and labor laws. Accordingly, it differentiates between liberal market economies (LMEs) that focus on the role of shareholders and market competition vis-à-vis co-ordinated market economies (CMEs) that are stakeholder-focused and prioritize social welfare (Hall & Soskice, 2001). The role of institutional quality may vary across such nations. For instance, it could be stronger in LMEs than in CMEs as economic actors in LMEs rely more strongly on market-based arms-length exchange compared to those in CMEs. A similar contingency could result from cultural differences across countries. Future research should explore how such effects vary in countries with different VoC and cultural systems, and whether context specificity makes our theoretical predictions stronger or weaker for other countries.

In addition, future research should investigate issues pertaining to causality. Although endogeneity driven by reverse causality is unlikely in our study (as it is difficult for a firm to influence country and industry characteristics), simultaneity might be possible. The use of instrumental variables is not suitable in our empirical setting because the independent variables are country characteristics that may influence other country attributes. However, if future studies use a global sample of countries, they can employ other country-specific exogenous instruments (e.g., geographic locations, the institutions of neighboring countries, and unexpected shocks including conflicts, and natural disasters). Another avenue for extending the current study would be to investigate how a firm's cost structure affects its ability to manage and respond to market dynamism within a given institutional context. For example, firms with lower fixed costs might be able to withstand volatile demand and partly avoid losses associated with sudden declines in demand. Hence, depending on their cost structure, firms might benefit differently from improvements in institutional quality. Finally, it would also be useful to understand how other industry attributes change the role of institutional quality as well as distinguish between different types of firms (e.g., services and manufacturing) and their strategies (e.g., exploratory or exploitative; Mavroudi et al., 2020), and consider other aspects of performance, including innovation (Kafouros et al., 2022).

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ENDNOTES

[a] We choose to distinguish between technological and market dynamism because these are two of the most fundamental forces that represent the influence of customers and technology on the market (Li & Calantone, 1998; Zhou, 2006).

[b] Data extracted from: https://carsalesbase.com/total-market-sales-country/europe-car-sales-data/

[c] This point does not necessarily imply that a higher level of market dynamism is always negative for the firm. For instance, market uncertainty might be quite common in new and emerging industries. However, this point does suggest that such volatility comes with certain challenges and requires firms to adopt a specific set of strategies that differ from those adopted by firms that operate in industries with stable demand.

[d] This transformation technique is also applied to all continuous independent variables.

[e] A widening pattern is characterized by low concentration of innovative activities, small-size innovators and high frequency of new entries; while a deepening pattern involves a higher concentration of innovative activities, larger firms and less frequent entry of new competitors (Malerba & Orsenigo, 1996).

[f] Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia joined the EU in 2004, while Bulgaria and Romania joined in 2007.

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