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How the country context shapes firms' competitive repertoire complexity

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Abstract

Research Summary: Recent research has shown that firms' ability to employ complex competitive repertoires can create long-term competitive advantages. Since research on its determinants has focused on the firm level, we lack an understanding of how country-level factors impact firms' implementation of complex competitive repertoires. Our cross-country study addresses this gap by integrating a model of country-level competitiveness factors with insights from the literature on competitive dynamics and portable governance. We argue that a country context with high-quality competitiveness factors enables firms to implement complex competitive repertoires. In addition, we hypothesize that firms with foreign investors from countries with high-quality competitiveness factors can partially compensate for low-quality factors in firms' domestic context. We found support for our hypotheses in an unbalanced sample containing 1,340 firms from 32 countries.

Managerial Summary: Employing complex competitive repertoires (i.e., diverse and dynamic arrays of competitive actions), such as price reductions or new product introductions, can help firms outcompete their competition. We argue and empirically show that firms' domestic country context, specifically high-quality governance, factor and demand conditions, related and

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supporting industries, and strong context for rivalry drive their ability to implement complex repertoires. Moreover, we find that ownership by foreign investors from favorable country backgrounds can partly compensate for firms' weak conditions at home by serving as enabling bridges. Managers who aim to improve their firms' repertoire complexity but are restricted by their domestic country context may consider attracting foreign investors from countries that have what their countries lack.

KEYWORDS

comparative international strategy, competitive dynamics, competitive repertoire, country-level determinants, foreign institutional investors

1 | INTRODUCTION

Recent research has shown that firms' ability to employ a complex competitive repertoire—that is, diverse and dynamic arrays of competitive actions, such as entering new markets or launching products—can positively affect firms' long-term performance (Connelly et al., 2017). However, building a complex competitive repertoire also requires a commitment to time and up-front investments (Basdeo et al., 2006; Connelly et al., 2017). Hence, investigating the determinants that enable firms to implement a complex competitive repertoire reveals important insights into firms' pursuit of competitive advantage.

To date, management scholars have focused on uncovering firm- and industry-level determinants of competitive repertoire complexity, such as technological resources (Ndofo et al., 2011), governance mechanisms (Connelly et al., 2017), and industry concentration (Ferrier, 2001). However, we do not yet know whether and which country-level factors affect firms' competitive repertoire complexity. Given the importance of the country context for firm profitability (McGahan & Victor, 2010), this may come as a surprise. Scholars have provided important insights into how firms' domestic country context and the country context of firms' foreign investors shape firms' behavior and strategizing. For instance, firms' domestic country context affects internationalization strategies (Cuervo-Cazurra, 2011; Hoskisson et al., 2013; Urbig et al., 2022), and foreign investors' country context shapes (e.g., firms' auditor choice) (Kim et al., 2019) and corporate governance practices (Aggarwal et al., 2011). Nevertheless, the insights are each confined to one specific area of strategic decision making and only constitute single actions of a complex competitive repertoire and do not fully reflect strategy as a portfolio of actions. Hence, we ask how firms' and their investors' country contexts shape firms' ability to engage in multiple parallel competitive actions (i.e., a complex competitive repertoire), and which country factors matter.

To address this gap, we integrate insights from the literature on the determinants of national competitiveness (e.g., Fainshmidt et al., 2016) and portable governance of foreign ownership (Aggarwal et al., 2011; Ellis et al., 2017; Kim et al., 2019) with insights from competitive

dynamics research on firms' competitive strategies (Basdeo et al., 2006; Connelly et al., 2017). To build a conceptual logic of which country factors potentially determine firms' competitive repertoires, we adopted country factors from Fainshmidt et al.'s (2016) model on determinants of national competitiveness that, in turn, drew from attributes of Porter's (1990) Diamond Model. Departing from this work, we build an extended model of country-level competitiveness factors and integrate factor conditions, demand conditions, related and supporting industries, the context for rivalry and governance quality into a competitiveness factors index (CFI). We theorize how the factors of the CFI affect firms' competitive repertoire complexity. Specifically, we hypothesize that high-quality CFIs (i.e., country factors enhancing competitiveness), positively relate to firms' ability to implement complex competitive repertoires. We thus argue that the country context provides resources or imposes constraints that ground firms' strategic choices and ultimately form their competitive advantage.

Turning to the role of foreign investors as an extension of the notion that country effects are rendered via firms' locations only, we theorize how foreign investors from countries with a high-quality CFI can function as "enabling bridges." Specifically, we argue that foreign investors from countries with a high-quality CFI can partly offset voids in firms' domestic country contexts, as investors offer an alternative channel to favorable country factors, for example, by connecting firms with qualified managers or providing them with access to foreign markets. This alternative channel is specifically helpful for firms lacking a high-quality CFI in their domestic country context. Thus, we hypothesize that ownership by institutional investors from countries with high-quality CFIs serves as a partial substitute for high-quality CFIs in firms' domestic countries.

To empirically test our hypotheses, we compiled a broad international dataset based on all firms listed in the Morgan Stanley Capital International (MSCI) All Country World Index (ACWI) between 2008 and 2017. This index contains about 2,500 firms¹ annually and covers roughly 85% of the free-float-adjusted market capitalization from up to 50 developed and emerging countries. Using country-level data from various sources on human capital, competitiveness, and governance indicators, we constructed a CFI and enriched our dataset with ownership, financial, and governance data. Our final analyses were based on an unbalanced sample of 9,556 firm-year observations from 32 countries. We found that a high-quality CFI in firms' domestic country context enables firms to implement more complex competitive repertoires. Furthermore, our analysis unveils how the country context of firms' foreign owners partially substitutes the effect of firms' domestic contexts—especially at low-quality CFI in their countries—when it comes to implementing complex competitive repertoires. However, a high-quality CFI in investors' countries can never fully offset the disadvantages caused by firms' country context with a low-quality CFI.

We contribute to the literature in two main ways. First, we add to the literature on competitive dynamics (Chen & Miller, 2012; Connelly et al., 2017; Ndofor et al., 2011) by providing a comparative international perspective stressing the relevance of the domestic country context as a determinant of firms' competitive strategies, specifically competitive repertoire complexity. We highlight how firms competing in global markets may do so on uneven playing fields, as their heterogeneous country contexts partly determine their competitive repertoire complexity. Second, we add to the research on the determinants of national competitiveness (e.g., Fainshmidt et al., 2016; Thompson, 2004) by explicating how foreign ownership, serving as an "enabling bridge," can be an imperfect substitute for the influence of the domestic country context on a focal firm. Also, we add to the literature suggesting that firms can overcome weaknesses in domestic country conditions via outward foreign investments (Geisler Asmussen et al., 2009) by providing empirical



evidence that inward foreign investments are an important alternative channel to do so. Lastly, our findings can also be informative to macro-level studies by exemplifying how country factors potentially affect aggregated national competitiveness via firms' ability to implement complex competitive repertoires.

2 | THEORY AND HYPOTHESES

2.1 | Firms' competitive repertoire complexity

Competitive actions are an important instrument in firms' strategy toolkits for developing a competitive advantage over their rivals (Hughes-Morgan et al., 2018). These actions include introducing new products and/or services, lowering or increasing prices, launching marketing campaigns, extending production capabilities, acquiring or partnering with other entities, or entering entirely new markets (Connelly et al., 2017). When formulating competitive strategies, firms decide which actions they can take and which they wish to combine to form their competitive repertoire. Miller and Chen (1996b, p. 420) define this concept as the bundle of "actions used by an organization [...] to attract, serve, and keep customers." We follow an updated conceptualization of *competitive repertoire complexity* that includes the newness of employed actions and intertemporal change in addition to the diversity of actions (cf. Connelly et al., 2017). Arguably, this conceptualization better captures competitive action as a stream of decisions (Mintzberg, 1978) in response to market dynamisms, as simply relying on action diversity would reveal "a repetitive pattern that rivals could easily diagnose and counteract" (Connelly et al., 2017, p. 1153). Various studies have analyzed the antecedents and outcomes of different competitive repertoires (e.g., Basdeo et al., 2006; Ferrier et al., 1999). Extant research highlights how more complex competitive repertoires² are more challenging to implement, but firms may reap rewards, for example, in the form of better long-term performance (Connelly et al., 2017; Ferrier, 2001; Ndofor et al., 2011).

