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# CEO International Experience in Advanced Market Economies and Firm Investment Horizon in a Transitioning Economy

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## Abstract

Building on the literature on managerial myopia, we investigate how chief executive officers' (CEOs) international experience in advanced market economies affects their firms' investment horizons in a transitioning economy. To overcome myopia, CEOs should possess the knowledge needed to manage current tasks, thereby freeing up cognitive resources for future considerations. In the context of our theorizing, we argue that international experience in advanced market economies equips CEOs with knowledge about how to deal with their current tasks of market-oriented adaptation in a transitioning economy, freeing up cognitive resources for considering longer-term investment horizons. Additionally, the effect of CEO international experience in advanced market economies on firm investment horizon is stronger under conditions that increase the cognitive burden on CEOs to perform market-oriented adaptation tasks – specifically, when there is a high scope of pro-market reform, high intensity of foreign competition, analyst coverage, and a high level of institutional ownership. Our estimation based on a matched sample of 204 Chinese CEOs during the period 2002–2019 supports the majority of our predictions. Our study contributes to research on firm investment horizon, CEO international experience, and transition economies.

## 摘要

本文调查了首席执行官在发达市场经济体中的国际化经历如何影响公司在转型经济中的投资视野。从管理短视理论出发，首席执行官应该具备管理当前任务所需的知识，从而释放认知资源用于考虑未来。我们因此预测在发达市场经济体中的国际化经历能够使首席执行官具备知识，去处理公司在转型经济体中市场导向任务的挑战，从而释放认知资源来考虑更长期的投资视野。此外，当首席执行官面对与执行市场导向任务有关的高程度认知负担时，即高程度的市场改革范围、高强度的外国竞争、分析师覆盖以及高水平的机构持股情况下，他们以往的国际化经历将对公司的投资视野产生更强烈的影响。通过对2002年至2019年期间204位中国首席执行官的匹配样本进行分析，我们发现结果确实如此。

**Keywords:** CEO international experience; firm investment horizon; market-oriented adaptation; market-oriented transition; myopia

**关键词:** 首席执行官的国际经验; 公司投资视野; 短视; 市场经济转型; 市场导向改革

## Introduction

Firm investment horizon, defined as ‘the *ex ante* average expected useful life of a firm’s investment’ (Souder, Reilly, Bromiley, & Mitchell, 2016: 1202), continues to attract scholarly interest (e.g., see, Reilly, Souder, & Ranucci [2016] for a review). Investment horizon is a temporal construct that

emphasizes preferences concerning the timing of investment returns (Frederick, 2005), and thus is distinct from concepts such as risk taking and uncertainty avoidance, which focus on decision makers' preference for the distribution (variance) of investment payoffs. In other words, investment horizon is a reflection of a firm's assessment of how to best balance the trade-offs involved in allocating resources to investment projects that have costs and benefits accruing at different points in time (Souder & Bromiley, 2012).

In general, scholars share the concern that firms' time horizons are biased toward the short term, and that this bias undermines their long-term competitiveness (e.g., Flammer & Bansal, 2017; Sampson & Shi, 2023). Research has highlighted the role of external forces that drive firms to overly focus on the short term, such as capital market pressures and managers' job environment (Kacperczyk, 2009; Qian, Lu, & Yu, 2019; Zhu, Jia, & Li, 2022). Other studies have investigated factors that help firms counter such short-term pressures and pursue investments with long-term horizons, such as financial slack and interlocking director networks (Benton & Cobb, 2019; Martin, Wiseman, & Gomez-Mejia, 2016; Souder & Shaver, 2010). Relatively little research has considered and tested how characteristics of the decision makers (e.g., chief executive officers [CEOs]) affect their firms' investment horizons. Given that CEOs make important firm investment decisions (Quigley & Hambrick, 2015) and are often subject to myopia bias (Miller, 2002), investigating how CEO-level factors impact firm investment horizon might generate valuable insights that could help firms avoid pursuing short-term-oriented investments.

Specifically, our study investigates how CEOs' international experience affects firm investment horizon in the context of a transitioning economy, China – a research setting characterized by significant variance in firm investment horizon (Sadun, Bloom, & van Reenen, 2017). CEO international experience, defined as prior education or work experience in a foreign country (Tihanyi, Ellstrand, Daily, & Dalton, 2000), is an increasingly important phenomenon<sup>1</sup> and a critical factor that affects various firm strategies (e.g., Carpenter, Pollock, & Leary, 2003; Chittoor, Aulakh, & Ray, 2015; Nielsen & Nielsen, 2011). For instance, international experience contributes to CEOs' abilities for making calculated risk-taking decisions regarding foreign investment. CEOs' knowledge gained through international experience can also help their firms initiate practices such as green innovation and corporate philanthropy (Luo, Chen, & Chen, 2021; Quan, Ke, Qian, & Zhang, 2023). Although such practices (e.g., green innovation) typically have temporal components, the temporal dimension remains understudied, and no research has considered the impact of CEO international experience on firm investment horizon.

To theorize about the link between CEO international experience and firm investment horizon in the context of China's market-oriented transition, we draw from scholarly work on managerial myopia, which argues that boundedly rational managers tend to allocate their attention sequentially between current issues and future considerations (Cyert & March, 1963; Levinthal & March, 1993; Miller, 2002). Making long-term plans is a cognitively demanding endeavor, as CEOs have to envision and analyze multiple future scenarios (Oppen & Burt, 2021). If CEOs' current tasks are challenging, such as when they have to adapt to the introduction of market-oriented institutions in the short term, they have fewer cognitive resources available for future considerations. As such, myopia can be expected when CEOs are cognitively overloaded by their current tasks (Levinthal & March, 1993; Miller, 2002).

We argue that international experience in advanced market economies (specifically, countries affiliated with the Organization for Economic Co-operation and Development [OECD])<sup>2</sup> helps CEOs overcome myopia during a market-oriented transition. CEOs with experience in advanced market economies are equipped with relevant knowledge that facilitates their handling of the current task challenges related to such a transition (Peng, Sun, & Markóczy, 2015). Hence, these CEOs have the ability to ease the cognitive burden associated with their current tasks, freeing up more cognitive resources with which they can address future considerations. Meanwhile, their ability to conceive a more distant, future market condition and their tendency toward exploration allow them to devote their cognitive resources to long-term plans and shift their perspective to the longer term.

We also investigate four contextual factors that are associated with the cognitive burden imposed on CEOs to initiate market-oriented adaptation, which alter the effects of CEOs' international experience on firm investment horizon (Plass, Moreno, & Brünken, 2010). These four factors – a larger scope of pro-market reform, higher intensity of foreign competition, analyst coverage, and a higher level of institutional ownership – highlight the salience of market-oriented adaptation and make such adaptation a high-stakes task for CEOs. Because these factors increase CEOs' cognitive burden when performing their current adaptation tasks, international experience in advanced market economies becomes even more valuable in helping CEOs avoid cognitive overload and, therefore, facilitates the adoption of a longer-term investment horizon.

Using a difference-in-differences (DID) approach, we find some evidence supporting our framework from a matched sample of 204 CEOs of Chinese publicly listed firms over the period 2002–2019. Our study contributes to the literature in three ways. First, our study goes beyond prior work that has focused on the role of environmental conditions and organizational characteristics (Laverty, 1996; Reilly et al., 2016; Zhu et al., 2022), by identifying the role of an important CEO-level factor in shaping firm investment horizon: CEO international experience. Second, our study delineates the context in which the CEO is embedded as an important boundary condition for the effects of CEO experience on firms' investment horizons (Cuypers, Patel, Ertug, Li, & Cuypers, 2022). CEOs' market-relevant knowledge stemming from their international experience becomes even more important for firms' long-term investments when the scope of pro-market reform and level of institutional ownership are high, because these contextual factors increase the cognitive burden on CEOs to perform the market-oriented adaptation tasks at hand. Third, we contribute to research on CEO international experience by highlighting its role in facilitating the development of a long-term investment horizon, moving beyond the extant perspectives that have primarily focused on risk taking (e.g., Chittoor et al., 2015; Nielsen & Nielsen, 2011).

## Literature Review

### *Firm Investment Horizon*

Investment horizon is an important aspect of firms' strategic decision making, as it concerns how firms balance short-term and long-term returns (Bromiley, 1986; Crilly, 2017). Investments with longer horizons, such as exploration-driven research and development (R&D) projects, generate more returns over a longer period of time, which helps sustain firms' competitive advantage (Zhong, Ma, Tong, Zhang, & Xie, 2021). But long-term investments may also inflict costs in the form of higher short-term losses (Martin et al., 2016). Hence, investment horizon choice reflects a firm's preference for allocating its efforts and resources across different investments with varying temporal foci (Souder & Bromiley, 2012).

Researchers have emphasized the need for firms to maintain a healthy balance between long-term and short-term investments (Levinthal & March, 1993). However, it has been observed that firms typically put more emphasis on investments with short-term returns than on those with long-term returns (Souder et al., 2016). Managers tend to rely on financial tools such as net present value (NPV) analysis to make investment decisions for different time horizons. In NPV analysis, managers use a time discount rate to deflate the investment's future cash flows into a present value. The choice of discount rate is driven partly by managers' ability to formulate expectations of the future, with higher applied discount rates being associated with more ambiguity (Frederick, Loewenstein, & O'Donoghue, 2002). The greater the time discount rate is, the relatively less attractive the longer-term investment appears.

