

ARTICLE

A Behavioral Account of Opportunistic Diversification: Evidence from Non-Real-Estate Firms' Investment in Real Estate

Wei Shi¹, Wenjing Cai², Dennis Wajda³, and Fuxiu Jiang⁴

¹University of Miami, Coral Gables, FL, USA, ²University of International Business and Economics, Beijing, China, ³Coastal Carolina University, Conway, SC, US, and ⁴Renmin University of China, Beijing, China

Corresponding author: Wenjing Cai (wenjinggaicai@uibe.edu.cn)

(Received 15 August 2021; accepted 14 March 2023; first published online 5 October 2023)

Abstract

This study provides a behavioral account of opportunistic diversification. We argue that top executives' social comparison with peer firms based on business segment performance can lead them to increase their investments in high-profitability new businesses (i.e., opportunistic diversification). Specifically, when the performance of a firm's main business relative to its peer firms' high-profitability business segment falls short of their aspirations, the firm's top executives will engage in problemistic search and subsequently increase opportunistic diversification. This effect is stronger when the firm is similar to peer firms along key firm characteristics and when top executives of the firm are underpaid. Although opportunistic diversification helps improve a firm's short-term accounting performance, it may weaken its long-term performance. Using Chinese non-real-estate firms' diversification investment in real estate as our empirical context, we find support for our arguments.

摘要

本文基于企业行为理论解释了企业的机会主义多元化行为。我们认为高管将公司主业业绩与同群公司特定业务的业绩做比较，并可能相应增加对盈利较高的新业务的投资（即“机会主义多元化”）。具体来说，当公司主业相比较同群公司高盈利业务的业绩低于高管预期时，管理者将进行问题搜寻，随后增加机会主义多元化投资。当公司与同群公司特征相近、高管薪酬较低时，上述作用更强。机会主义多元化能够改善公司的短期会计绩效，但对公司长期绩效是不利的。我们用中国非房地产企业投资房地产业务的情境对上述问题进行了实证检验，证明了我们的观点。

Keywords: behavioral theory of the firm; opportunistic diversification; problemistic search; real estate industry

关键词: 机会主义多元化; 企业行为理论; 问题搜寻; 房地产业务

Introduction

Corporate diversification is central to strategy research (Hoskisson & Hitt, 1990). In the past, scholars have offered a variety of theoretical perspectives to explain why firms undertake corporate diversification and the performance implications of such moves (Ahuja & Novelli, 2017; Hoskisson & Hitt, 1990). For instance, the resource-based view suggests that firms diversify into new business segments to leverage existing firm-specific resources and capabilities (Penrose, 1959; Teece, 1982). Agency theory predicts that top executives will pursue diversification to reduce idiosyncratic risks they face (Amihud & Lev, 1999) and attain private benefits in the form of power and prestige achieved through diversification (Jensen & Murphy, 1990; Shi, Zhang, & Hoskisson, 2017; Shleifer & Vishny, 1989). Although these existing theoretical perspectives have offered distinct explanations for why firms undertake diversification, they have done so by focusing on how diversification can benefit the firm's shareholders or how it serves only top executives' interests. Yet, in many cases, it is hard to disentangle whether shareholders or top executives benefit more from corporate diversification.

© The Author(s), 2023. Published by Cambridge University Press on behalf of International Association for Chinese Management Research

Drawing on the behavioral theory of the firm (BTOF) (Cyert & March, 1963; Gavetti, Greve, Levinthal, & Ocasio, 2012) and social comparison theory (Festinger, 1954; Suls & Wheeler, 2012), we argue that top executives compare the profit margin of their firm's main business with the performance of peer firms' high-profitability business segments. When top managers see their own organizations falling behind peer firms, they will undertake problemistic search that can lead to increased levels of diversification investment in a high-profitability business segment. We define such diversification as 'opportunistic diversification' that aims to improve the firm's short-term financial performance, regardless of the strategic fit between the new business and the firm's existing business. In contrast, non-opportunistic diversification does not have an embedded time horizon. If a firm experiences a performance shortfall and undertakes investment in an unrelated industry in an effort to improve its performance, such a move does not necessarily qualify as opportunistic diversification if a lengthy time span is required for this investment to come to fruition. Indeed, once the impact of time is taken into consideration, this kind of diversification decision is not an opportunistic one.

We test our theory on a panel dataset of non-real-estate Chinese firms that diversified into the real estate business. China has witnessed phenomenal growth in the real estate industry; by some accounts, investment in real estate in that country increased from 4% of GDP in 1997 to 15% of GDP in 2014 (Chivakul, Lam, Liu, Maliszewski, & Schipke, 2015). Real estate has thus become one of the highest-profitability business segments in China. We argue that when executives compare the profit margin of their firm's main business with peer firms' real estate business and observe a large performance shortfall for their own organization, they will *opportunistically* invest in the real estate business with the goal of reducing this immediate performance gap. Moreover, this effect is stronger when focal firms are more similar to peer firms along key firm characteristics because such similarities facilitate social comparison (Festinger, 1954). Similarly, this effect is stronger when executives are underpaid relative to peer executives because underpaid executives are more strongly motivated to enhance short-term performance through diversification than are overpaid executives. Although investment in real estate can improve a firm's short-term financial performance, it can also signal a lack of strategic focus (Ocasio & Joseph, 2017) and be detrimental to long-term accounting performance.

This study contributes to management research in three ways. First, our study advances corporate strategy research by developing a behavioral account of firms' pursuit of *opportunistic* diversification. Opportunistic diversification differs from diversification driven by managerial self-interest. The latter is an outcome of agency problems – that is, such diversification can harm shareholders' interests. By comparison, opportunistic diversification is driven by managerial motives to improve short-term financial performance and may not harm the short-term interests of shareholders. Our findings not only indicate that performance shortfalls relative to peers can lead to opportunistic diversification but also unpack the implications of such diversification. By doing so, our study offers novel insights into the drivers and consequences of opportunistic diversification.

Second, our study advances research on the BTOF by suggesting a novel social aspiration target. Most previous studies concerning social comparison have focused on overall performance shortfalls with external marketplace competitors (Audia & Greve, 2006; Chen & Miller, 2007; Greve, 1998, 2008). Our findings suggest that performance gaps between focal firms and peer firms' 'diversified' business can also trigger problemistic search and influence firms' diversification investment decisions. Despite awareness of peer firms' high performance, when deciding whether to increase their investment in a business segment, firms tend to pay more attention to the profitability of that targeted segment. Hence, compared with overall performance shortfalls, differences in targeted segment performance can be a more powerful driver of problemistic search.

Third, our study contributes to research on managerial short-termism from a BTOF's perspective. Prior research has explained managerial short-termism from the perspective of capital markets (Chen, Rhee, Veeraraghavan, & Zolotoy, 2015; Gigler, Kanodia, Sapa, & Venugopalan, 2014), firm performance measurement systems (Chen, Cheng, Lo, and Wang, 2015; Varas, 2014), external or internal governance mechanisms (Gonzalez & André, 2014; Shi, Connelly, & Hoskisson, 2017), or managers' experience of role ambiguity (Marginson & Mcaulay, 2008). Our findings enrich insights into antecedents to managerial short-termism by highlighting that performance shortfalls relative to peer firms can

also give rise to managerial short-termism. Specifically, when the performance of a firm's main business relative to its peer firms' real estate business segment is below aspirations, managers would engage in problemistic search, and choose to invest in high-profitability business to remedy such short-term performance shortfalls.

Theoretical Background

Antecedents and Performance Implications of Diversification

Which factors influence corporate diversification remains a question central to strategy research (Hoskisson & Hitt, 1990; Rumelt, Schendel, & Teece, 1994). Scholars have offered diverse theoretical perspectives to explain why firms engage in corporate diversification (Ahuja & Novelli, 2017; Hoskisson & Hitt, 1990). The resource-based view (Barney, 1991; Wernerfelt, 1984) suggests that firms allocate scarce resources to available product market opportunities in a descending order of value in an effort to maximize their overall financial returns (Levinthal & Wu, 2010; Montgomery & Wernerfelt, 1988). In addition, diversified firms have the opportunity to accumulate strategic assets more rapidly and at lower costs than their non-diversified competitors (Markides & Williamson, 1994). Consistent with the resource-based view, research has shown that diversification into a strategically related business can have a positive influence on firm performance (Markides & Williamson, 1994; Palich, Cardinal, & Miller, 2000).

Scholars have cited transaction cost theory and strategic behavior theories to justify the rationale behind diversification. Transaction cost theory proposes that firms' decisions to diversify into new business segments can be driven by the opportunity that internalization offers to reduce transaction costs associated with market exchanges (Jones & Hill, 1988). Strategic behavior theories predict that a firm's simultaneous presence in multiple markets generates competition-related advantages, which then enables the firm to coordinate its strategies across these markets through multimarket contact (Edwards, 1955), cross-subsidization (Amit & Livnat, 1988), and limiting competitors' access to customers and suppliers (Hart, Tirole, Carlton, & Williamson, 1990).

Agency theory provides yet another explanation why firms undertake diversification. Agency theory suggests that top executives engage in diversification to increase their own utility instead of the firm's utility. First, diversification can mitigate idiosyncratic risks that top executives incur (Amihud & Lev, 1999). Top executives develop firm-specific human capital over time, but hostile takeovers can lead managers to lose such human capital. As diversification can reduce the risk faced by firms and attenuate the threat of hostile takeovers (Hoskisson & Hitt, 1990; Ji, Mauer, & Zhang, 2020), it increases managerial job security. Second, diversification provides an effective way for firms to grow in size (Penrose, 1959), and managing larger firms is associated with higher power and prestige for top executives (Jensen, 1986). However, when top executives undertake diversification to pursue their own interests at the expense of the firm's interests, firm performance will deteriorate.

While the aforementioned theories assume that diversification decisions are the outcome of top executives' careful cost-benefit analyses, other streams of research provide a behavioral account. For instance, bandwagon effects occur when firms undertake a strategic action due to social pressures created by other firms taking the same action. These pressures can involve both institutional and competitive elements (McNamara, Haleblian, & Dykes, 2008). On the one hand, institutional bandwagon pressures arise when non-adopters perceive social pressures and choose to mimic the action of early adopters to avoid appearing different (DiMaggio & Powell, 1983). On the other hand, competitive bandwagon pressures are created when non-adopters feel pressure from missing out on competitive opportunities that early adopters appear to be seizing. Bandwagon pressures have been shown to influence firms' strategic decision making, including diversification. Bandwagon pressures can motivate firms to ride rising diversification waves, while forgoing rational assessment of the strategic value diversification may bring (Abrahamson & Rosenkopf, 1993; Fiol & O'Connor, 2003).

Diversification can be associated with a range of benefits, such as greater market power (Caves, 1981; Miller, 1973), more efficient allocation of resources through internal capital markets (Wan & Hoskisson, 2003), utilization of excess productive factors (Kock & Guillen, 2001), more efficient

utilization of existing resources in new settings (Chakrabarti, Singh, & Mahmood, 2007), and reduced performance variability by virtue of a portfolio of imperfectly correlated set of businesses (Ji et al., 2020). However, these benefits can be offset by the costs associated with an increasing scope of operations. Greater diversification increases managerial, structural, and organizational complexity, incurs greater coordination and integration costs, strains top management resources (Grant, Jammine, & Thomas, 1988), limits 'organizational attention' (Ocasio, 1997), and inhibits firms' ability to respond to major external changes (Donaldson, 2000). Other inefficiencies and costs arise from conflicting 'dominant logics' between businesses, internal capital market conflicts, and increased control and effort losses due to shirking (Markides, 1992). In studies conducted in developed economies, empirical research has often concluded that diversification leads to poorer performance and therefore, carries a 'diversification discount' (Montgomery & Wernerfelt, 1988). In contrast, in less munificent markets where factors and institutions are lacking, diversification can promote incremental value by creating substitutes for these factors and institutions (Wan & Hoskisson, 2003). Firms enjoy scope and scale advantages from internalizing functions provided by external intermediaries or institutions in advanced economies. A highly diversified firm is also in an advantageous position to exploit privileged access to information, licenses, and markets in developing countries (Chakrabarti et al., 2007).

While prior research has devoted much attention to understanding the antecedents and consequences of diversification, it generally assumes that diversification is driven by either executives' motives to pursue their self-interests or firms' efforts to improve their financial performance. Yet, in some cases, executives may pursue diversification into high-profitability business segments with the goal of boosting the firm's short-term financial performance, a move that we term 'opportunistic diversification'. As opportunistic diversification can enhance a firm's short-term performance, it is not necessarily an outcome of agency problems. However, opportunistic diversification is not oriented toward enhancing a firm's long-term competitiveness; in this sense, opportunistic diversification can harm the interests of shareholders. Our study draws upon the behavioral theory of firm to explore the antecedents and consequences of opportunistic diversification.

