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**Three Essays on the Consequences of Migrant Top
Management Team: Evidence from China**

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2025

**Three Essays on the Consequences of Migrant Top
Management Team: Evidence from China**

**A thesis presented in partial fulfilment of the
requirements for the Degree of**

**Doctor of Philosophy
in
Accountancy**

**at Massey University
Auckland, New Zealand**

**Ying Liu
2025**

ABSTRACT

This research investigates the consequences of migrant top management teams (TMT) using data of Chinese A-share listed firms. While the macroeconomics literature documents migration as a driving force in boosting a country's economy, the understanding on how migration shapes corporate outcomes is still limited. Understanding the corporate outcomes of migrant TMT provides insights into how human capital movement shapes corporate governance and decision-making. This has important implications for firms to develop a more effective corporate governance system and for policymakers to strengthen formal institutions. This study is structured into three essays: (i) the association between migrant TMT and corporate innovation; (ii) the association between migrant TMT and insider trading profitability; (iii) the association between migrant CEO and audit fees.

Essay One explores the association between migrant TMT defined as TMT comprised of one or more migrant managers and corporate innovation. Using hand-collected data for a sample of Chinese A-share listed firms spanning the period 2008-2020, I find a positive and significant association between a migrant TMT and corporate innovation including green innovation. My results remain robust to a set of endogeneity tests, including firm-fixed effects regression, entropy-balanced regression, and instrument variable regression. I then show that real earnings management and risk-taking are the channels through which the positive relationship between migrant TMTs and corporate innovation manifests itself: migrant TMTs engage less in real earnings management and are more likely to take risks. Finally, I find that the positive relationship between migrant TMTs and corporate innovation is more pronounced in state-owned firms, and remains significant in both high- and low-cultural diversity regions, suggesting that the observed effect is not primarily driven by cultural adaptability, but reflects a robust migration-driven mechanism. My findings contribute to the literature by providing novel evidence on how a migrant TMT affects corporate decision-making.

In Essay Two, I examine the association between migrant TMT and insider trading profitability. Using a large sample of Chinese insider trading activities, I find that migrant TMT members earn significantly higher abnormal returns than non-migrant TMT members when they purchase their own firms' shares. These migrant managers are more likely to exploit their private information related to future successful innovation. This positive association between migrant top managers and trading profitability weakens when migrant managers develop local social capital with local officials or possess legal experience. My findings suggest that migrant

TMT members are more likely to exploit private information when making insider trades. These findings contribute to the literature by providing evidence on how migration shapes managerial decision-making in the context of insider trading.

Finally, in Essay Three, I examine the association between migrant CEOs and audit fees. Using a sample of Chinese A-share listed firms spanning the period 2008-2020, I find that compared to other firms, firms with migrant CEOs tend to pay higher audit fees than any other clients but do not report longer audit report lag. This relationship is robust to controlling for various fixed effects, entropy balance matching, instrumental variables regression, and difference-in-difference analysis. I further find migrant CEOs, tend to demand high-quality auditing because of their innovative activities and thus pay higher audit fees. Cross-sectional tests show that the fee premium is diminished in firms with gender-diverse audit committees, and firms audited by longer-tenure auditors. My research sheds light on how management operating styles associated with migrant CEOs' characteristics linked to audit fees.

Key Words: Migrant, Top management team, Corporate innovation, Insider trading, Audit fees, China

ACKNOWLEDGEMENT

Pursuing a PhD has always been a big dream of mine. From studying accountancy since my undergraduate, all the way through my master's and doctoral studies, I am proud of myself for staying on this long but rewarding journey. Even before I could properly start my PhD, the sudden onset of COVID-19 disrupted everything, which felt like a poor start. However, despite the challenging beginning and the uncertainties that followed, these past four years have been incredibly rewarding, shaped by support and encouragement of those around me. With their help, each challenge became an important part of my growth. I learned to adapt, navigate the ups and downs, and find motivation in those rewarding moments of discovery. Now, as I am about to complete this amazing journey, I am deeply grateful to those who inspired, guided, and supported me throughout my doctoral studies. Without them, I would not be able to complete this thesis and my PhD study.

This thesis would not have been possible without the guidance of my main supervisor, Prof. Ahsan Habib. I am deeply grateful for his support and have truly enjoyed working with him, as his guidance ensures that everything is well-structured and organised. As the scholar I respect the most, he has consistently pointed me in the right direction whenever I faced challenges in my research, helping me navigate obstacles and find effective solutions. Looking back to the early days of my PhD journey, I struggled with reading and academic writing in English. With his guidance, I have gradually developed my skills, and although I am still in the process of learning, I have gained a much stronger foundation in academic writing and research. Beyond research, he always takes time to chat with me about my recent lives and check on my mental health. He genuinely cares about how I am doing as people, not just as a student or researcher. These conversations and his support have meant as much to me as his academic guidance throughout this journey. I would like to express my sincere gratitude to Professor Habib for providing me with so many opportunities and for his invaluable support.

I would like to express my sincere gratitude to my co-supervisor, Dr. Hedy Huang, who has provided great support and guidance throughout my doctoral journey. Whenever I faced challenges in writing my thesis, she patiently worked through each section with me, offering invaluable constructive feedback and suggestions. In addition to her academic guidance, she has been a constant source of encouragement and support in various non-academic aspects, for which I am profoundly grateful. I deeply admire her attitude towards life and the positive energy she brings. During moments of stress, she has generously dedicated her time to listening and offering reassurance. Her presence has brought warmth and balance to my PhD experience,

easing the pressures of academic life and making this journey more enriching. I feel incredibly fortunate to have both of my supervisors by my side. My deepest thanks go to them for their support, patience, and encouragement over the past three years.

I am also deeply grateful to my parents for providing me unlimited support, both financially and mentally, which has been instrumental throughout my studies. They always encourage me to pursue my dreams and respect for every decision I have made. When I chose to study a PhD, they wholeheartedly supported my dream. When I decided to study in New Zealand, the farthest I have ever been from home, they stood by my choice without hesitation. Despite this physical distance, their love and support have never felt far away. They continue to care for my well-being and health, even from afar, reminding me that no matter how far I go, I am never alone.

I would also like to thank my friends in New Zealand and my wonderful roommates, who have made this journey truly unforgettable. Because of them, my PhD experience was not just about academics but also filled with joy and meaningful connections. Together, I explored New Zealand's breathtaking landscapes during holidays. The laughter, shared meals added so much colour to my life. I am especially grateful to my roommate who generously drove me to the supermarket very week. Their kindness and support made daily life easier and reminded me of the warmth of friendship, even far from home.

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CHAPTER ONE - INTRODUCTION

1.1 Overview of the Three Essays

This thesis examines three essays on the consequences of migrant top management team in the context of China. Specifically, in Essay One and Essay Two, I examine the decision-making behaviour of top managers. Essay One adopts a team-level perspective, focusing on the relationship between migrant TMT and corporate innovation in China during the period from 2008 to 2020. Specifically, this study investigates whether firms with a higher proportion of migrant managers in their TMT achieve superior innovation outcomes compared to those predominantly led by local managers. While existing literature primarily explores the impact of individual executives, such as CEOs on corporate decision-making (see, for example, the comprehensive review by Shen (2021), relatively little attention has been given to the team-level effects, leaving a critical research gap. As members of the TMT, migrant managers collaborate with other top managers in shaping corporate strategy and operational decisions, potentially exerting a systematic influence on corporate innovation. Second, the reason why I focus on corporate innovation is that migrant managers are often characterised by a higher level of innovative personality. Thus, investigating whether the proportion of migrant managers within the TMT facilitates the generation of new ideas and long-term investments, ultimately fostering corporate innovation, holds significant research value. As mentioned earlier, the risk-taking preference of migrant managers may translate into riskier corporate decisions. However, when considering the team dynamics within the TMT, the relationship between migrant TMT and corporate innovation remains an open empirical question.

On one hand, migrant TMTs can facilitate corporate innovation. Drawing on upper echelons theory, I argue that TMTs with more migrant managers, who tend to be open to new ideas and are prone to risk-taking, are likely to be more innovative. These characteristics enable them to evaluate strategic choices from multiple perspectives and invest more in innovative activities (Cox et al., 1991; Sunder et al., 2017). Such a conducive environment promotes constructive debates and careful consideration of team decisions, reducing groupthink and enabling quick corrective actions based on past experiences (West and Anderson, 1996). Moreover, migrant TMTs' active involvement in decision-making helps ensure critical evaluation of team members' work, reducing myopic behaviour and fostering a long-term strategic orientation (Zhang, 2019), thereby enhancing innovation outcomes.

On the other hand, some may argue that migrant TMT may impede corporate innovation because of the outgroup status of migrant managers. In China, hometown origin is a fundamental basis for social network formation (Xu et al., 2021). Migrant managers, viewed as outsiders by local managers, may experience a reduced sense of belonging (Du et al., 2018; Wang and Fan, 2012), limiting their ability to foster constructive debates. This isolation can weaken TMT monitoring effectiveness (Zhang, 2019) and lead to myopic decision-making (Huang et al., 2022), ultimately hampering innovation performance.

The results show that firms with a larger proportion of migrant managers in the TMT have greater innovation outputs in terms of patent applications, patent grants, and patent citations. Further, the mediation effect shows that the positive association between migrant TMT and corporate innovation is driven by their longer time horizon and greater risk tolerance. The cross-sectional analysis indicates that the positive relationship between migrant TMTs and corporate innovation is more pronounced in state-owned firms, and remains significant in both high- and low-cultural diversity regions, suggesting that the observed effect is not primarily driven by cultural adaptability, but reflects a robust migration-driven mechanism. Finally, I find that firms with migrant TMT invest more in R&D and green innovation.

To further investigate how migrant TMT members make decisions differently from their local peers, in Essay two, I examine the association between migrant TMT members' decision-making in the context of insider trading. I view insider trading as a particularly powerful setting since it represents an individual and deliberate action on the part of the executive and has an immediate impact on the manager's wealth.

My primary hypothesis, the "risk-enhancement hypothesis", posits that migrant top managers, driven by their risk-taking tendencies, are more inclined to leverage private information in insider trading to secure personal gains. In addition, the lack of local social capital among migrant top managers increases their likelihood of acting individualistically, resulting in more aggressive trading activities and higher trading profits. Consequently, insider trades executed by migrant top managers tend to be more profitable than those of non-migrant top managers. In contrast, my alternative hypothesis, the "reputation protection hypothesis", suggests that migrant top managers generate lower abnormal returns than non-migrant top managers. Local officers and stakeholders typically subject migrant managers to more rigorous evaluation standards than their local counterparts. To protect their public reputation and career prospects, migrant managers are likely to adopt more ethical practices and avoid acting

opportunistically, which would lead to lower insider trading profits than non-migrant top managers.

Using a sample of 20,612 Chinese insider trades (including 5,364 purchases and 15,248 sales), I examine the association between migrant top managers and insider trading profitability. My analysis finds support for the risk enhancement hypothesis. Specifically, I find migrant top managers earn higher future abnormal stock returns from insider purchases than those made by non-migrant top managers. In the cross-sectional tests, I first investigate whether migrant top managers profit from private information about future successful innovation outcomes, as measured by subsequent patent performance. I find that the significantly positive association between migrant top managers and future insider trading profitability is more pronounced for firms with successful innovation outcomes, as measured by patent grants, future citations, and breakthrough innovation (defined as patents that fall in the top 10 % of their technology class and year). Second, I find migrant top managers strategically time their trades, as evidenced by a significant positive association between migrant status and trading profitability before the restriction period,¹ while this positive association does not exist in the post-restriction period. Third, the positive association between migrant top managers and trading profitability is more pronounced when insiders receive higher compensation within the firm, which rules out the possibility that migrant managers use insider trading as a means of self-compensation. Last, I find the positive association between migrant top managers and trading profitability diminishes when migrant top managers develop local social capital with local officials, suggesting that their limitation in local social capital contributes to higher profitability, as developing local social capital may impose constraints on migrant top managers in the TMT from exploiting private information in insider trading.

Different from Essay One and Essay Two where I examine the decisions of migrant TMT, I shift my lens to the auditing perspective in Essay Three. Unlike corporate decision-making, which requires input from the migrant TMT, financial reporting in Chinese firms is mainly the responsibility of the CEO. Therefore, in Essay Three, I focus on examining the relationship between migrant CEOs and audit fees.

¹ Due to the difficulty involved in identifying illegal insider trading, the CSRC also introduced the trading ban to minimise the occurrence of opportunistic insider trading (Zhu and Wang, 2015). These regulations forbid directors, supervisors, and senior management officers from trading during the 30 days preceding periodic reports such as annual, interim, and quarterly reports, or during the 10 days before an earnings preannouncement.

Audit fees may be affected by both demand- and supply-side factors (e.g., DeFond and Zhang, 2014). From the demand side, migrant CEOs are more likely than local CEOs to demand higher audit quality in the firm's financial statements, to provide assurance to the stakeholders and hence end up paying higher audit fees. Unlike local CEOs, whose abilities are more easily assessed through local information networks, the abilities of migrant CEOs remain relatively less observable (Yonker, 2017). To signal their ability and alleviate investors' concerns, migrant CEOs are more inclined to engage in innovative activities (Chemmanur et al., 2019; Gao et al., 2021). Given that innovation is a long-term, high-risk investment with the potential for big returns but big losses as well, it tends to increase information asymmetry and elevate performance volatility (Hall, 2002; Huang et al., 2021). One way of mitigating heightened information asymmetry is to provide high-quality financial reporting which needs to be verified by an independent auditor. Such verification, however, is costly as proxied by high audit fees (Defond and Zhang, 2014; Francis et al., 2011). I, therefore, expect a positive association between migrant CEO and audit fees from the demand side perspective.

However, from the supply side, migrant CEOs may be negatively associated with audit fees, as auditors might perceive lower risks when auditing firms managed by migrant CEOs. Firms managed by migrant CEOs, who possess superior human capital (He et al., 2024), tend to outperform those managed by local CEOs in addressing complex business challenges and adapting to economic changes. These skills enable migrant CEOs to select better projects, leading to improved operational performance (Chemmanur et al., 2019; Xue et al., 2021) and enhanced corporate information transparency (Hasan, 2020). These better performance and greater financial reporting quality could lower firms' business risk and misreporting risk. As a result, auditors may charge firms managed by migrant CEOs lower fees for lower risk associated with auditing such firms. I, therefore, expect a negative association between migrant CEO and audit fees from the supply-side perspective.

To empirically test the association between migrant CEOs and audit fees, I use a sample of listed firms in China from 2008 to 2020. By comparing a CEO's birthplace with the location of a firm's headquarters, a CEO is classified as a migrant if his/her place of birth differs from the location where the firm is headquartered. The results show a positive association between migrant CEO and audit fees. In addition, I find no significant association between migrant CEO and audit report lag, but a positive relationship between migrant CEOs and the regulatory sanction against auditors. The fee increase charged to clients with migrant CEOs, therefore,

involves insurance premiums to offset probable future losses arising from costly regulatory sanctions, but not compensation for additional works.

Next, I conduct mediation tests to explore whether and how migrant CEOs affect audit fees from both the demand and supply sides. I find that migrant CEOs, by investing more in innovative research and development (R&D) projects and generating a greater number of patents, are more likely to demand higher quality auditing, thereby paying higher audit fees. Meanwhile, I also find that migrant CEOs pay higher audit fees even when they are less prone to real earnings management. This finding indicates a biased assessment of financial reporting quality in firms with migrant CEOs.