Most authors have considered firm- and industry-level determinants in relation to complex competitive repertoires. Connelly et al. (2017) unveil how dedicated institutional investors and a pay gap between the chief executive officer (CEO) and the rest of the management team foster complex competitive repertoires. Ndofor et al. (2011) suggested that access to resources, such as superior technologies, a skilled workforce, and managerial capabilities, fosters more complex and norm-deviating competitive actions. Moreover, Ferrier (2001) found that a heterogeneous top management team and industry concentration affect the complexity of competitive action in firms.

Regardless of the progress that has been made in identifying the determinants of competitive repertoire complexity, an analysis taking a country-level perspective—despite its relevance in the international business literature—is still missing. Consequently, we take a firm-level perspective and theorize in the following on the relationship between firms' domestic country context (i.e., the country in which firms are headquartered), and their ability to implement complex competitive repertoires, while also considering the role of foreign investors' country contexts.

2.2 | Firms' domestic country contexts and their competitive repertoire complexities

Scholars have found that implementing a complex competitive repertoire is beneficial in the long term; however, firms must overcome challenges and bear the costs of implementation,

threatening their short-term profitability (Connelly et al., 2017). Hence, firms should carefully consider whether they can design and execute a complex competitive repertoire. In the following section, we theorize how firms' domestic country contexts affect their competitive repertoire complexity.

To develop a conceptual logic of which country factors potentially determine firms' competitive repertoire complexity, we adopted country factors from Fainshmidt et al.'s (2016) model on determinants of national competitiveness, which, in turn, drew from attributes of Porter's (1990) Diamond Model. Porter's original model builds on four cornerstones: *factor conditions* (i.e., workforce and infrastructure), *demand conditions* (i.e., the sophistication of the domestic market), *related and supporting industries* (i.e., national clusters of the same industry), and the *rivalry context* (the state of competition in the industry). In response to work criticizing the missing role of governance in the original model (e.g., Dunning, 1993; Griffiths & Zammuto, 2005; Rugman & D'Cruz, 1993), Fainshmidt et al. (2016) include a fifth factor, *governance*, in their model. Their study revealed that all five factors can play a role in accomplishing national competitiveness, and accordingly, we included the five factors in our CFI. We elaborate on the relationships between the five factors and the firms' competitive repertoire complexity.

First, high-quality factor conditions should positively affect firms' ability to implement a complex competitive repertoire. Firms need a qualified and heterogeneous management team that recognizes industry trends and can lead multiple initiatives to successfully implement a complex repertoire (Ferrier, 2001). Moreover, leaders require broad knowledge and skills to oversee a firm's complex arrangements of competitive moves (Connelly et al., 2017). Diverging from the focus on the top management team, firms must have access to further qualified human capital. Only a skilled workforce can maneuver the implementation of a complex repertoire that encompasses designing and maintaining multiple and potentially novel competitive actions simultaneously. Since importing a large amount of qualified labor is difficult, firms must primarily resort to the resources that their domestic, that is, headquarter, country provides them with: ideally, an educated workforce due to the country's high-quality and well-funded education system (Fainshmidt et al., 2016). Consequently, we expect well-developed factor conditions to play an important role in firms achieving complex repertoires.

Second, the sophistication of demand conditions, particularly consumer sophistication, is likely to affect firms' competitive repertoire complexity. Firms' competitive actions ultimately follow the objective of attracting consumers (Miller & Chen, 1994). Keeping all else equal, a narrow range of competitive actions might be insufficient to meet consumer needs (Miller & Chen, 1996a), while a more complex set of competitive actions, such as product innovation, price differentiation, or tailored marketing (Holm & Ax, 2020), will increase the likelihood of meeting these needs. As consumers from different country contexts have heterogeneous demands, the country context can, for example, determine whether consumers are solely attracted by low prices or base their buying decisions on more criteria. As a result, country contexts with more demanding consumers pressure companies to become more sophisticated (Fainshmidt et al., 2016; Porter, 1990). Applying these insights to our theoretical context, we argue that serving more sophisticated and demanding consumers' needs will necessitate a larger variety and dynamic adaptation of competitive actions. For example, more sophisticated consumers might require products to fulfill their demands regarding several competing attributes, such as price, quality, and sustainability. Accordingly, firms operating in markets characterized by sophisticated *demand conditions* are likelier to implement complex competitive repertoires to address these needs.



Third, firms headquartered in countries with sophisticated relative and supporting industries will be better able to implement complex competitive repertoires. Firms' access to and ownership of diverse technological resources determine their ability to increase the available set of competitive actions. In contrast, resource constraints may lead to the employment of a limited repertoire of competitive actions (Ndofor et al., 2011). We argue that firms embedded in clusters of sophisticated suppliers and related industries (cf. Porter, 1990) will have a higher likelihood of building diverse technological resources that translate into the ability to implement complex repertoires because their presence in an ecosystem with advanced firms increases the availability of technological spillovers (Cantwell & Mudambi, 2011; Phene & Tallman, 2014). Thus, we reason that a country context with well-established *related and supportive industries* will increase firms' competitive repertoire complexity.

Fourth, competitive markets are likely to increase firms' competitive repertoire complexity. The competitive actions that underlie competitive repertoire complexity are market-oriented activities that challenge the status quo of current market structures and processes (Jacobson, 1992). In a competitive market, the competitive actions of one firm become the competitors' concern and will, in turn, trigger similar responses (Barnett & McKendrick, 2004; Derfus et al., 2008). A firm's strategic actions to exploit market opportunities are thus to be considered relative to competitors' strategies (Chen & Miller, 2012). This notion goes back to Schumpeter's logic of a "creative destruction" in which one firm's gain translates into its rivals' loss (cf. Schumpeter, 1976). Such a competitive market situation will enable market firms to develop the awareness, motivation, and capability to implement complex competitive repertoires via two main mechanisms: learning and selection. When firms in competitive markets implement competitive actions, they learn which action routines are no longer efficient and test new or adjusted actions (Kirzner, 1997). This search, action, and learning process (March & Simon, 1958) should result in a more advanced and dynamic action repertoire. Given the reinforcing action-rival cycle, this will lead to a continuous learning process among firms in competitive environments, potentially leading to greater fitness of firms in the long run (Deraus et al., 2008). Moreover, research acknowledges that firms that apply a complex competitive repertoire can increase performance, while firms with too simplistic action repertoires might suffer (D'Aveni, 1994; Ferrier et al., 1999; Young et al., 1996). When unfit firms cease to exist, this leads to a selection of those firms that have developed the continuous capability to apply complex competitive repertoires. While characteristics such as high levels of industry concentration reduce firms' motivation to compete intensively (Ferrier, 2001; Young et al., 1996), the presence of strong local rivals stimulates competition and firms' capabilities (Porter, 1990). Thus, the effects of competition on firms' competitive repertoire complexity via the two described mechanisms will be especially pronounced in country contexts with such fierce rivalry contexts. Hence, we suggest that countries with business- and entry-friendly and competitive environments have an appropriate *rivalry context* (Fainshmidt et al., 2016) for firms to implement complex competitive repertoires.

Fifth, high-quality governance should positively affect firms' competitive repertoire complexity. Building a complex repertoire requires substantial up-front investments, for example, to enlarge capacity or develop products or services (Connelly et al., 2017). Decision makers in firms prefer a stable macro-economic, political, and legal environment before committing to long-term investments. Specifically, political stability reduces uncertainty around any long-term business and investment decisions (cf. Maitland & Sammartino, 2015). Moreover, high levels of corruption lead firms to invest in actions to deal with its implications. Such investments bind resources that could otherwise be invested in the capabilities needed to build a complex competitive repertoire. In turn, the control of corruption creates a culture that rewards performance and compliance instead of political connections and phony payments, fostering efficient

resource allocation (cf. Cieřlik & Goczek, 2018). Last, a strong rule of law protects property rights, reduces transaction costs, and increases trust in the legal system, offering a stable environment for making costly investments (cf. La Porta et al., 1998). Taken together, reliable national *governance* should positively influence the complexity of a competitive repertoire.

In summary, we thus hypothesize that high quality in the outlined five country factors—*factor conditions, demand conditions, related and supporting industries, the rivalry context, and governance*—aggregated in a CFI provide firms with stability, incentives, and resources, forming the basis for a complex competitive repertoire.