A Behavioral Perspective of Diversification Strategy

For decades, the BTOF has been a key theoretical framework used to explain firm strategic decisions (Bromiley, 2004; Cyert & March, 1963; Gavetti et al., 2012; Shi, Connelly, & Li, 2022). Based on the notion of decision makers' bounded rationality (March & Simon, 1958), BTOF emphasizes firms' strategic decision making predicated on the assessment of current performance. This theory suggests that when a firm's performance falls short of its aspiration level, it will pursue problemistic search to find a solution to address the performance shortfall (Shi, Chen, & Li, 2022; Greve, 1998; Harris & Bromiley, 2007; Iyer & Miller, 2008). The search for solutions is initially local, as decision makers begin by considering incremental or familiar changes. If performance declines are severe or protracted, however, the search becomes more urgent and increasingly novel (Greve, 1998). Consequently, a more distant search occurs when performance falls further below aspirations, whereas search efforts diminish as performance improves and returns to the desired aspiration level (Greve, 1998). Thus, performance shortfalls (when firm performance is below the aspiration level) can lead to problemistic search activity (Desai, 2016).

According to the BTOF, firms compare their current performance with their own prior performance (historical comparison) as well as with social referents (social comparison). These two types of performance shortfalls can have important implications for strategic decisions. A large body of research suggests that performance shortfalls can lead top executives to undertake risky investments in research and development (R&D) and innovation, as both areas are highly influential determinants of firms' long-term competitiveness and performance (Chen & Miller, 2007; Giachetti & Lampel, 2010; Greve, 2003; Tyler & Caner, 2016; Vissa, Greve, & Chen, 2010). Recent studies also indicate that organizations may undertake alliance activities when performance falls short of their aspiration levels (Baum, Rowley, Shipilov, & Chuang, 2005; Schwab & Miner, 2008; Shipilov, Li, & Greve, 2011). In addition, scholars have examined how performance feedback impacts firm mergers and acquisitions (Haleblian, Kim, & Rajagopalan, 2006; Iyer & Miller, 2008; Kim, Finkelstein, & Haleblian, 2015),

growth (Audia & Greve, 2006; Desai, 2008; Greve, 2008, 2011), diversification (McDonald & Westphal, 2003), market position change (Park, 2007), and internationalization (Jung & Bansal, 2009).

Most prior literature on performance relative to aspirations has focused on overall performance shortfalls, with external marketplace competitors being cast as the reference group (Audia & Greve, 2006; Chen & Miller, 2007; Greve, 1998, 2008). However, more recent research has called for a more careful specification of social reference groups (Moliterno, Beck, Beckman, & Meyer, 2014; Washburn & Bromiley, 2012). Research has demonstrated that firms can have different performance targets along the organizational hierarchy (March & Simon, 1958) and among different business units within the same organization (Gaba & Joseph, 2013; Hu, He, Blettner, & Bettis, 2017; Vissa et al., 2010). Findings from these studies highlight the importance of considering the different social aspiration targets used by organizations. To date, however, research has not considered whether top executives compare the performance of their firm's main business with that of other firms' high-profitability business segments, and how such comparisons can affect their problemistic search and opportunistic diversification decisions.

Empirical Context: Diversification to Real Estate

The empirical context used to test our theory is the diversification of non-real-estate firms¹ into the real estate business in China. Prior to 1990, China possessed little in the way of a real estate market, as people lived in either communes in the countryside or work-unit housing in urban areas (Nunlist, 2017). In 1978, however, economic reforms slowly gave rise to a sell-off of urban state-controlled housing to residents and signaled the beginning of a bustling property market. Since then, property value has skyrocketed as the Chinese economy continues to expand. For example, a 60-square-meter apartment in Beijing cost about \$30,000 in 1995 but could command more than \$810,000 in 2017 (Nunlist, 2017). Driven by fiscal stimuli and massive credit expansion, average housing prices in China tripled from 2005 to 2009 (Dreger & Zhang, 2013). Home mortgage loans, which have accounted for one-third of banks' total lending activities, have played a significant role in propelling the rapid growth of the real estate market (Deng & Liu, 2009).

The value of housing has become a crucial component of Chinese families' wealth. A survey of 25,000 families across 25 provinces conducted by the *Economic Daily* newspaper found that real estate accounted for 65.61% of per capita household wealth in 2015 (Nunlist, 2017). The real estate market is also crucial to the Chinese economy. As previously noted, investment in real estate in China increased to 15% of GDP in 2014 from 4% in 1997 (Chivakul et al., 2015). According to *The Economist* (2015), China's property market now accounts for almost one-fifth of the country's economy. Moody's Investors Service reports that Chinese real estate companies have reaped high financial returns from the skyrocketing housing prices in most Chinese cities. In 2008, the average profit margin was 28.7% for real estate companies, but only 7.4% for manufacturing companies (Zhi, Li, Jiang, Wei, & Sornette, 2019). Thus, the real estate industry was associated with high profitability over the last decade. The high profit margin of the real estate industry has propelled other firms to increase their diversification investments in real estate. Examples abound: China's high-end white liquor producer Kweichow Moutai diversified into real estate in 2011; Haier (the largest consumer electronics and home appliances company in China) ventured into real estate in 2008; Shanshan Group (one of the largest garment designers and makers) invested in real estate in 2011 despite founder Yonggang Zheng's claim it would not; LeTV (a China-based Internet company) made the leap into real estate through acquisitions – even though the firm had been an avid supporter of light-asset strategies and investment in real estate goes directly against such strategies.

Given the high-profitability of the real estate industry, many non-real-estate firms choose to diversify into the industry. The specific reasons why firms choose to increase their level of diversification investment in real estate vary, but the fundamental driver is the rapidly growing housing prices in many Chinese cities and the high profitability linked to the real estate industry. Increased levels of diversification investment in real estate have become an effective way for firms to achieve short-term financial windfalls. Yet, given that investment in the real estate business calls for large capital outlays, such investment involves high risks, particularly during market downturns.

Hypotheses

Performance Shortfalls and Real Estate Investment

BTOF argues that decision makers compare the organization's current performance with the firm's socially comparable peers (Gavetti et al., 2012). When firm performance falls below aspiration levels, firms are compelled to engage in problemistic search to find suitable solutions to mitigate the performance gap (Hui, Gong, Cui, & Jiang, 2022). Solutions generated by problemistic search are evaluated for their risk and organizational fit, with decision makers accepting increasingly higher risk as the organization's performance falls even further below its aspirations. Such learning-based performance feedback is inherently about attention allocation, through which top managers dedicate their limited cognitive resources to specific problems and solutions at the expense of filtering out other issues and long-term planning (Ocasio, Rhee, & Milner, 2020).

The real estate business acts as an example of a high-profitability segment given its exponential growth and high returns. Hence, top executives of non-real-estate firms will direct much of their attention to the performance gap between the profit margin of their main business and that of peer firms' real estate business. When the performance of a firm's main business relative to its peer firms' real estate business segment is below aspirations, the firm's top managers will direct their attention to search for a solution to boost performance (Desai, 2016). Although firms can invest in R&D and pursue acquisitions that can create synergistic value to improve firm performance, such gains may take a long time to materialize. In addition, payoffs from R&D and acquisitions are highly uncertain. In contrast, given its exponential growth and higher overall returns, investment in real estate can provide top executives with a timely and tangible solution to remedy such performance shortfalls. Therefore, increasing their level of diversification investment in real estate is a natural option for top executives given its high profitability and speedy payoffs. Meanwhile, opportunistic diversification in real estate can lead to an immediate performance boost. In contrast, non-opportunistic diversification may not guarantee such immediate performance enhancements given the length of time required to reap financial rewards.

This article considers performance shortfalls relative to social aspiration levels. We focus on two types of diversified peer firms: geographic peers and industry peers that have diversified into real estate business. Social comparison research has previously highlighted the importance of the geographic component of reference groups (Kulik & Ambrose, 1992; Luttmner, 2005; Persky & Tam, 1990). Firms located in the same province are not only geographically close but also face a similar institutional environment in terms of governmental regulations and economic development. As a result, the performance of other firms in the same geographic region serves as a more relevant referent than the performance of firms in distant geographic regions.

Hence, we focus on geographic peers whose main business is not real estate but have diversified into the real estate business (diversified geographic peers). If the profit margin of a focal firm's main business is much lower than the profit margin of the real estate business of diversified geographic peers, that firm may engage in problemistic search and decide to increase its level of diversification investment in real estate as a way to reduce performance shortfalls. In contrast, when geographic peers that have increased their level of diversification investment in real estate fail to achieve high financial returns from their real estate investment, the focal firm may not have the motivation to invest in real estate.

Hypothesis 1a (H1a): The difference between the profit margin of a non-real-estate firm's main business and the profit margin of the real estate business of its diversified geographic peers is positively associated with the firm's level of investment in the real estate business.

Firms in the same industry compete directly and hence serve as important reference points for one another (Fiegenbaum, Hart, & Schendel, 1996). Given their competitive relationships, top executives of firms in the same industry pay special attention to each other (Connelly, Li, Shi, & Lee, 2020). When top executives observe that competitors have increased their level of diversification investment in real estate (diversified industry peers) and achieved much higher financial returns than their own main business (i.e., high performance shortfall), such a shortfall can lead top executives to pursue

problemistic search and increase their firm's own level of diversification investment in real estate. In contrast, when diversified industry peers fail to achieve high financial returns from increased levels of investment in real estate, top executives will be less motivated to invest in real estate.

Hypothesis 1b (H1b): The difference between the profit margin of a non-real-estate firm's main business and the profit margin of the real estate business of its diversified industry peers is positively associated with the firm's level of investment in the real estate business.

Moderating Effect of Firm Similarity and Top Managers' Pay Deviation

The mechanism underlying Hypotheses 1a and 1b is top executives' comparison of the performance of their main business with the performance of peer firms' real estate business, with performance shortfalls identified through this comparison then leading top executives to increase their firm's level of diversification investment in real estate. To verify the underlying theoretical mechanism, we investigate the moderating effects of focal firms' similarity with peer firms and top executives' pay deviation from peers, both of which capture focal firms' intention to compare their own performance with peer firms.

Social comparison theory suggests that humans have an innate drive to evaluate their own status against the status of similar others to assess their position in society (Festinger, 1954; Masters & Keil, 1987). Individuals tend to select similar comparison targets because similarity between the comparer and referent reduces the complexity of comparison and gives rise to more precise information about themselves (Adams, 1963; Festinger, 1954; Kulik & Ambrose, 1992). Therefore, a firm's intention to compare its own performance with peer firms is contingent on how similar the firm is to peer firms along key firm characteristics (e.g., firm size and firm age). When a firm exhibits a high degree of similarity to diversified geographic and industry peers, the firm will pay greater attention to the performance of these peers; in turn, problemistic search intensity becomes more salient once a performance shortfall is recognized. In such a case, the firm is more likely to initiate search and implement solutions to achieve performance parity relative to peer firms. Given the firm may also have a similar resource profile to peer firms, investment in real estate may be more likely.

In contrast, when firms exhibit sharp heterogeneity from their diversified geographic and industry peers, top executives of the former may find the high performance of those peers' real estate business less relevant and may lack the awareness and motivation to invest in real estate. Even though the performance shortfall for the firm's main business relative to the peer firms' real estate business appears to be large, the former may not implement problemistic search to close such a gap. Thus, the comparing firm would not undertake increased levels of investment in the real estate business.

Hypothesis 2a (H2a): The positive relationship proposed in Hypothesis 1a is stronger when the firm has a high level of similarity to diversified geographic peers.

Hypothesis 2b (H2b): The positive relationship proposed in Hypothesis 1b is stronger when the firm has a high level of similarity to diversified industry peers.

Top executives compare themselves to their peers along many dimensions. The relationship between social comparison theory and executive compensation has received much scholarly attention. For instance, compensation committee members tend to use their own compensation levels as a benchmark when making executive compensation decisions (O'Reilly, Main, & Crystal, 1988). Research also attests to the presence of social comparison and its influence on pay dispersion among executives (Fredrickson, Davis-Blake, & Sanders, 2010; Henderson & Fredrickson, 2001). In our context, we argue that the influence of performance shortfalls on firms' investments in real estate will be stronger when top managers are underpaid relative to their peers (negative pay deviation). In essence, top executives' motivation to reduce performance shortfalls should hinge on their relative compensation levels. Prior research suggests that top executives have a strong motivation to make strategic decisions to elevate their compensation when they find themselves underpaid relative to peer executives (Seo,

Gamache, Devers, & Carpenter, 2015), given that compensation not only affects one's personal wealth but also reflects one's ability, worth, and social status (Mitchell & Mickel, 1999). Because firm performance is a crucial determinant of executive compensation (Murphy, 1999), underpaid top executives will be more strongly incentivized to address performance shortfalls. When top executives become aware that the performance of their main business lags far behind that of their peers' real estate business, they will engage in intensive search to mitigate performance gaps and subsequently increase their compensation. To accomplish this, top managers will increase the level of the firm's diversification investments in real estate as a means to achieve high profitability. In contrast, when top executives are overpaid relative to peer executives, their incentive to remedy their firm's performance shortfall relative to aspiration levels will be weak. In such a scenario, even if the profit margin of its main business lags behind that of peer firms in the real estate business, top executives may not invest in real estate to enhance overall firm performance.