I also conduct two moderating tests. I find that the positive association between migrant CEO and audit fees is less pronounced in firms with gender-diverse audit committees, and firms audited by long-tenured auditors. In additional analysis, I first examine the association between CEO migration direction and audit fees, and find a positive association only for CEO upward migration (i.e., migrant CEOs who migrated from less economically developed regions to more economically developed regions). I then investigate the association between migrant CFO and audit fees and find a marginally negative association. Also, my baseline results remain robust after excluding firms headquartered in the four major cities in China, i.e., Beijing, Shanghai, Guangzhou, and Shenzhen.

Taken together, the three essays provide a comprehensive understanding of how managerial migration shapes corporate outcomes in China. Essay One adopts a team-level perspective, showing that migrant top management teams foster innovation through their openness to new ideas and risk tolerance. Essay Two narrows the lens to individual executives and demonstrates that migrant managers' risk-taking tendencies extend to their personal trading behaviour, leading to higher insider trading profitability. Essay Three shifts the focus to external governance, revealing that the presence of migrant CEOs influences firms' demand for audit quality and, consequently, audit fees.

Viewed collectively, these essays highlight migration as a salient but underexplored managerial attribute within the upper echelons framework. By integrating evidence across strategic decision-making, personal behaviour, and external monitoring, the thesis provides novel insights into how executives' migration background influences both internal and external governance mechanisms. Beyond contributing to the academic literature, these findings also carry important implications for policymakers, regulators, and firms in emerging markets such

as China, where inter-regional migration of managerial talent is becoming increasingly common.

1.2 Motivations and Contributions for the Research

The scale of internal migration in China has expanded rapidly, with the Seventh National Population Census (2020) documenting a migrant population of 376 million. This large population migration carries significant economic implications, as extensive research in macro-economic demonstrates that migration facilitates knowledge and technology transfer (Hornung, 2014), enhances human capital accumulation (Kerr and Lincoln, 2010; Hunt and Gauthier-Loiselle, 2010; Rocha et al., 2017), and contributes to economic growth, particularly through patenting (Akcigit et al., 2017). While these macro-level studies provide valuable insights into the effects of migration, they offer a limited understanding of how migration influences firm-level outcomes through individual decision-makers. This micro-level perspective is particularly important because, according to upper echelons theory (Hambrick and Mason, 1984), corporate top managers, as key decision-makers, can significantly shape firm policies and performance through their characteristics and experiences. Studying the economic impact of migrant managers provides deeper insights into how human capital movement influences corporate governance and decision-making. It also serves as a valuable reference for corporate governance, policy formulation, and investor decision-making. However, despite the significant economic impact of migration, research on the consequences of migrant managers has received scant interest. This research fills the gap by investigating the consequences of migrant top management teams (hereafter, TMT) in China.

In this research, migrant TMT managers refer to top managers born outside the region where their firm's headquarters are located. The motivation for this research is predicated on several considerations. First, while literature has investigated the macro-economic impacts linking migration with regional growth (for example, Faggian and MaCann, 2009), limited attention has been paid to individual-level effects, particularly concerning corporate managers. At the micro-economic level, although prior literature has linked migrants to various corporate outcomes, including entrepreneurship (Wu and Eesley, 2021), corporate innovation (Gao et al., 2021), environmental, social, and governance (ESG) (Huang et al., 2023), green innovation (Xu et al., 2025), and compensation (Guo et al., 2023), further research is needed to fully understand the broader consequences of migrant TMT.

Second, a large academic literature has examined the labour market effects of international migration of high-skilled individuals including scientists, inventors, and recent college graduates (Faggian and McCann, 2006, 2009; Miguélez and Moreno, 2013; Zucker and Darby, 2007). However, the institutional environment, culture, and legal environment faced by international migrants differ fundamentally from those experienced by internal migrants who move across regions within the same country. Despite the emphasis on *international* migration, *internal* migration is quantitatively more significant. In 2019, international migrants accounted for 3.5% of the world population, whereas internal migrants constituted 10.8% in 2019 (McAuliffe and Khadria, 2019). Due to the importance of internal migration, policymakers would be more interested in understanding the implications of having migrant TMT in a firm. This study responds to the call for a deeper examination of migrant TMTs within the Chinese context.

This research contributes to the existing literature in the following ways. First, this research contributes to the literature on top managers' decision-making by examining the influence of managers' migration backgrounds. Since Yonker (2017) documented geography's impact on CEO recruitment, researchers have explored how local CEOs' hometown identity shapes their decisions (e.g., Lai et al., 2020; Ren et al., 2021). However, this focus on ingroup favouritism overlooks that outgroup members, such as non-local CEOs, may make decisions specifically to counter intergroup bias. Other scholars have explored this dynamic, with Gao et al. (2021) highlighting migrant entrepreneurs' distinct risk-taking preferences, and Xu et al. (2024) showing that firms led by migrant chairmen pursue more green innovation in response to heightened local scrutiny. Given that migration represents a self-selection process, and migrant managers face significant social capital constraints, understanding their decision-making patterns is crucial for examining human capital movement from a microeconomic perspective. This research extends this literature by investigating how migration background influences corporate innovation and insider trading decisions thereby, providing novel insights into the broader implications of managerial migration on corporate behavior and decision-making.

Second, this research sheds light on the impact of *team dynamics* on managerial decisions, compared with research that solely focuses on the effects of individuals such as CEOs or CFOs on corporate outcomes (Zhang, 2019). Although the characteristics of TMTs are widely studied in management literature, it remains an emerging study in the field of accounting and finance, leaving the impact of the TMT a fruitful area of research in accounting

(Hanlon et al., 2022). This research examines the shared experience and heterogeneity of migrant TMTs in China, a country characterised by an institutional setting with complex administrative divisions. Empirical findings in such a complex institutional setting will provide useful insight into understanding the influence of migrant TMTs on business decisions in the world's second largest economy.

Third, my study also extends my understanding of how CEOs' management of operating styles affects audit fees. In his seminal study on the pricing of audit services, Simunic (1980) provides the foundation for the substantial body of research that has examined the determinants of audit fees for over the four decades. In a meta-analysis of the research on the determinants of external audit fees, Hay et al. (2006) note that most studies in this area investigate many client and auditor attributes and their associations with audit pricing. However, a growing stream of literature has begun to examine the effect of various personal attributes of executives on audit fees (e.g., Krishnan and Wang 2015; Hanlon et al., 2022). I complement this literature by documenting a significant association between migrant CEO and audit fees.

Finally, my study also highlights that the governance of Chinese firms is shaped not only by formal structures such as ownership concentration and board composition, but also by the mobility and social identity of top executives. Migrant managers, with their distinctive risk-taking preferences, limited access to local social capital, and the need to establish legitimacy through performance, reveal that corporate governance in China is deeply intertwined with human capital mobility and the reliance on social networks.

By reviewing the literature on migrants and migrant managers, this study identifies two key characteristics associated with migrant managers. (1) Migrant managers tend to be more risk-takers; (2) As outsiders, migrant managers are often perceived as outgroup members. These two key characteristics of migrant managers would shape both their decision-making and their interactions with stakeholders.

First, research in Economics indicates that migrants generally exhibit distinct characteristics, such as risk-taking, adventurousness, and openness to new experiences (Chiswick, 1998; Wu and Easley, 2022). Individuals migrate in search of better opportunities, leaving behind familiar environments and moving to new, uncertain settings that may pose both challenges and risks. Migration inherently involves uncertainty, and individuals who choose to migrate are those who are willing to take risks (Wu and Easley, 2022). This suggests that

migrants tend to have a higher tolerance for risk compared to non-migrants. Economics research supports this argument. For example, Jaeger et al. (2010) and Heitmueller (2005) find that individuals with a greater willingness to take risks are more likely to migrate. Similarly, Hunt (2011) shows that migrants are more likely to start businesses compared to similar local residents. Wu and Eesley (2022) document that migrant graduates are more likely to start-up a larger firm compared with non-migrants because migrants are less risk-averse. As a subset of the broader migrant population, migrant top managers likely share these risk-taking traits. Their tendency toward risk-taking may translate into more risky corporate decision-making. Understanding this relationship provides a valuable framework for analysing the broader impact of migrant top management teams on corporate outcomes.

Second, while the risk-taking tendencies of migrant managers often translate into risk-taking behaviour, migrant managers face unique challenges stemming from their outsider status. According to the social identity theory, migrant managers are often viewed as outgroup members by local stakeholders because of working outside their hometown. While previous research has primarily focused on the advantages of ingroup identity (e.g., hometown ties) in research contexts such as firm innovation and tax avoidance (Ren et al., 2021; Shen et al., 2019), this intragroup relation-centric view overlooks an important dynamic: ingroup favouritism often accompanies outgroup bias. This bias can significantly influence how migrant managers are perceived and treated by local stakeholders. In addition, working outside the hometown changes a migrant manager's social network structure and resource acquisition (Xu et al., 2025). This disadvantage is particularly significant in China's relationship-based business environment, where social networks (*guanxi*) play a crucial role in resource allocation and business operations (Guo et al., 2023). Prior studies document that migrant managers face significant challenges due to their limited local social capital, including stricter standards from local officials and supply chain partners, as well as greater financing constraints (Ren et al., 2021). Given their outgroup status and the limitation of access to local social capital, it is crucial to examine how migrant managers adapt their decision-making strategies in response.

1.3 The Institutional Context of the Research

The results of the 2020 population census also show the trend of internal migration in China over the past decades. In terms of educational background, 57% of internal migrants have a bachelor's degree or above, choosing Beijing, Shanghai, Guangzhou, Shenzhen and Hangzhou as the most popular destinations for internal migration. The upward migration trend shows that more educated, highly skilled individuals are more willing to migrate to more economically

developed cities (Kopi and Clark, 2015). However, it is also possible for individuals to migrate to a less economically developed city where they could have a competitive advantage in the job market. These downward migrants may pursue a less stressful lifestyle and can enjoy lower living costs despite the less challenging job environment and fewer career progression opportunities.

While most studies on migration and innovation focus on international contexts, internal migration in China presents a distinct and underexplored phenomenon with important implications for managerial behaviour and firm outcomes. Unlike international migrants, who often face visible linguistic, cultural and institutional barriers, internal migrants in China, despite sharing the same nationality and ethnicity, encounter subtle but persistent challenges in social assimilation. These challenges arise from the country's vast geographic and cultural diversity, as well as institutional restrictions rooted in the hukou (household registration) system (Chan, 2009; Wang and Fan, 2012). China spans multiple climate zones and dialect regions, and local identity is strongly shaped by regional affiliation, customs and language (Talhelm et al., 2014). Even though the hukou system has been gradually relaxed over time and non-hukou migration has been tolerated, the conversion to local hukou and related social benefits (such as pension, education, medical insurance and permission to purchase housing and vehicles) is still quite restrictive for non-hukou migrants (Chan, 2009), making migration in China predominantly temporary and individualised. While the written language is unified, spoken dialects vary significantly across regions, reflecting historical patterns of migration and political boundaries. Dialect similarity is often indicative of shared cultural identity, while dissimilarity may signal deeper social divides (Falck et al., 2012).

These cultural and institutional frictions not only hinder migrants' social integration but also shape how they behave in organisational settings. Migrant managers may face barriers to accessing local networks, resources and support, affecting their influence and role within TMTs (Ren et al., 2021; Xu et al., 2021). As a result, internal migration in China is not merely a background demographic factor but a meaningful social experience that may influence cognitive styles, leadership behaviour and strategic decision-making. By explicitly focusing on internal migrant managers, rather than international migrants, this study contributes to the migration literature by highlighting a unique form of within-country relocation and its implications for corporate innovation in a context marked by significant regional, market and cultural disparities.

Moreover, the implications of migrant managers need to be understood within China's broader corporate governance environment. Unlike developed markets, Chinese firms are characterised by highly concentrated ownership, a strong presence of SOEs where top managers are often appointed by the government, and relatively weak external monitoring through mechanisms such as investor protection and independent boards (Fan et al., 2007). In this setting, managerial discretion plays a particularly important role, making the unique experiences and characteristics of migrant TMTs especially influential for corporate outcomes. By focusing on internal migrant managers in China, this study highlights a distinct form of within-country relocation and its implications for corporate innovation in a context shaped by regional, market, cultural, and governance disparities.

1.4 Organization of the Research

The remainder of the thesis proceeds as follows. Essay One (Chapter 2) is titled: "Migrant Top Management Team and Corporate Innovation: Evidence from China"; Essay Two (Chapter 3) is titled: "Migrant Top Management Team Members and Insider Trading Profitability"; Essay Three (Chapter 4) is titled: "Migrant CEO and Audit Fees: Evidence from China". Chapter five concludes the thesis.

STATEMENT OF CONTRIBUTION DOCTORATE WITH PUBLICATIONS/MANUSCRIPTS

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CHAPTER TWO - MIGRANT TOP MANAGEMENT TEAM AND CORPORATE INNOVATION: EVIDENCE FROM CHINA (ESSAY ONE)

2.1 Introduction

As a group of people with differential human capital, studies show migrants to have innovative personalities (Chiswick, 1999). In research spanning the fields of regional labour economics and psychology, extensive evidence documents the personal characteristics of migrants, such as entrepreneurship (Audretsch et al., 2012; Faggian et al., 2017), ambition (Czaika and Vothknecht, 2014), openness to new experience (Camperio Ciani et al., 2007; Canache et al., 2013), and extraversion (Canache et al., 2013; Jokela, 2009). With a surge in migration in recent years, more people are employed outside of their home region, and high skilled migrants in particular are increasingly playing important roles due to their talent and advanced skills (Ichino and Maggi, 2000).

Given the importance of the migrant work force and the multidisciplinary interest of researchers in the personalities of migrants, it can be expected that migrant managers, as a group of migrants, could possess more innovative personalities than their local counterparts. Therefore, it is worth investigating the effect of migrant managers in the discipline of corporate finance. A sizable body of literature grounded on the upper echelons theory of Hambrick and Mason (1984) recognizes the idea that corporate decisions can be influenced by the characteristics of top managers, such as their gender, ethnicity, appearance, and experiences (see Hanlon et al., (2022) for a comprehensive review of this stream of literature). More recently, a growing body of literature finds that the background of migrant managers has a significant impact on their personality traits and behaviours and can therefore influence corporate decisions and outcomes. For example, researchers have found that migrant entrepreneurs can improve corporate innovation, as they are more likely to take risks compared with their local peers (Gao et al., 2021). One problem with this stream of literature is it solely focuses on individuals, leaving the team-related issues under-researched. With limited information, managers may not always make optimal decisions, and thus must act within the social context of the firm (Zhang, 2019). Migrant managers, working with other managers in the top management team (TMT), could collectively influence corporate decision making at both strategic and operational level. Their migration background, therefore, is not only related to managerial decision making but is inseparable from corporate strategy and firm value.

This paper examines the association between top management teams comprised of one or more migrants (migrant TMTs) and corporate innovation. Migrant TMTs can facilitate corporate innovation. Different from routine tasks, innovation involves exploring unknown methods with a high probability of failure, and needs long-term investment (Holmstrom, 1989).

An innovative manager needs to possess certain personality traits including an adventurous spirit, tolerance to failure and an openness to novel ideas (Galasso and Simcoe, 2011; Sunder et al., 2017). Migrants face uncertainties and challenges presented by a new environment, making them more likely to be risk-taking, adventurous and open to new experiences: characteristics of innovative personalities (Chiswick, 1998; Wu and Easley, 2022). Migrant managers, as a group of migrants, could therefore possess more intrinsic motivation to pursue innovation than their local counterparts. Based on the upper echelons theory, I posit that a TMT with more migrant managers who can be characterised as being open to novel ideas and risk-taking, might collectively be innovative. They would facilitate evaluation of strategic choices from multiple perspectives and are more willing to spend more on innovative activities (Cox et al., 1991; Sunder et al., 2017). Such a conducive environment could, in turn, stimulate a positive attitude towards risks and encourage other TMT members to engage in constructive debates on strategic plans (Dahlin et al., 2005).² As such, TMT members may carefully consider team decisions, enabling management to quickly take corrective actions based on lessons learned from past experiences, thus reducing group thinking³ (West and Anderson, 1996). Therefore, a migrant TMT which has greater incentive to be effectively involved in the decision-making process is more likely to make sure that the work of other team members is critically checked. This has the added benefit of reducing myopic behaviours, encouraging the TMT to be longer-term orientated and directing the focus of the TMT towards setting long-term strategic goals (Zhang, 2019), and thus making corporate innovation a successful process.