Managerial myopia, defined as managers' tendency to overvalue short-term rewards and undervalue long-term outcomes (Laverty, 2004), is a key logic behind managers' preference for applying a high time discount rate in their evaluation of long-term investments (Kahneman & Tversky, 1979). It is rooted in the notion that managers are boundedly rational, and the principle of sequential attention naturally guides managers' attention to first solving pressing short-term concerns before addressing long-term considerations (Cyert & March, 1963). Thus, managerial myopia has also been

described as managers' incapacity to imagine, comprehend, or grasp the future (Das, 1987) or their lack of foresight to plan business for a longer time horizon (Opper & Burt, 2021). For instance, if managers are cognitively overloaded by their current tasks in the job environment, then they have few cognitive resources to devote to future considerations, causing managerial myopia (Miller, 2002).

Prior scholarly work has discussed how managerial myopia is associated with factors such as stock market pressure (e.g., Bakker & Knobens, 2015; Kacperczyk, 2009) and biases such as the 'learning trap' (Levinthal & March, 1993; Miller, 2002). In addition, aspects of the job environment, such as the perceived difficulty of managerial tasks, can constrain the attentional resources that managers can spend on considering temporally distal issues (Zhu et al., 2022). Research has also considered the conditions under which managers retain the cognitive resources necessary to avoid myopia and maintain a sufficient focus on future considerations. Studies have highlighted how the views held by members of a manager's social group affect the focal manager's perception of the salience of short- or long-term considerations when making decisions (Marginson & McAulay, 2008). Relatedly, Benton and Cobb (2019) have shown that managers' cohesive elite networks play a key role in preserving their decision-making autonomy by insulating them from shareholder scrutiny, so they are willing to make long-term investment decisions. Yet we know relatively little about CEO-level factors that may reduce myopia (see Crilly [2017] and Opper & Burt [2021] for recent exceptions) and shift a firm's investment horizon toward the long term.

### *CEO International Experience and Strategic Decision Making*

A key CEO-level factor that has been associated with CEOs' strategic decision making is their past international experience (Le & Kroll, 2017). Scholarly work has indicated that when CEOs gain experience in a distinct foreign environment (e.g., a different cultural value or institutional arrangement), they use the knowledge derived from this experience to facilitate their subsequent decision making (Maitland & Sammartino, 2015). For instance, international experience allows executives to gain knowledge about different cultural elements, identify linkages across these elements, and thereby improve the creative output of a firm (Godart, Maddux, Shipilov, & Galinsky, 2015). Le and Kroll (2017) argue that experience in different countries allows executives to detect (institutional) knowledge different from what they already know, which then shapes their cognitive capacity in ways that facilitate their decisions about initiating strategic changes. According to Maitland and Sammartino (2015), prior international experience enhances managers' ability to consider a large volume of knowledge elements that may potentially affect the success of their international acquisition decisions and to connect those elements when making such decisions. Thus, the existing research suggests that international experience strengthens executives' knowledge and cognitive ability and enables them to identify and solve decision problems more effectively (Carpenter, Sanders, & Gregersen, 2001; Le & Kroll, 2017). However, research so far has not explicitly determined whether and when CEO international experience can be linked with firm investment horizon, which is the focus of the current study.

### *China's Market-Oriented Transition*

In this study, we investigate the question of how CEO international experience affects firm investment horizon in China, which provides an important context for developing our hypotheses. In 1978, China started the transition toward a market-oriented economy. As part of this transition, many new market-based institutions have been (or are in the process of being) established (Haveman, Jia, Shi, & Wang, 2017), leading to widespread changes in China's business landscape. For instance, as regulations on foreign investments have been relaxed, foreign firms' entry into the Chinese market has increased dramatically (Xia, Ma, Lu, & Yiu, 2014). Many state-owned firms have been partially privatized to enhance their market competitiveness, and privately controlled firms have become a major contributor to the country's economic growth and development (Xia & Walker, 2015). In addition, a capital

market has been established to facilitate firms' capital-raising activities, and analysts and professional institutional investors have been introduced to support the functioning of this capital market (Firth, Gao, Shen, & Zhang, 2016).

In a highly dynamic environment such as in China, CEOs may be overwhelmed by the myriad adaptation challenges their firms face (Banalieva, Eddleston, & Zellweger, 2015). For instance, as the pro-market reform process continues, CEOs might have to restructure their organizations, adopt new governance practices, or lay off excess labor (Peng & Heath, 1996). These immediate tasks relating to market-oriented adaptation can monopolize CEOs' attention, distracting them from long-term considerations. Meanwhile, predicting the future during such a market transition is difficult (Li & Vermeulen, 2021), particularly when CEOs have little understanding of market institutions and are so focused on the present that they have few cognitive resources left to consider long-term plans. In the next section, we focus on how CEO international experience can help to explain the variance in firm investment horizon in China.

## Theoretical Background and Hypotheses Development

### *CEO International Experience in Advanced Market Economies and Firm Investment Horizon in China*

As we noted earlier, since making long-term plans is a cognitively demanding endeavor, CEOs need sufficient cognitive resources if they are to effectively address these kinds of future considerations. In particular, CEOs need to possess advanced knowledge and feel confident in their ability to perform the present adaptation task while avoiding being cognitively overloaded by that task, which would induce myopia. In the context of our theorizing, we propose that CEOs' international experience in advanced market economies shapes firm investment horizon for the following reasons.

First, CEOs with experience in countries with advanced market institutions (e.g., OECD countries) accumulate superior knowledge that is relevant for them to fulfill their current tasks of initiating market-oriented adaptation in the transitioning economy. Possessing the knowledge needed to solve the current task challenges frees up CEOs' cognitive resources and allows them to think about the longer term. In particular, CEOs' international experience in advanced market economies may inform their efficacy judgments about their ability to perform their current tasks either through actual mastery experience in a similar task context or through modeling what others do to perform similar tasks (Bandura, 2000). When their current job involves adapting their organizational form to fit a market-oriented system, those CEOs with prior exposure to advanced market institutions in foreign countries are confident about their ability to lead the firm through the uncertain adaptation process. As a result, CEOs' efficacy beliefs about the adaptation task reduce the difficulties they perceive in relation to fulfilling their current tasks, enabling them to save their cognitive resources for addressing future issues.

Additionally, CEOs' prior experience in advanced market economies helps them identify and implement effective market practices during the market transition, thereby reducing the amount of searching or experiments that CEOs need to perform to handle their market-oriented adaptation tasks. As a result, having such international experience frees up cognitive resources that CEOs can apply to longer-term planning. In sum, when more of their cognitive resources are allocated to long-term concerns, CEOs who have experience in countries with advanced market institutions are more likely to pursue a long-term investment horizon.

Second, international experience in advanced market economies helps CEOs develop predictions about future market-oriented environmental conditions, allowing them to better assess the potential payoffs of longer-term investments, and enhancing their knowledge base for formulating long-term plans. According to Casas-Arce, Martínez-Jerez, and Narayanan (2017), managers often struggle to identify relevant payoff information for evaluating their long-term investments, and their prior business experience helps them judge which investments are more financially feasible in the long term. When CEOs' experience in advanced market economies enables them to better construe the future, they are more willing to devote their cognitive resources to those long-term plans that promise better

investment returns (Oppen & Burt, 2021). Further, in our research setting (i.e., China), it might be challenging for CEOs to study or work abroad several decades ago. Thus, CEOs who did pursue experience in advanced market economies might possess an inclination toward exploration, which aligns well with a long-term investment horizon.<sup>3</sup>

Thus, international experience in advanced market economies allows CEOs in China to avoid myopia by drawing on a relevant set of knowledge to foster a strong capability for dealing with current job tasks, thus conserving cognitive resources for future-oriented considerations. In addition, such experience enhances CEOs' ability to construe the future and effectively deploy cognitive resources to longer-term planning. Accordingly, we hypothesize that:

*Hypothesis 1 (H1): There is a positive relationship between CEOs' international experience in advanced market economies and firm investment horizon during a market-oriented transition.*

### **Contingencies: CEOs' Cognitive Burden from Initiating Market-Oriented Adaptation**

To explore the cognitive mechanisms in hypothesis 1 more closely, we consider factors that relate to the cognitive burden CEOs are subject to when addressing the immediate task of adaptation to the transitioning environment. Scholars suggest that when the cognitive burden of performing a task is high, CEOs' ability to solve the specific task challenge at hand is key to avoid becoming cognitively overloaded by that task (Plass et al., 2010). Salient and high-stakes tasks attract CEOs' attention and demand a large amount of their mental faculties. Thus, we consider that the cognitive burden on CEOs who perform adaptation tasks is particularly high due to the perceived salience and stakes of initiating market-oriented adaptation.