Hypothesis 3a (H3a): The positive relationship proposed in Hypothesis 1a is stronger when the top executives of the non-real-estate business firm have a high level of negative pay deviation.

Hypothesis 3b (H3b): The positive relationship proposed in Hypothesis 1b is stronger when the top executives of the non-real-estate business firm have a high level of negative pay deviation.

Performance Implications of Real Estate Investment

Our last hypothesis focuses on the influence of real estate investment on firm accounting performance. A plethora of studies have examined the relationship between diversification and accounting performance. Based on a sample of 55 studies, a meta-analysis (Palich et al., 2000) shows a curvilinear relationship between diversification and accounting performance (growth and profitability), with related diversifiers outperforming both focused firms and unrelated diversifiers.

Although increasing diversification investment in real estate can be a response to a performance shortfall and a result of problemistic search, such investment can also be linked to instant high returns and positive short-term financial performance. Every strategic decision has an opportunity cost, and the value of strategic opportunities lost is the opportunity cost associated with the strategy actually chosen (Mackey & Barney, 2013: 348). When the opportunity cost of increasing diversification investment in real estate is lower than the opportunity cost of making other investments, this choice should improve firm performance (Mackey & Barney, 2013). As the average profit margin of real estate firms is triple that of manufacturing firms, intensive investment in real estate should enhance the firm's short-term accounting performance. Therefore, we anticipate that non-real-estate firms' investment in real estate will improve their short-term financial performance.

Hypothesis 4 (H4): The intensity of a non-real-estate firm's real estate investment is positively associated with its short-term financial performance.

Methods

Sample

The Chinese real estate market is an ideal setting to investigate these issues, given that it has yielded enormous profits for firms that have undertaken such investments in real estate. To test our hypotheses, we chose a sample of Chinese publicly traded firms that did not belong to the real estate industry but subsequently invested in real estate. Our sample included all A-share companies listed on mainland China's two stock exchanges (i.e., Shanghai Stock Exchange and Shenzhen Stock Exchange) between 2000 and 2014. Because our focus is on non-real-estate firms' diversification investments in real estate, we excluded firms that belong to the real estate industry as classified by the China Securities Regulatory Commission (CSRC). We also excluded firms in the financial industry because these firms have different disclosure requirements and accounting rules. Lastly, we excluded those

firms classified as ‘miscellaneous’ by the CSRC, as we were unable to pinpoint their core business. Our final sample consisted of 2,200 firms that do not belong to the real estate industry.

We obtained data on firms’ investments in the real estate industry from the WIND database. Firm financial data and data for other variables used in this study were collected from the China Securities Market and Accounting Research (CSMAR) database. These databases have been widely adopted in recent management research using Chinese data (Greve & Zhang, 2017; Li, Shi, Connelly, Yi, & Qin, 2022; Shi et al., 2022; Schuler, Shi, Hoskisson, & Chen, 2017).

Measures

Dependent variables

Our first dependent variable is *Real estate investment level*, which was measured as the ratio of a firm’s sales revenue from the real estate segment to its total sales revenue. This variable captures the level of firms’ investment in the real estate business. Approximately 12.8% of our firm-year observations involved some form of investment in real estate. Importantly, we focused on the level of diversification investment in real estate because this continuous variable captures the degree of focal firms’ commitment to rectify performance gaps relative to peer firms’ investments in real estate.

Our second dependent variable is related to firm accounting performance. Research on diversification has used different constructs to measure firm accounting performance (Ahuja & Novelli, 2017). Prior literature has noted that the profit margin of a specific business segment reflects the operating performance of that business and is, in part, the product of firm strategy (Fairfield & Yohn, 2001; Stickney & Brown, 1999). Consequently, profit margin has been widely adopted to measure operating performance or performance of a specific business in recent management research (Wassmer, Li, & Madhok, 2017; Zatzick, Moliterno, & Fang, 2012). We followed previous research and employed *Industry-adjusted operating profit margin (OPM)* to measure firm accounting performance. *Industry-adjusted OPM* was calculated as a focal firm’s OPM adjusted by the mean level of OPM in its industry, where a firm’s OPM was calculated as the ratio of the firm’s operating profit to its operating revenue. Subtracting industry OPM from firm operating margin is a widely used method to rule out systematic differences across industries (Harrison, Hall, & Nargundkar, 1993; Zhang & Rajagopalan, 2003).

Independent variables

We followed prior BTOF studies (Desai, 2016; Hui et al., 2022) by calculating the difference between the firm’s main business performance and two aspiration levels. The independent variable of Hypothesis 1a is *Performance difference from diversified geographic peers*, measured as the difference between the profit margin of a non-real-estate firm’s main business and the average real-estate-business operating margin of firms in the same province that have increased their level of diversification investment in real estate. The independent variable of Hypothesis 1b is *Performance difference from diversified industry peers*, measured as the difference between the operating margin of a non-real-estate firm’s main business and the average real-estate-business operating margin of firms that have increased their level of diversification investment in real estate in the same industry. We used the CSRC one-digit industry classification system to identify industry peers and the two-digit system to identify peers in the manufacturing industry (Jiang, Jiang, Huang, Kim, & Nofsinger, 2017), since manufacturing firms represent the bulk of Chinese listed firms (Sun et al., 2016) and more than 60% of our firms belonged to this industry. The independent variable for Hypotheses 4 is *Real estate investment level*, measured as the ratio of a firm’s sales revenue from the real estate segment to its total sales revenue.

Moderators

The first moderator is firm *Similarity* to geographic or industry peers with investments in the real estate business. Following existing research (Hoberg & Phillips, 2010, 2016), we used the cosine

similarity methodology to measure the extent of firm similarity. We defined a three-dimensional vector for each firm i in each year t , where the three dimensions included firm size (the natural logarithm of total assets), firm growth opportunity (the growth rate of total sales), and firm listing age. We defined the rankings of each dimension among diversified geographic and industry peers for year t as $V_{loc,t}$ and $V_{ind,t}$. We then created a matrix showing the firm's relative position on each characteristic among its peers, and calculated the average of characteristic vectors among comparison firms to form two compared boilerplates (Hoberg & Phillips, 2016), defined as $\bar{V}_{loc,t}$ and $\bar{V}_{ind,t}$, respectively. Finally, we obtained the similarity score between each firm and comparison groups (boilerplates) as follows:

$$\text{Similarity}_{loc,t} = V_{loc,t} * \bar{V}_{loc,t}$$

$$\text{Similarity}_{ind,t} = V_{ind,t} * \bar{V}_{ind,t}$$

The second moderator regards the level of *Top executives' negative pay deviation* from peer executives. To measure this moderator, we first ran an OLS regression to estimate the level of predicted executive compensation. Specifically, we estimate the following OLS regression:

$$\text{Executive compensation}_{i,t} = \beta \times X_{i,t-1} + \varepsilon_{i,t}$$

where i indexes firm and t indexes time. Executive compensation $_{i,t}$ is the dependent variable, measured as the total compensation of the three highest-paid top executives (Conyon & He, 2011).² We took the natural logarithm of total compensation. $X_{i,t-1}$ represents a vector of variables used to predict total executive compensation. It includes firm size (the natural logarithm of total assets), firm performance (return on assets [ROA]), firm age, year fixed effects, industry fixed effects, and province fixed effects. The regression results are presented in Table 1. We use the residual from the regression to measure top executives' pay deviation from the expected value. A higher value of the residual implies a lower level of negative pay deviation from peer executives.

Control variables

In modeling the likelihood of a firm's increased level of diversification investment in real estate, we included several control variables. We controlled for *Firm size* using the natural logarithm of total assets and for firm performance using *ROA*. In addition, we controlled for *Industry growth ratio* because firms in fast-growing industries may not need to diversify. Industry growth rate was measured as the current-year industry total sales divided by the previous year's industry total sales minus one. We controlled for free cash flow because firms with a high level of free cash flow have more resources to increase their level of diversification investment in real estate (Jensen, 1986). Specifically, we controlled for *Cash holding ratio*, measured as the ratio of cash and cash equivalents to total assets. Firms with a strong long-term debt capacity tend to engage in unrelated diversification (Chatterjee & Wernerfelt, 1988). Therefore, we include *Long-term debt ratio* (measured as long-term liabilities divided by total assets) as a control variable.

Firms that make intensive investments in fixed assets may have fewer resources available for increasing the level of their diversification investments in real estate. *Fixed asset investment* was measured as the ratio of total fixed assets invested in a year to total assets. In addition, we controlled for *Business diversification* because firms with extensive diversification experiences are more inclined to diversify into a new business segment. *Business diversification* was measured as the sum of squared sales shares for all business segments in the same firm. We controlled for *Industry concentration* because firms in a competitive industry may diversify into other industries as a means to reduce competitive pressure. We used the Herfindahl–Hirschman index to measure industry concentration.

We also included a number of governance variables that may influence a firm's level of diversification investment in real estate. We controlled for *Board independence* and *CEO duality* because these two variables can influence how closely managers are monitored (Dalton, Hitt, Certo, & Dalton, 2007),

Table 1. Construction of top executives' negative pay deviation

	Dependent variable: Executive compensation
Lagged size	0.265*** (0.014)
Lagged ROA	0.014 (0.014)
Lagged listing age	-0.056*** (0.017)
Constant	4.871*** (0.310)
Year fixed effects	Yes
Industry fixed effects	Yes
Province fixed effects	Yes
Observations	18,300
R-squared	0.519
F statistics	132.462

Notes: Standard errors clustered by firm are in parentheses. ****p* < 0.01, ***p* < 0.05, **p* < 0.10. Two-tailed tests. We use a sample period of 1999–2014 to estimate top executives' negative pay deviation.

which in turn can affect the firm's level of diversification investments in real estate. Board independence was measured as the ratio of outside directors to board size and CEO duality received a value of '1' if a CEO was also board chair and '0' otherwise. We controlled for *Managerial ownership* because managers with a high level of ownership may have a stronger motivation to increase their level of diversification investment in real estate to enhance firm performance. *Managerial ownership* was measured as the ratio of shares owned by top executives to total shares outstanding. We controlled for *Ownership concentration* because monitoring by shareholders can influence a firm's likelihood of increasing its level of diversification investments in real estate. *Ownership concentration* was measured as the Herfindahl–Hirschman index of percentages of ownership held by the 10 largest shareholders. We also included *State ownership* as a control variable because top executives of state-owned enterprises (SOEs) have less discretion in making strategic decisions compared to top executives of privately owned enterprises (Li & Tang, 2010). *State ownership* was measured as the percentage of ownership held by the government. Furthermore, because central and local governments have a substantial influence on both the demand and supply sides of the real estate market, firms with strong political connections tend to venture into real estate. Therefore, firm *Political connections* received a value of '1' if one of top executives or board members had political connections and '0' otherwise.

Institutional theory (DiMaggio & Powell, 1983) suggests that firms may diversify into the real estate business under mimetic pressure. Therefore, we controlled for *Ratio of diversified geographic peers* and *Ratio of diversified industry peers*. Ratio of diversified geographic (industry) peers was measured as the number of firms that had changed their level of diversification investment in real estate in the same province (industry) divided by the total number of listed firms in the province (industry). We also controlled for firm historical performance, given that a firm's own past performance is indicative of how well that firm can and should do in its environment. This variable, *Difference from historical performance*, was measured as the difference between the current profit margin of a non-real-estate firm's main business and that in year *t*–1.

In modeling firm accounting performance, we included the following control variables: firm size, industry growth rate, business diversification, fixed asset investment, industry concentration, prior main business profit margin, and prior firm performance. We excluded cash holding ratio and long-

term debt ratio from the model because firm performance can influence these two variables. In addition, we controlled for all previous governance variables used to predict real estate investment.

Summary statistics and correlations for all of the main variables in our research are presented in [Table 2](#).

Analyses and Results

The dependent variable of Hypotheses 1a and 1b is a ratio variable, which is always greater than zero. To mitigate bias from firm-level heterogeneity on the dependent variable, we chose to use firm fixed-effects regressions. Our arguments suggest that a firm's diversification decisions can be driven by performance differences relative to its geographic and industry peers. Therefore, we measured our independent variables and predictors at time $t-1$ and our dependent variable at time t .