Hypothesis (H1). *The quality of CFI in a firm's headquarters country is positively associated with a firm's competitive repertoire complexity.*

2.3 | Firms' domestic country and foreign investors' country interactions

As outlined in our reasoning for H1, firms headquartered in countries with low-quality CFIs are limited in their ability to implement complex competitive repertoires. Firms' efforts to surmount these obstacles can be costly or nonachievable given the voids in their domestic countries. In the following, we argue that firms aiming to overcome such voids in their domestic countries may access resources and support elsewhere, particularly from foreign institutional owners.

The literature has established how foreign institutional owners, building on their knowledge, networks, and monitoring abilities, influence their firms' strategizing. Foreign investors are motivated to intervene since their own interests might differ from the objectives of domestic shareholders, who are potentially more entangled with the firm and less inclined to exercise strict oversight (Desender et al., 2016; Yamanoi & Asaba, 2018). To intervene, they can use two channels of influence: first, "voice"—that is, direct influence, such as exercising their voting rights or private engagement with the management, and second, indirect influence via "exit"—that is, selling their stakes (Hennig et al., 2022; McCahery et al., 2016). Extant research stresses that foreign investors export effective governance practices (Cumming et al., 2017; Fang et al., 2019; Ferreira & Matos, 2008), such as terminating underperforming CEOs (Aggarwal et al., 2011). What is more, foreign investors also serve as a channel to transfer beneficial country factors from the foreign investor's country to the investee. For instance, good country governance, that is, high-quality country-level institutions, is transferred from the acquirer to the target and increases the total value creation in cross-border mergers and acquisitions (M&A) deals (Ellis et al., 2017). Investors do so by building cross-border bridges and reducing transaction costs and information asymmetries. Importantly, such transfer not only explains the direct effects of foreign institutional investors on firm-level outcomes, but also causes interdependencies with the firms' domestic country context. The impact of foreign institutional investors seems to be more pronounced for firms from low-quality country contexts, hinting at the substitutability between foreign institutional ownership and firms' domestic country contexts (Ferreira et al., 2010).

We extend the argument of substitutability to the influence of the country context of foreign investors in our theorizing. We suggest that firms draw benefits from the favorable country context of their foreign institutional owners if their weak domestic country context constrains their ability to implement a complex competitive repertoire. Foreign institutional investors can, for example, facilitate access to raw materials and markets; they can bring in qualified managers, and they can share their industry, organizational, and strategic knowledge with their countries



if firms' domestic countries do not supply this. Moreover, foreign investors may push their firms to invest in human capital and tangible and intangible assets (Bena et al., 2017), which helps firms build repertoire complexity. As a result, foreign institutional owners from countries with high-quality CFIs can build on the competencies and resources developed in their countries and should partially compensate for low-quality CFIs in firms' domestic countries, and enable firms to realize a more complex competitive repertoire. Nevertheless, it is important to highlight that not all voids in a domestic country context can be compensated for by foreign institutional investors. It is reasonable to assume that some CFIs cannot be transferred across country borders via foreign ownership. For example, spillovers and learning effects from ecosystems with sophisticated related and supportive industries, trial and error learning from competitive markets, or strong legal systems will be extremely difficult or impossible for investors to replace.

Thus, we hypothesize a partial substitution that becomes visible via a negative interaction effect:

Hypothesis (H2). *Foreign institutional ownership from countries with high-quality CFIs negatively moderates the relationship between the quality of a CFI in a firm's headquarters country and the firm's competitive repertoire complexity.*

3 | RESEARCH DESIGN

3.1 | Data and sample

We drew on the MSCI ACWI from 2008 to 2017 for our initial sample. This index consists of between 2,423 and 2,499 mid- and large-cap stocks from up to 50 countries worldwide. These firms cover about 85% of the free-float-adjusted market capitalization in their respective countries. Initially, we included every firm listed in the MSCI ACWI at least once during the sample period. We selected Thomson Reuters Institutional Holdings to download ownership data, Thomson Financial Datastream for financial data, BoardEx for governance data, and RavenPack News Analytics for information on competitive actions (Connelly et al., 2019). Country-level data stem from various sources (Fainshmidt et al., 2016). We used the Human Capital Report, the Ease of Doing Business Index, and the World Governance Indicators, as provided by the World Bank, the Global Competitiveness Report provided by the World Economic Forum, and the Cluster scoreboard provided by the Organization for Economic Co-operation and Development (OECD).

Our final sample consisted of 1,340 firms from 32 countries after we had excluded firms without full data on competitive actions, ownership, or country characteristics, and companies headquartered in tax havens Dharmapala & Hines Jr. (2009).³ We further excluded observations where we had less than three firm years per firm and fewer than three firms per country to ensure sufficient variation within levels. We based our analysis on 9,556 firm-year observations (see Table A1, in Appendix). This sample encompasses a broad international representation of publicly listed firms, their owners, and their competitive actions, thus, serving as a fitting choice for our study.

3.2 | Dependent variable: Competitive repertoire complexity

When firms pursue a competitive advantage, they make a range of strategic decisions. They employ a competitive repertoire composed of single competitive actions. These are specified as

“all externally directed, specific, and observable newly created moves initiated by a firm to enhance its competitive position” (Ferrier et al., 1999, p. 378). Furthermore, the actions must be finalized and observable to the press, rivals, and/or consumers.

This definition implies that a news analytics database, such as RavenPack is a fitting choice for data on competitive actions (Connelly et al., 2017). It uses an algorithm to browse more than 19,000 international media enterprises, cover over 40,000 listed firms worldwide, and presort its findings. We took 199,585 first-reported actions⁴ from the firms in our sample and grouped them into seven action categories: product, capacity, pricing, marketing action, acquisitions, strategic alliances, and market expansions. Our approach aligns with prior research (Chen & Miller, 2012; Connelly et al., 2017, 2019) in terms of categories used and the average of 20.89 actions per firm and year.

The variable *competitive repertoire complexity* operationalizes a comprehensive range of a firm's global strategic decisions and consists of three components: the diversity of actions measured using the Shannon index, the change in actions calculated via Euclidean distance, and the novelty of actions in the form of a simple count (Connelly et al., 2017). The Shannon index captures a firm's diversity of competitive actions. It is calculated on an annual basis by summing the proportion of actions per category i (out of A) multiplied by the natural log of the proportion per category. For an equally distributed range of actions, the index approaches the maximum value of $\ln(A)$. In the opposite case, it converges to zero (Connelly et al., 2017). The Shannon index is calculated as follows:

$$S = - \sum_{i=1}^A p_i \ln p_i$$

The second integral part of repertoire complexity measures the change in actions for one firm from 1 year to another as Euclidean distance. A1–A7 indicate the seven competitive action categories. D equals zero if the competitive repertoires are identical at t and $t - 1$ (Connelly et al., 2017). The Euclidean distance is operationalized as follows:

$$D_{t-1,t} = \sqrt{(A1_{t-1} - A1_t)^2 + \dots + (A7_{t-1} - A7_t)^2}$$

Finally, we capture the novelty of competitive actions. Novelty describes when the firm introduced a competitive action in a specific category in year t , where there has been no action in $t - 1$ (Connelly et al., 2017). Thus, C captures the change in firms' action categories, when the value for $t - 1$ had been zero and now is greater than zero. Next, we sum up the changes over the seven action categories. Thus, the novelty value could range from 0 (no new categories compared to $t - 1$) to 7 (no actions at all in $t - 1$, and at least one action in every category in t). Novelty is calculated as follows:

$$N_{t-1,t} = \sum_{i=1}^A C_i$$

To integrate the three parts—the Shannon index for diversity, the Euclidean distance for change, and the count for novelty—into one coherent measure, we standardized the values and summed them to form the variable of *competitive repertoire complexity* for firm k in year t as represented by the following formula:

$$\text{Competitive repertoire complexity}_{k,t} = S_{k,t} + D_{k,t} + N_{k,t}$$

3.3 | Independent variables and moderators

3.3.1 | Competitiveness factors index

We adopted the five country factors from Fainshmidt et al.'s (2016) model on the determinants of national competitiveness to build the CFI (Table 1):

First, we used three of the World Governance Indicators by the World Bank to approximate the *governance quality* per country: control of corruption, the rule of law, and political stability and the absence of violence. The measures evaluate the (lack of) exercise of power for private gains, confidence in and abiding by the rules of society, and the likelihood of instability and violence (including terrorism). All three measures are standardized and averaged to form the *governance quality* measure (Fainshmidt et al., 2016). The second factor contributing to the CFI is the *rivalry context*, which again is composed of three parts (Fainshmidt et al., 2016): first, the Doing Business Survey by the World Bank, evaluating the obstacles to finding and maintaining a business⁵; second, a variable for the extent of market dominance exerted as measured by the Global Competitiveness Report (World Economic Forum); and third, the intensity of rivalry, again evaluated by the Global Competitiveness Report. Again, we standardized and averaged the three parts to form a *rivalry context*. The third component of the CFI evaluates the sophistication of *demand conditions* per country using the variable *buyer sophistication* from the Global Competitiveness Report (Fainshmidt et al., 2016). Survey respondents rated the sophistication of their customers' demands on a scale of 1–7, and we standardized the resulting variable. The fourth component of the CFI is *factor conditions*, as the average of the standardized scores for education, health, and wellness, and workforce and employment from the Human Capital Report 2013 by the World Economic Forum. Education captures access to and quality of primary, secondary, and tertiary education. Health and wellness measures the physical and mental states of the countries' populations. Workforce and employment assesses the experience, training, talent, and knowledge of the existing working-age population. Finally, we included *related and supporting industries* in the CFI. We operationalized *related and supporting industries* following the OECD's cluster scoreboard, in which relevant business agglomerations were identified as clusters. In the second step, the clusters were categorized as narrow or broad, depending on the number of included organizations.