² Since migrant manager is a member of the TMT and the TMT can be split into homogenous subgroups, one could argue that the underlying construct of my paper is related to TMT faultline literature. The TMT faultlines are hypothetical dividing lines that split a team into homogenous subgroups based on team members' alignment along their multiple characteristics (Lau and Murnighan, 1998; Thatcher et al., 2003). Subsequent studies further distinguished faultlines into *bio-demographic* fault lines represented by physical characteristics, such as age, gender or ethnicity, and *task-related* fault lines characterized by position, tenure, education, professional or functional background (Bezrukova et al., 2009; Hutzschenreuter and Horstkotte, 2013; Ndofor et al., 2015). Ma et al. (2021) document an inverted U-shaped relationship between task-related faultline and green technology innovation for a sample of Chinese firms. Although I use upper echelons theory, I discuss the characteristics of migrant managers relying primarily on the *self-selection* theory from the migration literature. Consequently, my arguments in Section 3 draws both from the migration and upper echelons theories. As a result, my paper is distinct from the literature on the TMT faultlines literature.

³ Group thinking, a term describing a group in which “group loyalty requires each individual to avoid raising contentious issues” (Janis, 1982, p. 12).

Conversely, despite their innovative personalities, a migrant TMT may impede corporate innovation resulting from isolation of migrant managers in the team. In China, one's town of origin is one of the most common and distinctive bases upon which social network is built (Xu et al., 2021). A migrant manager in a TMT might be considered an outsider by the group of local managers. Such exclusive and unsettled behaviour would negatively influence the migrant's identity formation and sense of belonging (Du et al., 2018; Wang and Fan, 2012), making them shy away from communicating which has the flow on effect of impeding their ability to stimulate constructive debates and evaluation of different strategic choices. Further, the in-group views among local managers are less likely to be challenged, which might weaken the monitoring role of each member of the TMT (Zhang, 2019). This may lead the TMT more towards meeting short-term earnings expectations and engaging in more myopic behaviours, which eventually results in biased decision-making (Huang et al., 2022). Therefore, the efficiency of decision-making in a firm with a migrant TMT would be hindered, resulting in poor innovation performance.

The Chinese market provides a suitable setting to study the association between migrant TMT and corporate innovation for several reasons. First, In China, there are 34 provincial administrative regions⁴, 56 ethnic groups, and more than 20 different dialects (Bian et al., 2019). Throughout China's vast territory and diverse environment, unique cultures and traditions have developed in different regions which profoundly influence individual personalities and behaviours (Du et al., 2014). Such variations in culture and environment across regions in China provide a natural setting for exploring the association between migrant TMTs and corporate innovation. Second, China has witnessed a rapid increase in internal migration during the past few decades. The Chinese seventh national census conducted in 2020 states the number of internal migrants grew from 21.35 million in 1990 to 376 million in 2020. The surge in internal migration within China provides an opportunity to examine whether migrant TMTs are related to corporate innovation.

To examine this hypothesis, it must be determined whether a TMT member is a migrant or not using hand-collected birthplace data (see Section 4 for more details). The results show a positive association between migrant TMTs and corporate innovation. The result is also economically significant, with findings suggesting that a one standard deviation increase in the

⁴ The 34 provinces include 4 autonomous regions (Inner Mongolia, Ningxia Hui, Xinjiang Uyghur, and Tibet), 4 municipalities (Beijing, Shanghai, Chongqing, and Tianjin), and 2 Special Administrative Regions (Hong Kong and Macau). http://www.stats.gov.cn/english/PressRelease/202102/t20210228_1814177.html

proportion of migrant managers in the TMT (*Mig_Prop*) in year t is associated with an 18.7% increase in the total number of patent applications, a 16.8% increase in the total number of patents granted, and a 23.6% increase in the citations per patent in year $t+1$.

This association is robust to a series of endogeneity tests, including entropy matching approach and instrumental variable regression. Furthermore, mediation effect tests are run to explore the potential channels through which migrant TMT influences corporate innovation. The findings show that migrant TMT have a longer time horizon and are more willing to take risks, which likely increases corporate innovation.

I further find that the association between migrant TMT and corporate innovation is more pronounced for state-owned enterprises (SOEs) than their non-SOE counterparts. This finding suggests that migrant TMTs in SOEs are more innovative, which would lead to more innovative outputs. Second, sub-sample analyses reveal that the positive association between migrant TMTs and corporate innovation holds in both high- and low-cultural-diversity regions, suggesting that the observed effect is not primarily driven by cultural adaptability, but reflects a robust migration-driven mechanism. Finally, I find that firms with migrant TMT invest more in R&D and green innovation.

This study makes several contributions to the literature. First, it extends the growing body of literature examining how managerial characteristics affect firm decisions and performance. Prior literature has documented that the characteristics of top managers, such as their overseas background (Yuan and Wen, 2018), educational experiences (Beladi et al., 2021), and early life experience (Wan et al., 2021; Zhou et al., 2020), are important factors in corporate decision making. However, research on the consequences of the migration background of TMT members on firm outcome is largely missing from the literature. This research fills this void in the literature.

Second, this research sheds light on the impact of *team dynamics* on managerial decisions, compared with research that solely focuses on the effects of individuals such as CEOs or CFOs on corporate outcomes (Zhang, 2019). Although the characteristics of TMTs are widely studied in management literature, it remains an emerging study in the field of accounting and finance, leaving the impact of the TMT a fruitful area of research in accounting (Hanlon et al., 2022). This research examines the shared experience and heterogeneity of migrant TMTs in China, a country characterized by an institutional setting with complex administrative divisions. Empirical findings in such a complex institutional setting will provide

useful insight into understanding the influence of migrant TMTs on business decisions in the world's second largest economy.

The remainder of the paper proceeds as follows. Section 2 introduces the institutional background in terms of internal migration and innovation development in China. Section 3 reviews the related literature and develops the hypothesis. Section 4 outlines the sample and specifies the regression models and variables. Section 5 provides the main test results, and Section 6 concludes the paper.

2.2 Institutional Environment

2.2.1 Internal migration in China

The term “migrant” refers to people who move from one place to another, especially to find a job or better living conditions. They can be individuals moving across international borders, or individuals simply moving within a country from one region to another. Unlike international immigrants, most migrants in China tend to be of the same ethnicity. However, internal migrants might still be culturally, economically, and socially different from local residents, due to differences in social environments between the host city and the migrant's birthplace (Wang and Fan, 2012).

Since the establishment of the People's Republic of China in 1949, the Chinese internal migration policies have gone through two distinct phases. The first phase was the period between 1966 and 1976 where internal migration was integral to the central planning system in China, also known as the “Up to the Mountains and Down to the Countryside Movement” (Chen et al., 2020). Young adults followed directions from the state to migrate from relatively more developed urban areas to less developed rural areas. Internal migration in this period was directed by the state and was not affected by self-selection decisions.

The second phase occurred after the economic reforms in 1979, when the Chinese government relaxed restrictions on internal migration. In particular, people were gradually allowed to migrate from rural areas to urban areas or between urban areas. After 1979, migration was primarily motivated by income gaps, including both the rural-urban income gap and the regional income gap. According to the 2019 data from the National Bureau of Statistics of China, the average annual salary of employees in all industries was 90,501 Chinese *yuan*, equivalent to US\$14,009. However, there is wide variation in average salary across China, with Beijing salaries the highest (173,205 Chinese *yuan*, equivalent to US\$26,812), followed by Shanghai with 149,377 Chinese *yuan* (US\$23,123), while provinces like Liaoning paying

salaries of 62,859 Chinese *yuan* (US\$9,730), less than half those in Beijing. In light of the large wage gap, individuals may seek employment in more economically developed regions where their skills are rewarded. In addition, more economically developed cities have better infrastructure, receive more investment, and have more favourable talent retention policies. Therefore, more job opportunities, more career progression, and even environment and lifestyle can be strong motivations for internal migration.

The results of the 2020 population census also show the trend of internal migration in China over the past decades. In terms of educational background, 57% of internal migrants have bachelor's degree or above, choosing Beijing, Shanghai, Guangzhou, Shenzhen, and Hangzhou as the most popular destinations for internal migrations. The upward migration trend shows that more-educated, highly skilled individuals are more willing to migrate to more economically developed cities (Kopi and Clark, 2015). However, it is also possible for individuals to migrate to a less economically developed city where they could have a competitive advantage in the job market. These downward migrants may pursue a less stressful lifestyle and can enjoy lower living costs despite the less challenging job environment and fewer career progression opportunities.

2.2.2 Innovation policies and development in China

Since the early 2000s, innovation has been a key factor in China's sustained economic growth. In 2006, the 'National Guideline on Medium and Long-term Plan for Science and Technology Development (2006–2020)' was issued by the state council of China with the aim of changing the mindset of the economy from 'made-in-China' to 'invented-in-China'.⁵ Thereafter, several policies, and regulations have been issued at different administrative levels to foster innovation.

At present, tax relief policies and government subsidies are the main methods by which the Chinese government encourages firms to innovate (Liu et al., 2011). Several circulars have been issued by the central government regarding R&D expenses eligible for "super deduction". For example, in 2015 the government decided to expand the scope of the super deduction for R&D expenses incurred by firms domiciled in China (Circular 119).⁶ Since then, R&D expenses, including testing expenses for trial products, labour costs of external R&D personnel, and other expenses which can be directly related to R&D activities have also been considered

⁵ China National Medium- and Long-term S&T Strategic Plan (outline): http://www.gov.cn/jrzq/2006-02/09/content_183787_7.htm (In Chinese).

⁶ Notice of the Ministry of Finance, the State Administration of Taxation and the Ministry of Science and Technology on Improving the Policies for the Weighted Pre-tax Deduction of Research and Development Expenses: <http://lawinfochina.com/display.aspx?id=20643&lib=law>

for the super deduction. Over the past few years, in addition to providing R&D subsidies directly to local firms, provincial governments have also provided other government-funded research projects to local firms. Owing to these efforts, a positive impact of these government policies and guidelines is seen in the R&D investment of China as a whole. As reported by the World Bank⁷, the R&D/GDP ratio in China increased from 1.37% to 2.07% between 2005 and 2016.

2.3 Literature Review and Hypothesis Development

2.3.1 Literature on migrant TMT

Migration research has predominantly developed through several theoretical lenses to explain migrants' distinctive characteristics and economic outcomes. For example, Human capital theory conceptualises migration as a self-selection process where individuals with greater ambition, risk tolerance, and achievement motivation are more likely to relocate (Borjas, 1987; Chiswick, 1999). These inherent characteristics foster entrepreneurship, innovation, and adaptability in unfamiliar environments (Chiswick, 1999). Building on this view, prior studies argue that the personal characteristics of migrants shape their post-migration behaviour (Duleep, 2015; Hart and Acs, 2011). Such individuals typically demonstrate greater openness to new experiences, cognitive flexibility, and problem-solving capabilities, which are characteristics particularly valuable in uncertain and dynamic contexts.

Although human capital theory is commonly used to explain how human capital contributes to individual and regional development, other perspectives, such as social identity theory, highlight the importance of migrants' adaption across economic, cultural, behavioural, and psychological dimensions, which also significantly influence migration outcomes (Cai and Zimmermann, 2024). While these theoretical insights are compelling, migration research has traditionally focused on the macro-level economic consequences of international migration, particularly in developed countries. A large body of literature examines how immigration affects host-country labour markets, including wages, employment, and productivity (Dustmann et al., 2016; Lewis and Peri, 2015). However, this focus overlooks a critical demographic reality: while international migrants accounted for 3.5% of the global population in 2019, internal migrants made up a much larger share, 10.8% in 2009 (McAuliffe and Khadria,

⁷ 'Research and development expenditure (% of GDP)' by World Bank, <https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?locations=CN>

2019). In rapidly urbanising economies such as China, internal migration plays a central role in shaping not only labour dynamics but also organisational behaviour.

Recent studies have begun exploring the implications of internal migration in the Chinese context. An et al. (2024) examine labour market outcomes among internal migrants, while Cai and Zimmermann (2024) investigate identity formation and cultural adaptation. Wu and Easley (2021) find that rural-to-urban migrants demonstrate greater entrepreneurial tendencies, likely due to the enhanced resilience and lower risk aversion developed through migration experiences. These studies suggest that migration experiences may systematically alter economic behaviours. Social identity theory offers valuable insights applicable to the internal migration context as well. In China, internal migrants frequently move across regions with significant differences in dialect, culture, economic development, and social norms. Despite sharing ethnicity and citizenship with local residents, these migrants often encounter outsider status and limited access to informal networks and resources (Chan, 2010; Wang and Fan, 2012). Research shows that individuals perceived as outgroup members typically face greater trust deficits and integration challenges within organisations (Hogg et al., 2012). These social barriers likely influence both migrants' behaviour and how they are perceived within corporate structures.

However, few studies have systematically examined how these migrant characteristics manifest in managerial roles or affect firm-level outcomes. Notable exceptions include He et al. (2024), who find that internal migrant auditors, possessing a higher level of human capital, provide high-quality audits. Gao et al. (2021) show that migrant entrepreneurs tend to pursue more innovative business strategies than their local counterparts, as migrant entrepreneurs are more risk-taking. Building on the social identity theory, Huang et al. (2023a) document that migrant CEOs, who are perceived as outgroup members by local stakeholders, would engage in a higher level of ESG activities to overcome the intergroup bias they face. However, research specifically addressing how internal migrant managers in top leadership positions influence corporate innovation remains limited.

I argue that internal migrant managers bring both the distinct cognitive characteristics associated with migration and the identity-based challenges of outsider status. This combination of capability and context jointly influences their innovation behaviour. My approach extends existing research by connecting individual migration experiences to

organisational innovation outcomes in a setting where internal migration is both widespread and institutionally complex.

2.3.2 Literature on corporate innovation

Unlike routine tasks, innovation involves exploring unknown knowledge, which involves a higher risk of failure, and long-term, multi-stage investments, and which can generate positive returns with significant delays (Holmstrom, 1989). As such, to encourage managers to be oriented towards innovation, short-term failures must be tolerated, and managers must be shielded from external short-term pressure (Manso, 2011).

Extensive studies in the fields of accounting, finance and corporate governance have been conducted to explore the determinants of innovation (see Huang et al., (2021) for a comprehensive review). First, the stream of literature in accounting highlights the importance of quality accounting information and transparency in promoting innovation. As innovation is more information-sensitive than other investments, these studies demonstrate that a better accounting information environment promotes firm innovation by reducing information asymmetries (Brown and Martinsson, 2019). Consistent with this, research on financial reporting quality shows that more transparent and comparable disclosure of accounting information improves innovation efficiency (Chircop et al., 2020; Zhong, 2018). Jia (2019) finds that firms which restate their financial information to improve transparency tend to innovate more in exploratory rather than exploitative innovation projects, suggesting that these firms are associated with a greater appetite for risk. However, increases in financial reporting quality may also be detrimental to innovation given the risk of information leakage about product development to competitors (Bhattacharya and Ritter, 1983; Healy and Palepu, 2001).