Results from firm fixed-effects OLS regressions are presented in [Table 3](#). Model 1 was used to test Hypothesis 1a. The coefficient estimate of *Performance difference from diversified geographic peers* was positive ($\beta = 0.039$, $p < 0.01$), which was consistent with Hypothesis 1a. In terms of economic magnitude, when the difference between profit margin of a firm's main business and average profit margin of its diversified geographic peers' real estate business increased from the mean minus one standard deviation to the mean plus one standard deviation, the firm's real estate investment intensity increased from 64.43% to 135.57% of its mean. We tested Hypothesis 1b in Model 2. The coefficient estimate of *Performance difference from diversified industry peers* was positive ($\beta = 0.046$, $p < 0.01$), supporting Hypothesis 1b. In terms of economic magnitude, when the difference between the profit margin of a firm's main business and the average profit margin of its diversified industry peers' real estate business increased from the mean minus one standard deviation to the mean plus one standard deviation, the firm's real-estate investment intensity increased from 64.43% to 139.20% of its mean. In Model 3, we included both independent variables. The coefficient estimates of both predictors were positive and significant, which is consistent with prior results.

Hypotheses 2a and 2b predict that the relationships posited in Hypotheses 1a and 1b, respectively, will be stronger when the focal firm is more similar to its geographic or industry peers. The results of Hypotheses 2a and 2b tests are reported in Models 1 and 2 in [Table 4](#).

As shown in Model 1, the coefficient estimate of the interaction term between *Performance difference from diversified geographic peers* and *Geographic similarity* was positive ($\beta = 0.089$, $p < 0.05$), consistent with Hypothesis 2a. In terms of economic magnitude, when *Geographic similarity* took its mean minus one standard deviation and *Performance difference from diversified geographic peers* increased from the mean minus one standard deviation to the mean plus one standard deviation, a firm's real estate investment intensity increased from 64.96% to 124.05% of its mean. When *Geographic similarity* took its mean plus one standard deviation and *Performance difference from diversified geographic peers* increased from the mean minus one standard deviation to the mean plus one standard deviation, a firm's real-estate investment intensity increased from 54.90% to 151.44% of its mean.

As shown in Model 2, the coefficient estimate of the interaction term between *Performance difference from diversified industry peers* and *Industry similarity* was positive ($\beta = 0.182$, $p < 0.01$), which lends support to Hypothesis 2b. In terms of economic magnitude, when *Industry similarity* took its mean minus one standard deviation and *Performance difference from diversified industry peers* increased from the mean minus one standard deviation to the mean plus one standard deviation, a firm's real estate investment intensity increased from 67.28% to 115.73% of its mean; when *Industry similarity* took its mean plus one standard deviation and *Performance difference from diversified industry peers* increased from the mean minus one standard deviation to the mean plus one standard deviation, a firm's real estate investment intensity increased from 45.40% to 163.90% of its mean.

Hypotheses 3a and 3b postulate that the relationships proposed in Hypotheses 1a and 1b will be stronger when top executives are underpaid. The results of Hypotheses 3a and 3b tests are reported in Models 3 and 4 in [Table 3](#).

Model 3 shows that the coefficient estimate of the interaction between *Performance difference from diversified geographic peers* and *Top executives' negative pay deviation* was negative ($\beta = -0.021$, $p <$

Table 2. Descriptive statistics and correlations

Variables	N	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Real estate diversification level	11,580	0.02	0.10	1									
2. Performance difference from diversified geographic peers	11,580	0.13	0.20	0.08	1								
3. Performance difference from diversified industry peers	11,580	0.12	0.19	0.10	0.70	1							
4. Firm size	11,580	21.65	1.19	-0.01	0.14	0.06	1						
5. ROA	11,580	0.04	0.06	-0.06	-0.31	-0.38	0.09	1					
6. Industry growth ratio	11,580	0.21	0.16	0.03	-0.02	-0.05	-0.01	0.08	1				
7. Cash holding ratio	11,580	0.18	0.13	-0.07	-0.15	-0.12	-0.15	0.27	-0.02	1			
8. Long-term debt ratio	11,580	0.07	0.10	0.04	0.01	-0.01	0.42	-0.12	0.01	-0.30	1		
9. Fixed asset investment	11,580	0.03	0.08	-0.08	-0.08	-0.10	0.12	0.12	-0.01	-0.09	0.18	1	
10. Business diversification	11,580	0.74	0.25	-0.17	-0.02	-0.05	-0.04	0.06	-0.01	0.10	-0.05	0.06	1
11. Industry concentration	11,580	0.07	0.06	0.02	-0.05	-0.05	0.11	0.09	0.02	0.09	0.06	0.02	-0.06
12. Board independence	11,580	0.35	0.07	-0.02	0.03	0.02	0.10	0.05	-0.04	0.05	0.01	0.01	0.04
13. CEO duality	11,580	0.18	0.38	-0.03	-0.05	-0.06	-0.12	0.03	-0.04	0.11	-0.11	0.01	0.06
14. Managerial ownership	11,580	0.07	0.16	-0.09	-0.06	-0.09	-0.18	0.13	-0.11	0.27	-0.18	0.10	0.16
15. Ownership concentration	11,580	0.21	0.14	-0.05	-0.01	-0.06	0.24	0.14	0.00	0.06	0.05	0.12	0.10
16. State ownership	11,580	0.28	0.25	0.00	0.05	0.03	0.30	-0.06	0.11	-0.19	0.24	0.01	-0.06
17. Political connections	11,580	0.44	0.50	-0.01	-0.03	-0.03	0.03	0.07	-0.01	0.04	-0.04	0.04	0.00
18. Difference from historical performance	11,580	0.01	0.06	0.08	0.16	0.19	0.00	-0.19	-0.01	0.00	0.01	-0.01	-0.01
19. Ratio of diversified geographic peers	11,580	0.12	0.07	0.06	0.02	-0.01	-0.10	-0.04	0.14	-0.06	0.00	-0.05	-0.11
20. Ratio of diversified industry peers	11,580	0.12	0.10	0.16	0.07	0.12	0.01	-0.04	0.14	-0.02	0.03	-0.09	-0.12

(Continued)

Table 2. (Continued.)

Variables	N	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
21. Geographic similarity	11,560	0.87	0.12	0.05	0.12	0.11	0.29	-0.04	0.06	-0.20	0.15	-0.07	-0.10
22. Industry similarity	11,560	0.87	0.11	0.03	0.11	0.11	0.30	-0.06	0.05	-0.20	0.14	-0.08	-0.11
23. Top executives' negative pay deviation	10,439	0.03	0.70	0.02	-0.09	-0.11	0.02	0.26	0.02	0.08	-0.04	0.05	0.02
	11	12	13	14	15	16	17	18	19	20	21	22	23
11. Industry concentration	1												
12. Board independence	0.05	1											
13. CEO duality	-0.01	0.11	1										
14. Managerial ownership	0.05	0.13	0.24	1									
15. Ownership concentration	0.06	0.02	-0.03	0.05	1								
16. State ownership	0.06	-0.15	-0.27	-0.44	0.36	1							
17. Political connections	0.00	0.02	0.03	0.07	0.01	-0.15	1						
18. Difference from historical performance	0.03	0.00	0.01	0.02	0.01	0.01	-0.01	1					
19. Ratio of diversified geographic peers	-0.03	-0.17	-0.06	-0.16	-0.05	0.10	-0.03	0.01	1				
20. Ratio of diversified industry peers	0.08	-0.10	-0.11	-0.17	-0.04	0.12	-0.01	-0.03	0.19	1			
21. Geographic similarity	-0.05	-0.02	-0.13	-0.32	-0.10	0.17	-0.04	-0.04	0.11	0.11	1		
22. Industry similarity	-0.03	-0.02	-0.13	-0.34	-0.11	0.18	-0.04	-0.04	0.02	0.10	0.63	1	
23. Top executives' negative pay deviation	-0.02	-0.02	0.03	-0.03	-0.04	-0.03	0.06	-0.02	-0.00	0.01	0.02	0.03	1

Note: Absolute values of correlations greater than 0.02 significant at $p < 0.05$.

Table 3. Determinants of increased diversification investment in real estate

	Dependent variable: Real estate diversification level		
	Model 1	Model 2	Model 3
Performance difference from diversified geographic peers	0.039*** (0.011)		0.028*** (0.009)
Performance difference from diversified industry peers		0.046*** (0.013)	0.035*** (0.011)
Firm size	0.007 (0.004)	0.007* (0.004)	0.007* (0.004)
ROA	0.099*** (0.030)	0.104*** (0.031)	0.112*** (0.032)
Industry growth ratio	0.004 (0.007)	0.006 (0.007)	0.006 (0.007)
Cash holding ratio	-0.004 (0.010)	-0.003 (0.010)	-0.003 (0.010)
Long-term debt ratio	0.023 (0.018)	0.022 (0.018)	0.023 (0.018)
Fixed asset investment	-0.020** (0.008)	-0.020** (0.009)	-0.019** (0.009)
Business diversification	-0.021*** (0.008)	-0.020** (0.008)	-0.020** (0.008)
Industry concentration	0.044 (0.040)	0.049 (0.040)	0.050 (0.040)
Board independence	0.076*** (0.027)	0.074*** (0.027)	0.075*** (0.027)
CEO duality	0.006 (0.004)	0.006 (0.004)	0.006 (0.004)
Managerial ownership	0.001 (0.010)	0.002 (0.010)	0.002 (0.010)
Ownership concentration	0.077** (0.033)	0.079** (0.033)	0.079** (0.033)
State ownership	-0.028 (0.024)	-0.029 (0.024)	-0.030 (0.024)
Political connections	-0.006 (0.004)	-0.006 (0.004)	-0.006 (0.004)
Difference from historical performance	0.070*** (0.019)	0.066*** (0.018)	0.058*** (0.018)
Ratio of diversified geographic peers	-0.024 (0.028)	-0.026 (0.028)	-0.026 (0.028)
Ratio of diversified industry peers	0.032 (0.036)	0.028 (0.035)	0.025 (0.035)
Constant	-0.148* (0.087)	-0.154* (0.087)	-0.153* (0.086)

(Continued)

Table 3. (Continued.)

	Dependent variable: Real estate diversification level		
	Model 1	Model 2	Model 3
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observations	11,580	11,580	11,580
R-squared	0.675	0.675	0.676
F statistics	2.285	2.207	2.258

Notes: Standard errors clustered by firm are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Two-tailed tests.

0.05), supporting Hypothesis 3a. When *Top executives' negative pay deviation* took its mean minus one standard deviation and *Performance difference from diversified geographic peers* increased from the mean minus one standard deviation to the mean plus one standard deviation, a firm's real estate investment intensity increased from 46.81% of the mean-level intensity to 156.31% of the mean-level intensity. However, when *Top executives' negative pay deviation* took its mean plus one standard deviation and *Performance difference from diversified geographic peers* increased from the mean minus one standard deviation to the mean plus one standard deviation, a firm's real estate investment intensity increased from 70.61% to 125.67% of its mean.

As shown in Model 4, the coefficient estimate of the interaction term between *Performance difference from diversified industry peers* and *Top executives' negative pay deviation* was negative ($\beta = -0.020$, $p < 0.05$), which lends support to Hypothesis 3b. In terms of economic magnitude, when *Top executives' negative pay deviation* took its mean minus one standard deviation and *Performance difference from diversified industry peers* increased from the mean minus one standard deviation to the mean plus one standard deviation, a firm's real estate investment intensity increased from 44.29% to 151.60% of its mean; when *Top executives' negative pay deviation* took its mean plus one standard deviation and *Performance difference from diversified industry peers* increased from the mean minus one standard deviation to the mean plus one standard deviation, a firm's real estate investment intensity increased from 68.71% to 130.20% of its mean.

Hypothesis 4 suggests that real estate diversification should be positively associated with short-term financial performance. We conducted firm fixed-effects OLS regressions to test this hypothesis. We measured *Industry-adjusted OPM* at $t+1$ since time is required for firms that have increased the level of their diversification investment in real estate to become profitable. The independent variable and all of the control variables were measured at $t-1$. The results of Hypothesis 4 tests are presented in Table 5.

As shown in Model 1, the coefficient estimate of *Real estate diversification level* was positive and statistically significant with *Industry-adjusted OPM* at $t+1$ as the dependent variable ($\beta = 0.201$, $p < 0.05$), consistent with Hypothesis 4. When a firm's real estate investment intensity increases from zero to the mean plus one standard deviation, its industry-adjusted OPM increased by 64.09%.