To create a single measure, we performed a reliability analysis to confirm that the five individual measures contributed to a single underlying construct. A high Cronbach's alpha (0.90) confirmed the internal consistency and lent validity to our approach. We therefore calculate the CFI on a yearly basis by summing up *governance quality*, *rivalry context*, *demand conditions*, *factor conditions*, and *related and supporting industries*.⁶

3.3.2 | Foreign institutional ownership (from countries ranking high in CFI)

In our second hypothesis, we argue about the influence of foreign institutional investors⁷ from countries ranking high in the CFI. Specifically, we want to capture firms' ownership held by these investors. For the operationalization, we conducted three steps. First, we divided all countries in the sample into thirds *T1*, *T2*, and *T3* (with 1 representing the highest quality),

TABLE 1 Composition of the competitiveness factors index

Measure	Operationalization	Calculation	Source
Governance quality	Control of corruption	Standardized, averaged	World Governance Indicators (World Bank, 2008–2017)
	Rule of law		
	Political stability, no violence		
Rivalry context	Ease of doing business index	Standardized, averaged	Doing Business Survey (World Bank, 2010–2017 ^a) Global Competitiveness Report (World Economic Forum, 2008–2016 ^b)
	Extent of market dominance		
	Intensity of rivalry		
Demand conditions	Buyer sophistication	Standardized	Global Competitiveness Report (World Economic Forum, 2008–2016 ^b)
	Education	Standardized, averaged	Human Capital Report (World Economic Forum, 2013 ^c)
Factor conditions	Health and Wellness	Standardized	Cluster Scoreboard (OECD, 2012/13 ^d)
	Workforce and employment		
Related and supporting Industries	Industry clusters	Standardized	Cluster Scoreboard (OECD, 2012/13 ^d)

^aValues for 2010 have been used for 2008 and 2009.

^bValues for 2016 have been used for 2017.

^cValues for 2013 have been used for every year from 2008 to 2017.

^dValues for 2012/2013 have been used for every year from 2008 to 2017.

according to the CFI (see Table A2). In the following, we particularly focused on foreign institutional investors from *T1* as these are the countries with high-quality CFIs. Second, we assigned all foreign institutional investors to the previously defined thirds (*T1*, *T2*, and *T3*) according to their domestic country. This resulted in a classification of foreign institutional investors coming from countries scoring high, middle, or low in the CFI. Third, for each firm and year we determined how many shares (in percent) are held by foreign institutional investors from *T1*, which yielded our variable *T1 foreign inst. ownership* as represented by the following formula:

$$T1 \text{ foreign inst. ownership}_{k,t} = \sum_{fi=1}^{FI} s_1 + s_2 + \dots + s_{FI}$$

With *k* for the firm, *t* the year, *fi/FI* the foreign institutional investors, and *s* their share for *T1*.⁸

3.4 | Control variables

We employed multiple control variables in our analysis, which prior research has determined to be important predictors of firms' strategic choices. To account for differences in *firm size*, we calculated the natural logarithm of the number of employees. Return on assets (ROA), *free cash flow*, and *current*



ratio serve as barometers of firm performance, as prior research has shown that more resourceful firms are able to implement more complex competitive repertoires (Connelly et al., 2017; Ndofor et al., 2011). *Board size* and tenure (*time in role*) for board members and CEOs can influence the outcome of potential agency conflicts over strategic choices. A complex competitive repertoire is easier to achieve when firms employ a high volume of competitive actions. Consequently, we included *action volume* as a control. At the country level, we controlled for the cultural influence of *uncertainty avoidance* (Hofstede, 1984) on competitive repertoire complexity.⁹ We eliminated outliers for continuous variables by winsorizing at the 1% and 99% levels. Finally, we incorporated dummy variables for *industry* (based on the two-digit standard industry classification level) and *year*.

3.5 | METHODS

Our international dataset has an unbalanced panel structure with three levels, where firm years are nested within firms nested within countries. *CFI* varies across countries. Firms from the same country are likely to be more like each other as they deal with the same preconditions. Furthermore, the panel structure of our data required us to address within-firm serial correlations. Consequently, we used hierarchical linear modeling (HLM) to capture the within- and between-group variances and to account for potential autocorrelation and heteroscedasticity. Thus, we explicitly modeled country-, firm-, and year-level residuals to account for observations' partial interdependence (cf. Hofmann, 1997). We operationalized HLM using the *mixed* command from STATA 16, which allowed us to specify the levels as in the described order and calculate robust standard errors.

4 | RESULTS

4.1 | Descriptive statistics

Table 2 reports the means, standard deviations (*SDs*), variance inflation factors (*VIFs*), and pairwise correlations for the variables used in the regression analysis. The correlation between *competitive repertoire complexity* and *CFI* was positive at 0.21, which provides a first indication of H1. The mean *VIFs* and individual *VIFs* were far below the critical thresholds, indicating that we did not have multicollinearity problems (O'Brien, 2007; Table 2).

4.2 | Hypothesis testing

Table 3 reports our results using HLM. In H1, we propose that the *CFI* of a firm's domestic country (i.e., the country in which it is headquartered) is positively related to a firm's competitive repertoire complexity. We tested this hypothesis in Model 1. The positive and significant coefficient ($\beta = 1.535$; $p < .01$) indicates that the domestic country context determines competitive repertoire complexity. The economic effect of *CFI* on competitive repertoire complexity is noteworthy. A one *SD* increase from the mean of the *CFI* is associated with a change of 0.26 in competitive repertoire complexity or an increase of 30.1% ($= 0.26/0.84$).

Model 2 introduces an interaction between the firm's domestic country *CFI* and foreign institutional ownership from countries ranking high in *CFI* to test H2. The results indicate support for the hypothesis ($\beta = -1.058$; $p < .05$). Figure 1 illustrates a partial substitution effect.

TABLE 2 Descriptive statistics and correlations

	Mean	SD	VIF	1	2	3	4	5	6	7	8	9	10	11
Competitive repertoire complexity	0.84	2.13	1.54											
CFI	0.68	0.17	1.31	0.21										
T1 foreign inst. Ownership	0.28	0.25	1.14	-0.03	-0.15									
Firm size	9.60	1.53	2.39	0.34	0.03	0.03								
Return on assets	0.14	0.08	1.27	0.01	0.00	-0.03	0.03							
Free cash flow	1.46	2.46	2.30	0.36	0.09	-0.03	0.45	0.07						
Current ratio	1.75	1.24	1.45	-0.06	0.10	-0.04	-0.28	0.06	-0.14					
Board size	8.54	2.93	1.41	0.20	-0.18	-0.03	0.26	-0.01	0.23	-0.21				
Time in role (board)	5.50	2.83	1.31	0.06	0.03	-0.16	0.07	0.12	0.03	0.07	0.19			
Time in role (CEO)	5.05	4.81	1.18	-0.02	-0.02	0.03	0.01	0.04	-0.02	0.07	-0.05	0.30		
Action volume	20.89	46.63	1.90	0.47	0.11	-0.06	0.32	0.04	0.56	0.00	0.15	0.05	0.01	
Uncertainty avoidance	55.17	19.73	1.25	-0.14	-0.16	0.06	0.07	-0.14	0.01	-0.04	-0.14	-0.22	-0.03	-0.06

Note: N = 9,556 firm-years. Firm size is a natural log. Variables 1 and 4–10 are winsorized at the 1 and 99% level. Abbreviations: CEO, chief executive officer; CFI, competitiveness factors index; VIF, variance inflation factors.