Another stream of literature suggests that corporate governance influences corporate innovation, where culture, as an informal governance mechanism, can shape individual behaviours and financial practices of a firm and thus can either facilitate or hinder innovation. Informal governance makes more sense in emerging markets, in particular where formal institutions are weak and less developed (Huang et al., 2021). Adhikari and Agrawal (2016), for example, find that firms headquartered in gambling-friendly areas are more innovative, in the sense that gambling preferences instill a corporate culture which tolerates failures where there is a possibility of very large gains, leading to increased spending on exploration and experimentation, and ultimately to more innovation. Kong et al. (2021) document that social trust can enhance innovation output by alleviating the principal-agent problem and increasing

the tolerance for short-term failures. Based on the *imprinting theory*⁸, literature also examines how the experiences of top managers such as disaster experience (Bernile et al. 2017), foreign experience (Yuan and Wen, 2018), back to countryside experience (Zhou et al., 2021), birth order (Wan et al., 2021) and hometown identity (Ren et al., 2021) influence corporate innovation.

2.3.3 Hypothesis on migrant TMT and innovation

As a risky, unpredictable and long-term investment (Holmstrom, 1989), corporate innovation requires managers to have certain personality traits including tolerance for failure, openness to novel ideas, and an adventurous spirit (Galasso and Simcoe, 2011; Hamilton et al. 2019; Hirshleifer et al., 2012). An extensive literature on social psychology and labour economics confirms that migrants are conscientious, flexible and open to change (Polavieja et al., 2018), making them more adventurous, open to new experiences, and more inclined to take risks (Chiswick, 1999; Wu and Eesley, 2022). Studies suggest that individuals who are dissatisfied with their present location are driven to migrate for achievement motivation (Boneva et al., 1998). Those who are achievement-orientated tend to have a stronger belief in their abilities and are more likely to work harder after failure. Migrants are also perceived to be “more restless and avoid routine” (McClelland, 1987, p.249), leading to an increased likelihood that they will seize opportunities: precursors for innovation. In addition, migration is full of uncertainties and challenges as migrants must establish new social network connections and acquire needed resources, making them more likely to have a positive attitude towards risks (Chiswick, 1998). Conducting a survey on the migration of university graduates, Wu and Easley (2022) find that graduates who moved from rural to urban areas are more likely to start their career in much larger firms than those who migrated from urban to rural areas, remained in urban areas, or remained in rural areas. The authors propose that migration decisions suggest more risk-taking, and a location change from rural to urban settings may pose an increased risk. Given the innovative personalities of migrants, it is expected that migrant managers will possess more innovative personalities than their local counterparts.

Migrant managers who are characterised as being open to novel ideas and having an adventurous spirit would facilitate evaluation of strategic choices from multiple perspectives and accelerate new ideas at the TMT level (Cox et al., 1991; Milliken and Martins, 1996). Such

⁸ The process of imprinting occurs when a focal entity develops characteristics that reflect prominent features of its environment during a brief period of susceptibility, and these characteristics persist even when the environment significantly changes over time (Marquis and Tilcsik, 2013).

a conducive team environment could in turn stimulate a positive attitude towards risk-taking and encourage TMT members to have constructive debates on strategic plans, thus reducing group thinking (Dahlin et al., 2005). They may carefully consider team decisions, and quickly learn from past experiences and take corrective actions. Therefore, a migrant TMT with greater incentives to be effectively involved in the decision-making process will critically check each other's work, have a longer time horizon with reduced myopic behaviours, and will direct the focus of the TMT towards developing long-term strategic goals including successful innovation (Zhang, 2019).

On the flip side, social identity theory⁹ suggests that migrant managers might be considered as out-group members in the TMT (Tajfel, 1982). In China, hometown is among the most common and distinctive bases upon which social network is built (Xu et al., 2021). Ren et al. (2021) suggest that hometown (i.e., non-migrant) CEOs in China could receive more support from the board owing to their hometown identity. It is easy to extrapolate that migrant managers, compared with their local counterparts, may receive less local support from government, local investors and local suppliers (Lai et al., 2020). Such exclusion and unsettled conditions would negatively influence a migrant's sense of belonging and identity formation (Du et al., 2018; Wang and Fan, 2012), making them shy away from communicating, and impede their ability to stimulate constructive debates and evaluation of different strategic choices. Also, the cost of favouritism bias¹⁰ may lead to in-group views being less likely to be challenged, which might weaken the monitoring of each member of the TMT on others (Zhang, 2019). As a result, the TMT may be led more towards meeting short-term earnings expectations and engaging more in myopic behaviours, eventually resulting in biased decision-making (Huang et al., 2022). As such, migrant managers may not be able to promote an innovative team environment at the TMT level, despite their innovative personalities. Based on the competing arguments above, the following hypothesis is proposed:

H1: There is no association between migrant TMT and corporate innovation in Chinese listed firms.

⁹ According to Abrams and Hogg (1988), social identity is the belief that one belongs to a particular social group, based on comparisons between members of the selected group and other groups (Stets and Burke, 2000). Those in a group are like-minded individuals, sharing similar beliefs, identifying with one another, having similar opinions, and behaving similarly (Stets and Burke, 2000).

¹⁰ Individuals who integrate into groups are likely to lose their ability to think for themselves, and instead, tend to conform to in-group thoughts, which ultimately leads to biased decision-making. Favouritism in-group ignores or fails to adequately consider the costs of favoured decisions and suggestions from specialists outside the group. Tajfel and Turner (1986) describe bias as emphasising in-group membership at the expense of out-group members.

2.4 Research Methodology

2.4.1 Sample selection

The initial data for this study includes all A-share listed firms from 2008 to 2020. The sample period starts in 2008 as birthplace data for managers required for calculating migrant TMT was largely missing before 2008. The birthplace data is critically important to identify whether a TMT member is a migrant or not. Several sources were utilized as detailed below.

First, the China Stock Market Accounting Research Database (CSMAR) was used to retrieve birthplace data for TMT managers. When this information was not available from CSMAR, I manually collected the ID number from the Initial Public Offering (IPO) prospectus and then retrieved birthplace data using the manager's ID number. Every Chinese citizen must register their residence after birth, and each resident is assigned a unique 13-digit ID number when registering residence. The ID number cannot be changed, even after migration. In most cases, a person's birthplace can be determined by the first 6 digits of the ID number. Specifically, the first 2 digits indicate the province of the residence, the third and fourth digits indicate the city, and fifth and sixth, the district/county. To further validate the accuracy of the retrieval of birthplace information as described above, I cross-referenced the birthplace information provided on the ID with data retrieved from various sources including newspapers, journals, alumni reports and public profiles.¹¹ Some illustrative examples of tracking migration status of TMT members are provided in Appendix A. Patent applications and grant data are collected from the Chinese Research Data Services Platform (CNRDS) database, which has been widely used in prior innovation studies (Chen et al., 2021; Cui et al., 2021; Luo et al., 2022; Tang et al., 2021). Patent Citations data and the accounting and governance data come from the CSMAR database.

To focus solely on mainland China, firms with migrant managers from foreign countries, Hong Kong, Taiwan and Macao were excluded. Migrant TMT data was then merged with innovation data. The specific sample selection procedures are shown in Panel A of Table 2.1. Because I used one-year-ahead innovation measures, I lost another 1,475 firm-year

¹¹I do so because the first 6 digits of ID may not always accurately reflect the actual place of birth. The State Council of China introduced "The People's Republic of China Identity Card Trial Regulations" in April 1984, marking China's initial set of regulations governing residents' identification cards. This means a manager who was born after the promulgation of this regulation had the option to obtain his/her ID in the place of study or employment, potentially resulting in the first six digits of their ID not accurately indicating their actual birthplace.

observations resulting in a final sample of 4,713 firm-year observations for performing the baseline regression.

Panel B of Table 2.1 reports the sample distribution across industry. Industries are categorized according to the Guidance on the Industry Category of Listed Companies issued by the China Securities Regulatory Commission (CSRC) in 2012. The top three industries in my sample are manufacturing (3,841), followed by information transmission, software and information technology services (312) and construction (134). The industry distribution of the full sample is consistent with the fact that listed firms in China are dominated by the manufacturing sector.

2.4.2 Measurement of the dependent and main independent variable

2.4.2.1 Migrant TMT

The CSMAR database lists the President, Vice Presidents, Secretary to the Board, and other senior executives in the TMT as disclosed in annual reports. Consistent with prior literature, a migrant manager is defined as a manager whose birthplace is different from the place where the firm is located (Gao et al., 2021). Based on the definition of migrant managers, I measure migrant TMT by the proportion of migrant managers in the TMT and denote this as *Mig_Prop*. Prior literature finds that individual behaviour is shaped not only by nature (i.e., innate characteristics) but also by experiences (Hanlon et al., 2022). To investigate whether migration experiences impact managers' preferences and beliefs and ultimately corporate innovation, I decompose *Mig_Prop* into two components namely direct migration (*Mig_Direct*) and multiple migration (*Mig_Multiple*) based on the movements of their migration.¹² Specifically, *Mig_Direct* refers to the proportion of migrant managers who migrated just once, moving directly from their hometown to their current workplace. *Mig_Multiple* is defined as the proportion of migrant managers who have migrated more than once. This distinction may be relevant because managers with multiple migration experiences could be more inclined toward risk-taking and openness to new ideas, while direct migrants may exhibit stronger preferences for stability and a comparatively lower appetite for risk.

¹² I obtained managers' migration movements from their public profiles. Although tracking a manager's entire migration journey through public profiles can be challenging and may lead to potential underestimations, it provides a fundamental understanding of their migration history.

2.4.2.2 Corporate innovation

Corporate innovation is calculated using output-based measures, namely patent applications, patents granted, and patent citations.¹³ One-year-ahead patent measures were used in all regression specifications to account for the fact that migrant TMTs need time to make investments in innovative activities. Three variants of patent applications were used. *Apply1* is the natural logarithm of one plus the total number of patents applications; *Apply2* is the natural logarithm of one plus the number of invention and utility model patents applied; and finally, *Iapply* is the natural logarithm of one plus the number of invention patents applied.¹⁴ Similarly, three variants of patents granted are used. *Grant1* is the natural logarithm of one plus the number of total patents granted. *Grant2* is the natural logarithm of one plus the number of invention and utility patents granted. *Igrant* is the natural logarithm of 1 plus the number of invention patents granted. *Citation* is the natural logarithm of 1 plus the number of citations received by the patent annually. I adjust a patent's annual citations for its technology class by dividing it by the average citation of that year received by all patents filed (and eventually granted) in the same cohort (the same two-digit technology class and application year) (Hall et al., 2001; Nguyen et al., 2020). This measure of innovation quality accounts for the heterogeneous propensity for patents in different technology classes to cite other patents.

2.4.3 Regression model

To investigate the association between migrant TMT and corporate innovation, the following ordinary least squares (OLS) regression model is used:

¹³ Input-based measures such as R&D expenditure has often been used as the most common measurement for a firm's innovation activities. However, limitations also exist in the use of input-based measurement. First, R&D expenditures cannot capture a firm's innovation strategies and innovation performance (Manso, 2011) as it only reflects one particular observable quantitative input (Aghion et al., 2013). As stressed by Aghion et al. (2013), the innovation output depends more on the productivity of R&D expenses, rather than on the amount of R&D. Therefore, the increase in the amount of R&D expenses cannot necessarily guarantee more innovation outputs (Gao et al., 2018; Lanjouw and Schankerman, 2004). Second, R&D expenses are more sensitive to accounting standards than innovation outputs, as whether they should be capitalised or expensed are quite specific (Acharya and Subramanian, 2009). Thus R&D expenditures used in research do not necessarily reflect the firm's actual R&D expenses.

¹⁴ As per the Patent Law of People's Republic of China, patents in China are divided into three types: invention, utility model and design patents. Among these three types of patents, invention and utility model patents include both substantial and format elements, while design patents only include format elements. To mitigate the concern that the number of patents applied or granted captures mainly the quantity of patents, I also use the number of inventions plus utility model patents (*Apply2*), and invention patents (*Iapply*), considering these two kinds of patents are of higher quality and more innovative than others, with invention patents having the highest quality among these three types.

$$\begin{aligned}
Innovation_{i,t+1} = & \alpha_0 + \beta_1 Mig_{Prop_{i,t}} + \beta_2 Size_{i,t} + \beta_3 Roa_{i,t} + \beta_4 Lev_{i,t} + \\
& \beta_5 Growth_{i,t} + \beta_6 Tobinq_{i,t} + \beta_7 TMT_{size_{i,t}} + \beta_8 TMT_{age_{i,t}} + \\
& \beta_9 TMT_{edu_{i,t}} + \beta_{10} TMT_{gender_{i,t}} + \beta_{11} Bind_{i,t} + \beta_{12} Top Holding_{i,t} + \\
& \beta_{13} Firm Age_{i,t} + \beta_{14} Home CEO_{i,t} + Industry Fe + Year Fe + \\
& Province Fe + \varepsilon_{i,t}
\end{aligned} \tag{1}$$

$$\begin{aligned}
Innovation_{i,t+1} = & \alpha_0 + \beta_1 Mig_{Pure_{i,t}} + \beta_2 Mig_{Multiple_{i,t}} + \beta_3 Size_{i,t} + \beta_4 Roa_{i,t} + \\
& \beta_5 Lev_{i,t} + \beta_6 Growth_{i,t} + \beta_7 Tobinq_{i,t} + \beta_8 TMT_{size_{i,t}} + \beta_9 TMT_{age_{i,t}} + \\
& \beta_{10} TMT_{edu_{i,t}} + \beta_{11} TMT_{gender_{i,t}} + \beta_{12} Bind_{i,t} + \beta_{13} Top Holding_{i,t} + \\
& \beta_{14} Firm Age_{i,t} + \beta_{15} Home CEO_{i,t} + Industry Fe + Year Fe + \\
& Province Fe + \varepsilon_{i,t}
\end{aligned} \tag{2}$$

where *Innovation* is proxied by patent applications (*Apply1*, *Apply2* and *Iapply*), patents granted (*Grant1*, *Grant2* and *Igrant*), and Patent citations (*Citation*). Since the firms' innovation cycle is typically long (e.g. Holmstrom, 1989; Manso, 2011), and there is an inherent time lag in the association between migrant TMT and corporate innovation. Thus, I use the one-year-ahead innovation measures as the dependent variable (He and Tian, 2013; Chemmanur et al. 2019). This approach also help reduce concerns about reverse causality.

In Equation (1), the variable of interest, *Mig_Prop*, is the ratio of the numbers of migrant managers to the TMT size. In equation (2) *Mig_Direct* and *Mig_Multiple* are the proportion of one-time migrants, and multiple-time migrants in the TMT, respectively. Following prior literature (Hu et al., 2021; Wan et al., 2021), the set of control variables includes firm size (*Size*), return on assets (*Roa*), financial leverage of the firm (*Lev*), asset growth (*Growth*), Tobin's q (*Tobinq*), TMT size (*TMT_size*), the average age of TMT (*TMT_age*), the average education level of TMT (*TMT_edu*), the average gender of TMT (*TMT_gender*), board independence (*Bind*), ownership concentration proxied by the percentage of total shares held by the largest shareholder (*Top Holding*), firm age (*Firm Age*), and CEO hometown identity (*Home CEO*). In addition, I include industry, year, and province fixed effects in the regression model to control for the unobservable industry, year, and provincial-level invariant characteristics and time trends. Standard errors are clustered at the firm level. I winsorize all the continuous variables at the 1 and 99% levels to reduce the influence of the outliers. Appendix B details the variable definitions and their data sources.

2.5 Results

2.5.1 Descriptive statistics and correlation analysis

Table 2.1 exhibits the distribution of the sample. Panel B and C of Table 2.1 presents the distribution of the sample by industry and province, respectively. About 81.5% of sample observations come from the manufacturing industry (industry code C). Column (1) in Panel B shows the number of firms headquartered in each province and Column (2) provides the percentage breakdown. The highest number of firm headquarters are found in Guangdong (n=909), whereas Xinjiang has the smallest number of firm headquarters (n=5).