When top executives allocate firm resources and redirect their attention to new lines of business, they tend to neglect efforts geared toward developing the firm's main business and core competencies. Hence, despite earning short-term profits from altering the level of investment in real estate business, such diversification tends to be detrimental to the profitability of the firm's main business in the long run. Given that the performance losses from the firm's main business segment will gradually outweigh the short-term performance gains from its investment in real estate, long-run accounting performance will subsequently suffer. In Model 2 and Model 3 with *Industry-adjusted OPM* at $t+2$ and *Industry-adjusted OPM* at $t+3$ as the dependent variable, respectively, the coefficient estimates of *Real estate diversification level* were not significant. In Model 4, the dependent variable was *Industry-adjusted OPM* at $t+4$, and the coefficient estimate of *Real estate diversification level* became

Table 4. Firm fixed-effects OLS regressions used to test moderating hypotheses

	Dependent variable: Real estate diversification level			
	Model 1	Model 2	Model 3	Model 4
Performance difference from diversified geographic peers × Geographic similarity	0.089** (0.045)			
Performance difference from diversified industry peers × Industry similarity		0.182*** (0.064)		
Performance difference from diversified geographic peers × Top executives' negative pay deviation			-0.021** (0.009)	
Performance difference from diversified industry peers × Top executives' negative pay deviation				-0.020** (0.010)
Performance difference from diversified geographic peers	-0.035 (0.039)		0.046*** (0.011)	
Performance difference from diversified industry peers		-0.110** (0.055)		0.052*** (0.013)
Geographic similarity	-0.003 (0.010)			
Industry similarity		-0.010 (0.012)		
Top executives' negative pay deviation			0.002 (0.002)	0.003 (0.002)
Firm size	0.007* (0.004)	0.007 (0.004)	0.010*** (0.004)	0.011*** (0.004)
ROA	0.093*** (0.030)	0.097*** (0.030)	0.087*** (0.029)	0.090*** (0.030)
Industry growth ratio	0.005 (0.007)	0.007 (0.007)	0.010 (0.007)	0.012 (0.007)
Cash holding ratio	-0.004 (0.011)	-0.003 (0.011)	-0.006 (0.011)	-0.005 (0.011)
Long-term debt ratio	0.021 (0.018)	0.021 (0.018)	0.017 (0.019)	0.016 (0.019)
Fixed asset investment	-0.020** (0.009)	-0.020** (0.009)	-0.022** (0.009)	-0.022** (0.009)
Business diversification	-0.021** (0.008)	-0.020** (0.008)	-0.018** (0.008)	-0.017** (0.008)
Industry concentration	0.050 (0.041)	0.050 (0.040)	0.033 (0.037)	0.037 (0.036)
Board independence	0.081*** (0.027)	0.080*** (0.027)	0.064** (0.027)	0.062** (0.026)
CEO duality	0.005 (0.004)	0.005 (0.004)	0.007* (0.004)	0.007* (0.004)
Managerial ownership	0.001 (0.010)	0.001 (0.010)	-0.000 (0.013)	0.003 (0.013)

(Continued)

Table 4. (Continued.)

	Dependent variable: Real estate diversification level			
	Model 1	Model 2	Model 3	Model 4
Ownership concentration	0.078** (0.033)	0.080** (0.033)	0.080** (0.035)	0.081** (0.035)
State ownership	-0.029 (0.024)	-0.029 (0.024)	-0.035 (0.025)	-0.035 (0.026)
Political connections	-0.005 (0.004)	-0.005 (0.004)	-0.005 (0.004)	-0.005 (0.004)
Difference from historical performance	0.066*** (0.018)	0.062*** (0.018)	0.057*** (0.019)	0.052*** (0.018)
Ratio of diversified geographic peers	-0.020 (0.028)	-0.022 (0.028)	-0.025 (0.029)	-0.028 (0.029)
Ratio of diversified industry peers	0.030 (0.036)	0.028 (0.035)	0.015 (0.034)	0.012 (0.034)
Constant	-0.152* (0.085)	-0.142* (0.086)	-0.219*** (0.084)	-0.226*** (0.084)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	11,560	11,560	10,439	10,439
R-squared	0.677	0.678	0.690	0.690
F statistics	2.248	2.208	2.246	2.135

Notes: Standard errors clustered by firm are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Two-tailed tests.

negative and marginally significant ($\beta = -0.136$, $p < 0.10$). In Model 5, where we employed the mean value of *Industry-adjusted OPM* at $t+3$ and $t+4$ as the dependent variable, the coefficient estimate of *Real estate diversification level* was still negative and significant ($\beta = -0.157$, $p < 0.05$). These results imply that although an increase in diversification investment in real estate is associated with an improvement in short-term financial performance, it does not promote the firm's financial performance in the long run and may even be harmful to that long-term performance.

Difference-in-Differences Analyses

Although our use of lagged independent variables and firm fixed-effects sought to mitigate bias from time-invariant firm heterogeneity, it is possible that our findings are subject to bias from reverse causality. Put differently, a firm's increased level of diversification investment in real estate could affect its performance, thereby directly influencing the performance gap between that firm and its peers. To mitigate this bias, we implemented a difference-in-differences (DID) approach to capture the effect of performance gaps more clearly after identifying control firms for each treatment firm using propensity score matching (PSM).

To this end, we defined a shock as the focal firm's performance gap with its peers that ranked in the highest 10th percentile. Because some firms experienced a shock in the form of a huge performance shortfall more than once in the study period, we focused on firms that had experienced such a shock for the first time. We then conducted PSM to identify control firms for the treatment group. Specifically, we first ran a logistic regression with all control variables in the main regression as

Table 5. Relationship between real estate diversification and firm accounting performance

	Industry-adjusted OPM (<i>t</i> +1)	Industry-adjusted OPM (<i>t</i> +2)	Industry-adjusted OPM (<i>t</i> +3)	Industry-adjusted OPM (<i>t</i> +4)	Industry-adjusted OPM (Mean of <i>t</i> +3 and <i>t</i> +4)
	Model 1	Model 2	Model 3	Model 4	Model 5
Real estate diversification level	0.201** (0.101)	0.087 (0.095)	−0.040 (0.107)	−0.136* (0.074)	−0.157** (0.068)
Firm size	−0.054*** (0.017)	−0.050*** (0.018)	−0.030* (0.018)	−0.009 (0.013)	−0.020* (0.011)
Industry growth ratio	−0.105*** (0.033)	−0.080** (0.038)	0.041 (0.027)	0.071*** (0.017)	0.060*** (0.016)
Business diversification	0.003 (0.039)	−0.063 (0.044)	−0.045 (0.033)	−0.017 (0.020)	−0.033* (0.018)
Fixed asset investment	−0.035 (0.073)	−0.092 (0.056)	0.014 (0.086)	0.004 (0.031)	−0.019 (0.025)
Industry concentration	0.012 (0.222)	0.068 (0.159)	0.201 (0.157)	−0.585*** (0.187)	−0.380** (0.157)
Board independence	0.044 (0.101)	0.074 (0.094)	0.075 (0.095)	−0.016 (0.060)	0.009 (0.052)
CEO duality	0.027 (0.024)	0.043* (0.024)	0.018 (0.034)	0.026** (0.013)	0.019* (0.012)
Managerial ownership	0.033 (0.083)	0.142 (0.111)	0.017 (0.141)	−0.059 (0.175)	−0.056 (0.116)
Ownership concentration	0.455*** (0.105)	0.217** (0.089)	0.214* (0.114)	0.079 (0.065)	0.077 (0.061)
State ownership	0.126 (0.140)	0.078 (0.118)	−0.101 (0.138)	−0.037 (0.048)	−0.086** (0.043)
Political connections	0.013 (0.015)	0.017 (0.019)	0.028 (0.018)	0.017* (0.010)	0.018* (0.010)

(Continued)

Table 5. (Continued.)

	Industry-adjusted OPM (<i>t</i> +1) Model 1	Industry-adjusted OPM (<i>t</i> +2) Model 2	Industry-adjusted OPM (<i>t</i> +3) Model 3	Industry-adjusted OPM (<i>t</i> +4) Model 4	Industry-adjusted OPM (Mean of <i>t</i> +3 and <i>t</i> +4) Model 5
Constant	1.114*** (0.351)	1.192*** (0.367)	0.741** (0.359)	0.347 (0.261)	0.584*** (0.220)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	11,940	9,872	8,323	7,198	7,198
<i>R</i> -squared	0.378	0.286	0.283	0.438	0.573
<i>F</i> statistics	15.335	19.182	11.054	18.368	22.888

Notes: Standard errors clustered by firm are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Two-tailed tests.

predictors. The dependent variable of the logistic regression received a value of '1' if a firm-year observation involved a performance gap ranking in the top 10th percentile (for the first time) and '0' otherwise. Based on the propensity score calculated from the logistic regression, we were able to identify control firms for the treatment firms. Specifically, a control firm and a treatment firm should have the smallest difference in their propensity scores for a given year. We conducted *t*-tests to determine whether the treatment firms differed from the control firms along our matching dimensions but did not find any statistically significant difference.

The post-period for treatment firms was coded as '1' for the two years after (including the year of) a firm experienced a shock (i.e., a performance gap) and '0' for the two years prior to the shock. The pre-period and post-period for control firms were the same as those for their corresponding treatment firms. Choosing a five-year window represents a trade-off between relevance and accuracy (He & Tian, 2013), in that a long window may introduce noise unrelated to the performance shortfall shock, while a narrow window could eliminate some of the possible changes resulting from the event.

Based on the matched samples, we implemented firm fixed-effects OLS regressions to examine the influence of a performance shortfall shock on the level of diversification investment in real estate (represented by the interaction between the treatment and post-period). Results from DID regressions are reported in Table 6. In Model 1, the coefficient estimate of the interaction term *Post-period of shock on performance shortfall relative to geographic peers* × *Treatment of shock on performance shortfall relative to geographic peers* was positive and significant ($\beta = 0.021$, $p < 0.01$), which was consistent with Hypothesis 1a. Model 2 shows that the coefficient estimate of the interaction term *Post-period of shock on performance shortfall relative to industry peers* × *Treatment of shock on performance shortfall relative to industry peers* was positive and significant ($\beta = 0.022$, $p < 0.01$), providing support for Hypothesis 1b.

In examining the effect of increased level of diversification investment on firm performance, it is also possible that firms with undesirable accounting performance could choose to increase their level of diversification investment in real estate. Therefore, we also conducted DID analysis after matching each treatment firm with a similar control firm using the PSM method. Similar to the DID analysis for Hypotheses 1a and 1b, we first identified a group of control non-real-estate firms that did not expand their level of diversification investment during our sample frame. Some firms increased their investment, decreased their investment, and reinvested in real estate during the study period. We focused on those firms that increased their level of diversification investment for the first time. We then conducted PSM to identify control firms for the treatment group. The post-period for treatment firms was coded as '1' for the two years after (including the year of) a firm had expanded its level of diversification investment in real estate and '0' for the two years prior to its diversification expansion. The pre-period and post-period for control firms were the same as those for their corresponding treatment firms. Based on the matched samples, we implemented firm fixed-effects OLS regressions to examine the influence of an increase in the level of diversification investment in real estate on the firm's overall performance (represented by the interaction between *treatment of diversification shock* and *post-period of diversification shock*). In untabulated results, we found that when examining the effect of an increase in the level of diversification investment in real estate on *industry-adjusted OPM*, the coefficient estimate of the interaction term *Post-period of diversification shock* × *Treatment of diversification shock* was positive and statistically significant ($\beta = 0.079$, $p < 0.05$), which was consistent with Hypothesis 4.

Supplementary Analyses

Coarsened exact matching

We also note that the choice of expanding the level of diversification in real estate could be driven by systematically different firm characteristics, instead of rectification of performance shortfalls. To mitigate this concern, we performed analyses based on coarsened exact matching (CEM). Specifically, we classified firm-year observations of positive performance shortfalls into the treatment group, while firm-year observations of negative performance shortfalls were control group members. We then

Table 6. Difference-in-differences analyses for Hypotheses 1a and 1b

	Dependent variable: Real estate diversification level	
	Model 1	Model 2
Post-period of shock on performance shortfall relative to geographic peers × Treatment of shock on performance shortfall relative to geographic peers	0.021*** (0.007)	
Post-period of shock on performance shortfall relative to industry peers × Treatment of shock on performance shortfall relative to industry peers		0.022*** (0.006)
Firm size	0.026*** (0.008)	0.023*** (0.009)
ROA	0.068 (0.055)	0.031 (0.037)
Industry growth ratio	-0.010 (0.016)	-0.014 (0.013)
Cash holding ratio	-0.008 (0.027)	-0.043** (0.019)
Long-term debt ratio	-0.027 (0.036)	0.009 (0.022)
Fixed asset investment	-0.006 (0.016)	-0.036* (0.018)
Business diversification	0.013 (0.014)	-0.005 (0.012)
Industry concentration	-0.007 (0.044)	0.005 (0.036)
Board independence	0.097** (0.047)	0.040 (0.041)
CEO duality	-0.001 (0.006)	0.012* (0.007)
Managerial ownership	0.052 (0.035)	0.031** (0.014)
Ownership concentration	0.060 (0.047)	-0.017 (0.038)
State ownership	-0.030 (0.048)	0.007 (0.042)
Political connections	-0.005 (0.008)	-0.003 (0.004)
Difference with historical performance	0.092** (0.046)	0.016 (0.031)
Ratio of diversified geographic peers	0.027 (0.041)	0.041 (0.040)
Ratio of diversified industry peers	-0.019 (0.059)	0.037 (0.040)

(Continued)

Table 6. (Continued.)