In this research, we investigate two contextual factors that have previously been linked to the salience of tackling market-oriented adaptation tasks: the scope of pro-market reform and the intensity of foreign competition (Banalieva et al., 2015; Chari & David, 2012). In addition, analyst coverage and institutional ownership create a governance context in which CEOs are held particularly accountable for their companies' performance (Kang, Luo, & Na, 2018; Wiersema & Zhang, 2011), increasing the perceived stakes of market-oriented adaptation. We suggest that under these contextual conditions, CEOs' international experience in advanced market economies plays a bigger role in reducing their cognitive burden, thereby freeing up resources to support firms' long-term investment horizons.

#### *The scope of pro-market reform*

Central to the process of market-oriented transition is the governance of business activities according to market-based rules (Cuervo-Cazurra, Gaur, & Singh, 2019). In China, significant within-country variations are apparent in the scope of market-oriented reform (Chan & Du, 2021). That is, different provinces in China vary in their political agenda with respect to implementing pro-market reform (Chang & Wu, 2014). Here, we define the scope of pro-market reform as the extent of market liberalization in a year (Banalieva et al., 2015). A high scope of pro-market reform indicates an ongoing liberalization progress occurring in multiple reform domains, with more bureaucratic barriers being removed to facilitate the function of the labor, capital, and product markets (Cuervo-Cazurra & Dau, 2009). Under this condition, CEOs face heightened pressure to adopt market-based practices and tactics across a wider range of reform domains, such as implementing governance tools, investing in R&D, and engaging in consumer marketing (Banalieva et al., 2015; Chari & David, 2012). Moreover, as peer firms are also adopting market-based practices quickly when the scope of pro-market reform is high, the focal firm faces greater pressure to take similar actions, which increases the salience of the market-oriented adaptation for CEOs (Peng & Heath, 1996).

When market-oriented adaptation is a more salient task, the knowledge possessed by CEOs with experience in advanced market economies aligns well with their tasks of initiating market-oriented adaptation across multiple reform domains (Giannetti, Liao, & Yu, 2015). In essence, this knowledge base reduces the cognitive burden on CEOs who are dealing with adaptation challenges in their current job environment and saves their cognitive resources for long-term considerations. In contrast, if the

task of initiating market-oriented adaptation is less salient in CEOs' job environment (e.g., when the scope of pro-market reform is limited), then CEOs are less likely to experience cognitive overload. In that case, CEOs' international experience with advanced market institutions will be less important for overcoming myopia. These arguments lead to our next hypothesis:

*Hypothesis 2 (H2): When there is a larger scope of pro-market reform in the region, the positive relationship between CEOs' international experience in advanced market economies and firm investment horizon during a market-oriented transition will be stronger.*

### *Intensity of foreign competition*

As transitioning economies open their domestic markets and allow foreign direct investment, the intensity of competition between foreign and domestic firms in the same industry increases (Cuervo-Cazurra & Dau, 2009). In those industries where entry barriers are relaxed and foreign firms can easily enter the market, domestic firms face high pressure to compete with these foreign firms to survive and succeed (Kumaraswamy, Mudambi, Saranga, & Tripathy, 2012).

Firms facing intense foreign competition need to initiate market-oriented adaptation quickly to enhance their efficiency and neutralize the threats (Kumaraswamy et al., 2012). Meanwhile, foreign rivals can 'import' their market-based competition tactics, which adds to the pressure faced by CEOs of local firms to adapt their firms' operating routines to the new market logic (Chung & Luo, 2008). Thus, under the condition of high foreign competition, CEOs are compelled to initiate market-oriented adaptation, and CEOs' experience in countries with advanced market institutions becomes an even more valuable asset for handling that task. In contrast, under lower levels of foreign competition, market-oriented adaptation may be relatively less salient to local-firm CEOs. Because CEOs experience less cognitive overload due to the immediate task of market-oriented adaptation in this scenario, CEO international experience in advanced market economies will be less important for determining firms' long-term investment horizons. Therefore, we hypothesize:

*Hypothesis 3 (H3): When there is a higher intensity of foreign competition in the industry, the positive relationship between CEOs' international experience in advanced market economies and firm investment horizon during a market-oriented transition will be stronger.*

### *Analyst coverage*

The introduction of financial analysts into the stock market is part of the market-oriented transition aimed at establishing market intermediaries that can reduce information asymmetry experienced by investors (Khanna & Palepu, 2000). Analysts' job mainly consists of analyzing a company's information, making predictions about the company's performance, and recommending that investors either buy, sell, or hold the company's stocks (Hong, Kubik, & Solomon, 2000). Researchers have found that firms experience pressure to meet the performance expectations set by financial analysts (Souder & Shaver, 2010). Firms that fail to meet analysts' performance targets typically experience a decline in their stock price (Bartov, Givoly, & Hayn, 2002). Similar findings have also been documented in transitioning economies (Zhang, Wang, & Zhou, 2020). Analyst coverage thus represents a source of external pressure that attracts CEOs' attention (Desjardine & Bansal, 2019).

Given the transitional nature of the Chinese economy, not all firms are covered by financial analysts. When firms are subject to analyst coverage, their CEOs experience short-term performance pressure to ensure that they adapt effectively to the transitioning environment, because failure to do so could lead to their dismissal (Wiersema & Zhang, 2011). For instance, analysts' downgrading can increase the pressure on CEOs to address their firm's short-term losses and restore its reputation (Qian, Balaji, Crilly, & Liu, 2023). In this scenario, market-oriented adaptation becomes a high-stakes test for CEOs, increasing their cognitive burden in the short term. CEOs with international experience in advanced market economies are more well equipped with knowledge that allows them to be more confident about making effective decisions concerning market-oriented adaptation and thereby satisfying analysts' performance expectations. Thus, international experience in advanced market

economies plays an important role in freeing up cognitive resources for longer-term investment considerations when firms are subject to analyst coverage. For firms not subject to analyst coverage, the stakes are lower for their CEOs even if their market-based adaptation is less successful. In the absence of short-term performance pressure imposed by analysts, CEOs can potentially make mistakes about market-oriented adaptation and learn from their failures, without fear of being terminated. Hence, when firms are not subject to analyst coverage, CEO international experience in advanced market economies is less salient for firms' long-term investment horizons. This leads to our next hypothesis:

*Hypothesis 4 (H4): When firms are subject to analyst coverage, the positive relationship between CEOs' international experience in advanced market economies and firm investment horizon during a market-oriented transition will be stronger.*

### *Institutional ownership*

Institutional owners such as mutual funds, pension funds, and other types of financial institutions have incentives to diligently monitor CEO decisions (Bushee, 1998; Firth et al., 2016). Institutional owners can enhance the effectiveness of board monitoring either by nominating their representatives to the board or by incentivizing increased monitoring by existing board members (Liu, Low, Masulis, & Zhang, 2020). In China, institutional ownership has become increasingly prevalent since 2000 (Yuan, Xiao, & Zou, 2008).

High levels of institutional investors' monitoring could increase the stakes for CEOs when they initiate market-oriented adaptation programs, because poor execution may increase their chance of being fired (Kang et al., 2018). When market-oriented adaptation is perceived as a high-stakes task for CEOs, it increases their cognitive burden in the short term. Thus, if CEOs' experience in advanced market economies has provided the knowledge and confidence they need to perform the high-stakes adaptation tasks well, then it plays a more important role in freeing up cognitive resources for the pursuit of longer-term investments when firms' institutional ownership level is high. In contrast, in the face of low-institutional ownership, CEOs are subject to less monitoring, which reduces the stakes of performing the adaptation tasks at hand. In this case, CEOs' experience in countries with market-oriented institutions plays a less salient role in supporting firms' pursuit of a longer-term investment horizon. Thus, we hypothesize that:

*Hypothesis 5 (H5): When firms' institutional ownership level is higher, the positive relationship between CEOs' international experience in advanced market economies and firm investment horizon during a market-oriented transition will be stronger.*

## **Methods**

### *Data and Sample*

We tested our hypotheses using data from manufacturing firms publicly listed on the stock exchanges in China. Over the past few decades, many managers with overseas work experience or foreign education have been employed by firms in China (Han, Jennings, Liu, & Jennings, 2019). Such international experience is of considerable value to Chinese firms (Peng et al., 2015), and returnees are regarded as the nation's 'brain gain' (Giannetti et al., 2015). We excluded firms from service sectors such as retailing, real estate, banking, and insurance from the analysis due to their different accounting practices related to their capital expenditures, which is the foundation of our dependent variable (Souder et al., 2016). We collected data from several databases. Company profiles and financial data were obtained from the China Stock Market and Accounting Research database. We extracted information about CEOs' international experience from their résumés, which are available from firms' annual reports. We obtained data about the regions (provinces) from the National Economic Research Institute (NERI) database. The sample spanned the period from 2002 to 2019. Our data collection began with 2002 because the data required to construct the dependent variable *firm investment horizon* were available only from 2003 on, and we used a 1-year lag between our dependent and independent variables.