Table 2.1 Full sample distribution

Panel A: Sample Selection Procedure			
Observations with available manager birthplace information			8,335
Less:			
Observations in the financial industry			157
Observations with no patent application and no patents granted in the same year			1,089
Observations with TMT members from foreign countries			355
Observations with missing controls			546
Final Sample			6,188
Panel B: Full sample distribution across industry			
Industry		N	%
A	Agriculture, forestry, animal husbandry and fishery	25	0.53
B	Mining	76	1.61
C	Manufacturing	3,841	81.5
D	Industry of electric power, heat, gas and water production and supply	53	1.12
E	Construction	134	2.84
F	Wholesale and retail	49	1.04
G	Transport, storage and postal service	13	0.28
I	Information transmission, software and information technology services	312	6.62
K	Real Estate	3	0.06
L	Leasing and commercial service	39	0.83
M	Scientific research and technical service	47	1.00
N	Water conservancy, environment and public facility management	67	1.42
P	Education	12	0.25
Q	Health and social work	3	0.06
R	Culture, sports and entertainment	29	0.62
S	Diversified industries	10	0.21
Total		4,713	100.00

Panel C: Full sample distribution across province

Province	Headquarters of firms	
	N	% of all Obs.
Beijing	395	8.38
Tianjin	54	1.15
Hebei	68	1.44
Shanxi	48	1.02
Inner Mongolia	16	0.34
Liaoning	70	1.49
Jilin	29	0.62
Heilongjiang	31	0.66
Shanghai	240	5.09
Jiangsu	647	13.73
Zhejiang	703	14.92
Anhui	116	2.46
Fujian	188	3.99
Jiangxi	71	1.51
Shandong	294	6.24
Henan	149	3.16
Hubei	94	1.99
Hunan	158	3.35
Guangdong	909	19.29
Guangxi	37	0.79
Hainan	10	0.21
Chongqing	37	0.79
Sichuan	135	2.86
Guizhou	11	0.23
Yunnan	60	1.27
Tibet	12	0.25
Shaanxi	50	1.06
Gansu	55	1.17
Qinghai	14	0.30
Ningxia	7	0.15
Xinjiang	5	0.11

Note: This table reports the distribution of my sample. Panel A reports the number of observations in each industry and the percentage of observations in the whole sample. Panel B reports the corresponding percentages of the full sample by province. Columns (1) and (2) in Panel B report the number of firm headquarters in each province and the percentage in the whole sample, respectively. Panel C reports the sample selection procedure.

Table 2.2 summarises descriptive statistics for the regression variables. The mean of patent applications is 17.73, 15.02, and 6.30 for *Apply1* (total patents), *Apply 2* (invention plus utility patents), and *Iapply* (invention patents), respectively.¹⁵ In terms of patents granted, the corresponding values are 14.64, 11.88, and 2.55 (before natural logarithm). Additionally, each patent in my sample, on average, receives 9.69 citations per year. Compared with US firms, which typically report substantially higher level of patenting activity (Hall et al., 2005), these figures indicate that Chinese firms in my sample exhibit considerably lower innovation output. The difference between the maximum and minimum value is quite large, ranging from a

¹⁵ The number of patent applications used here are the actual number of patents before taking natural logarithm.

minimum of 0 to a maximum of 818.75 for the total patent applications (untabulated). The large differences indicate the variations in the level of corporate innovation across different firms are significant, which potentially facilitates this study. The mean value of *Mig_Prop* is 0.277, indicating that, on average, the percentage of migrant managers in the TMT is 27.8%. Approximately 20% of the migrant managers in the TMT have migrated only once (*Mig_Direct*), while about 8% have experienced multiple migrations (*Mig_Multiple*).

Firms in my sample are relatively large (average *Size* is 21.60), profitable (mean *Roa* of 5.10%), have good growth opportunities (mean *Growth* of 28%). The mean values of these basic firm-level controls are similar to those in previous studies (Wan et al., 2021; Zhou et al., 2021). The mean value of *Home CEO* is 0.59, implying that 59% of CEOs are from local provinces, which is consistent with prior literature (Lai et al., 2020; Ren et al., 2021; Yonker, 2017). With respect to TMT characteristics, the mean of TMT size (*TMT_size*) is 6.05, and their average age (*TMT_age*) is 46.76, with approximately 85% being male. The mean value of TMT education (*TMT_edu*) is 1.176 (3.241 before taking natural logarithm), suggesting that the average education level of TMTs is equivalent to a bachelor's degree.

Table 2.2 Descriptive statistics

Variable	N	Mean	Std. Dev.	0.25	Median	0.75
<i>Mig_Prop_t</i>	4,713	0.277	0.289	0.000	0.200	0.444
<i>Mig_Direct_t</i>	4,713	0.204	0.238	0.000	0.143	0.333
<i>Mig_Multiple_t</i>	4,713	0.073	0.142	0.000	0.000	0.125
<i>Apply1_{t+1}</i>	4,713	3.052	1.419	2.079	3.091	3.989
<i>Apply2_{t+1}</i>	4,713	2.900	1.443	1.946	2.944	3.850
<i>Iapply_{t+1}</i>	4,713	2.106	1.369	1.099	2.079	2.996
<i>Grant1_{t+1}</i>	4,713	2.900	1.318	1.946	2.890	3.761
<i>Grant2_{t+1}</i>	4,713	2.708	1.332	1.792	2.708	3.584
<i>Igrant_{t+1}</i>	4,713	1.365	1.145	0.693	1.099	2.079
<i>Citation_{t+1}</i>	3,387	1.068	0.601	0.741	1.223	1.522
<i>Size_t</i>	4,713	21.600	1.273	20.740	21.410	22.140
<i>Roa_t</i>	4,713	0.051	0.047	0.025	0.050	0.077
<i>Lev_t</i>	4,713	0.351	0.185	0.199	0.334	0.485
<i>Growth_t</i>	4,713	0.283	0.451	0.046	0.136	0.328
<i>Tobinq_t</i>	4,713	1.923	0.972	1.297	1.616	2.207
<i>TMT_size_t</i>	4,713	1.804	0.347	1.609	1.792	2.079
<i>TMT_age_t</i>	4,713	3.841	0.079	3.789	3.845	3.896
<i>TMT_edu_t</i>	4,713	1.173	0.214	1.050	1.179	1.299
<i>TMT_gender_t</i>	4,713	0.850	0.158	0.750	0.857	1.000
<i>Bind_t</i>	4,713	0.376	0.054	0.333	0.333	0.429
<i>Top Holding_t</i>	4,713	0.343	0.139	0.239	0.330	0.428
<i>Firm Age_t</i>	4,713	2.627	0.433	2.398	2.708	2.944
<i>Home CEO_t</i>	4,713	0.590	0.492	0.000	1.000	1.000
<i>Rem_t</i>	3,486	-0.019	0.170	-0.103	-0.004	0.083
<i>Risk_t</i>	3345	-.0006	0.090	-0.034	-0.011	0.053
<i>SOE_t</i>	4,713	0.194	0.395	0.000	0.000	0.000
<i>RD_Ratio_{t+1}</i>	4,713	0.966	1.149	0.000	0.693	1.609

<i>Gpat_App_{t+1}</i>	4,713	0.601	0.919	0.000	0.000	1.099
<i>IGpat_App_{t+1}</i>	4,713	0.734	0.981	0.000	0.000	1.386
<i>Gpat_grant_{t+1}</i>	4,713	0.267	0.586	0.000	0.000	0.000
<i>IGpat_grant_{t+1}</i>	4,713	0.267	0.586	0.000	0.000	0.000

Note: This table reports the summary statistics of the regression variables. All variables are defined in Appendix B.

Table 2.3 shows the Pearson correlation matrix for the variables used in the baseline regression model. *Mig_Prop* is positively and significantly correlated with *ApplyI_{t+1}*, *GrantI_{t+1}*, *Citation_{t+1}* at the 1% level (correlation coefficients: 0.12, 0.10, and 0.10, respectively). This provides univariate support that migrant TMT is positively associated with corporate innovation. Among the control variables, *Size* and *Lev* are positively and significantly correlated with innovation measures (Hall and Ziedonis, 2001; Yuan and Wen, 2018). TMT characteristics, such as *TMT_size*, *TMT_age*, *TMT_edu*, and *TMT_gender* are significantly and positively correlated with innovation measures. The correlation between CEO hometown identity (*Home CEO*) and innovation measures is negative and significant. The largest variance inflation factor (VIF) is 1.95 which is far less than 10, suggesting that multicollinearity is not a serious concern in the estimations in this study (Marquardt, 1970).

Table 2.3 Pearson correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1.Mig_Prop	1.00																						
2.Mig_Direct	0.87	1.00																					
3.Mig_Multiple	0.57	0.09	1.00																				
4.Apply1	0.12	0.08	0.10	1.00																			
5.Apply2	0.13	0.09	0.10	0.96	1.00																		
6.Iapply	0.15	0.12	0.12	0.85	0.89	1.00																	
7.Grant1	0.10	0.07	0.10	0.78	0.74	0.66	1.00																
8.Grant2	0.11	0.08	0.10	0.75	0.78	0.69	0.94	1.00															
9.Igrant	0.14	0.10	0.12	0.58	0.60	0.68	0.66	0.70	1.00														
10.Citation	0.10	0.07	0.08	0.42	0.45	0.42	0.38	0.41	0.42	1.00													
11.Size	-0.00	-0.10	0.01	0.40	0.40	0.39	0.45	0.45	0.40	0.21	1.00												
12.Roa	0.02*	0.02	0.02	0.02	-0.01	0.02	-0.02	-0.05	-0.10	0.03	-0.16	1.00											
13.Lev	0.01	0.01	0.01	0.05	0.08	0.07	0.08	0.11	0.08	0.02	0.37	-0.23	1.00										
14.Growth	0.07	0.06	0.03	-0.01	-0.01	-0.01	-0.07	-0.08	-0.04	0.04	-0.35	0.24	-0.03	1.00									
15.Tobinq	0.02*	0.01	0.03	-0.07	-0.08	-0.02	-0.11	-0.13	-0.01	-0.02	-0.23	0.22	-0.15	-0.03	1.00								
16.TMT_size	-0.08	-0.05	-0.09	0.16	0.15	0.14	0.16	0.16	0.13	0.16	0.26	-0.01	0.04	-0.02*	-0.12	1.00							
17.TMT_age	-0.07	-0.05	-0.06	0.06	0.07	0.06	0.12	0.12	0.10	-0.08	0.31	-0.05	0.10	-0.19	-0.07	0.13	1.00						
18.TMT_edu	0.20	0.13	0.19	0.12	0.11	0.15	0.11	0.10	0.16	0.08	0.20	-0.01	0.07	-0.04	0.08	-0.00	-0.04	1.00					
19.TMT_gender	-0.01	-0.00	-0.02	0.08	0.09	0.08	0.08	0.08	0.07	0.10	0.10	-0.02	0.03	-0.02	-0.07	0.11	0.12	0.07	1.00				
20.Bind	0.04	0.03	0.04	0.04	0.03	0.04	0.05	0.04	0.05	-0.00	0.06	-0.02	0.05	-0.01	0.03	-0.08	-0.01	0.05	-0.07	1.00			
21.Top Holding	0.03*	0.04	-0.01	0.04	0.02	-0.00	0.06	0.03	0.01	0.10	0.18	0.11	0.04	-0.00	-0.05	-0.02	0.03	0.02	0.01	0.09	1.00		
22.Firm Age	-0.08	-0.06	-0.06	0.04	0.03	0.05	0.09	0.09	0.06	-0.25	0.15	-0.08	0.08	-0.22	0.04	-0.01	0.26	-0.01	-0.06	0.05	-0.07	1.00	
23.Home CEO	-0.49	-0.40	-0.33	-0.13	-0.15	-0.15	-0.13	-0.14	-0.13	-0.10	-0.13	0.06	-0.05	0.01	-0.01	0.02	0.02*	-0.19	0.06	-0.01	-0.02	0.03	1.00

Note: This table shows the Pearson correlation matrix of TMT migration measures, corporate innovation measures and control variables. Bold and italics indicates statistical significance at $p < 0.01$; bold values indicate statistical significance at $p < 0.05$; and * indicates statistical significance at $p < 0.10$. All variables are defined in Appendix B.

2.5.2 Baseline regression results

I estimate the OLS regressions (Equations 1 and 2) to examine the association between migrant TMT and corporate innovation and report the results in Table 2.4. As per Equation (1) the independent variable of interest is *Mig_Prop*, with the dependent variables being one-year-ahead innovation outputs (measured as patent applications, patents granted, and patent citations). Columns (1) – (6) of Table 2.4 present the results for patent applications, measured by *Apply1_{t+1}*, *Apply2_{t+1}*, *Iapply_{t+1}*, respectively. I find the coefficients of *Mig_Prop* are positive and significant at the 1% level, with values of 0.494, 0.542, 0.523 in Columns (1), (3) and (5). The findings are also economically significant. For example, a one-standard deviation increase in *Mig_Prop* in year *t*, is associated with a 18.7% increase in the total number of patent applications in year *t+1* (Column 1), a 20.8% increase in the number of utility plus invention patent applications in year *t+1* (Column 3), and a 22.1% increase in the number of invention patents in year *t+1* (Column 5).¹⁶ This suggests that firms that have TMTs with more migrant managers lead to more patent applications and are more likely to engage in highly innovative strategies (i.e., generating more utility and invention patents).

As I discussed earlier, migrant managers can be either one-time migrants, or multiple migrants considering their migration experiences. Therefore, I replace *Mig_Prop* in Equation (1) by *Mig_Direct* and *Mig_Multiple* in Equation (2) to infer the differential effects of migration experiences, if any, on corporate innovation. The results are reported in Columns (2), (4) and (6) of Table 2.4. I find the coefficients for the migration variables positive and significant. In Column (2), for example, the coefficients of *Mig_Direct* and *Mig_Multiple* are 0.417 ($p < 0.05$) and 0.714 ($p < 0.01$). I find the coefficient on *Mig_Multiple* larger in magnitude than *Mig_Direct* for the other innovation measures as well, despite multiple-time migrants comprising a small fraction of all migrant managers.

Owing to the fact that not all patents applied would be successful, the association between migrant TMT and patents granted are further examined and the results reported in Columns (7) - (12) of Table 2.4. The results are generally consistent with those of patent applications. For example, the coefficients on *Mig_Prop* are significant and positive at the 1% level for all three patent granted measures, with coefficients being 0.433, 0.504, and 0.364 for

¹⁶ Define *Apply1_{t+1}* as the *y* variable and *Mig_Prop_t* as the *x* variable of interest, then the coefficient on *Mig_Prop_t* of 0.494 represents $d\ln(1 + y)/dx$. To find the change in *y* (*dy*), I derive it as $dy = [d\ln(1 + y)/dx] * dx * (1 + y)$. As the standard deviation of *x* is 0.286, and the unconditional mean of *y* is 3.052, I obtain $dy = [d\ln(1 + y)/dx] * dx * (1 + y) = 0.494 * 0.286 * (1 + 3.052) = 0.572$. This represents a 18.7% ($0.572/3.052$) increase in the mean of *Apply1_{t+1}*.

$Grant1_{t+1}$, $Grant2_{t+1}$, and $Igrant_{t+1}$, respectively. The results are also economically significant. For example, a one-standard deviation increase in Mig_Prop , in year t is associated with a 16.8% increase in the total number of patents granted in year $t+1$ according to the result in column (7), a 19.9% increase in the number of utility plus invention patents granted based on the result in column (9), and an 18.2% increase in the number of invention patents granted based on the result in column (11). The coefficients on Mig_Direct and $Mig_Multiple$ are also positive and significant in Columns (8), (10) and (12) with the magnitude of the coefficients on $Mig_Multiple$ being larger than that of Mig_Direct .