	Dependent variable: Real estate diversification level	
	Model 1	Model 2
Constant	−0.553*** (0.166)	−0.469** (0.187)
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	2,784	2,867
R-squared	0.822	0.848
F statistics	0.961	1.310

Notes: Standard errors clustered by firm are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Two-tailed tests.

conducted CEM to identify control observations for the treatment group. Factors used to implement the match procedure included *Firm size*, *ROA*, *Long-term debt ratio*, *Business diversification*, *Managerial ownership*, and *Political connections*. Incorporating the weights generated from CEM, we then reran our main regressions; the results are reported in Table 7. We found that the coefficient estimates of performance gaps with diversified geographic and industry peers were both positive and significant, implying that our main results were not affected by the incorporation of possible common factors.

Survival analyses

Given that a firm's decision to increase the level of its diversification investment in real estate is a variable that was censored at the time of observation, we also used survival analysis to examine firms' likelihood of making increased investments in real estate. As shown in Table 8, we found that the coefficient estimates of performance gaps were positive and significant. These results indicate that performance difference from diversified geographic/industry peers was positively associated with the hazard rate of a firm's increased level of diversification investment in real estate, which is mostly consistent with our main results.

Leverage ratio

Since increasing the level of diversification investment in real estate requires large capital outlays, firms engaging in this course of action must raise external capital by issuing debt or applying for credit if their retained earnings cannot cover the expense. We, therefore, examined the change in the leverage ratio after firms increased their level of diversification investment in real estate. In untabulated results, we found that the coefficient estimate of *Real estate diversification level* was positive and significant ($\beta = 0.059$, $p < 0.05$), implying that an increased level of diversification investment in real estate results in higher firm leverage.

Differentiating diversification modes

To further illustrate a firm's entry into the real estate business, we distinguished between different entry modes and reran our regressions.³ We found that entry into the real estate market through acquisitions accounted for 15.52% of all diversification firm-year observations, while internal growth was responsible for 84.48% of the observations. We constructed an *Internal growth dummy*, which equaled '1' when the firm diversified into the real estate market through internal growth initiatives and '0' otherwise. Similarly, we created the variable *Acquisition dummy*, which equaled '1' when the firm diversified through acquisitions and '0' otherwise. Table 9 shows the results of these analyses. We can deduce from Models 1 and 2 that the two types of performance gaps demonstrated significantly positive relationships with internal growth diversification. However, in terms of the determination of acquisition

Table 7. Coarsened exact matching analyses for Hypotheses 1a and 1b

	Dependent variable: Real estate diversification level	
	Model 1	Model 2
Performance difference from geographic peers	0.033* (0.018)	
Performance difference from industry peers		0.072*** (0.024)
Firm size	-0.000 (0.009)	0.012 (0.010)
ROA	0.055 (0.054)	0.133* (0.079)
Industry growth ratio	0.005 (0.013)	0.010 (0.016)
Cash holding ratio	0.005 (0.024)	-0.009 (0.023)
Long-term debt ratio	0.058 (0.046)	0.121 (0.080)
Fixed asset investment	0.002 (0.021)	0.006 (0.028)
Business diversification	-0.018 (0.024)	-0.019 (0.023)
Industry concentration	0.013 (0.061)	0.016 (0.063)
Board independence	0.043 (0.040)	0.055 (0.054)
CEO duality	0.008 (0.006)	0.012* (0.006)
Managerial ownership	-0.011 (0.023)	-0.012 (0.024)
Ownership concentration	0.040 (0.044)	0.050 (0.043)
State ownership	-0.037 (0.033)	-0.094** (0.046)
Political connections	-0.015** (0.008)	-0.016* (0.009)
Difference from historical performance	0.043 (0.040)	0.028 (0.044)
Ratio of diversified geographic peers	-0.020 (0.046)	-0.054 (0.053)
Ratio of diversified industry peers	-0.010 (0.040)	-0.033 (0.050)

(Continued)

Table 7. (Continued.)

	Dependent variable: Real estate diversification level	
	Model 1	Model 2
Constant	0.007 (0.182)	-0.216 (0.204)
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	4,086	3,806
R-squared	0.748	0.781
F statistics	0.801	0.868

Notes: Standard errors clustered by firm are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Two-tailed tests.

diversification in Models 3 and 4, the coefficient estimates of the two independent variables were both positive but not significant.

R&D investment, patent applications, and granted patents

If firms devote more resources to expanding their investment in real estate in an attempt to fix their performance shortfalls, they should have fewer resources available for R&D investment. R&D investment takes a long time to generate payoffs. Given that increased investment in real estate calls for substantial capital outlays, firms increasing their level of investment in this industry will have fewer resources left for other endeavors, including R&D. In other words, increasing the level of diversification investment in real estate can crowd out R&D investment.

To examine this prediction, we measured the dependent variable at time t and the independent variable and all of the control variables at time $t-1$. We conducted firm fixed-effects OLS regressions to test the relationship between increased level of diversification investment in real estate investment and R&D intensity (measured as the ratio of R&D expenditure to total revenues). In untabulated results, the coefficient estimate of *Real estate diversification level* was negative ($\beta = -0.006, p < 0.05$), which is consistent with our conjecture.

We also examined whether increasing the level of a firm’s diversification investment in real estate might harm a firm’s R&D output. Specifically, we used the number of patent applications and patents granted to capture firm R&D output (Acs & Audretsch, 1989). Since it takes time to transform R&D investments into patents, we measured patent applications and patents granted at time $t+2$ separately. In untabulated results, we conducted firm fixed-effects OLS regressions to examine the relationship between level of real estate diversification investment and patent applications/patents granted. To address skewness associated with patent applications and patents granted, we used the natural logarithm of each variable in these analyses. With the number of patent applications measured at $t+2$ as the dependent variable, the coefficient estimate of *Real estate diversification level* was negative and statistically significant ($\beta = -0.255, p < 0.05$). With the number of patents granted as the dependent variable, the coefficient estimate of *Real estate diversification level* was also negative and statistically significant ($\beta = -0.211, p < 0.10$, two-tailed test). We obtained similar results when we measured patent applications and patents granted at $t+3$.

Discussion

This study seeks to provide a behavioral account of why firms engage in opportunistic diversification. Consistent with our arguments, we found that firms are more likely to increase their level of diversification investment in real estate when there is a large gap between the profit margin of their main business and the average profit margin of the real estate business of their diversified geographic and

Table 8. Survival analysis

	Model 1	Model 2
Performance difference from diversified geographic peers	0.995*** (0.342)	
Performance difference from diversified industry peers		1.052** (0.509)
Firm size	0.071 (0.065)	0.080 (0.064)
ROA	-1.223 (1.108)	-1.200 (1.160)
Industry growth ratio	0.904 (1.328)	0.663 (1.326)
Cash holding ratio	-0.521 (0.539)	-0.554 (0.539)
Long-term debt ratio	1.045 (0.687)	1.035 (0.692)
Fixed asset investment	-0.853 (0.751)	-0.953 (0.757)
Business diversification	-1.255*** (0.213)	-1.254*** (0.212)
Industry concentration	2.461 (2.397)	2.225 (2.446)
Board independence	0.417 (0.861)	0.448 (0.864)
CEO duality	0.217 (0.169)	0.222 (0.169)
Managerial ownership	-1.749** (0.862)	-1.673* (0.862)
Ownership concentration	-1.602*** (0.528)	-1.595*** (0.526)
State ownership	-0.087 (0.322)	-0.082 (0.321)
Political connections	-0.056 (0.114)	-0.052 (0.114)
Difference from historical performance	-0.167 (0.964)	-0.254 (0.987)
Ratio of diversified geographic peers	-0.026 (0.708)	0.260 (0.689)
Ratio of diversified industry peers	-9.030*** (1.458)	-8.886*** (1.450)
Observations	9,855	9,855
Log likelihood	-1,109.91	-1,111.84
LR chi-squared	142.94	140.99

Notes: Standard errors clustered by firm are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Two-tailed tests.

Table 9. Determinants of different modes of diversification

	Dependent variable: Internal growth dummy		Dependent variable: Acquisition dummy	
	Model 1	Model 2	Model 3	Model 4
Performance difference from diversified geographic peers	1.483*** (0.355)		0.136 (0.544)	
Performance difference from diversified industry peers		0.885** (0.383)		0.822 (0.627)
Controls	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	2,231	2,231	1,141	1,141
Log likelihood	-895.39	-901.66	-343.35	-342.51
LR chi-squared	94.01	81.47	61.21	62.89

Notes: Standard errors clustered by firm are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Two-tailed tests. Results for control variables are not tabulated to save space.

industry peers. This effect was particularly strong when firms were similar to peer firms and when top executives were underpaid. Moreover, we found that although increasing the level of diversification investment in real estate can improve a firm’s accounting performance in the short run, it harms long-term accounting performance. These findings collectively imply that performance shortfalls can give rise to problemistic search and sow the seeds of increased corporate diversification.

This study has a number of theoretical and practical implications. First and foremost, our findings illustrate that performance shortfalls relative to their diversified peers can drive firms to engage in corporate diversification by investing in a high-profitability business segment. Scholars have provided distinct theoretical lenses to explain why firms engage in corporate diversification. Existing research suggests that corporate diversification is driven either by firms’ intentions to achieve high economic returns or by top executives’ motives to obtain private benefits (Ahuja & Novelli, 2017). While previous research has provided a behavioral account by proposing bandwagon pressures as one of the motivations behind firms’ strategic decisions (Abrahamson & Rosenkopf, 1993), little is known about how and why firms’ diversification strategies respond to social performance shortfalls. We argue that firms increase their level of diversification investment in real estate (i.e., a new business segment) because of top executives’ social comparisons with their diversified peers and problemistic search.

Importantly, we narrowed our theoretical contribution to opportunistic diversification for two reasons. First, top managers in the focal firms are more likely to assess geographic and industry peers’ enhanced diversification investments in real estate and subsequent positive financial returns as an immediate opportunity to remedy their own firm’s performance shortfalls. In short, opportunistic firms want their own ‘slice of the pie’ in this high-profitability new business segment. Second, not only does increasing diversification investment in real estate offer opportunistic firms a source of passive income, stable cash flow, tax advantages, and a hedge against inflation, but expanding diversification investment in real estate increasingly offers portfolio diversification – due to its low correlation to other assets – beyond the appealing income and yield opportunities. Thus, opportunistic diversification differs from diversification driven solely by managerial self-motives.

Diversification driven by social comparison also differs from diversification driven by mimetic isomorphism (DiMaggio & Powell, 1983; Haveman, 1993). Bandwagon learning occurs when firms adopt a new strategy that has been prevalent among peer firms, with the goal of attaining or enhancing organizational legitimacy. Yet, in our context, a firm’s decision to change its level of diversification investment in real estate can actually harm its legitimacy. Indeed, because skyrocketing housing prices can

potentially cause an economic bubble, the Chinese government has taken various measures to prevent opportunistic investment in real estate (Nunlist, 2017). An editorial in the state-run *People's Daily* newspaper warned that the real estate market was unable to generate sustainable long-term returns for firms and that investing in the real estate business might adversely affect their core competencies.

Prior research has acknowledged that firms conduct both within- and between-firm social comparisons based on performance, and noted that such comparisons can have differential influences on firms' investment decisions (Hu et al., 2017). Our findings indicate that top executives compare the performance of their main business with the performance of a high-profitability business segment, with this comparison potentially motivating the firm to increase its diversification investments in real estate (i.e., a new business segment), extending what we know about the targets of performance comparison.

Our moderating analyses provide further evidence that performance shortfalls can motivate top executives to expand the level of their firm's diversification investment in real estate. Underpaid executives will have a stronger motivation to engage in problemistic search to improve firm performance compared to overpaid top executives. This implies that problemistic search in the presence of performance shortfalls hinges on top executives' motivation, enriching our insights into the boundary conditions of problemistic search.

Relatedly, our research explores the effects of diversification driven by social comparison on overall firm performance. Although increasing its level of diversification investment in real estate might improve the firm's accounting performance in the short term, it can adversely affect its long-term accounting performance. Our findings collectively help reconcile inconclusive findings with respect to the influence of diversification on firm performance.

Our findings also extend research on managerial myopia, defined as an overly keen focus on the firm's short-term results (Laverty, 1996, 2004). Whether it stems from flawed management practice (Laverty, 1996) or pressures from investors and financial analysts, managerial myopia encourages top executives to devote their attention and firm's resources to investment projects that can generate immediate financial returns. Our study implies that managerial myopia could interact with social comparison with peers who are associated with high-profitability business segments to stimulate an increase in the level of diversification investment in real estate. While expanded investment in real estate due to such interaction effects might boost the firm's short-term accounting performance, this practice is scorned by investors who prefer firms to have a focused strategy and sustained competitive advantage.