TABLE 3 Hypothesis testing

Method	Model 1	Model 2
Dependent variable	HLM Competitive repertoire complexity	HLM Competitive repertoire complexity
CFI	1.535 (5.079)***	1.818 (5.411)***
T1 foreign inst. ownership		1.004 (4.114)***
CFI × T1 foreign inst. ownership		−0.968 (−2.274)**
Firm size	0.285 (11.995)***	0.282 (11.525)***
Return on assets	−1.676 (−5.637)***	−1.726 (−5.761)***
Free cash flow	0.038 (2.822)***	0.039 (2.339)**
Current ratio	−0.002 (−0.106)	−0.005 (−0.204)
Board size	0.042 (4.107)***	0.041(3.722)***
Time in role (board)	−0.019 (−2.145)**	−0.019 (−1.593)
Time in role (CEO)	−0.006 (−1.444)	−0.007 (−2.069)**
Action volume	0.015 (22.963)***	0.015 (5.843)***
Uncertainty avoidance	−0.012 (−4.061)***	−0.011 (−3.517)***
Constant	−2.867 (−7.212)***	−3.200 (−5.956)***
Industry effects	Yes	Yes
Year effects	Yes	Yes
χ^2	2,180.00	2,215.48
<i>N</i>	9,556	9,556

Note: *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. Z-statistics appear in parentheses next to the coefficients.

Abbreviations: CEO, chief executive officer; CFI, competitiveness factors index; HLM, hierarchical linear modeling; VIF, variance inflation factors.

We plotted the effect of the CFI in a firm's domestic country on competitive repertoire complexity at two levels of foreign institutional ownership: (i) the mean of foreign institutional ownership from countries ranking high in CFI minus one *SD* as “below-average foreign ownership” and (ii) the mean plus one *SD* as “above-average foreign ownership.” At a low level of the CFI in the firm's domestic country (starting at the left side of the x-axis), firms implement a lower (higher) level of competitive repertoire complexity if the share of foreign institutional owners from countries ranking high in CFI is low (high). With an increasing CFI in the firm's domestic country, the compensating effect from foreign ownership levels off until competitive repertoire complexity almost converges at its maximum.

4.3 | Robustness checks

4.3.1 | Sensitivity analyses

We used HLM to test our hypotheses in our main models. To demonstrate that our results were not driven by the choice of empirical model, we ran robustness checks using alternative

Partial substitution of competitiveness factors index (CFI)
in firms' domestic countries and foreign
institutional investors' countries.

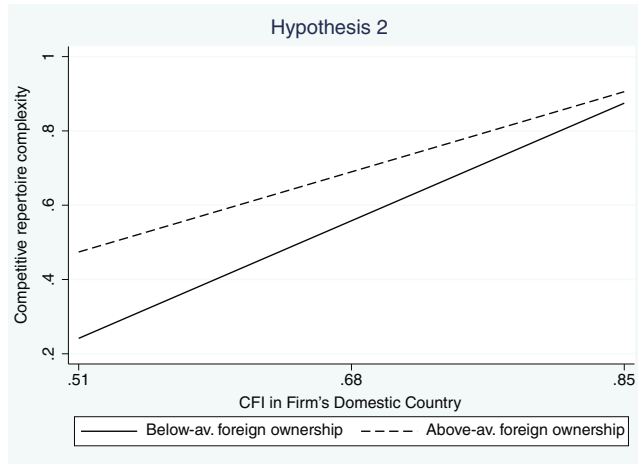


FIGURE 1 We use the mean of foreign institutional ownership from countries ranking high in CFI minus one *SD* as “below-average foreign ownership” and the mean plus one *SD* as “above-average foreign ownership”

regression techniques. As owners' investments are an endogenous choice, we specifically considered regression techniques that also help to address the resulting endogeneity concerns: (a) random effects, (b) the generalized estimating equation (GEE), and (c) the generalized method of moments (GMM).¹⁰ Table 4 reports the results, which are quantitatively and qualitatively similar to our main results using HLM.

In additional sensitivity tests, we also changed the operationalization of our independent variables, namely *CFI* and *T1 foreign inst. ownership*.¹¹ The *CFI* is an index that consists of five elements: governance quality, rivalry context, demand conditions, factor conditions, and related and supporting industries. These elements again consist of 11 sub-parts in total (Table 1). In our main model, we calculated a standardized value for each of the five main elements. The mean of these five elements resulted in our variable *CFI*. As a robustness check, we constructed *CFI* as the mean of the 11 underlying standardized parts. The results for the hypothesis testing remained unchanged in their substance and corroborate our arguments. We also tested the robustness of the categorization of foreign institutional investors for H2. In our main model, we grouped countries into thirds, depending on their degree of CFI. In the second step, we summed up the shares held by investors from each third by the firm. In the sensitivity test, we chose a categorization along quartiles and repeated the second step. The results corroborate our findings regarding H2.

4.3.2 | Potential endogeneity concerns

To alleviate potential concerns beyond our use of alternative regression techniques that particularly tackle endogeneity, we used additional methodological approaches.¹² First, we performed a propensity score matching (PSM) analysis. PSM analysis accounts for differences in observable



TABLE 4 Robustness checks

Method	Model 1 Random effects Competitive repertoire complexity	Model 2 GEE Competitive repertoire complexity	Model 3 GMM Competitive repertoire complexity
CFI	2.330 (9.664)***	2.390 (11.335)***	4.549 (3.584)***
T1 foreign inst. ownership	1.177 (3.260)***	1.152 (3.384)***	4.611 (2.133)**
CFI × T1 foreign inst. ownership	−1.763 (−3.259)***	−1.718 (−3.415)***	−7.990 (−1.914)*
Firm size	0.264 (11.017)***	0.289 (13.320)***	−0.418 (−1.187)
Return on assets	−1.578 (−5.197)***	−1.889 (6.402)***	−0.683 (−0.421)
Free cash flow	0.038 (2.719)***	0.045 (3.473)***	0.286 (2.693)***
Current ratio	0.002 (0.077)	0.007 (0.326)	−0.369 (−1.591)
Board size	0.056 (6.108)***	0.071 (8.430)***	0.096 (1.514)
Time in role (board)	−0.007 (−0.831)	−0.006 (−0.774)	−0.024 (−0.586)
Time in role (CEO)	−0.008 (−1.757)*	−0.007 (−1.554)	0.007 (0.458)
Action volume	0.015 (23.219)***	0.014 (23.899)***	0.014 (3.787)***
Uncertainty avoidance	−0.013 (−8.928)***	−0.012 (−10.092)***	−0.009 (−2.458)**
Constant	−3.241 (−9.576)***	−3.811 (−11.948)***	0.783 (0.258)
Industry effects	Yes	Yes	Yes
Year effects	Yes	Yes	Yes
χ^2	2,474.14	3,543.47	438.85
N	9,556	9,556	8,469

Notes: *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. Z-statistics appear in parentheses next to the coefficients. In Model 2, we specified a GEE with an identity link function and a Gaussian (normal) distribution. To account for within-firm correlation, we employed the autoregressive within-group correlation of the first order (ar1) with standard errors cluster at the firm level. In Model 3, we implemented the tests for autocorrelation in differences (AR1) and levels (AR2), as suggested by Arellano and Bond (1991), to check the validity of the instrumented estimates. Moreover, we use Hansen's J statistic to indicate whether the restrictions are overidentified; that is, whether the number of moment conditions surpasses the parameters to be estimated. The results confirm the appropriateness of the GMM regression: AR1: $z = -22.78$, $Pr > z = 0.000$; AR2: $z = -0.38$, $Pr > z = 0.705$; Hansen test: 29.42, $Prob > \chi^2 = 0.104$. Abbreviations: CEO, chief executive officer; GEE, generalized estimating equation; GMM, generalized method of moments.

characteristics between firms with strong versus weak investor influence from countries ranking high in CFI, and thus mitigates concerns about unobservable characteristics that may be linked to these observable characteristics (Chang et al., 2013; Chen et al., 2015). Using PSM, we created a matched sample where each treated observation (high investor influence from countries ranking high in CFI) is matched with a control observation (low investor influence from countries ranking high in CFI), while the remaining observable characteristics are similar. In the matching process, we specified a one-to-one matching with a conservative caliper of 0.05 (Shipman et al., 2017). Using the matched sample of observations with high and low investor influence from countries ranking high in CFI, we reran our main regressions and again found results that support our hypotheses.