### **DID Approach**

To test our hypotheses, we checked whether the firm's investment horizon improved after it hired a CEO with experience in advanced market economies. However, it can be argued that such a change in firm investment horizon might be due to the CEO succession event itself, which aims to bring in a new strategic intent that calls for a long-term investment horizon. To alleviate the concern about selection bias, scholars have suggested using instrumental variables or DID estimation methods (Hill, Johnson, Greco, O'Boyle, & Walter, 2021). Given that it is difficult to identify strong instrumental variables, we employed a DID estimation method in our analyses. A DID estimation compares the changes in investment horizon for firms that hired a CEO with experience in advanced market economies ('treatment firms') with those made by comparable firms that hired a CEO without such experience over the same period of time ('control firms'). Specifically, we estimated changes in firm investment horizon 3 years prior to and 3 years after a CEO was hired (e.g., Le & Kroll, 2017).

To use DID estimation, the trend in investment horizon must be indistinguishable between the treatment and control firms, had an internationally experienced CEO not been hired (e.g., Hill et al., 2021). Hence, we constructed a matched sample of treatment and control firms that shared a similar set of characteristics in the same year that CEO succession occurred. We used propensity score matching (PSM) to implement our matching procedure. Specifically, we first identified 269 CEO succession events during the period 2003–2017 in which the newly appointed CEOs had international experience. We stopped at 2017 because we needed 3 years (2017–2019) to estimate the change in firms' investment horizon for those hiring internationally experienced CEOs. Among those 269 new CEOs, we excluded 86 CEOs who had stayed in their position for only 2 years or less by the end of 2019. Prior studies have suggested that CEOs will have a visible impact on their firms' investment strategy if they stay in power for at least 3 years (e.g., Le & Kroll, 2017). We further excluded 45 CEOs whose predecessors also possessed international experience during the 3-year time window prior to the appointment of the focal CEO. Of the remaining 138 CEOs, eight had to be excluded due to lack of information about their firms' financial or ownership data. For the remaining 130 succession events involving internationally experienced CEOs, we ran a PSM analysis to identify a matching group of firms. Each matching firm experienced a CEO succession event in the same year as the treatment firm and had no other CEO succession event within the 3-year window before or after the focal CEO succession event occurred.

For the PSM analysis, we first used a probit regression model to predict the likelihood that a given firm would employ a CEO with international experience. The predictors were firm size, firm age, leverage, financial slack, degree of internationalization, foreign ownership, state ownership, board chair's international experience, return on assets (ROA), intangible assets, capital expenditure, intensity of domestic competition, government intervention, prevalence of CEOs with international experience at the regional level, and year dummies. All of those factors may potentially influence a firm's decision to hire an internationally experienced CEO (e.g., Luo, Liu, Wu, & Zhong, 2021). We report the probit regression results in [Appendix Table A1](#).

Next, we calculated the propensity scores based on the results of the probit regression model and grouped firms with the nearest propensity scores as a matching pair. We could not identify a match for 20 succession events where firms hired an internationally experienced CEO. That left us with 110 succession events, of which 102 were succession events where the succeeding CEOs had experience in advanced market economies<sup>4</sup>. We used these 102 treatment cases over a 6-year time window, along with their controls, for the DID estimation. After removing missing observations, our final dataset included 204 new CEOs and 1,019 CEO-firm-year observations over the period 2002–2019.

### **Variables and Measures**

#### *Dependent variable: Firm investment horizon*

The dependent variable in our analysis is firm investment horizon. Applying the methods adopted by prior studies, we used a firm's asset durability as a proxy for its investment horizon (Martin et al., 2016; Souder et al., 2016). Specifically, we quantified each firm's asset durability by dividing the end-of-year

total value of its gross property, plant, and equipment by its depreciation expense of that year. Firms using straight-line depreciation amortize their capital expense by dividing it equally over the asset's expected life, so the expected asset life can then be estimated by dividing the total value of the firm's assets by the depreciation expense in a particular year, a value referred to as asset durability (Souder & Bromiley, 2012). This variable was measured annually and values were winsorized at the 1% level to ensure that the results were not driven by outliers (McNamara, Haleblan, & Dykes, 2008). The advantage of using asset durability to capture the temporal construct of 'investment horizon' is that it specifies how long an investment project lasts, whereas other measures (such as R&D expenditure) are less specific (Souder & Bromiley, 2012).

### *Independent variables*

For the DID estimation, we constructed two indicators: treatment firms and after succession. The DID estimator was the interaction term of the two indicators. For 'treatment firms', we coded the value as 1 if the firm hired a CEO with experience in advanced market economies during our study period, and 0 otherwise. To construct this variable, we extracted CEOs' résumés from firms' annual reports and counted a CEO as possessing experience in advanced market economies if s/he held a job in an OECD country or in Hong Kong, Macao, or Taiwan, or if s/he received a degree granted by a university there (Giannetti et al., 2015). For 'after succession', we coded the value as 1 if the observation was within the period starting from the date on which a CEO with experience in advanced market economies was appointed and up to 3 years after that CEO succession event, and 0 if the observation was within the 3-year period prior to the succession. For control firms, we coded 'after succession' the same way as we did for their corresponding treatment firms.

### *Moderators*

To capture the scope of pro-market reform, we used the rankings of all 31 Chinese provinces based on the development level of their market-oriented institutions; these rankings are issued by the NERI (e.g., Wang, Fan, & Zhu, 2007). NERI ranks the 31 provinces based on index scores indicating the development level of their market-oriented institutions, where the index is a composite score consisting of five subindices: government and market relations, non-state enterprise sector development, product market development, factor market development, and market intermediary and legal environment. The scope of pro-market reform was defined as a binary variable. A value of 1, indicating a high scope of pro-market reform, was assigned if the firm headquarters' province was ranked in the top four among all 31 provinces in a particular year, and 0 otherwise.

Then, following Xia et al. (2014), we calculated the intensity of foreign competition using three indices: the percentage of foreign firms' assets in an industry, the percentage of foreign firms' sales in an industry, and the number of employees employed by foreign firms divided by the total number of employees in the same industry. Industry was defined at the two-digit Standard Industrial Classification (SIC) level. Since these three indices are highly correlated, we took the average of the three to proxy the intensity of foreign competition in an industry. Analyst coverage was a binary variable coded as 1 if at least one analyst followed that firm in a particular year, and 0 otherwise (Luo & Chung, 2013). We measured the level of institutional ownership as the percentage of shareholdings held by institutional investors (Firth et al., 2016).

### *Control variables*

We also included a set of control variables in the analysis to address alternative explanations. We controlled for firm size, measured as the logarithm of the firm's total assets in a particular year. We controlled for firm age, measured as the number of years since the firm was incorporated. We controlled for debt ratio and financial slack, which capture the level of firms' excessive financial capital that can be redeployed to deal with short-term financial losses (Tan & Peng, 2003). Debt ratio was the ratio of a firm's total debt over its total assets. Financial slack was measured using the firm's liquid assets divided by its short-term debt.

We also controlled for CEO shareholding, foreign ownership, state ownership, CEO tenure, CEO duality, board independence, and board ownership, as these aspects of governance may affect a firm's investment horizon (Reilly et al., 2016). CEO shareholding was measured as the percentage of shares held by the firm's CEO out of the firm's total equity shares. Foreign ownership was measured as the percentage of shares held by foreign investors, and state ownership was measured as the percentage of shareholdings held by the government or government-affiliated bureaus. CEO tenure was measured as the number of years since the CEO was hired. CEO duality was a dummy variable, with a value of 1 being assigned if the CEO was also the chair of the board, and 0 otherwise. Board independence was measured by a dummy variable, with a value of 1 indicating that more than one-third of the board members were independent directors, and 0 otherwise. Board ownership, a proxy for the board's financial incentive to monitor the CEO's decisions, was measured using the number of board members who owned firm shares (Jia, Huang, & Zhang, 2019).

Additionally, we controlled for ROA, market to equity ratio, capital expenditure, sales growth, degree of internationalization, and intangible assets. Previous studies have suggested that those factors may influence firm investment horizon (e.g., Sampson & Shi, 2023). ROA was calculated as net profit divided by total assets. The market to equity ratio was calculated as the firm's market value divided by its book value. Capital expenditure was the firm's annual expenditure on property, plant, and equipment (PPE). Sales growth was the annual growth rate of the firm's total sales. Degree of internationalization was the percentage of the firm's sales that are international. Intangible assets was the total amount of intangible assets the firm possessed in a particular year.

We also controlled for important CEO characteristics such as CEO age, gender, and prior board experience (e.g., Matta & Beamish, 2008). CEO age was the difference between the focal year and the year when the CEO was born. CEO gender was a dummy variable, with a value of 1 indicating a male CEO. The variable 'CEO prior board experience' was captured using the number of years the CEO had served as a board member of a publicly listed firm (Jiang, Xia, Devers, & Shen, 2021). Then, we controlled for the international experience of the board chair. This binary variable was coded as 1 when the firm's board chair had any international experience, and 0 otherwise. Lastly, industry concentration was controlled to account for the effect of industry competition on firm investment horizon. We used the Herfindahl index to indicate industry concentration at the two-digit SIC level and measured it using the market shares of all listed firms each year (Haveman et al., 2017).