In addition to its theoretical implications, our study has important practical implications. First, our findings indicate that top executives choose to address short-term performance shortfalls at the expense of core competency development. As managers consistently respond to and learn from short-term performance feedback to determine whether the current strategies and practices are effective in the absence of long-term planning (Cyert & March, 1963), this calls for top executives to allocate more attention and resources to long-run competitiveness to find 'best' solutions instead of 'satisfactory' ones. Second, our findings may be of interest to policymakers. Innovation is crucial to a nation's long-term competitiveness, and R&D investments by firms are an indispensable component of innovation. Our supplementary results suggest that elevated levels of diversification investment in real estate divert firm resources away from R&D investment, which could reduce a nation's competitiveness in the long run.

Our study is not without a number of limitations that can provide avenues for future research. First, although we argue that social comparison can motivate executives to expand their firms' diversification investments in real estate, we did not directly measure executives' comparison processes. Future research could conduct in-depth case analyses to gain a deeper insight into how the focal firm's performance relative to peer firms' financial returns from real estate investments affects top executives' willingness to increase the level of their own firm's diversification investments in real estate.

Second, we tested our arguments based on a sample of Chinese firms. Although increasing the level of diversification investment in real estate provides an ideal setting to investigate diversification into a high-profitability industry, China has a unique institutional environment, making our findings less

generalizable to other countries. Future research could use empirical settings from other countries to investigate the drivers and consequences of diversification into high-profitability industries and business segments.

Third, other contingency factors may affect firms' increased level of diversification investment in real estate. For instance, future research could explore how governance actors influence firms' diversification investments in real estate. On the one hand, monitoring from internal and external governance actors can prevent managers from engaging in increased diversification investment in real estate driven by performance shortfalls (Walsh & Seward, 1990). On the other hand, pressure from governance actors (e.g., financial analysts) can motivate firms to increase their diversification investment in real estate as a means to improve the firm's short-term performance (Shi et al., 2017; Shi & Hoskisson, 2021). Future research could reconcile these opposing perspectives by uncovering how governance actors influence firms' diversification decisions and, more specifically, why actors choose to increase their level of diversification investment in the real estate industry over other profitable business segments.

Notes

1. Unless specified, the term 'firms' in this study refers to non-real-estate firms.
2. We focused on top executives' total compensation instead of CEO compensation for two reasons. First, diversification decisions can be outcomes of interactions among top executives. Second, publicly traded firms in China were not required to disclose CEO compensation until 2005.
3. The data for entry modes were obtained from the CSMAR database. Specifically, we collected all M&A activities where our sample firms acted as merger partners from the Mergers and Acquisitions Database. We extracted deals where acquirers were non-real estate firms and targets were associated with real estate business, and classified them as acquisitions in our model. The rest of the diversification observations were classified as internal growth in our model.

Data Availability Statement. The data and codes that support the findings of this article are openly available in the Open Science Framework at <https://osf.io/a2ueh/>

Financial Support. This study was supported by the National Natural Science Foundation of China (No. 72002034) and the Fundamental Research Funds for the Central Universities in UIBE (No. CXTD12-03).

References

- Abrahamson, E., & Rosenkopf, L. 1993. Institutional and competitive bandwagons: Using mathematical modeling as a tool to explore innovation diffusion. *Academy of Management Review*, **18**(3): 487–517.
- Acs, Z. J., & Audretsch, D. B. 1989. Patents innovative activity. *Eastern Economic Journal*, **15**(4): 373–376.
- Adams, J. S. 1963. Toward an understanding of inequity. *Journal of Abnormal Psychology*, **67**(5): 422–436.
- Ahuja, G., & Novelli, E. 2017. Redirecting research efforts on the diversification–performance linkage: The search for synergy. *Academy of Management Annals*, **11**(1): 342–390.
- Amihud, Y., & Lev, B. 1999. Does corporate ownership structure affect its strategy towards diversification? *Strategic Management Journal*, **20**(11): 1063–1069.
- Amit, R., & Livnat, J. 1988. Diversification strategies, business cycles and economic performance. *Strategic Management Journal*, **9**(2): 99–110.
- Audia, P. G., & Greve, H. R. 2006. Less likely to fail: Low performance, firm size, and factory expansion in the shipbuilding industry. *Management Science*, **52**(1): 83–94.
- Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, **17**(1): 99–120.
- Baum, J. A. C., Rowley, T. J., Shipilov, A. V., & Chuang, Y. T. 2005. Dancing with strangers: Aspiration performance and the search for underwriting syndicate partners. *Administrative Science Quarterly*, **50**(4): 536–575.
- Bromiley, P. 2004. *The behavioral foundations of strategic management*. Oxford, UK: Blackwell.
- Caves, R. E. 1981. Diversification and seller concentration: Evidence from changes, 1963–72. *The Review of Economics and Statistics*, **63**(2): 289–293.
- Chakrabarti, A., Singh, K., & Mahmood, I. 2007. Diversification and performance: Evidence from East Asian firms. *Strategic Management Journal*, **28**(2): 101–120.
- Chatterjee, S., & Wernerfelt, B. 1988. Related or unrelated diversification: A resource based approach. *Proceedings of the Academy of Management*, **1988**(1): 7–11.
- Chen, W. R., & Miller, K. D. 2007. Situational and institutional determinants of firms' R&D search intensity. *Strategic Management Journal*, **28**(4): 369–381.
- Chen, X., Cheng, Q., Lo, A. K., & Wang, X. 2015. CEO contractual protection and managerial short-termism. *The Accounting Review*, **90**(5): 1871–1906.

- Chen, Y. Y., Rhee, S. G., Veeraraghavan, M., & Zolotoy, L. 2015. Stock liquidity and managerial short-termism. *Journal of Banking & Finance*, **60**: 44–59.
- Chivakul, M., Lam, M. R. W., Liu, X., Maliszewski, W., & Schipke, M. A. 2015. *Understanding residential real estate in China*. Washington, DC: International Monetary Fund.
- Connolly, B. L., Li, Q. J., Shi, W., & Lee, K. 2020. CEO dismissal: Consequences for the strategic risk taking of competitor CEOs. *Strategic Management Journal*, **41**(11): 2092–2125.
- Conyon, M. J., & He, L. R. 2011. Executive compensation and corporate governance in China. *Journal of Corporate Finance*, **17**(4): 1158–1175.
- Cyert, R., & March, J. 1963. *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice Hall.
- Dalton, D. R., Hitt, M. A., Certo, S. T., & Dalton, C. M. 2007. The fundamental agency problem and its mitigation: Independence, equity, and the market for corporate control. *Academy of Management Annals*, **1**(1): 1–64.
- Deng, Y., & Liu, P. 2009. Mortgage prepayment and default behavior with embedded forward contract risks in China's housing market. *Journal of Real Estate Finance and Economics*, **38**(3): 214–240.
- Desai, V. M. 2008. Constrained growth: How experience, legitimacy, and age influence risk taking in organizations. *Organization Science*, **19**(4): 594–608.
- Desai, V. M. 2016. The behavioral theory of the (governed) firm: Corporate board influences on organizations' responses to performance shortfalls. *Academy of Management Journal*, **59**(3): 860–879.
- DiMaggio, P. J., & Powell, W. W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, **48**: 147–160.
- Donaldson, L. 2000. Organizational portfolio theory: Performance driven organizational change. *Contemporary Economic Policy*, **18**(4): 386–396.
- Dräger, C., & Zhang, Y. 2013. Is there a bubble in the Chinese housing market? *Urban Policy and Research*, **31**(1): 27–39.
- The Economist (London)*. 2015. Coming down to earth; China's economy. 415(8934).
- Edwards, C. D. 1955. Conglomerate bigness as a source of power. In G. J. Stigler (Ed.), *Business concentration and price policy*. Princeton, NJ: Princeton University Press.
- Fairfield, P. M., & Yohn, T. L. 2001. Using asset turnover and profit margin to forecast changes in profitability. *Review of Accounting Studies*, **6**: 371–385.
- Festinger, L. 1954. A theory of social comparison processes. *Human Relations*, **7**(2): 117–140.
- Fiegenbaum, A., Hart, S., & Schendel, D. 1996. Strategic reference point theory. *Strategic Management Journal*, **17**(3): 219–235.
- Fiol, C. M., & O'Connor, E. J. 2003. Waking up! Mindfulness in the face of bandwagons. *Academy of Management Review*, **28**(1): 54–70.
- Fredrickson, J. W., Davis-Blake, A., & Sanders, W. M. G. 2010. Sharing the wealth: Social comparisons and pay dispersion in the CEO's top team. *Strategic Management Journal*, **31**(10): 1031–1053.
- Gaba, V., & Joseph, J. 2013. Corporate structure and performance feedback: Aspirations and adaptation in M-form firms. *Organization Science*, **24**(4): 1102–1119.
- Gavetti, G., Greve, H. R., Levinthal, D. A., & Ocasio, W. 2012. The behavioral theory of the firm: Assessment and prospects. *Academy of Management Annals*, **6**(1): 1–40.
- Giachetti, C., & Lampel, J. 2010. Keeping both eyes on the competition: Strategic adjustment to multiple targets in the UK mobile phone industry. *Strategic Organization*, **8**(4): 347–376.
- Gigler, F., Kanodia, C., Sapra, H., & Venugopalan, R. 2014. How frequent financial reporting can cause managerial short-termism: An analysis of the costs and benefits of increasing reporting frequency. *Journal of Accounting Research*, **52**(2): 357–387.
- Gonzalez, A., & André, P. 2014. Board effectiveness and short termism. *Journal of Business Finance & Accounting*, **41**(1 and 2): 185–209.
- Grant, R. M., Jammine, A. P., & Thomas, H. 1988. Diversity, diversification, and profitability among British manufacturing companies. *Academy of Management Journal*, **31**(4): 771–801.
- Greve, H. R. 1998. Performance, aspirations, and risky organizational change. *Administrative Science Quarterly*, **43**(1): 58–86.
- Greve, H. R. 2003. A behavioral theory of R&D expenditures and innovations: Evidence from shipbuilding. *Academy of Management Journal*, **46**(6): 685–702.
- Greve, H. R. 2008. A behavioral theory of firm growth: Sequential attention to size and performance goals. *Academy of Management Journal*, **51**(3): 476–494.
- Greve, H. R. 2011. Positional rigidity: Low performance and resource acquisition in large and small firms. *Strategic Management Journal*, **32**(1): 103–114.
- Greve, H. R., & Zhang, C. M. 2017. Institutional logics and power sources: Merger and acquisition decisions. *Academy of Management Journal*, **60**(2): 671–694.
- Haleblian, J. J., Kim, J. Y., & Rajagopalan, N. 2006. The influence of acquisition experience and performance on acquisition behavior: Evidence from the US commercial banking industry. *Academy of Management Journal*, **49**(2): 357–370.
- Harris, J., & Bromiley, P. 2007. Incentives to cheat: The influence of executive compensation and firm performance on financial misrepresentation. *Organization Science*, **18**(3): 350–367.
- Harrison, J. S., Hall, E. H., & Nargundkar, R. 1993. Resource allocation as an outcropping of strategic consistency: Performance implications. *Academy of Management Journal*, **36**(5): 1026–1051.