Second, we employed PSM to account for differences between firms from countries ranking high and low in CFI. We again followed the described procedure and created a matched sample, where each treated observation from a country ranking high in CFI was matched to a control observation from a country ranking low in CFI. Again, we found consistent results for our hypotheses.

Third, we controlled for a potential selection bias by following Shaver (1998) and included a correction factor derived from a first-stage probit model estimating the likelihood of investor influence from countries ranking high in CFI in all second-stage regressions. This approach aimed to control for the self-selection of institutional investors into firms with high repertoire complexity. The first-stage probit model includes an exclusion criterion that is correlated with investor influence from countries ranking high in CFI, but not correlated with competitive repertoire complexity. We used the net foreign direct investment inflow into the country as the exclusion criterion (Certo et al., 2016). We then repeated our main regression, including the inverse Mills ratio from the first-stage regression as an additional control variable. After controlling for the likelihood of investor influence from countries ranking high in CFI, all our results remained stable.

4.4 | Additional analyses

4.4.1 | Individual factors of the CFI

In H1, we suggest that the CFI in firms' domestic countries influences their competitive repertoire complexity. To scrutinize our arguments, we dissected the CFI into its five factors and analyzed their influence on competitive repertoire complexity. Based on our theory, we expected significant effects of all factors on competitive repertoire complexity.

Table 5 reports the results. We found positive and significant coefficients for *governance quality* ($\beta = .382$; $p < .01$), *rivalry context* ($\beta = .121$; $p < .10$), *factor conditions* ($\beta = .429$; $p < .01$), and *related and supporting industries* ($\beta = .237$; $p < .05$). The effect of *demand conditions*, however, is not significant ($\beta = .038$; $p = .609$), although it is still positive. The interpretation of the null findings is speculative. Nevertheless, we sought to deliberate on potential explanations. One potential explanation might be that demand conditions become effective only when other factors are present. We found potential support for this speculation in Fainshmidt et al.'s (2016) study on national competitiveness, in which the findings indicated that demand conditions do not matter in two of their four configurations in a qualitative comparative analysis (QCA). In the other two configurations, demand conditions are a core condition, but at least also need to contain the factors of rivalry and governance quality. Of course, Fainshmidt et al. analyze national competitiveness (at the country level), while our study refers to a firm-level dependent variable, and both studies use different methodologies, indicating that our explanation should be treated with caution. Another potential explanation might be that our sample covers the largest firms worldwide, with many of them catering to international customers. As foreign customers can also influence firms (e.g., Belderbos & Grimpe, 2020), domestic demand conditions might be less formative for those firms' strategy, as would be expected with purely domestic firms. Ultimately, to shed further light on our null finding regarding demand conditions, we call for future research to explore whether and how this factor is truly relevant to firms' competitive repertoire complexity.



TABLE 5 Additional analysis: individual factors of the competitiveness factors index

Method	Model 1 HLM Competitive repertoire complexity	Model 2 HLM Competitive repertoire complexity	Model 3 HLM Competitive repertoire complexity	Model 4 HLM Competitive repertoire complexity	Model 5 HLM Competitive repertoire complexity
Governance quality	0.382 (4.672)***				
Rivalry context		0.121 (1.763)*			
Demand conditions			0.038 (0.512)	0.429 (4.927)***	0.237 (2.376)**
Factor conditions					
Related and supporting industries					
Firm size	0.286 (12.035)***	0.289 (12.134)***	0.290 (12.155)***	0.288 (12.105)***	0.289 (12.106)***
Return on assets	-1.691 (-5.688)***	-1.695 (-5.694)***	-1.703 (-5.722)***	-1.684 (-5.665)***	-1.696 (-5.701)***
Free cash flow	0.102 (2.935)***	0.102 (2.887)***	0.102 (2.896)***	0.101 (2.822)***	0.101 (2.830)***
Current ratio	-0.003 (-0.144)	-0.003 (-0.133)	-0.003 (-0.139)	-0.003 (-0.139)	-0.002 (-0.112)
Board size	0.040 (3.936)***	0.039 (3.811)***	0.039 (3.821)***	0.041 (4.016)***	0.040 (3.912)***
Time in role (board)	-0.019 (-2.189)**	-0.020 (-2.292)**	-0.021 (-2.379)**	-0.020 (-2.207)**	-0.021 (-2.323)**
Time in role (CEO)	-0.006 (-1.424)	-0.006 (-1.436)	-0.006 (-1.391)	-0.007 (-1.472)	-0.006 (-1.390)
Action volume	0.015 (22.883)***	0.015 (22.891)***	0.015 (22.845)***	0.015 (22.912)***	0.015 (22.873)***
Uncertainty avoidance	-0.012 (-3.951)***	-0.014 (-3.701)***	-0.014 (-3.532)***	-0.012 (-3.818)***	-0.016 (-4.118)***
Constant	-1.987 (-5.735)***	-1.907 (-5.014)***	-1.896 (-4.712)***	-2.003 (-5.723)***	-1.846 (-4.881)***
Industry effects	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes
χ^2	2,171.41	2,131.79	2,127.06	2,172.71	2,135.78
N	9,556	9,556	9,556	9,556	9,556

Note: *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. Z-statistics appear in parentheses next to the coefficients. Abbreviations: CEO, chief executive officer; HLM, hierarchical linear modeling.

4.4.2 | In-depth analysis of the influence of foreign institutional investors

Given our findings of a substitution effect between the CFI from firms' domestic (i.e., headquarters') countries, and from foreign institutional investors' countries, additional analyses on *when* and *how* the effect of foreign institutional investors unfolds could reveal promising insights.

First, the illustration of our results on the substitution effect in Figure 1 already indicates that the effect of foreign institutional investors is likelier to unfold *when* a firm's domestic country scores low in CFI. In an unreported test, we split our sample into observations with firms' domestic countries scoring high (above the median) and low (below the median) in the CFI. The results (available upon request) show only a positive significant relationship between foreign institutional investors and competitive repertoire complexity in the low sample split. Thus, the regression confirms the indication in Figure 1 that foreign institutional investors unfold their effect on firms' competitive repertoire complexity in situations in which firms face voids in their domestic country.

Second, the first additional test reported in Table 5 sheds light on *how* the different elements of the CFI in a firm's domestic country add to its competitive repertoire complexity. To gain insights into *how* foreign institutional investors add to firms' competitive repertoire complexity, we built on our findings from the previous tests and investigated the effect of the different factors of the CFI in firms' domestic country contexts with low-quality CFI. Thus, we focused on observations scoring below the median of the CFI and investigated the influence of foreign institutional investors on individual elements. Table 6 reports the results. We found positive and significant coefficients for the *rivalry context* ($\beta = .542$; $p < .01$), *demand conditions* ($\beta = .481$; $p < .01$), and *factor conditions* ($\beta = .575$; $p < .01$), while the coefficients for *governance quality* ($\beta = .265$; $p = .118$) and *related and supporting industries* ($\beta = .490$; $p = .661$) are still positive but not significant. This analysis adds to the development of greater insights into our understanding of *how*—meaning through which specific channels—foreign institutional investors influence their firms' competitive repertoire complexity (McCahery et al., 2016). However, future empirical research is needed to understand whether the pattern observed in our post hoc test is robust.

4.4.3 | CFI and national competitiveness

Our study's motivation builds on prior literature's link between the factors of the CFI and national competitiveness. While we sought to explore the role of competitive repertoire complexity in this relationship, we expected the factors of the CFI to endow firms with the right capabilities to increase a nation's productivity (i.e., higher competitiveness) (cf. Fainshmidt et al., 2016; Porter, 1990). From our main tests, we know that the country-level variable CFI is positively related to a firm's competitive repertoire complexity. Thus, we expected higher competitive repertoire complexity in a firm to contribute to higher levels of national competitiveness. In line with Fainshmidt et al. (2016), we used the gross domestic product based on purchasing power parity per capita as a proxy for the dependent variable country's national competitiveness. The independent variable was a firm's competitive repertoire complexity. Using these variables, we tested the proposed relationship. In unreported results (available upon request), we find a positive and statistically significant relationship between a firm's competitive repertoire complexity and national competitiveness ($\beta = 1.834$; $p = .000$), which aligns with our expectations and supports our arguments.