## Analyses

We estimated the change in firm investment horizon as a response to the succession of a CEO with experience in advanced market economies using the following formula:

$$y = \alpha_i + \alpha_t + \beta_1 * \text{after succession} + \beta_2 * \text{treatment firms} \\ + \beta_3 * \text{treatment firms} * \text{after succession} + \gamma'X + \varepsilon$$

where  $y$  indicates firm investment horizon;  $\alpha_i$  and  $\alpha_t$  indicate firm- and year-fixed effects;  $X$  indicates the vector of control variables; and  $\varepsilon$  indicates the error term. All independent and control variables were lagged by 1 year. We mean-centered all of the moderators before creating the interaction terms to mitigate multicollinearity effects.

## Results

Table 1 reports the descriptive statistics and correlation coefficients for the variables. No particular pair of variables showed an extremely high correlation value. As an initial observation, it is noteworthy that firm size was negatively correlated with firm investment horizon. In addition, firm age had a positive correlation with firm investment horizon, and ROA negatively correlated with firm investment horizon. These findings are consistent with previous research, such as that of Martin et al. (2016), and thus support the validity of our data.

**Table 1.** Descriptive statistics and correlations

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Investment horizon	18.08	6.50														
Firm size	21.78	1.21	-0.14													
Firm age	13.93	5.28	0.07	0.21												
Debt ratio	0.44	0.19	0.08	0.31	0.04											
Financial slack	2.01	1.79	-0.06	-0.18	-0.03	-0.64										
ROA	0.04	0.06	-0.21	0.05	0.02	-0.35	0.20									
Market to equity	1.80	1.90	0.08	-0.36	0.10	-0.29	0.15	0.11								
Capital expenditure <sup>†</sup>	613.08	2,888.88	-0.07	0.45	0.10	0.12	-0.05	0.00	-0.10							
Sales growth	0.21	0.42	-0.02	0.07	-0.03	0.01	-0.05	0.25	0.01	0.02						
Degree of internationalization	0.15	0.21	-0.16	-0.01	-0.13	-0.07	0.00	0.05	-0.05	-0.00	0.02					
Intangible asset <sup>†</sup>	415.79	1,324.20	-0.13	0.51	0.11	0.07	-0.03	0.04	-0.10	0.38	0.08	0.03				
State ownership	0.10	0.19	0.08	0.13	-0.26	0.18	-0.12	-0.11	-0.22	0.09	0.01	-0.10	0.08			
Foreign ownership	0.05	0.12	-0.02	0.09	0.06	0.09	-0.06	0.03	-0.08	0.04	-0.03	0.06	0.13	0.09		
CEO shareholding	0.02	0.07	-0.05	-0.08	-0.10	-0.22	0.13	0.13	0.05	-0.04	0.03	0.05	-0.01	-0.15	-0.11	
CEO tenure	2.18	2.40	0.00	0.04	0.06	0.10	-0.10	-0.04	-0.01	0.03	-0.06	-0.01	-0.04	0.02	-0.01	-0.03
Duality	0.19	0.39	-0.07	-0.09	-0.04	-0.05	0.07	0.01	0.02	-0.06	0.01	0.04	0.04	-0.14	-0.06	0.41
Board independence	0.43	0.50	0.02	0.12	0.09	0.04	-0.00	0.01	0.03	0.01	0.01	0.07	0.07	-0.01	0.08	0.07
Board ownership	2.23	2.13	-0.18	0.11	-0.10	-0.18	0.07	0.12	-0.06	0.11	0.03	0.07	0.07	-0.05	-0.02	0.23
Chair international experience	0.09	0.29	-0.06	-0.01	-0.01	-0.14	0.18	0.01	0.11	-0.03	-0.01	0.01	0.11	-0.05	0.04	0.04
CEO prior board experience	1.30	0.85	-0.02	0.10	0.16	0.01	-0.01	0.03	0.09	0.10	-0.05	0.01	0.09	-0.11	0.00	0.02
CEO age	47.69	8.00	-0.04	0.14	-0.03	-0.01	0.04	-0.02	-0.05	0.07	-0.02	-0.00	0.10	0.10	0.09	0.16
CEO gender	0.96	0.20	-0.05	0.01	-0.10	-0.06	0.08	0.01	-0.03	0.03	0.04	-0.02	0.03	0.08	-0.03	0.00
Industry concentration	0.09	0.09	0.02	-0.06	-0.13	0.12	-0.12	-0.08	-0.12	-0.05	-0.05	-0.06	-0.00	0.03	-0.05	-0.07
Pro-market reform scope	0.34	0.48	-0.14	-0.02	-0.07	-0.10	0.03	0.07	-0.01	-0.04	-0.02	0.11	-0.01	-0.07	0.11	0.07

*(Continued)*

**Table 1.** (Continued.)

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Foreign competition	0.27	0.14	-0.03	-0.03	-0.05	-0.04	0.03	-0.01	0.17	0.07	0.09	0.31	0.07	-0.06	0.08	-0.05
Analyst coverage	0.71	0.45	-0.22	0.29	-0.01	-0.11	0.08	0.28	-0.02	0.11	0.10	0.09	0.11	-0.09	-0.06	0.10
Institutional ownership	0.06	0.07	-0.09	0.19	0.14	-0.02	0.02	0.29	0.12	0.06	0.11	0.02	0.03	-0.11	-0.07	0.03
Treatment firms	0.49	0.50	-0.07	-0.01	0.03	0.02	0.05	0.03	-0.03	-0.04	0.02	0.11	0.03	-0.07	-0.01	0.07
After succession	0.56	0.50	-0.03	0.15	0.22	0.01	-0.01	-0.02	0.02	0.03	0.03	0.00	0.11	-0.11	-0.02	-0.01
	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Duality	0.13															
Board independence	-0.05	0.15														
Board ownership	-0.05	0.00	-0.04													
Chair international experience	-0.12	0.09	0.06	-0.03												
CEO prior board experience	0.47	0.17	0.02	0.10	-0.12											
CEO age	0.28	0.33	0.04	0.03	-0.04	0.19										
CEO gender	-0.03	0.02	-0.00	0.00	-0.07	0.07	0.11									
Industry concentration	0.01	-0.01	-0.06	-0.03	-0.04	0.01	-0.10	-0.12								
Pro-market reform scope	-0.06	-0.05	-0.06	0.10	0.04	-0.10	-0.13	-0.05	-0.01							
Foreign competition	0.04	0.00	-0.03	-0.08	0.00	-0.00	0.03	0.03	-0.14	0.11						
Analyst coverage	-0.03	0.02	0.06	0.09	0.10	0.05	0.02	0.08	-0.09	0.01	-0.01					
Institutional ownership	0.04	0.04	0.02	0.06	0.02	0.12	-0.01	0.04	-0.10	0.07	0.06	0.32				
Treatment	-0.14	0.05	0.19	-0.06	0.21	-0.14	-0.06	-0.13	-0.00	0.07	-0.00	0.01	0.01			
After succession	-0.57	-0.14	0.06	0.00	0.12	-0.19	-0.27	-0.02	-0.03	0.02	-0.06	0.10	-0.00	0.02		

Notes: N = 1,019.  $p < 0.05$  if  $|\text{correlations}| > 0.06$ . <sup>†</sup>In millions of Yuan (¥).

**Table 2** reports results of the DID estimation testing our hypotheses on the full sample. First, model 1 tests the main effect. Then, models 2–5 test the moderating effects individually. Finally, model 6 provides a complete model that includes all four moderators. Hypothesis 1 suggests that there is an increase in the firm's investment horizon after it hires a CEO with experience in advanced market economies. We found support for this hypothesis based on both models 1 and 6 in **Table 2**. Model 6 suggests that, compared to those without an experienced CEO, firms hiring a CEO with experience in advanced market economies increase their investment horizons by 1.107 ( $p < 0.1$ ). This is a 6% increase relative to the sample mean of investment horizon.

Next, to test for the moderating effect of pro-market reform scope (H2), we interacted the DID indicators ('treatment firms' and 'after succession') with a dummy variable indicating whether the firm operated in a province whose scope of pro-market reform was ranked at the top (i.e., top four) among all provinces at the time of CEO succession. The results (model 6 of **Table 2**) indicated a marginally significant, positive coefficient ( $p < 0.1$ ) for the three-way interaction term between 'treatment firms', 'after succession', and a dummy variable indicating a high versus low pro-market reform scope. A further calculation showed that an increase in the scope of pro-market reform (from 'non-top four' to 'top four') increased the effect of hiring a CEO with experience in advanced market economies on firm investment horizon drastically. Specifically, CEO international experience increased investment horizon by 19%  $[(2.378 + 1.107)/18]$  relative to the sample mean when pro-market reform scope was high. Hence, we found evidence in support of hypothesis 2.

For the moderating effect of the intensity of foreign competition (H3), model 3 in **Table 2** shows a significant three-way interaction term between 'treatment firms', 'after succession', and a dummy variable indicating whether a firm operates in an industry whose foreign competition intensity is above or below the median value across all industries at the time of CEO succession. However, when we considered the full model (model 6), this effect was no longer evident. We found similar results for the moderating effect of analyst coverage (H4): there was evidence of a significant three-way interaction term between the DID indicators and the analyst coverage dummy when modeled alone (model 4) that disappeared in the full model (model 6). Thus, we did not find robust support for hypotheses 3 and 4 when considering all of the results together.