- Hart, O., Tirole, J., Carlton, D. W., & Williamson, O. E. 1990. Vertical integration and market foreclosure. Brookings papers on economic activity. *Microeconomics*, 1990: 205–286.
- Haveman, H. A. 1993. Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative Science Quarterly*, 38(4): 593–627.
- He, J., & Tian, X. 2013. The dark side of analyst coverage: The case of innovation. *Journal of Financial Economics*, 109(3): 856–878.
- Henderson, A. D., & Fredrickson, J. W. 2001. Top management team coordination needs and the CEO pay gap: A competitive test of economic and behavioral views. *Academy of Management Journal*, 44(1): 96–117.
- Hoberg, G., & Phillips, G. 2010. Product market synergies and competition in mergers and acquisitions: A text-based analysis. *Review of Financial Studies*, 23(10): 3773–3811.
- Hoberg, G., & Phillips, G. 2016. Text-based network industries and endogenous product differentiation. *Journal of Political Economy*, 124(5): 1423–1465.
- Hoskisson, R. E., & Hitt, M. A. 1990. Antecedents and performance outcomes of diversification: A review and critique of theoretical perspectives. *Journal of Management*, 16(2): 461–509.
- Hu, S., He, Z. L., Blettner, D. P., & Bettis, R. A. 2017. Conflict inside and outside: Social comparisons and attention shifts in multidivisional firms. *Strategic Management Journal*, 38(7): 1435–1454.
- Hui, K. N.-C., Gong, Y. Y., Cui, Q., & Jiang, N. P. 2022. Foreign investment or divestment as a near-term solution to performance shortfalls? The moderating role of vicarious learning. *Asia Pacific Journal of Management*, 39(4): 1481–1509.
- Iyer, D. N., & Miller, K. D. 2008. Performance feedback, slack, and the timing of acquisitions. *Academy of Management Journal*, 51(4): 808–822.
- Jensen, M. C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76(2): 323–329.
- Jensen, M. C., & Murphy, K. J. 1990. Performance pay and top-management incentives. *Journal of Political Economy*, 98(2): 225–264.
- Ji, S. S., Mauer, D. C., & Zhang, Y. L. 2020. Managerial entrenchment and capital structure: The effect of diversification. *Journal of Corporate Finance*, 65: 101505.
- Jiang, F., Jiang, Z., Huang, J., Kim, K. A., & Nofsinger, J. R. 2017. Bank competition and leverage adjustments. *Financial Management*, 46(4): 995–1022.
- Jones, G. R., & Hill, C. W. 1988. Transaction cost analysis of strategy–structure choice. *Strategic Management Journal*, 9(2): 159–172.
- Jung, J. C., & Bansal, P. 2009. How firm performance affects internationalization. *Management International Review*, 49(6): 709–732.
- Kim, J.-Y., Finkelstein, S., & Halebian, J. 2015. All aspirations are not created equal: The differential effects of historical and social aspirations on acquisition behavior. *Academy of Management Journal*, 58(5): 1361–1388.
- Kock, C., & Guillen, M. F. 2001. Strategy and structure in developing countries: Business groups as an evolutionary response to opportunities for unrelated diversification. *Industrial and Corporate Change*, 10(1): 77–113.
- Kulik, C. T., & Ambrose, M. L. 1992. Personal and situational determinants of referent choice. *Academy of Management Review*, 17(2): 212–237.
- Laverty, K. J. 1996. Economic ‘short-termism’: The debate, the unresolved issues, and the implications for management practice and research. *Academy of Management Review*, 21(3): 825–860.
- Laverty, K. J. 2004. Managerial myopia or systemic short-termism? The importance of managerial systems in valuing the long term. *Management Decision*, 42(7/8): 949–962.
- Levinthal, D. A., & Wu, B. 2010. Opportunity costs and non-scale free capabilities: profit maximization, corporate scope, and profit margins. *Strategic Management Journal*, 31(7): 780–801.
- Li, J., Shi, W., Connelly, B. L., Yi, X., & Qin, X. 2022. CEO awards and financial misconduct. *Journal of Management*, 48(2): 380–409.
- Li, J. T., & Tang, Y. 2010. CEO hubris and firm risk taking in China: The moderating role of managerial discretion. *Academy of Management Journal*, 53(1): 45–68.
- Lu, C. 2010. Evaluation of the bubble in the Chinese real estate market. *Economic Research*, (6): 28–41.
- Luttmer, E. F. P. 2005. Neighbors as negatives: Relative earnings and well-being. *Quarterly Journal of Economics*, 120(3): 963–1002.
- Mackey, T. B., & Barney, J. B. 2013. Incorporating opportunity costs in strategic management research: The value of diversification and payout as opportunities forgone when reinvesting in the firm. *Strategic Organization*, 11(4): 347–363.
- March, J. G., & Simon, H. A. 1958. *Organizations*. New York, NY: Wiley.
- Marginson, D., & Mcaulay, L. 2008. Exploring the debate on short-termism: A theoretical and empirical analysis. *Strategic Management Journal*, 29(3): 273–292.
- Markides, C. C. 1992. Consequence of corporate refocusing: Ex-ante evidence. *Academy of Management Journal*, 35(2): 398–412.
- Markides, C. C., & Williamson, P. J. 1994. Related diversification, core competences and corporate performance. *Strategic Management Journal*, 15(S2): 149–165.
- Masters, J. C., & Keil, L. J. 1987. Generic comparison processes in human judgment and behavior. In J. C. Masters & W. P. Smith (Eds.), *Social comparison, social justice, and relative deprivation: Theoretical, empirical, and policy perspectives*: 11–54. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- McDonald, M. L., & Westphal, J. D. 2003. Getting by with the advice of their friends: CEOs’ advice networks and firms’ strategic responses to poor performance. *Administrative Science Quarterly*, 48(1): 1–32.

- McNamara, G. M., Haleblan, J. J., & Dykes, B. J. 2008. The performance implications of participating in an acquisition wave: Early mover advantages, bandwagon effects, and the moderating influence of industry characteristics and acquirer tactics. *Academy of Management Journal*, **51**(1): 113–130.
- Miller, R. A. 1973. Concentration and marginal concentration, advertising, and diversity: Three issues in structure-performance tests. *Industrial Organization Review*, **1**: 15–24.
- Mitchell, T. R., & Mickel, A. E. 1999. The meaning of money: An individual-difference perspective. *Academy of Management Review*, **24**(3): 568–578.
- Moliterno, T. P., Beck, N., Beckman, C. M., & Meyer, M. 2014. Knowing your place: Social performance feedback in good times and bad times. *Organization Science*, **25**(6): 1684–1702.
- Montgomery, C. A., & Wernerfelt, B. 1988. Diversification, Ricardian rents, and Tobin's q. *Rand Journal of Economics*, **19**(4): 623–632.
- Murphy, K. J. 1999. Executive compensation. In O. Ashenfelter & D. Card (Eds.), *Handbook of labor economics*: 2485–2563. Amsterdam, Netherlands: Elsevier/North-Holland.
- Nunlist, T. 2017. *China's housing market: The iron bubble*. Beijing: CKGSB Knowledge.
- Ocasio, W. 1997. Towards an attention-based view of the firm. *Strategic Management Journal*, **18**(S1): 187–206.
- Ocasio, W., & Joseph, J. 2017. The attention-based view of great strategies. *Strategy Science*, **3**(1): 289–294.
- Ocasio, W., Rhee, L., & Milner, D. 2020. Attention, knowledge, and organizational learning. In L. Argote & J. M. Levine (Eds.), *The Oxford handbook of group and organizational learning*: 81–94. Oxford, UK: Oxford University Press.
- O'Reilly, C. A., Main, B. G., & Crystal, G. S. 1988. CEO compensation as tournament and social comparison: A tale of two theories. *Administrative Science Quarterly*, **33**(2): 257–274.
- Palich, L. E., Cardinal, L. B., & Miller, C. C. 2000. Curvilinearity in the diversification–performance linkage: An examination of over three decades of research. *Strategic Management Journal*, **21**(2): 155–174.
- Park, K. M. 2007. Antecedents of convergence and divergence in strategic positioning: The effects of performance and aspiration on the direction of strategic change. *Organization Science*, **18**(3): 386–402.
- Penrose, E. T. 1959. *The theory of the growth of the firm*. Oxford, UK: Oxford University Press.
- Persky, J., & Tam, M. Y. 1990. Local status and national social-welfare. *Journal of Regional Science*, **30**(2): 229–238.
- Rumelt, R. P., Schendel, D. E., & Teece, D. J. 1994. *Fundamental issues in strategy*. Boston, MA: Harvard Business School Press.
- Schuler, D. A., Shi, W., Hoskisson, R. E., & Chen, T. 2017. Windfalls of emperors' sojourns: Stock market reactions to Chinese firms hosting high-ranking government officials. *Strategic Management Journal*, **38**(8): 1668–1687.
- Schwab, A., & Miner, A. S. 2008. Learning in hybrid-project systems: The effects of project performance on repeated collaboration. *Academy of Management Journal*, **51**(6): 1117–1149.
- Seo, J., Gamache, D. L., Devers, C. E., & Carpenter, M. A. 2015. The role of CEO relative standing in acquisition behavior and CEO pay. *Strategic Management Journal*, **36**(12): 1877–1894.
- Shi, W., & Hoskisson, R. 2021. *Understanding and managing strategic governance*. Hoboken, NJ: Wiley.
- Shi, W., Chen, G., & Li, B. 2022. Problem solving or responsibility avoidance? The role of CEO internal attribution tendency in shaping corporate downsizing in response to performance shortfalls. *Journal of Management Studies*, **60**(5): 1273–1301. <https://doi.org/10.1111/joms.12896>
- Shi, W., Connelly, B. L., & Hoskisson, R. E. 2017. External corporate governance and financial fraud: Cognitive evaluation theory insights on agency theory prescriptions. *Strategic Management Journal*, **38**(6): 1268–1286.
- Shi, W., Connelly, B. L., & Li, J. 2022. Excess control rights in family firms: A socioemotional wealth perspective. *Corporate Governance: An International Review*, **30**(6): 806–828.
- Shi, W., Zhang, Y., & Hoskisson, R. 2017. Ripple effects of CEO awards: Investigating the acquisition activities of superstar CEOs' competitors. *Strategic Management Journal*, **38**(10): 2080–2102.
- Shipilov, A. V., Li, S. X., & Greve, H. R. 2011. The prince and the pauper: Search and brokerage in the initiation of status-heterophilous ties. *Organization Science*, **22**(6): 1418–1434.
- Shleifer, A., & Vishny, R. W. 1989. Management entrenchment: The case of manager-specific investments. *Journal of Financial Economics*, **25**(1): 123–139.
- Stickney, C., & Brown, P. 1999. *Financial reporting and statement analysis*, 4th ed. New York, NY: Harcourt, Brace.
- Suls, J., & Wheeler, L. 2012. Social comparison theory. In P. A. M. V. Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology*: 460–482. Los Angeles, CA: Sage.
- Teece, D. J. 1982. Towards an economic theory of the multiproduct firm. *Journal of Economic Behavior & Organization*, **3**(1): 39–63.
- Tyler, B. B., & Caner, T. 2016. New product introductions below aspirations, slack and R&D alliances: A behavioral perspective. *Strategic Management Journal*, **37**(5): 896–910.
- Varas, F. 2014. Managerial short-termism, turnover policy, and the dynamics of incentives. *The Review of Financial Studies*, **31**(9): 3409–3451.
- Vissa, B., Greve, H. R., & Chen, W.-R. 2010. Business group affiliation and firm search behavior in India: Responsiveness and focus of attention. *Organization Science*, **21**(3): 696–712.
- Walsh, J. P., & Seward, J. K. 1990. On the efficiency of internal and external corporate control mechanisms. *Academy of Management Review*, **15**(3): 421–458.
- Wan, C., & Hoskisson, R. E. 2003. Home country environments, corporate diversification strategies, and firm performance. *Academy of Management Journal*, **46**(1): 27–45.

- Washburn, M., & Bromiley, P.** 2012. Comparing aspiration models: The role of selective attention. *Journal of Management Studies*, 49(5): 896–917.
- Wassmer, U., Li, S., & Madhok, A.** 2017. Resource ambidexterity through alliance portfolios and firm performance. *Strategic Management Journal*, 38(2): 384–394.
- Wernerfelt, B.** 1984. A resource-based view of the firm. *Strategic Management Journal*, 5(2): 171–180.
- Zatzick, C. D., Moliterno, T. P., & Fang, T.** 2012. Strategic (mis)fit: The implementation of TQM in manufacturing organizations. *Strategic Management Journal*, 33(11): 1321–1330.
- Zhang, Y., & Rajagopalan, N.** 2003. Explaining new CEO origin: Firm versus industry antecedents. *Academy of Management Journal*, 46(3): 327–338.
- Zhi, T., Li, Z., Jiang, Z., Wei, L., & Sornette, D.** 2019. Is there a housing bubble in China? *Emerging Markets Review*, 39: 120–132.

Wei Shi (wshi@bus.miami.edu) is a Professor of Management and Cesarano Faculty Scholar at Miami Herbert Business School, University of Miami. His primary research interest focuses on the influence of corporate governance actors and upper echelons on strategic decisions. He coauthored the book entitled ‘*Understand and managing strategic governance*’.

Wenjing Cai (wenjingcai@uibe.edu.cn) is an Assistant Professor of financial management at Business School, University of International Business and Economics. She received her PhD from Renmin University of China. Her research interests include strategic management, corporate finance, and corporate governance.

Dennis Wajda ([dwajda@coastal.edu](mailto:d wajda@coastal.edu)) is an Assistant Professor of management at the Wall College of Business, Coastal Carolina University. A twenty-year navy veteran, his research interests lie at the intersection of global strategy, strategic leadership, and corporate governance with an emphasis on the role of the national legal and policy environments on firms’ strategic decision-making processes. He has published in the *Journal of Management*.

Fuxiu Jiang (jiangfuxiu@rmbs.ruc.edu.cn) is a Professor of Finance at School of Business, Renmin University of China. His research areas include corporate finance and corporate governance in China. He has published in *The Review of Financial Studies*, *Review of Finance*, *Journal of Corporate Finance*, *Journal of Banking and Finance*, and *Financial Management*.