TABLE 6 Additional analysis: Foreign institutional investors' influence for firms with low-quality competitiveness factors index in their domestic country

Method	Model 1		Model 2		Model 3		Model 4		Model 5	
	HLM	Competitive repertoire complexity	HLM	Competitive repertoire complexity	HLM	Competitive repertoire complexity	HLM	Competitive repertoire complexity	HLM	Competitive repertoire complexity
T1 governance quality	0.265 (1.563)									
T1 rivalry context		0.542 (3.438)***								
T1 demand conditions			0.481 (3.207)***							
T1 factor conditions				0.575 (3.513)**						0.490 (0.438)
T1 related and supporting industries										
Firm size	0.295 (9.382)***	0.292 (9.305)***	0.293 (9.338)***	0.290 (9.234)***	0.297 (9.417)***					
Return on assets	-1.639 (-4.152)***	-1.675 (-4.258)***	-1.669 (-4.241)***	-1.692 (-4.299)***	-1.607 (-4.070)***					
Free cash flow	0.055 (3.132)***	0.055 (3.184)***	0.055 (3.174)***	0.056 (3.226)***	0.054 (3.092)***					
Current ratio	0.028 (1.000)	0.026 (0.937)	0.028 (0.991)	0.026 (0.922)	0.029 (1.032)					
Board size	0.045 (3.327)***	0.045 (3.338)***	0.045 (3.317)***	0.046 (3.397)***	0.045 (3.305)***					
Time in role (board)	-0.022 (-1.864)*	-0.021 (-1.803)*	-0.022 (-1.813)*	-0.021 (-1.777)*	-0.023 (-1.896)*					
Time in role (CEO)	-0.012 (-2.086)**	-0.013 (-2.114)**	-0.013 (-2.127)**	-0.013 (-2.136)**	-0.012 (-2.087)**					
Action volume	0.013 (15.996)***	0.013 (15.963)***	0.013 (15.944)***	0.013 (15.946)***	0.013 (15.995)***					
Uncertainty avoidance	-0.014 (-2.913)***	-0.013 (-2.771)***	-0.013 (-2.809)***	-0.013 (-2.793)***	-0.014 (-2.920)***					
Constant	-2.220 (-4.566)***	-2.341 (-4.829)***	-2.143 (-4.441)***	-2.312 (-4.790)***	-2.141 (-4.411)***					
Industry effects	Yes	Yes	Yes	Yes	Yes					
Year effects	Yes	Yes	Yes	Yes	Yes					
χ^2	1,313.61	1,336.50	1,332.21	1,337.71	1,305.54					
N	4,810	4,810	4,810	4,810	4,810					

Note: *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. Z-statistics appear in parentheses next to the coefficients. Abbreviations: CEO, chief executive officer; HLM, hierarchical linear modeling.

5 | DISCUSSION AND CONCLUSION

In this study, we investigated how firms' domestic country context and the country context of firms' foreign investors affect firms' strategizing, specifically firms' competitive repertoire complexity, and which country factors matter in doing so. We integrated an extended model of country-level competitiveness factors with the competitive dynamics literature (Basdeo et al., 2006; Connelly et al., 2017) and the literature on portable governance (Ellis et al., 2017). We show that a country context with high-quality competitiveness factors enables firms to implement complex competitive repertoires. Additionally, we unveil that firms with foreign investors from countries with high-quality competitiveness factors can partially compensate for low-quality competitiveness factors in their domestic contexts. However, this substitution effect is imperfect.

With our study, we contribute to the literature in two major ways. First, on competitive dynamics (e.g., Basdeo et al., 2006; Connelly et al., 2017) by highlighting the importance of firms' domestic country context in determining their ability to employ a diverse set of competitive actions. While the literature has generated insights into micro-level determinants of repertoire complexity (Connelly et al., 2017; Ferrier, 2001; Ndofor et al., 2011), we lack a comparative international study to investigate firms' domestic countries as conditions for their pursuit of competitive advantage. We highlight how firms competing in global markets may do so on uneven playing fields, as their competitive repertoires are partly determined by their heterogeneous country backgrounds.

Moreover, we add further evidence to research stressing the impact of the domestic country context on firms' strategizing (e.g., Cuervo-Cazurra, 2011; Grøgaard et al., 2019; Hoskisson et al., 2013; Urbig et al., 2022) by empirically investigating the relation of a diverse set of country factors with firms' strategizing in the context of developed and developing countries. Our findings also imply that studies examining the moderating role of the domestic country context in the relationship between firm strategies and performance (e.g., Chakrabarti et al., 2007; Wan & Hoskisson, 2003) should theoretically and empirically take into account how the country context may not only serve as a moderator of the strategy–performance relationship but could also act as a determinant of firms' ability or willingness to employ certain strategies. To avoid conceptual and empirical biases, it is important to disentangle these two effects in future studies.

Second, we contribute to the literature on the determinants of national competitiveness (e.g., Fainshmidt et al., 2016; Porter, 1990; Thompson, 2004) by explicating the role of inward foreign investments, specifically through institutional investors. Drawing on arguments from the literature examining the influence of foreign institutional investors (Aggarwal et al., 2011; Desender et al., 2016; Ferreira & Matos, 2008; Luong et al., 2017), we uncover how investors from countries with high-quality competitiveness factors increase their firms' competitive repertoire complexity and that this source is an imperfect substitute for firms' low-quality domestic context. Thus, we demonstrate how investors not only export governance mechanisms (Ellis et al., 2017) but also the characteristics of their countries. Porter's (1990) original diamond model has been criticized for its domestic focus, leading to extensions of the model that consider the international dimension, for example, by including closely linked trade economies via a double diamond model (Brouthers & Brouthers, 1997), by considering the role of inward MNC presence in the focal country (Dunning, 1992; Fainshmidt et al., 2016), or by explicating how MNCs can overcome national weaknesses via foreign subsidiary ownership (Geisler Asmussen et al., 2009). Interestingly, the first empirical comparative global study found that inward MNC presence does not seem to be a critical component of a nation's competitiveness



(Fainshmidt et al., 2016). By theorizing and empirically testing a specific form of inward foreign investment—foreign institutional investment—we nuance the view on the role of foreign investment and deliver empirical evidence that inward investments are relevant—at least for firm-level competitiveness. Since institutional investment has developed into a significant economic factor in recent decades (cf. Fichtner, 2020), future studies investigating the competitiveness of nations should consider this specific international dimension. Moreover, our additional analyses deliver further insights into the literature on nations' competitiveness. We found a positive relationship between competitive repertoire complexity and national competitiveness, which delivers insights into how country-level factors translate into aggregate national competitiveness by enabling firms to develop organizational capabilities—that is, the ability to develop and employ complex competitive repertoires.

Our findings also offer insights for managers and policymakers. Managers looking to steer their firm's competitive repertoires in a more complex direction, restricted by their domestic country context, could aim to attract foreign investors from countries that have what they miss. Policymakers who aim to create a more business-friendly environment have two basic options: first, improve the competitiveness factors in their country, and second, a shorter-term option would be to attract foreign institutional investment from countries with desirable characteristics. Therefore, it is important to facilitate capital flows into the country, for example, by easing restrictions or raising disclosure standards to create transparency. In the long term, improving country factors that are crucial for a business-friendly environment will attract foreign owners interested in stable, trustworthy, and profitable investment opportunities.

5.1 | Limitations and future research

Our study is not free from limitations. First, our assessment that a complex competitive repertoire increases a firm's ability to generate a competitive advantage is based on findings from recent research that complex repertoires can increase firms' performance (e.g., Connelly et al., 2017; Ferrier, 2001; Ndofo et al., 2011). Nevertheless, we acknowledge that a complex repertoire might not always translate into superior performance. For example, high investment and coordination costs might lead to inferior short-term performance (Connelly et al., 2017). Moreover, contextualization is important, as firms' ability to adjust and adapt the repertoire will be important in reaping the potential benefits of a complex portfolio (Fox et al., 2022). Future research questions arise when examining in which domestic or global markets a complex repertoire will result in the most promising performance.