Lastly, for the moderating effect of institutional ownership (H5), we found a significant and positive sign ( $p < 0.05$ ) for the three-way interaction term between the DID indicators and a dummy variable indicating whether a firm's institutional ownership was above or below 5% at the time of CEO succession (models 5 and 6 in **Table 2**)<sup>5</sup>. Econometrically, an increase in the level of institutional ownership (from 'low' to 'high') significantly augments the influence of CEOs' experience in advanced market economies. A calculation based on model 6 showed that such CEO experience increased firm investment horizon by roughly 24%  $[(3.153 + 1.107)/18]$  relative to the sample mean when there was a high level of institutional ownership. Hence, hypothesis 5 was supported.

In sum, the complete model (model 6) offered weaker support for our hypotheses about the moderating effects compared to other models. The lack of significant findings in model 6 regarding the moderating effects of foreign competition and analyst coverage could be due to the fact that those two moderators impose their impacts through channels such as pro-market reform and institutional ownership. For instance, it might be that foreign competition after China's admission to the World Trade Organization induced local governments to introduce more pro-market reform measures (Hu, Li, Lin, & Wei, 2023). Moreover, after a firm is followed by analysts, institutional investors begin to own shares in it (O'Brien & Bhushan, 1990).

### Supplementary Analyses

To further minimize the concern of multicollinearity, we performed subsample analyses to test the moderating effects as stated in hypotheses 2–5. We split the sample based on the value of the moderators at the year of CEO succession. The results from these subsample analyses (see **Table 3**) were consistent with those reported in **Table 2**.

**Table 2.** DID estimation: The impact of CEO international experience in advanced market economies on firm investment horizon

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
(H1) Treatment × After succession	1.270** (0.630)	1.069* (0.618)	1.322** (0.628)	1.127* (0.619)	1.328** (0.628)	1.107* (0.616)
(H2) Treatment × After succession × (Pro-market reform scope ≤4)		2.381* (1.244)				2.378* (1.251)
(H3) Treatment × After succession × (Foreign competition > median)			2.192* (1.233)			1.123 (1.226)
(H4) Treatment × After succession × (Analyst coverage dummy) <sup>†</sup>				1.987* (1.200)		0.761 (1.281)
(H5) Treatment × After succession × (Institutional ownership >5%)					3.714*** (1.286)	3.153** (1.352)
Firm size	-0.352 (0.557)	-0.104 (0.556)	-0.400 (0.555)	-0.034 (0.564)	-0.336 (0.558)	-0.012 (0.559)
Firm age	0.676*** (0.167)	0.164 (0.188)	0.693*** (0.165)	0.151 (0.189)	0.684*** (0.166)	0.163 (0.186)
Leverage	-1.838 (2.324)	-2.453 (2.281)	-1.047 (2.333)	-2.494 (2.280)	-2.667 (2.331)	-2.594 (2.292)
Financial slack	0.093 (0.147)	0.047 (0.144)	0.118 (0.146)	0.072 (0.145)	0.084 (0.146)	0.077 (0.144)
ROA	-7.271* (3.981)	-4.426 (3.934)	-6.838* (3.970)	-4.734 (3.931)	-7.533* (3.958)	-3.996 (3.898)
Market to equity	0.203 (0.159)	-0.021 (0.161)	0.215 (0.158)	-0.029 (0.161)	0.180 (0.155)	-0.026 (0.155)
Capital expenditure	0.000* (0.000)	0.000* (0.000)	0.000* (0.000)	0.000** (0.000)	0.000* (0.000)	0.000** (0.000)
Sales growth	0.633 (0.406)	0.232 (0.405)	0.606 (0.405)	0.199 (0.405)	0.624 (0.404)	0.219 (0.401)
Degree of internationalization	-1.928 (1.658)	-2.473 (1.636)	-1.829 (1.658)	-2.565 (1.630)	-2.302 (1.646)	-2.363 (1.624)

(Continued)

Table 2. (Continued.)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intangible asset	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
State ownership	-3.922** (1.590)	-4.222*** (1.552)	-3.871** (1.584)	-4.154*** (1.562)	-3.436** (1.591)	-3.688** (1.550)
Foreign ownership	-0.016 (3.292)	1.368 (3.249)	0.057 (3.278)	1.543 (3.245)	-0.412 (3.268)	0.877 (3.210)
CEO shareholding	3.457 (3.483)	3.483 (3.458)	5.078 (3.514)	3.183 (3.426)	3.375 (3.474)	5.234 (3.495)
CEO tenure	-0.227** (0.109)	-0.073 (0.111)	-0.253** (0.110)	-0.095 (0.111)	-0.225** (0.108)	-0.080 (0.112)
Duality	-0.846 (0.610)	-0.811 (0.598)	-0.888 (0.610)	-0.839 (0.598)	-0.916 (0.612)	-1.006* (0.600)
Board independence	0.251 (0.464)	0.264 (0.458)	0.170 (0.463)	0.329 (0.455)	0.329 (0.462)	0.280 (0.455)
Board ownership	0.065 (0.170)	-0.086 (0.171)	0.089 (0.170)	-0.101 (0.170)	0.033 (0.169)	-0.108 (0.170)
Chair international experience	-0.766 (0.964)	-1.189 (0.948)	-0.768 (0.962)	-1.331 (0.954)	-1.202 (0.972)	-1.527 (0.953)
CEO prior board experience	0.148 (0.282)	-0.056 (0.278)	0.159 (0.281)	-0.028 (0.279)	0.108 (0.282)	-0.088 (0.278)
CEO age	-0.006 (0.031)	-0.009 (0.030)	-0.011 (0.031)	-0.008 (0.031)	-0.014 (0.031)	-0.022 (0.030)
CEO gender	0.503 (1.000)	0.198 (0.988)	0.371 (0.995)	0.287 (0.989)	0.693 (0.997)	0.258 (0.982)
Industry concentration	-19.855*** (5.491)	-15.958*** (5.436)	-19.216*** (5.465)	-16.206*** (5.446)	-21.145*** (5.486)	-16.292*** (5.406)
Pro-market reform scope	-0.374 (0.571)		-0.518 (0.572)	0.099 (0.573)	-0.414 (0.569)	



Foreign competition	1.723 (3.812)	1.617 (3.760)		2.211 (3.779)	2.860 (3.815)	
Analyst coverage	-0.376 (0.452)	-0.093 (0.446)	-0.320 (0.450)			-0.381 (0.447)
Institutional ownership	-0.720 (3.765)	1.455 (3.706)	-0.323 (3.751)	1.330 (3.697)		
Treatment	-10.851*** (1.671)	-20.995*** (2.842)	-10.845*** (1.665)	-3.804* (2.071)	-10.944*** (1.660)	-3.915 (2.840)
After succession	-2.576*** (0.579)	-1.095* (0.632)	-2.705*** (0.578)	-1.139* (0.635)	-2.597*** (0.579)	-1.235* (0.632)
Constant	17.760 (11.404)	20.375* (11.370)	19.025* (11.370)	19.541* (11.504)	17.894 (11.442)	20.462* (11.394)
Two-way interaction terms and their constituents <sup>‡</sup>	Included	Included	Included	Included	Included	Included
Firm- and year-fixed effects	Included	Included	Included	Included	Included	Included
Within-firm $R^2$	0.183	0.218	0.190	0.218	0.192	0.235

Notes:  $N = 1,019$ . Standard errors in parentheses. The analysis was conducted at the CEO-firm-year level. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ . <sup>‡</sup>Analyst coverage dummy was '1' when analysts always covered the firm during the 3-year time window following the CEO succession, '0' otherwise. <sup>†</sup>The two-way interaction terms and their constituents included dummies indicating a high/low scope of pro-market reform, high/low intensity of foreign competition, analyst coverage, and high-/low-institutional ownership; their interaction terms with the 'Treatment' indicator; and their interaction terms with the 'After succession' indicator.