Finally, I also consider innovation quality as proxied by patent citations. The coefficient on Mig_Prop is 0.581 ($p < 0.01$) (Column 13). In terms of economic significance, a one-standard deviation increase in Mig_Prop in year t , is associated with a 23.6% increase in the patent citations. For citation measure, too, the coefficients on Mig_Direct and $Mig_Multiple$ are positive and significant (Column 14) and the magnitude of the coefficient on $Mig_Multiple$ is larger than that of Mig_Direct . Overall, the regression results in Table 2.4 suggest that migrant TMT has a positive and significant effect on both the quantity and quality of innovation outputs, which reject my Hypothesis 1.

With respect to the firm-related control variables, I find that larger firms are associated with higher innovation outputs as the coefficient estimates on $Size$ are positive and significant at the 1% level. Likewise, firms with higher growth opportunities ($Growth$) are more innovative. TMT size (TMT_size) and TMT gender (TMT_gender) are significantly and positively associated with corporate innovation, suggesting that a firm with larger and male-dominated TMT are associated with innovation. Conversely, the coefficients on Lev and TMT_age are significantly negative, suggesting that leverage and age are two constraints on firm innovation. The coefficient of CEO hometown identity ($Home_CEO$) is significant and negative, implying that CEO hometown identity leads to less innovation outputs. Different from the findings in Ren et al. (2021) that a firm with a hometown CEO tends to innovate more, the finding in this study is consistent with Yonker (2017) and Jiang, Qian and Yonker (2019), who suggest that hometown bias can cause suboptimal decisions, leading to fewer innovative outputs.

Table 2.4 Baseline regression results

Variables	<i>Apply1_{t+1}</i>		<i>Apply2_{t+1}</i>		<i>Iapply_{t+1}</i>		<i>Grant1_{t+1}</i>		<i>Grant2_{t+1}</i>		<i>Igrant_{t+1}</i>		<i>Citation_{t+1}</i>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<i>Mig_Prop</i>	0.494*** (0.149)		0.542*** (0.151)		0.523*** (0.145)		0.433*** (0.143)		0.504*** (0.144)		0.364*** (0.126)		0.581*** (0.157)	
<i>Mig_Direct</i>		0.417** (0.169)		0.477*** (0.177)		0.483*** (0.170)		0.356** (0.162)		0.433*** (0.167)		0.302** (0.146)		0.445** (0.183)
<i>Mig_Multiple</i>		0.714*** (0.248)		0.726*** (0.259)		0.639** (0.265)		0.654*** (0.253)		0.704*** (0.254)		0.541** (0.247)		0.983*** (0.279)
<i>Size</i>	0.611*** (0.036)	0.610*** (0.036)	0.612*** (0.039)	0.611*** (0.039)	0.583*** (0.038)	0.583*** (0.038)	0.569*** (0.035)	0.568*** (0.035)	0.560*** (0.037)	0.559*** (0.037)	0.482*** (0.035)	0.481*** (0.035)	0.602*** (0.042)	0.600*** (0.041)
<i>Roa</i>	1.450** (0.712)	1.437** (0.715)	0.748 (0.761)	0.737 (0.763)	1.267* (0.691)	1.260* (0.692)	0.663 (0.671)	0.650 (0.674)	-0.188 (0.712)	-0.201 (0.715)	0.259 (0.559)	0.248 (0.561)	1.402* (0.799)	1.381* (0.799)
<i>Lev</i>	-1.826*** (0.675)	-1.815*** (0.674)	-1.374** (0.695)	-1.364** (0.693)	-0.609 (0.653)	-0.603 (0.652)	-1.379** (0.652)	-1.367** (0.650)	-0.810 (0.668)	-0.800 (0.665)	-0.523 (0.573)	-0.515 (0.571)	-1.757** (0.754)	-1.730** (0.752)
<i>Growth</i>	0.442*** (0.048)	0.441*** (0.048)	0.452*** (0.049)	0.452*** (0.049)	0.487*** (0.047)	0.487*** (0.047)	0.363*** (0.042)	0.363*** (0.043)	0.353*** (0.043)	0.352*** (0.043)	0.332*** (0.038)	0.332*** (0.038)	0.355*** (0.054)	0.355*** (0.054)
<i>Tobinq</i>	0.047 (0.034)	0.047 (0.034)	0.053 (0.036)	0.053 (0.037)	0.109*** (0.037)	0.109*** (0.037)	0.022 (0.031)	0.022 (0.031)	0.022 (0.034)	0.022 (0.034)	0.099*** (0.032)	0.098*** (0.032)	0.061 (0.038)	0.062 (0.038)
<i>TMT_size</i>	0.215** (0.108)	0.220** (0.108)	0.186* (0.108)	0.190* (0.108)	0.192* (0.103)	0.195* (0.103)	0.237** (0.103)	0.242** (0.103)	0.193* (0.102)	0.198* (0.102)	0.143 (0.088)	0.147* (0.087)	0.103 (0.118)	0.112 (0.118)
<i>TMT_age</i>	-0.958** (0.464)	-0.955** (0.464)	-0.953* (0.486)	-0.951* (0.486)	-0.759* (0.454)	-0.758* (0.454)	-0.711 (0.445)	-0.708 (0.444)	-0.681 (0.462)	-0.678 (0.462)	-0.072 (0.370)	-0.069 (0.369)	-0.810 (0.497)	-0.811 (0.494)
<i>TMT_edu</i>	0.111 (0.165)	0.096 (0.163)	0.055 (0.180)	0.042 (0.179)	0.198 (0.171)	0.190 (0.170)	0.021 (0.158)	0.006 (0.157)	-0.035 (0.169)	-0.048 (0.169)	0.189 (0.138)	0.177 (0.137)	0.135 (0.183)	0.105 (0.182)
<i>TMT_gender</i>	0.418* (0.218)	0.422* (0.218)	0.463** (0.218)	0.466** (0.218)	0.441** (0.203)	0.443** (0.203)	0.383* (0.208)	0.387* (0.208)	0.457** (0.208)	0.461** (0.208)	0.314* (0.166)	0.317* (0.165)	0.249 (0.256)	0.257 (0.257)
<i>Bind</i>	0.080 (0.621)	-0.056 (0.625)	-0.265 (0.639)	-0.269 (0.636)	-0.267 (0.610)	-0.270 (0.608)	0.014 (0.632)	0.009 (0.627)	-0.171 (0.626)	-0.175 (0.622)	0.121 (0.532)	0.117 (0.529)	-0.229 (0.675)	-0.224 (0.666)
<i>Top Holding</i>	-0.365 (0.253)	-0.359 (0.252)	-0.617** (0.259)	-0.612** (0.258)	-0.672*** (0.251)	-0.668*** (0.251)	-0.063 (0.243)	-0.057 (0.242)	-0.372 (0.246)	-0.366 (0.245)	-0.417* (0.217)	-0.411* (0.216)	-0.443 (0.285)	-0.424 (0.283)
<i>Firm Age</i>	0.076 (0.094)	0.077 (0.095)	0.050 (0.095)	0.051 (0.095)	0.041 (0.095)	0.042 (0.095)	0.045 (0.090)	0.047 (0.089)	0.032 (0.088)	0.033 (0.088)	0.068 (0.077)	0.069 (0.077)	0.028 (0.095)	0.030 (0.094)
<i>Home CEO</i>	-0.171** (0.081)	-0.165** (0.081)	-0.220*** (0.083)	-0.215*** (0.083)	-0.160** (0.081)	-0.156* (0.081)	-0.146* (0.077)	-0.140* (0.077)	-0.196** (0.078)	-0.191** (0.078)	-0.047 (0.068)	-0.042 (0.068)	-0.134 (0.089)	-0.125 (0.088)
_cons	-8.590*** (1.783)	-8.569*** (1.773)	-8.273*** (1.931)	-8.255*** (1.923)	-9.597*** (1.848)	-9.585*** (1.843)	-8.876*** (1.692)	-8.854*** (1.679)	-8.640*** (1.805)	-8.621*** (1.794)	-10.782*** (1.539)	-10.765*** (1.526)	-7.445*** (1.964)	-7.426*** (1.943)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4,713	4,713	4,713	4,713	4,713	4,713	4,713	4,713	4,713	4,713	4,713	4,713	3,387	3,387
Adj R ²	0.34	0.34	0.33	0.33	0.31	0.31	0.34	0.34	0.33	0.33	0.30	0.30	0.57	0.57

Note: This table presents the OLS regression results of the association between TMT migration and corporate innovation for the period 2008 to 2020. The dependent variable of the regressions is the innovation output measures. *Apply1_{t+1}*, *Apply2_{t+1}*, *Iapply_{t+1}* refer to the number of total patents applied, utility and invention patents applied, and invention patents applied in the following year, respectively. Patents granted, likewise, is proxied by the total number of patents granted (*Grant1_{t+1}*), utility and invention patents granted (*Grant2_{t+1}*), and invention patents granted in the following year (*Igrant_{t+1}*). *Citation_{t+1}* is the patent citations in the following year. The key independent variables are the proportion of migrant managers (*Mig_Prop*), direct migrant managers (*Mig_Direct*) and multiple migrant managers (*Mig_Multiple*). Robust standard errors clustered at firm-level are in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix B.

2.5.3 Endogeneity tests

The regression results so far indicate a positive association between migrant TMT and corporate innovation. However, the results might be subject to endogeneity concerns. First, it is possible for omitted variables to bias the regression results if migration and firm innovation decisions are jointly determined by other unobservable factors. Second, the results are likely to suffer from problems of reverse causality. Innovative firms may prefer to hire talented managers from all over the nation, which would lead to more migrant managers in the TMT. However, by using one-year-ahead innovation measures in all my regression specifications, I have potentially alleviated this concern. Other potential endogeneity issues are addressed in several ways, including entropy matching approach and instrumental variable regression.¹⁷

2.5.3.1 Entropy balancing test

In recent studies, entropy balance matching has been shown to be more effective than propensity score matching as it relies on less restrictive assumptions, avoids sample reduction, and achieves balance for multiple moments of the covariate distribution (e.g., Hainmueller, 2012; McMullin and Schonberger, 2020). To better address the endogeneity issues arising from variation in observable firm characteristics, the baseline regression model is re-run using the entropy balanced sample and the results are presented in Table 2.5. This method ensures proper covariate balance between treated (Migrant TMT) and control (Non-migrant TMT) samples. For entropy balancing test, I code migrant TMT (*Mig_TMT*) as 1 if at least 50% of the TMT managers are migrants, and zero otherwise. By using entropy balancing, observations in the control group are allocated a weight, so that the mean, variance, and skewness of the distribution for each matched variable is very similar to its counterparts in the treated sample, resulting in no significant differences between the treated and control groups. The matching process used is based on 13 different covariates, and the differences in covariates after entropy balancing suggests that proper entropy balancing is achieved (Panel A of Table 2.5). Entropy-balanced regression is then run, and the results reported in Panel B of Table 2.5. The coefficients on *Mig_Prop* are significant and positive for all patent outputs measures, consistent with the main findings that migrant TMT is associated with more patents applied, more patents granted, and more citations.¹⁸

¹⁷ I did not conduct fixed effects regression owing to the fact that the within firm variation in the independent variable (i.e., *Mig_Prop*) is much smaller than the cross-sectional variation. OLS specification is better suited in such a case.

¹⁸ Untabulated results using *Mig_Direct* and *Mig_Multiple* are generally consistent with *Mig_Prop* for the other analyses as well (results are available upon request).

Table 2.5 Entropy balancing approach**Panel A: Covariate balance**

Covariates	Weight variables before entropy balancing						Weight variables after entropy balancing					
	Treated			Control			Treated			Control		
	Mean	Variance	Skewness	Mean	Variance	Skewness	Mean	Variance	Skewness	Mean	Variance	Skewness
<i>Size</i>	21.630	1.718	1.160	21.580	1.355	1.037	21.630	1.718	1.160	21.630	1.717	1.161
<i>Roa</i>	0.050	0.003	-0.857	0.049	0.003	-0.760	0.050	0.003	-0.857	0.050	0.003	-0.857
<i>Lev</i>	0.361	0.040	0.342	0.365	0.036	0.359	0.361	0.035	0.342	0.361	0.035	0.342
<i>Growth</i>	0.305	0.235	2.818	0.258	0.180	2.955	0.305	0.234	2.818	0.305	0.234	2.817
<i>Tobinq</i>	1.982	1.031	2.222	1.929	1.000	2.275	1.982	1.031	2.222	1.982	1.030	2.222
<i>TMT_size</i>	1.724	0.121	0.162	1.826	0.110	-0.066	1.724	0.121	0.162	1.724	0.121	1.162
<i>TMT_age</i>	3.836	0.006	-0.167	3.846	0.006	-0.194	3.836	0.006	-0.167	3.835	0.006	-0.155
<i>TMT_edu</i>	1.227	0.040	-0.220	1.160	0.046	-0.092	1.227	0.040	-0.220	1.227	0.040	-0.218
<i>TMT_gender</i>	0.853	0.026	-0.928	0.843	0.025	-0.912	0.853	0.026	-0.928	0.853	0.026	-0.927
<i>Bind</i>	0.379	0.003	1.041	0.376	0.003	1.239	0.379	0.003	1.041	0.379	0.003	1.043
<i>Top Holding</i>	0.341	0.020	0.467	0.336	0.019	0.411	0.341	0.020	0.467	0.341	0.020	0.467
<i>Firm Age</i>	2.593	0.200	-0.920	2.671	0.175	-1.066	2.593	0.200	-0.920	2.593	0.200	-0.919
<i>Home CEO</i>	0.175	0.144	1.713	0.752	0.187	-1.164	0.175	0.144	1.713	0.176	0.145	1.698