Second, we acknowledge that repertoire complexity is one of several key constructs when it comes to corporate strategy (cf. Feldman, 2020) that would be worth analyzing. However, we are confident that competitive repertoire complexity is a relevant theoretical construct, especially in settings where a complex portfolio of various strategic actions is needed to address market uncertainties and complexity, as is the case in global strategy. Moreover, repertoire complexity is more aligned with strategy as a stream of decisions (Mintzberg, 1978) than with the single and more static components of a competitive repertoire, such as M&As. Narrowing the analysis to include only single components or constructs that only capture the sequence of potentially homogenous actions, such as action speed or volume, would not deepen our understanding of how firms draw from the full toolkit of strategic actions.

Third, our hypotheses and operationalization regarding the extended model of country-level competitiveness factors aggregate the five underlying factors. We do so because our empirical

model would have become too complex when we intend to capture the interactions between domestic country factors and country factors of foreign investors. Based on the high correlations between the five factors and a high Cronbach's alpha, we built an index. Nevertheless, Porter's (1990) work does not suggest aggregating the four factors into one measure, as the factors are distinct and complex elements that can mutually reinforce each other. Newer work also stresses this complex and interdependent system among the factors (Fainshmidt et al., 2016). Thus, the different factors could influence firm-level decisions and outcomes in distinct ways through mutual reinforcement and factor-specific mechanisms, requiring greater differentiation than our model allows. Future research on the effects of country-level competitiveness factors on firm strategy might, for example, adopt a QCA approach (cf. Fainshmidt et al., 2016) to better understand the different configurations of factors needed to result in increased firm-level competitiveness.

Fourth, it would be desirable to further disentangle firms' competitive repertoires, such as isolating a firm's competitive repertoire for specific domestic markets or cross-border activities. This would increase our understanding of whether the domestic country context only affects firms' ability to develop and employ complex repertoires in their respective domestic countries or in international markets, potentially increasing their international competitiveness. Unfortunately, our data prevent us from further disentangling the construct because the RavenPack database does not capture the geographical destination of the actions and does not differentiate between cross-border actions and those in the domestic country.

Finally, while we used a broad international sample, finer-grained analysis could add further value (Ellis et al., 2018). Researchers could zoom into firms within one country with owners from varying countries. Furthermore, "institutional investors" encompass actors from diverse backgrounds (hedge funds are different from sovereign wealth funds, which are different from pension funds) and distinctive investment horizons (dedicated vs. transient investors: Bushee, 1998). In particular, differentiation between dedicated and transient investors has the potential to deepen our understanding (cf. Oehmichen et al., 2021). While dedicated investors could increase repertoire complexity in the long term via monitoring and knowledge spillover effects, managers may feel inclined to shift resources toward complex portfolios to please a more transient investor with higher returns.

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ENDNOTES

- ¹ The firms in our cross-country study's sample vary in their degrees of multinationality. While some can be categorized as multinational corporations, our sample also includes firms with a more domestic focus. In any case, they are the largest firms within their domestic countries.
- ² Different authors use different terms for the same concept. We follow Connelly et al. (2017) and use *competitive repertoire complexity* and *complex competitive repertoire* interchangeably to describe a diverse and dynamic repertoire of competitive actions.

- ³ In unreported tests, we discarded institutional owners holding less than 1% of equity for any given firm and found similar results. In our main tests, however, we decided to consider all institutional investors as also small holdings might add up to considerable size in aggregating the total foreign holdings and measuring its influence.
- ⁴ The RavenPack database does not capture the geographical destination of the actions and does not differentiate between global actions and actions in the domestic country. Thus, our measure for repertoire complexity is based on firms' international and domestic actions.
- ⁵ While we follow Fainshmidt et al. (2016) and interpret the Doing Business Survey as a construct that reflects the ability to compete, one could also view this measure as a pure institutions-related factor representing the ease of entering a market. In unreported tests, we, therefore, constructed our measure of CFI without the Doing Business Survey. The results support our hypotheses.
- ⁶ In unreported tests, we considered the configurations of the individual elements proposed by Fainshmidt et al. (2016) and employed an alternative proxy for a CFI. This proxy takes the value of one if one of the four identified configuration is in place. To assess the presence of an individual element, we categorize observations into above and below the median of the individual element in the respective year. The results support our hypotheses.
- ⁷ We focus on institutional investors since they are prominently discussed in the literature and are the most prominent foreign investors (in our data we see that 91.7% of the foreign investors are institutional investors). Nevertheless, the mechanisms which we outline for H2 can also hold for other foreign strategic investors. Hence, in unreported analyses, we tested, whether our empirical results also hold when building our variable with all types of foreign investors. Our results are robust to such change in ownership variable and are available upon request.
- ⁸ In unreported tests, we control for foreign institutional ownership from *T2* and *T3* and find consistent results
- ⁹ In unreported sensitivity tests, we control for the other Hofstede measures and find consistent results.
- ¹⁰ (1) Random effects models correct for within-firm correlation and produce efficient estimates. GEE also accounts for nonindependence across observations (Ballinger, 2004). (2) For the GEE models, we specify an identity link function, a Gaussian (normal) distribution, and an autoregressive within-group correlation of the first order (ar1) to account for within-firm correlation. (3) GMM has several advantages. First, GMM accounts for reverse causality by using instrumental variable estimates. Second, GMM accounts for unobservable heterogeneity by including firm-fixed effects. Third, GMM considers the dynamic relationship between investors and strategy by allowing for the inclusion of the lagged values of the dependent variable.
- ¹¹ The results for the sensitivity tests of our independent variables are not reported, but are available from the authors upon request.
- ¹² The PSM results and the Heckman procedure are not reported, but are available from the authors upon request. In an additional unreported test, we tested for reverse causality between investors' influence from countries ranking high in CFI and repertoire complexity by using *competitive repertoire complexity* as the independent variable and *T1 foreign inst. ownership* as the dependent variable. We find a negative but insignificant relation. Lastly, we particularly investigated the effect of substantial changes ($\pm 10\%$) in ownership from countries ranking high in CFI on competitive repertoire complexity by employing a dummy variable. Using an HLM and a firm-fixed effects model, we find the expected positive and significant relation. Both tables are available from the authors upon request.

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APPENDIX A

TABLE A1 Country overview

Country	Number of firms	Percentage of firms	Mean national CFI	Mean competitive repertoire complexity
Australia	44	3.3	0.63	0.45
Austria	6	0.4	0.73	-0.23
Belgium	7	0.5	0.74	0.07
Brazil	10	0.7	0.33	-1.19
Canada	73	5.4	0.75	0.37
China	14	1.0	0.47	-0.73
Denmark	8	0.3	0.79	1.35
Finland	4	3.6	0.77	1.32
France	61	0.4	0.20	-1.25
Germany	48	2.5	0.27	0.73
Greece	6	0.3	0.20	-0.93
India	34	1.5	0.55	0.94
Indonesia	4	0.4	0.41	0.49
Ireland	20	1.4	0.47	0.18
Israel	5	9.8	0.83	0.24
Italy	19	1.0	0.23	-0.82
Japan	131	1.9	0.80	1.14
Mexico	13	0.5	0.48	-0.76
Netherlands	26	0.9	0.68	0.71
Philippines	10	1.0	0.81	0.80
Poland	8	1.3	0.71	0.99
Portugal	7	0.7	0.25	-1.47
Singapore	12	7.6	0.79	1.02
South Africa	37	39.9	0.76	1.36
South Korea	26	3.3	0.63	0.45
Spain	22	0.4	0.73	-0.23
Sweden	13	0.5	0.74	0.07
Switzerland	18	0.7	0.33	-1.19
Thailand	9	5.4	0.75	0.37
Turkey	8	1.0	0.47	-0.73
United Kingdom	102	0.3	0.79	1.35
United States	535	4.6	0.63	1.07
Total	1,340	100	0.68	0.84

Abbreviation: CFI, competitiveness factors index.

TABLE A2 Classification of countries according to levels of the competitiveness factors index

1st third (# listed)		2nd third (# listed)		3rd third (# listed)	
Austria	10	Australia	10	Brazil	10
Belgium	10	China	10	Greece	10
Canada	10	Denmark	4	India	10
Denmark	6	France	10	Indonesia	10
Finland	10	Ireland	10	Mexico	10
Germany	10	Israel	10	Philippines	10
Japan	10	Italy	10	Poland	10
Netherlands	10	Portugal	10	South Africa	10
Sweden	10	Singapore	10	Thailand	10
Switzerland	4	South Korea	10	Turkey	10
United Kingdom	10	Spain	10		
United States	10	Switzerland	6		

Note: Countries are listed multiple times if their classification has changed (time frame: 2008–2017).