**Table 3.** DID estimation: testing the moderating effects using subsamples

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Reform scope		Foreign competition		Analyst coverage		Institutional ownership	
	High	Low	High	Low	Yes	No	High	Low
Treatment × After succession	2.692** (1.100)	0.093 (0.804)	2.443*** (0.807)	0.118 (1.086)	1.685** (0.701)	-1.195 (1.413)	2.740** (1.192)	0.089 (0.788)
Constant	-26.960 (21.248)	32.987** (14.953)	4.420 (13.057)	83.409*** (26.504)	3.257 (13.187)	123.163*** (31.961)	-1.622 (19.365)	27.365 (16.787)
Control variables	Included	Included	Included	Included	Included	Included	Included	Included
Firm and year-fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Observations	369	650	642	377	766	253	366	653
Within-firm $R^2$	0.160	0.097	0.253	0.266	0.093	0.313	0.146	0.318

Notes: Standard errors in parentheses. We split the sample based on the dummy variables indicating a high/low scope of pro-market reform, high/low intensity of foreign competition, analyst coverage, and high-/low-institutional ownership at the time of CEO succession. Control variables included firm size, firm age, leverage, financial slack, ROA, market to equity, capital expenditure, sales growth, degree of internationalization, intangible asset, state ownership, foreign ownership, CEO shareholding, CEO tenure, duality, board independence, board ownership, chair international experience, CEO board experience, CEO age, CEO gender, industry concentration, pro-market reform scope, foreign competition, analyst coverage, institutional ownership, treatment, and after succession. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

We performed several other additional analyses to show the robustness of our findings; details can be found in the [Appendices](#). First, the finding about a positive relationship between CEOs' exposure to advanced market institutions and firm investment horizon was robust to using a different sample consisting of all newly appointed CEOs during the study period of 2002–2019. Second, using a different length of event time window (e.g., a 4-year window) did not change the finding regarding the effect of CEOs' experience in advanced market economies on firm investment horizon. Third, we used Heckman two-stage approach to account for sample selection bias given that some firms hired CEOs with international experience whereas others did not. After correcting for this sample selection issue, the results were consistent with those reported in [Table 2](#). Finally, our results for the moderating effect of pro-market reform scope were robust to use of alternative measures (i.e., using rankings of factor market development, rankings of legal system and intermediary development, a top-three ranking, and a top-five ranking) in the supplementary analyses (see [Appendix B](#)).

### *Further analysis of CEO international experience*

One potential concern is the possibility that advanced market economies might be different in terms of the prevalence of firms having long-term (or short-term) investment horizons, which could affect CEOs' understanding of the benefits of a long-term investment horizon. According to Hall and Soskice (2001), stakeholder-oriented market economies embrace a longer-term investment horizon more often than shareholder-oriented market economies do. Hence, we suggest that CEOs with experience in a stakeholder-oriented market economy may be more keenly aware of not only the knowledge that helps them manage the current tasks of market-oriented adaptation but also the benefits of a longer-term investment horizon.

To test this idea, we constructed a dummy variable, with a value of 1 indicating the CEO had exposure to a stakeholder-oriented market economy<sup>6</sup>, and 0 otherwise. Our results (see [Table C1](#) in [Appendix C](#)) showed that the interaction term between 'treatment firms', 'after succession', and CEO experience in a stakeholder-oriented market economy had a positive and statistically significant sign. This indicates that experience in stakeholder-oriented market economies plays a more salient role in promoting long-term investment horizons than experience in other advanced market economies. This finding supports our argument that the context in which CEOs gain international experience affects their choice of long-term investment horizons.

## **Discussion**

The findings of our study contribute to the literatures on firm investment horizon, CEO international experience, and transition economies in several important ways. First, by focusing on a CEO-level factor (i.e., CEO international experience), our research goes beyond previous studies that have emphasized the role of external environmental factors such as capital market pressure or environmental dynamism and organizational factors such as financial slack in explaining firm investment horizon (e.g., Bakker & Knoben, 2015; Bushee, 1998; Kacperczyk, 2009; Zhu et al., 2022). While recent research has also shown that the specific network resources available to the CEO can affect firm investment horizon (Opper & Burt, 2021), our findings demonstrate that CEOs' international experience, in the form of prior work or educational experience in an advanced market economy, can help them to focus more on longer-term investments. Thus, by highlighting how CEO-level factors affect the selection of firm investment horizon, we heed the call for more scholarly attention to the specific characteristics of individual decision makers (i.e., CEOs) that may help firms avoid pursuing overly short-term-oriented investment decisions (Lavery, 1996; Opper & Burt, 2021).

Second, we contribute to the literature by responding to recent calls (e.g., Cuypers et al., 2022) to clarify the situational rationales for CEOs' impact on firm strategic decisions. Specifically, our study offers insights into how the characteristics of the job environment in which CEOs are embedded affect the relevance of their international experience in supporting firms' long-term investment horizons (Plass et al., 2010). In our study, we emphasize the challenges involved in adapting to a more

market-oriented environment and consider how contextual factors affect CEOs' cognitive burden of addressing this challenge. We identify contingency factors (e.g., pro-market reform scope and institutional ownership) in a transitioning economy context that affect the impact of CEO international experience on firm investment horizon by highlighting the salience of these market-adaptation pressures and the stakes CEOs perceive when initiating efforts to address immediate market-oriented adaptation. Our study thus contextualizes the impact of CEOs' experience on firm investment horizon.

Third, we extend the literature on the impact of CEO international experience on firm strategy. Prior research has shown that CEO international experience is beneficial for firms' international expansion, strategic adaptation, and green innovation (Carpenter et al., 2001; Godart et al., 2015; Le & Kroll, 2017; Maitland & Sammartino, 2015; Quan et al., 2023). This work relies on mechanisms such as risk-taking to link CEO international experience with firm strategy (e.g., Chittoor et al., 2015). To the extent that such corporate strategies as international acquisition have a future dimension embedded in them (Chittoor, Aulakh, & Ray, 2019), our study offers an alternative explanation for why CEOs with international experience tend to pursue those strategies. In essence, our work informs the literature by showing that CEOs' international experience in advanced market economies may impact the outcomes of their firms not only through their risk-taking tendencies, but also through their investment horizon choices.

Additionally, studying the impact of CEO international experience on firm investment horizon can be particularly relevant in a transitioning economy context, which presents CEOs with many challenges when they try to pursue a long-term investment horizon (e.g., Li & Vermeulen, 2021). Our findings demonstrate the value of focusing on CEO-level factors such as international experience to help explain the large variances observed in Chinese firms' investment horizons. Moreover, the extant research on the impact of top managers' international experience in transitioning economies has typically focused on how such experience allows managers to transfer useful knowledge, improves corporate governance effectiveness, and cultivates a culture of social responsibility inside the organization (Giannetti et al., 2015; Luo, Chen et al., 2021; Wang, 2015). This phenomenon – essentially a cross-border transfer of human capital – has been described as 'brain gain' in less-developed economies (Giannetti et al., 2015). In accordance with this view, our study suggests that CEOs' experience in advanced market economies can be a critical source of knowledge that helps CEOs avoid myopia, and sheds light on a particular manifestation of 'brain gain' in a transition-economy context.

Our study also has practical implications. For firms in a transitioning economy, hiring a CEO with experience in advanced market economies could be a way to help mitigate short-term pressures. Meanwhile, key stakeholders of the firm need to be aware of the tasks imposed on the CEO. Only when the task demands CEOs currently face match with the knowledge/skill set they can offer will that prior experience play a major role in preventing them from becoming myopic in their decision making.

Our study has several limitations, which point out directions for future research. First, while China is an important setting in which to investigate the market-oriented transition's implications for firm investment horizon, it would be useful to explore the extent to which the study's findings can be generalized to other contexts experiencing an institutional transition.

Second, future research could analyze the impact of CEO international experience in greater detail. For instance, our dataset did not include the exact date when a particular CEO went to a foreign country to learn market-oriented knowledge. Thus, we assumed that there was a stable institutional environment in the foreign country where CEOs gained the international experience that subsequently informed their decision making. Future research could investigate whether the changes in a foreign country's institutional environment render CEOs' international experience more or less valuable. Further, we acknowledge that those Chinese CEOs who gained international experience a longer time ago may have a general personal tendency toward exploration and long-term investment horizons. Future research could investigate this issue by, for instance, testing whether the effects of CEO international experience on firm investment horizon vary depending on when that experience was gained.

Third, we focused on new CEOs in our empirical setting, which could generate concerns. For instance, new CEOs are particularly vulnerable to the influence of other powerful actors within

the firm, such as board chairs. We controlled for board chairs' impact in our analysis, but future research should also investigate other top management team members' impact on firm investment horizon. In addition, we selected only CEOs with a long tenure (i.e., equal to or longer than 3 years) when analyzing the effect of CEO experience. This raises concerns that long-tenured CEOs might tend to have good relationships with their colleagues, which supports a long-term investment horizon. Although our DID research design to some extent alleviates that concern, future research can investigate how the relationships between CEOs and their colleagues influence the development of a long-term investment horizon.

Finally, our study did not provide robust evidence to support the moderating effects of foreign competition and analyst coverage. Foreign competition and analyst coverage may not directly capture the cognitive burden experienced by CEOs in initiating market-oriented adaptation. We thus call for future research to probe additional conditions under which market-oriented adaptation is a salient and high-stakes task for CEOs to perform.

## Conclusion

CEOs' international experience in advanced market economies is critical for firms' long-term investment horizons because the knowledge that such CEOs possess helps them manage their current tasks and allows them to better foresee the distant future during market-oriented transition. Further, the impact of CEOs' experience in advanced market economies on their firms' long-term investment horizons is amplified by contextual factors that increase their current job challenges related to market-oriented adaptation. Our study offers valuable insights and fruitful avenues for future research for scholars interested in CEO experience and firm investment horizon during a market-oriented transition.