Panel B: Entropy-balanced regression							
Variables	<i>Apply</i> _{<i>t</i>+1}	<i>Apply</i> _{<i>t</i>+1}	<i>lapply</i> _{<i>t</i>+1}	<i>Grant</i> _{<i>t</i>+1}	<i>Grant</i> _{<i>t</i>+1}	<i>lgrant</i> _{<i>t</i>+1}	<i>Citation</i> _{<i>t</i>+1}
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Mig_Prop</i>	0.436*** (0.162)	0.480*** (0.163)	0.624*** (0.156)	0.296** (0.149)	0.348** (0.148)	0.436*** (0.122)	0.406** (0.167)
<i>Size</i>	0.637*** (0.041)	0.645*** (0.041)	0.620*** (0.042)	0.580*** (0.038)	0.584*** (0.037)	0.491*** (0.037)	0.664*** (0.056)
<i>Roa</i>	1.928** (0.924)	1.338 (0.941)	1.448* (0.805)	1.436* (0.817)	0.684 (0.800)	0.376 (0.630)	0.895 (0.863)
<i>Lev</i>	-3.358*** (1.119)	-2.856*** (1.093)	-1.831** (0.786)	-2.330** (0.909)	-1.855** (0.918)	-1.045 (0.664)	-2.844*** (0.926)
<i>Growth</i>	0.458*** (0.064)	0.459*** (0.066)	0.475*** (0.064)	0.391*** (0.055)	0.391*** (0.056)	0.295*** (0.045)	0.348*** (0.078)
<i>Tobinq</i>	-0.024 (0.055)	-0.014 (0.057)	0.077 (0.049)	-0.067 (0.049)	-0.059 (0.051)	0.089** (0.043)	0.054 (0.059)
<i>TMT_size</i>	0.315** (0.138)	0.287** (0.138)	0.319** (0.143)	0.284** (0.121)	0.230* (0.120)	0.236** (0.112)	0.178 (0.149)
<i>TMT_age</i>	-0.683 (0.663)	-0.607 (0.665)	-0.256 (0.654)	-0.425 (0.599)	-0.162 (0.599)	0.404 (0.495)	0.388 (0.718)
<i>TMT_edu</i>	0.256 (0.202)	0.241 (0.209)	0.278 (0.202)	0.111 (0.188)	0.091 (0.191)	0.287* (0.159)	0.209 (0.211)
<i>TMT_gender</i>	1.027*** (0.271)	1.083*** (0.277)	0.907*** (0.259)	0.906*** (0.242)	0.979*** (0.251)	0.548*** (0.198)	0.842** (0.340)
<i>Bind</i>	0.413 (0.783)	0.072 (0.784)	-0.429 (0.751)	0.777 (0.740)	0.307 (0.748)	0.017 (0.621)	-0.334 (0.892)
<i>Top Holding</i>	-0.213 (0.315)	-0.477 (0.318)	-0.592* (0.327)	0.150 (0.290)	-0.131 (0.294)	-0.435 (0.265)	-0.247 (0.396)
<i>Firm Age</i>	-0.032 (0.111)	-0.065 (0.115)	-0.027 (0.106)	0.011 (0.100)	-0.003 (0.099)	0.046 (0.088)	-0.076 (0.114)
<i>Home CEO</i>	-0.211** (0.093)	-0.277*** (0.095)	-0.197** (0.092)	-0.175** (0.082)	-0.235*** (0.084)	-0.055 (0.070)	-0.242** (0.095)
_cons	-11.152*** (2.414)	-11.321*** (2.449)	-12.903*** (2.461)	-11.061*** (2.177)	-12.012*** (2.194)	-13.129*** (1.847)	-13.465*** (2.696)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4,713	4,713	4,713	4,713	4,713	4,713	3,387
Adj R ²	0.422	0.422	0.386	0.430	0.425	0.348	0.634

Note: This table reports the entropy balance test results. Panel A shows the covariate balance with and without weighting. Panel B shows the entropy balanced regression estimates. The dependent variable of the regressions is the innovation output measures. *Apply*_{*t*+1}, *Apply*_{*t*+1}, *lapply*_{*t*+1} refer to the number of total patents applied, utility and invention patents applied, and invention patents applied in the following year, respectively. Patents granted, likewise, is proxied by the total number of patents granted (*Grant*_{*t*+1}), utility and invention patents granted (*Grant*_{*t*+1}), and invention patents granted in the following year (*lgrant*_{*t*+1}). *Citation*_{*t*+1} is the patent citations in the following year. The independent variable is the proportion of migrant managers (*Mig_Prop*). Robust standard errors clustered at firm-level are in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix B.

2.5.3.2 Instrumental variable analysis

Instrumental variable regressions are also used to further mitigate potential endogeneity concerns. Two instrumental variables are used in this study. First, similar to the approach adopted by prior literature (Hochberg and Lindsey, 2010; Kang et al., 2018; Ren et al., 2021), the average value of the proportion of migrant managers in the same province (*Average_TMT_Prov*) is used by excluding the focal firm as an instrument. Firms from the same province operate in a similar environment, making them similarly receptive to hiring migrant managers. Thus, *Average_TMT_Prov* would be correlated across firms in the same

province, making the *relevance* condition of the instrumental variable satisfied. Additionally, it is unlikely that corporate innovation is directly influenced by the hiring of migrant managers by other firms, thereby satisfying the *exclusion* criteria as well.

Second, motivated by Lai et al. (2020) who use the percentage of clear days in the firm's headquarter locations as an instrument to examine the association between local CEO and myopic decisions, I use annual temperature differences in the regions where firms are headquartered as the second instrument. As firms in regions with more desirable weather can more easily attract talented managers from across the country (Lai et al., 2020), it is anticipated that regions with lower annual temperature differences have more pleasant weather and are therefore more attractive to migrant managers. Furthermore, weather conditions, as exogenous factors, are less likely to directly influence corporate innovation (Lai et al., 2020), thereby, satisfying the exclusion criteria.

Weather condition data is collected from the China Meteorological Data Sharing Service System (CMDSSS) which records daily minimum, maximum, and average temperatures, sunshine duration, precipitation, wind speed, and relative humidity for 820 weather stations in China.¹⁹ To calculate the temperature difference, first the daily provincial-level average temperature are calculated using the daily minimum and maximum temperature data from the CMDSSS and then annualized. Then a relative temperature difference variable, *Temp_Diff*, is created. *Temp_Diff* is calculated as the annual provincial temperature difference minus the annual country-level temperature difference excluding the focal province, multiplied by -1 so that higher values imply more pleasant weather.²⁰ A positive and significant coefficient on *Temp_Diff* is expected in the first stage regression.

Table 2.6 presents the results for 2SLS regressions. In Column(1), the coefficients on the first stage variables, *Average_TMT_Prov* (coefficient: 0.658, $p < 0.01$) and *Temp_Diff* (coefficient: 0.076, $p < 0.01$) are positive and significant, consistent with my conjecture that the proportion of migrant managers is highly related across firms in the same province, and managers are more likely to migrate to provinces with lower temperature differences. In the

¹⁹ CMDSSS was developed and is currently managed by the Climatic Data Center, National Meteorological Information Center, China Meteorological Administration. See <http://data.cma.cn/> for details.

²⁰ For example, in 2015, the annual temperature difference of Guangdong is 20.81, when the average annual temperature difference of other provinces excluding Guangdong is 32.55. *Temp_Diff*, therefore, is 11.74 calculated as $(20.81 - 32.55) * (-1)$. In comparison, the average annual temperature difference in Ningxia is 31.74, when the average annual temperature difference excluding Ningxia is 32.02. *Temp_Diff*, therefore, is 0.28. Following the notion that migrant managers would be attracted to regions with more pleasant weather, I expect Guangdong to be more attractive than Ningxia in 2015.

second stage, I use the predicted value of *Mig_Prop* from the first-stage regression as an independent variable, along with other variables defined in Model (1). The coefficient on the predicted *Mig_Prop* is also positive and significant for various innovation measures from Column (2) to Column (8). For example, *Mig_Prop* is positively and significantly associated with *Citation_{t+1}* (coefficient: 0.557, $p < 0.05$) in Column (8). In addition, the validity of the instrumental variable is also tested. The K-Paap rk LM statistic (448.103) for the under-identification test is significant at the 1% level, suggesting that the chosen instruments satisfy the identification criteria. In terms of weak instrumental variable test, the Cragg–Donald Wald F statistic and the K-Paap Wald rk F statistic are much greater than the Stock-Yogo (2005) critical value, hence the instruments in this study also pass the weak instrument test. Overall, the 2SLS regression analysis confirms the robustness of my baseline results that migrant TMT is positively associated with corporate innovation.

While the average proportion of migrant managers in the same province is unlikely to have a direct effect on a firm's innovation, I acknowledge the possibility that it may be correlated with unobserved province-level shocks, such as regional innovation policies or development strategies that could simultaneously affect both managerial mobility and innovation outcomes. These unobserved factors may, in turn, influence the likelihood of other firms appointing migrant CEOs, thereby indirectly affecting the focal firm. To address this concern, I include province and year fixed effects to absorb time-invariant provincial characteristics and common temporal shocks, as well as province-level controls to capture evolving regional factors. Although I cannot fully rule out the possibility of simultaneous province-level shocks influencing both variables, such risks are substantially reduced after these controls. It is also possible that temperature differences may influence local industrial policies, which in turn affect corporate innovation. For example, regions with more favourable climates may attract more talent and firms, prompting local governments to implement pro-innovation industrial policies, such as R&D subsidies or technology zones. This could represent a potential violation of the exclusion restriction, as *Temp_Diff* may affect innovation through policy channels beyond talent mobility. While I attempt to mitigate this concern by including province and year fixed effects and controlling for key regional economic indicators, I acknowledge that there may remain some potential threats to the exclusion restriction for each instrument.

Table 2.6 2SLS instrumental variable regressions

Variables	First Stage	Second Stage						
	<i>Mig_Prop</i>	<i>Apply1_{t+1}</i>	<i>Apply2_{t+1}</i>	<i>Iapply_{t+1}</i>	<i>Grant1_{t+1}</i>	<i>Grant2_{t+1}</i>	<i>Igrant_{t+1}</i>	<i>Citation_{t+1}</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Average_Mig_Prov</i>	0.658*** (0.032)							
<i>Diff_Temp</i>	0.076*** (0.020)							
<i>Mig_prop</i>		0.752*** (0.195)	0.539*** (0.200)	0.654*** (0.193)	0.800*** (0.180)	0.604*** (0.183)	0.715*** (0.163)	0.557** (0.218)
<i>Size</i>	0.004 (0.004)	0.603*** (0.023)	0.603*** (0.023)	0.582*** (0.023)	0.565*** (0.021)	0.552*** (0.022)	0.474*** (0.019)	0.553*** (0.027)
<i>Roa</i>	-0.006 (0.082)	1.706*** (0.486)	0.842* (0.498)	1.254*** (0.481)	1.179*** (0.448)	0.220 (0.457)	0.456 (0.407)	1.616*** (0.600)
<i>Lev</i>	-0.051 (0.092)	-1.591*** (0.555)	-1.428** (0.569)	-1.090** (0.550)	-1.113** (0.512)	-0.885* (0.522)	-0.872* (0.466)	-1.160* (0.681)
<i>Growth</i>	0.014 (0.009)	0.462*** (0.059)	0.477*** (0.060)	0.536*** (0.058)	0.360*** (0.054)	0.367*** (0.055)	0.403*** (0.049)	0.355*** (0.066)
<i>Tobinq</i>	-0.007* (0.004)	0.030 (0.026)	0.027 (0.026)	0.087*** (0.026)	-0.001 (0.024)	-0.014 (0.024)	0.073*** (0.022)	0.027 (0.030)
<i>TMT_size</i>	-0.029*** (0.010)	0.260*** (0.062)	0.233*** (0.063)	0.217*** (0.061)	0.279*** (0.057)	0.233*** (0.058)	0.164*** (0.052)	0.233*** (0.072)
<i>TMT_age</i>	-0.014 (0.051)	-1.624*** (0.283)	-1.693*** (0.290)	-1.444*** (0.280)	-1.314*** (0.261)	-1.372*** (0.266)	-0.433* (0.237)	-1.113*** (0.338)
<i>TMT_edu</i>	0.121*** (0.018)	-0.035 (0.105)	-0.056 (0.108)	0.069 (0.104)	-0.110 (0.097)	-0.118 (0.099)	0.126 (0.088)	-0.003 (0.124)
<i>TMT_gender</i>	0.040* (0.023)	0.292** (0.130)	0.359*** (0.133)	0.413*** (0.129)	0.204* (0.120)	0.305** (0.122)	0.252** (0.109)	0.158 (0.158)
<i>Bind</i>	0.082 (0.066)	0.315 (0.386)	0.050 (0.395)	0.217 (0.382)	0.477 (0.356)	0.307 (0.363)	0.398 (0.323)	0.517 (0.457)
<i>Top Holding</i>	0.048* (0.027)	-0.475*** (0.151)	-0.707*** (0.154)	-0.767*** (0.149)	-0.169 (0.139)	-0.469*** (0.141)	-0.483*** (0.126)	-0.785*** (0.179)
<i>Firm Age</i>	-0.040*** (0.011)	0.081 (0.058)	0.053 (0.059)	0.027 (0.058)	0.045 (0.054)	0.024 (0.055)	0.040 (0.049)	-0.023 (0.065)
<i>Home CEO</i>	-0.267*** (0.008)	-0.033 (0.076)	-0.151* (0.078)	-0.094 (0.075)	0.043 (0.070)	-0.071 (0.071)	0.046 (0.063)	-0.171* (0.087)
<i>_cons</i>	-2.123*** (0.683)	-6.056*** (1.156)	-5.391*** (1.184)	-6.876*** (1.146)	-6.583*** (1.066)	-5.772*** (1.087)	-9.337*** (0.970)	-5.329*** (1.363)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	5,515	4,419	4,419	4,419	4,419	4,419	4,419	3,387
Adj_R ²	0.453	0.293	0.286	0.258	0.286	0.276	0.231	0.531
K-Paap-LM <i>stat.</i>	448.103							
Cragg-Donald Wald F	363.808							
K-Paap Wald F <i>stat.</i>	266.964							
Stock-Yogo critical value at 10%	19.93							

Note: This table reports the estimated results from the two-stage least square (2SLS) instrumental variables regressions. The first instrumental variable, *Average_Mig_Prov* is the average value of *Mig_Prop* of all other firms excluding the focal firm in the same province in year *t*. The second instrumental variable, temperature differences (*Diff_Temp*) is the annual provincial temperature difference minus the annual country-level temperature difference excluding the focal province, multiplied by -1. The dependent variable of the regressions is the innovation output measures. *Apply1_{t+1}*, *Apply2_{t+1}*, *Iapply_{t+1}* refer to the number of total patents applied, utility and invention patents applied, and invention patents applied in the following year, respectively. Patents granted, likewise, is proxied by the total number of patents granted (*Grant1_{t+1}*), utility and invention patents granted (*Grant2_{t+1}*), and invention patents granted in the following year (*Igrant_{t+1}*). *Citation_{t+1}* is the patent citations in the following year. Robust standard errors clustered at firm-level are in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix B.

2.5.4 Mediation tests

In developing the hypothesis, I argued that a migrant TMT can be considered to have a longer time horizon and a positive attitude toward risks, and this will affect their corporate decisions, such as prioritising innovative projects. Therefore, in this section, I follow the mediation test approach of Baron and Kenny (1986) to examine two potential channels: the long-term orientation of migrant TMT, and the willingness to take risks. More particularly, I run the following two regressions:

$$\begin{aligned} Mediators = \alpha_0 + \beta_1 Mig_{Prop_{i,t}} + \sum Controls_t + Industry\ Fe + Year\ Fe + \\ Province\ Fe \end{aligned} \quad (3.1)$$

$$\begin{aligned} Innovation_{i,t+1} = \alpha_0 + \beta_1 Mig_{Prop_{i,t}} + \beta_2 Mediators_{i,t} + \sum Controls_t + Industry\ Fe + \\ Year\ Fe + Province\ Fe \end{aligned} \quad (3.2)$$

Where *Mediators* are the two mediation variables and control variables are defined as before. Following prior literature (Bushee, 1998), when a migrant TMT is more likely to hold long-term visions, it would engage less in real earnings management (*Rem*), and hence *Rem* is used as the first mediation variable.²¹ The risk-taking attitude (*Risk*) of migrant TMT is used as the second mediation variable proxied by investment inefficiency. The total effect can be broken down into direct and indirect effects, which are calculated based on the bootstrap approach. The results are reported in Table 2.7. Panel A of Table 2.7 reports the results of the mediation effect of *Rem*, and Panel B for *Risk*.

I expect a migrant TMT to be less likely to engage in real earnings management compared to their non-migrant TMT counterparts. In Panel A of Table 2.7, I find that *Mig_Prop* is associated with lower *Rem*, and the significant indirect effect indicates that lower *Rem* plays a mediation role in influencing the association between migrant TMT and corporate innovation. In the first stage, the coefficient on *Mig_Prop* (-0.047) in Column (1) is significant and negative at the 5% level, suggesting that migrant TMT engages less in real earnings management. In the second stage, the coefficients on *Mig_Prop* measures are positive, whereas the coefficients on *Rem* are negative from Columns (2) to (8). For example, in Column (2), the coefficients on

²¹ Engaging in real earnings management by forgoing valuable investment opportunities or delaying projects can lead to lower long-term firm performance (Vorst, 2016). Migrant TMT who has long-term time horizon, are less likely to engage in REM. In addition, lower REM signals higher financial reporting quality. High-quality reporting is particularly important for innovative activities because it reduces information asymmetry and allows managers to secure the long-term resources needed for innovation. It enables management to identify projects with positive NPV, thereby facilitating corporate innovation (Huang et al., 2021). We, therefore, use reduced REM as an indicator of a TMT's long-term time horizon.