**Data availability statement.** The data supporting the findings of this study are openly available in the Open Science Framework at <http://osf.io/72bsn/>

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## Notes

1. The Stanford Corporate Governance Research Initiative's report, for instance, shows that roughly 34% of the 5,000 publicly listed U.S. firms have CEOs with international experience.
2. We consider the following OECD countries as having advanced market institutions: Australia, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Japan, Luxembourg, Netherlands, Norway, Poland, Singapore, South Korea, Spain, Sweden, Switzerland, United Kingdom, and United States. We also consider Hong Kong, Macao, and Taiwan as having advanced market institutions.
3. We thank an anonymous reviewer for suggesting this point.
4. In the robustness check, when we included non-OECD country experience in our analysis, the DID estimator for the impact of CEO experience became weaker. This result implies that compared to OECD country experience, non-OECD country experience plays a less valuable role in supporting a long-term investment horizon.
5. Bushee (1998) suggested that an equity level larger than 5% for institutional investors translates into a sufficiently influential ownership position to affect corporate investment policies.
6. Stakeholder-oriented market economies are the following countries: Belgium, Denmark, Finland, Germany, Netherlands, Norway, Sweden, Switzerland, and Japan.

## Appendix A

This appendix provides the results of the probit model for PSM.

**Table A1.** Probit model predicting a firm's probability of hiring a CEO with international experience

	Model 1
Firm size	−0.197*** (0.065)
Firm age	−0.002 (0.013)
Leverage	0.817** (0.370)
Financial slack	0.030 (0.032)
Degree of internationalization	0.464* (0.278)
Foreign ownership	1.340*** (0.489)
State ownership	−0.810** (0.353)
ROA	1.788* (0.929)
Intangible asset	0.085** (0.038)
Capital expenditure	0.656* (0.377)
Chair international experience	0.569** (0.258)
Private firm competition (industry)	0.291 (0.579)
Government intervention (region)	−0.006 (0.008)
Prevalence of internationally experienced CEOs (region)	0.011* (0.006)
Constant	0.449 (1.176)
Year-fixed effect	Included
Observations	1,066

Notes: Standard errors in parentheses. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

**Appendix B**

This appendix provides details about robustness checks.

First, based on the sample of all newly appointed CEOs from 2002 to 2019, we checked whether exposure to advanced market institutions affects the firm investment horizon without using the DID technique. In that test, we required all new CEOs to stay in office for at least 3 years and used data from those CEOs' first 3 years in office for the analyses. In total, we had 2,167 new CEOs and 5,547 CEO-firm-year observations. Not using DID allowed us to use a continuous measure for experience with advanced market institutions. Therefore, we measured this using the difference between the quality level of market institutions of the foreign country each CEO gained experience in and that of China's market institutions at the time of the CEO succession event. Data about a country's quality of market institutions are based on the economic freedom index developed by the Fraser Institute, consistent with existing studies (Cuervo-Cazurra et al., 2019). We used generalized estimating equation (GEE) models for the estimation. Our results (see Table B1) suggest that CEOs being exposed to better market institutions is positively associated with the length of their firms' investment horizons.

**Table B1.** GEE model predicting the impact of CEOs' experience with advanced market institutions (all new CEOs)

	Model 1
CEOs' experience with advanced market institutions	0.307** (0.148)
Firm size	-0.523*** (0.086)
Firm age	0.124*** (0.019)
Leverage	1.491*** (0.442)
ROA	-5.709*** (1.334)
Degree of internationalization	-2.562*** (0.491)
Chair international experience	-0.270 (0.376)
CEO shareholding	-8.131*** (1.472)
CEO board experience	0.222** (0.097)
CEO age	0.040*** (0.013)
CEO gender	-0.852** (0.386)
CEOs' experience in non-OECD countries	-0.838 (1.091)
Pro-market reform scope	-1.335*** (0.175)
Foreign competition	0.012 (1.383)
Analyst coverage	-0.975*** (0.209)
Institutional ownership	-5.155*** (1.234)
Constant	29.000*** (1.941)

(Continued)

**Table B1.** (Continued.)

	Model 1
Year- and industry-fixed effects	Included
Observations	5,547
Number of CEOs	2,167

*Notes:* Standard errors in parentheses. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ . We checked whether the length of the event time window affects the results. We used a 4-year and an 8-year event time windows for robustness checks. Although using an 8-year time window makes the results weaker, using a 4-year time window generates findings consistent with those observed in Table 2 (see model 1 of Table B2). We suspect that as CEOs with experience in advanced market economies stay in power longer, their knowledge and foresight advantage against their rivals diminishes over time. That might explain why we notice a weaker CEO effect using a longer time window. We are also aware of the potential selection issue caused by using a matched sample for analyses. To alleviate that concern, we corrected that sample selection issue using the Heckman two-step approach. We first ran a probit model that predicts firms' likelihood of hiring an internationally experienced CEO and then used the inverse Mills ratio generated from the probit model as an additional control to predict the impact of CEOs' experience on firm investment horizon in the DID analyses. The Heckman first-stage probit model included predictors such as firm size, firm age, leverage, financial slack, degree of internationalization, foreign ownership, state ownership, the board chair's international experience, ROA, intangible assets, capital expenditure, and the prevalence of CEOs with international experience at the regional level. We used the prevalence of CEOs with international experience at the regional level (i.e., per province) as the instrument in the first-stage probit regression. When more firms in the same region have CEOs with international experience, it may cause the focal firm to imitate that hiring decision, but that would not have an impact on the firm's investment horizon. After correcting for this sample selection issue, our results are not substantially different from those in Table 2 (see model 2 of Table B2).

**Table B2.** Robustness check for the effect of CEOs' international experience in advanced market economies

	Model 1 Using 4-year time window	Model 2 Correcting for sample selection bias
Treatment $\times$ After succession	2.163*** (0.698)	1.166* (0.623)
Inverse Mills ratio		-15.308*** (3.613)
Constant	10.831 (15.718)	47.980*** (13.347)
Control variables	Included	Included
Firm- and year-fixed effects	Included	Included
Observations	733	1,019
$R^2$	0.241	0.201

*Notes:* Standard errors in parentheses. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ . Control variables included firm size, firm age, leverage, financial slack, ROA, market to equity, capital expenditure, sales growth, degree of internationalization, intangible asset, state ownership, foreign ownership, CEO shareholding, CEO tenure, duality, board independence, board ownership, chair international experience, CEO board experience, CEO age, CEO gender, industry concentration, pro-market reform scope, foreign competition, analyst coverage, institutional ownership, treatment, and after succession. We then checked whether the results were robust to alternative measures for the scope of pro-market reform. We used the rankings of factor market development and the rankings of market intermediary and legal system development, for which data were collected from the same NERI databases. Using those different measures did not substantially change our findings regarding the moderating effects of the scope of pro-market reform. Further, we checked whether using a top three or a top five ranking instead of a top four ranking to construct the binary variable of 'scope of pro-market reform' makes a difference. Again, we did not find any results substantially different from the ones we reported in Table 2 (see Table B3).



**Table B3.** Robustness check for the moderating effect of pro-market reform scope with alternative measures

	Model 1	Model 2	Model 3	Model 4
	Ranking of factor market development	Ranking of legal system and intermediary development	Top three ranking	Top five ranking
Treatment × After succession × Pro-market reform scope (dummy)	3.030** (1.459)	2.685** (1.204)	2.280* (1.318)	1.999* (1.192)
Constant	17.374 (11.323)	14.975 (11.299)	20.779* (11.361)	15.473 (11.288)
Control variables	Included	Included	Included	Included
Firm- and year-fixed effects	Included	Included	Included	Included
Observations	1,019	1,019	1,019	1,019
R <sup>2</sup>	0.251	0.251	0.236	0.249

Notes: Standard errors in parentheses. \*\*\**p* < 0.01, \*\**p* < 0.05, \**p* < 0.1. Control variables included firm size, firm age, leverage, financial slack, ROA, market to equity, capital expenditure, sales growth, degree of internationalization, intangible asset, state ownership, foreign ownership, CEO shareholding, CEO tenure, duality, board independence, board ownership, chair international experience, CEO board experience, CEO age, CEO gender, industry concentration, treatment, after succession, treatment × After succession, treatment × pro-market reform scope, after succession × pro-market reform scope, and other interaction terms concerning the moderating effects of foreign competition, analyst coverage, and institutional ownership.

### Appendix C

This appendix provides results for analyzing the effect of CEOs’ experience in stakeholder-oriented market economies.

**Table C1.** DID estimation: the moderating effect of CEOs’ exposure to stakeholder-oriented market economies

	Model 1
Treatment × After succession × CEOs’ exposure to stakeholder-oriented market economies	2.725** (1.182)
Constant	25.695** (11.143)
Control variables	Included
Firm- and year-fixed effects	Included
Observations	1,019
R <sup>2</sup>	0.189

Notes: Standard errors in parentheses. \*\*\**p* < 0.01, \*\**p* < 0.05, \**p* < 0.1. Control variables included firm size, firm age, leverage, financial slack, ROA, market to equity, capital expenditure, sales growth, degree of internationalization, intangible asset, state ownership, foreign ownership, CEO shareholding, CEO tenure, duality, board independence, board ownership, chair international experience, CEO board experience, CEO age, CEO gender, industry concentration, pro-market reform scope, foreign competition, analyst coverage, institutional ownership, treatment, after succession, and treatment × CEOs’ exposure to stakeholder-oriented market economies.

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