Mig_Prop and *Rem* are 0.444 ($p<0.01$) and -0.734 ($p<0.01$), respectively. Also, the bootstrap test results for the indirect effect are significant for all specifications, suggesting that migrant TMT engaging less in real earnings management would lead to more patent applications. Similar results can be found for patents granted in Columns (5) – (7), and patent citations in Column (8). Overall, the results support the prediction that long-term time horizon is one channel influencing the association between migrant TMT and corporate innovation.

Panel B of Table 2.7 reports the mediation test result of risk-taking on the association between migrant TMT and corporate innovation. Firm risk-taking (*Risk*) is measured using investment efficiency by the deviation of investment expenditure from the expected level estimated following Richardson (2006) (See Appendix B for detailed definition). In general, managers with higher levels of risk aversion tend to invest less than their risk-tolerant peers (Pikulina et al., 2017). Given that *Risk* (proxied by investment efficiency) signifies a deviation from expected investment, I expect a positive association between *Mig_Prop* and *Risk*. In the first stage, the coefficient on *Mig_Prop* (0.009) in Column (1) is positive and significant at the 1% level, suggesting that migrant TMT is more likely to invest more. The result supports my conjecture that migrant TMT are more inclined to take risks. In the second stage, the coefficient on *Mig_Prop* and *Risk* are still positive. For example, in Column (4), the coefficients on *Mig_Prop* and *Risk* are 0.582 ($p<0.01$), and 0.846 ($p<0.05$), respectively. In addition, the significant indirect effect using bootstrapping (0.013, $p<0.05$) also suggests that a firm with a migrant TMT takes more risks, resulting in more invention patents applied. Overall, the result support the prediction that risk-taking is one channel influencing the association between migrant TMT and corporate innovation.

Table 2.7 Mediation effect

Panel A Mediation effect of real earnings management

Variables	<i>Rem</i>	<i>Apply1_{t+1}</i>	<i>Apply2_{t+1}</i>	<i>Iapply_{t+1}</i>	<i>Grant1_{t+1}</i>	<i>Grant2_{t+1}</i>	<i>Igrant_{t+1}</i>	<i>Citation_{t+1}</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Mig_Prop</i>	-0.047** (0.020)	0.444*** (0.165)	0.508*** (0.166)	0.504*** (0.159)	0.424*** (0.161)	0.489*** (0.161)	0.316** (0.132)	0.519*** (0.178)
<i>Rem</i>		-0.734*** (0.236)	-0.502** (0.241)	-0.463** (0.221)	-0.801*** (0.231)	-0.514** (0.233)	-0.559*** (0.188)	-0.502** (0.250)
<i>Home_CEO</i>	-0.002 (0.011)	-0.170* (0.088)	-0.209** (0.090)	-0.179** (0.090)	-0.152* (0.084)	-0.205** (0.085)	-0.099 (0.076)	-0.137 (0.099)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
_cons	0.098 (0.240)	-9.120*** (2.014)	-8.578*** (2.204)	-10.410*** (2.145)	-9.079*** (1.979)	-8.578*** (2.102)	-11.902*** (1.795)	-6.848*** (2.238)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3,486	3,486	3,486	3,486	3,486	3,486	3,486	2,428
Adj_R ²	0.188	0.373	0.366	0.329	0.355	0.348	0.320	0.611

Direct effect	0.444***	0.508***	0.504***	0.424***	0.489***	0.316***	0.519***	
Indirect effect	0.036***	0.025**	0.023***	0.040***	0.025***	0.028***	0.020**	
Panel B Mediation effect of risk taking								
Variables	<i>Risk</i>	<i>Apply1_{t+1}</i>	<i>Apply2_{t+1}</i>	<i>Iapply_{t+1}</i>	<i>Grant1_{t+1}</i>	<i>Grant2_{t+1}</i>	<i>Igrant_{t+1}</i>	<i>Citation_{t+1}</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Mig_Prop</i>	0.009*** (0.004)	0.532*** (0.096)	0.593*** (0.097)	0.582*** (0.092)	0.458*** (0.093)	0.526*** (0.093)	0.381*** (0.081)	0.451*** (0.102)
<i>Risk</i>		0.643 (0.414)	0.801* (0.422)	0.846** (0.419)	0.668* (0.379)	0.837** (0.384)	0.344 (0.326)	0.846* (0.465)
<i>Home_CEO</i>	0.002 (0.002)	-0.142*** (0.052)	-0.194*** (0.053)	-0.172*** (0.052)	-0.135*** (0.050)	-0.197*** (0.050)	-0.108** (0.045)	-0.217*** (0.054)
<i>Other Controls</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>_cons</i>	-0.142*** (0.046)	-10.810*** (1.239)	-10.277*** (1.302)	-11.764*** (1.247)	-10.140*** (1.177)	-9.718*** (1.223)	-12.409*** (1.057)	-10.013*** (1.387)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3345	3345	3345	3345	3345	3345	3345	3061
Adj_R ²	0.169	0.378	0.374	0.336	0.351	0.348	0.315	0.571
Direct effect		0.522***	0.582*	0.569***	0.446***	0.512***	0.374***	0.444***
Indirect effect		0.010	0.011*	0.013**	0.012*	0.014**	0.007	0.007

Note: This table reports the mediation effect. Panel A of Table 2.8 reports the result of the mediation effect of real earnings management (Rem). Panel B reports the result of the mediation effect of risk-taking (Risk). The dependent variable of the regressions is the innovation output measures. Apply1_{t+1}, Apply2_{t+1}, Iapply_{t+1} refer to the number of total patents applied, utility and invention patents applied, and invention patents applied in the following year, respectively. Patents granted, likewise, is proxied by the total number of patents granted (Grant1_{t+1}), utility and invention patents granted (Grant2_{t+1}), and invention patents granted in the following year (Igrant_{t+1}). Citation_{t+1} is the patent citations in the following year. Control Variables are the same as in the baseline regression table. Robust standard errors clustered at firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix B.

2.5.5 Moderating tests

In this section, I report the moderation test results for *state ownership* and *cultural diversity* on the association between migrant TMT and corporate innovation.

2.5.5.1 The effect of state ownership (SOE)

First, I examine the moderating effects of state ownership. SOEs and non-SOEs differ significantly in terms of business and investment strategies, industry regulations, resource allocations, financing constraints, political connections, and corporate social responsibility (Chen et al., 2010; Shleifer and Vishny, 1994). In China, top managers in SOEs are often appointed directly by the Chinese government (Schipani and Liu, 2017). Such appointment mechanisms reduce the likelihood of strong personal ties among top managers, thereby making top managers in the migrant TMTs more independent from each other, which could lead to a more innovative environment in the migrant TMT. Also, SOEs are better connected with the government, thus, have easier access to financing channels, and tend to have less management myopia (Lin et al., 2023). Therefore, a migrant TMT in an SOE with a more innovative environment, and with easier access to financing channels, would lead to more innovative outputs. In contrast, non-SOEs are more likely to be faced with financial constraints (Guariglia et al., 2011), and the appointment of top managers in non-SOEs are often influenced by kinship,

emotional relationships and management hierarchy (Yin et al., 2022). Corporate decisions made by a migrant TMT in non-SOEs are more likely to be impacted by these social connections, thereby resulting in less innovation outputs, among others. I create a dummy variable, SOE, coded 1 if a firm is defined as state owned, and 0 otherwise. Table 2.8 reports the result. The coefficients on the interactive variable $Mig_Prop \times SOE$ are positive and significant. For example, the coefficient is 0.563 ($p < 0.01$) when the dependent variable is $Apply1_{t+1}$ (Column 1). This suggests that the positive association between migrant TMT and corporate innovation is more pronounced in SOEs.

Table 2.8 Migrant TMT, SOE and corporate innovation

Variables	$Apply1_{t+1}$	$Apply2_{t+1}$	$Iapply_{t+1}$	$Grant1_{t+1}$	$Grant2_{t+1}$	$IGrant_{t+1}$	$Citation_{t+1}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Mig_Prop</i>	0.332** (0.148)	0.354** (0.150)	0.397*** (0.142)	0.265* (0.143)	0.288** (0.143)	0.233** (0.118)	0.417*** (0.154)
<i>Mig_Prop</i> × <i>SOE</i>	0.788** (0.324)	0.998*** (0.358)	1.036*** (0.351)	0.781** (0.314)	1.044*** (0.340)	1.002*** (0.305)	0.756* (0.458)
<i>SOE</i>	-0.030 (0.153)	-0.113 (0.173)	-0.091 (0.166)	-0.128 (0.144)	-0.229 (0.164)	-0.095 (0.134)	-0.187 (0.190)
<i>Home CEO</i>	-0.175** (0.079)	-0.225*** (0.081)	-0.164** (0.079)	-0.152** (0.077)	-0.203*** (0.077)	-0.050 (0.065)	-0.134 (0.088)
<i>Other controls</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
_cons	-8.165*** (1.901)	-8.026*** (2.006)	-9.105*** (1.874)	-8.860*** (1.819)	-8.843*** (1.887)	-10.304*** (1.577)	-7.586*** (2.042)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4,713	4,713	4,713	4,713	4,713	4,713	3,387
Adj R ²	0.341	0.337	0.315	0.340	0.339	0.303	0.581

Note: This table presents results from the regression of the moderating role of ownership structure on the association between migrant TMT and corporate innovation. SOE is the dummy variable of state ownership. The dependent variable of the regressions is the innovation output measures. $Apply1_{t+1}$, $Apply2_{t+1}$, $Iapply_{t+1}$ refer to the number of total patents applied, utility and invention patents applied, and invention patents applied in the following year, respectively. Patents granted, likewise, is proxied by the total number of patents granted ($Grant1_{t+1}$), utility and invention patents granted ($Grant2_{t+1}$), and invention patents granted in the following year ($Igrant_{t+1}$). $Citation_{t+1}$ is the patent citations in the following year. Control variables are the same as the baseline regression table. Robust standard errors clustered at firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix B.

2.5.5.2 Migration effect versus cultural effect

My findings thus far indicate a positive association between migrant TMT and corporate innovation. However, this relationship may be driven more by cultural adaptability than by the migration experience itself. To address this concern, I conduct a subsample analysis focusing on cities with varying levels of multicultural environments to control the confounding effects of cultural influences. For example, cities such as Guangzhou and Shanghai are characterised by high cultural diversity, with local populations accustomed to interactions across linguistic and cultural boundaries. In these environments, migrant executives may integrate more readily, potentially enhancing their innovative contributions. Conversely, in culturally homogeneous

cities with limited exposure to diverse perspectives, migrant TMT members face greater adjustment challenges that may distinctly affect their innovation output.

Specifically, following Lei et al. (2022), I measure city-level cultural diversity using dialect data. *Diversity* is the dialect differentiation index, which ranges from 0 to 1 with higher values indicating greater dialect diversity.²² I then divide the sample at the median level of dialect diversity. I construct a binary variable, *Diversity_High*, which equals 1 if a city's dialect diversity exceeds the median, and 0 otherwise.

The results, presented in Table 2.9, suggest that the positive relationship between migrant TMT and corporate innovation remain consistently positive and statistically significant in both subsamples. For instance, the coefficient of *Mig_Prop* on *Apply1_{t+1}* is 0.564 ($p < 0.01$) when *Diversity_High*=1, compared to 0.444 ($p < 0.05$) when *Diversity_High*=0. This suggests that migrant TMT exert a positive impact on innovation irrespective of whether the city environment is characterised by high or low cultural diversity. In other words, the migration effect does not simply arise from migrants' enhanced ability to adapt to culturally diverse environments. Instead, this finding provides strong evidence that the innovation effect I identify is robustly driven by migration itself, rather than primarily reflecting cultural adaptability or the cultural diversity inherent to certain cities.

Table 2.9 Migration effect versus cultural effect: subsample based on cultural diversity
Panel A: Patent applications

	Diver High=1	Diver High=0	Diver High=1	Diver High=0	Diver High=1	Diver High=0
	<i>Apply1_{t+1}</i>	<i>Apply1_{t+1}</i>	<i>Apply2_{t+1}</i>	<i>Apply2_{t+1}</i>	<i>Iapply_{t+1}</i>	<i>Iapply_{t+1}</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Mig_Prop</i>	0.564*** (0.198)	0.444** (0.177)	0.606*** (0.196)	0.428** (0.181)	0.691*** (0.189)	0.536*** (0.178)
<i>Home CEO</i>	-0.133 (0.119)	-0.099 (0.103)	-0.168 (0.118)	-0.137 (0.106)	-0.123 (0.117)	-0.093 (0.107)
<i>Other Controls</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>_cons</i>	-7.074*** (2.506)	-8.047*** (2.501)	-6.139** (2.663)	-8.530*** (2.644)	-9.599*** (2.281)	-11.238*** (2.162)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	2425	2322	2425	2322	2425	2322
Adj_R ²	0.29	0.34	0.29	0.34	0.27	0.29

Panel B: Patents granted

	Diver High=1	Diver High=0	Diver High=1	Diver High=0	Diver High=1	Diver High=0
	<i>Grant1_{t+1}</i>	<i>Grant1_{t+1}</i>	<i>Grant2_{t+1}</i>	<i>Grant2_{t+1}</i>	<i>Igrant_{t+1}</i>	<i>Igrant_{t+1}</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Mig_Prop</i>	0.551*** (0.196)	0.344** (0.173)	0.603*** (0.191)	0.350** (0.173)	0.575*** (0.165)	0.364** (0.159)
<i>Home CEO</i>	-0.100 (0.116)	-0.071 (0.101)	-0.131 (0.113)	-0.109 (0.101)	-0.080 (0.095)	-0.009 (0.090)
<i>Other Controls</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>_cons</i>	-7.074***	-8.047***	-6.139**	-8.530***	-9.599***	-11.238***

²² Following Lei et al. (2022), I also measure dialect diversity using the number of distinct sub-Chinese dialects spoken within a city, and the untabulated results remain consistent.

	(2.506)	(2.501)	(2.663)	(2.644)	(2.281)	(2.162)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	2425	2322	2425	2322	2425	2322
Adj_R ²	0.27	0.36	0.27	0.36	0.26	0.28

Panel C: Patent citations

	Diver_High=1	Diver_High=0
	Citation	Citation
	(1)	(2)
<i>Mig_Prop</i>	0.450** (0.229)	0.435** (0.216)
<i>Home CEO</i>	-0.229 (0.142)	-0.013 (0.128)
<i>Other Controls</i>	Yes	Yes
<i>_cons</i>	-4.754 (3.133)	-8.597*** (3.251)
Year	Yes	Yes
Industry	Yes	Yes
N	1418	1330
Adj_R ²	0.42	0.51

Note: This table presents results from the regression of subsample based on cultural diversity. *Diver_High* equals 1 if a city's dialect diversity exceeds the median, and 0 otherwise. The dependent variable of the regressions is the innovation output measures. *Apply1_{t+1}*, *Apply2_{t+1}*, *Iapply_{t+1}* refer to the number of total patents applied, utility and invention patents applied, and invention patents applied in the following year, respectively. Patents granted, likewise, is proxied by the total number of patents granted (*Grant1_{t+1}*), utility and invention patents granted (*Grant2_{t+1}*), and invention patents granted in the following year (*Igrant_{t+1}*). *Citation_{t+1}* is the patent citations in the following year. Control variables are the same as the baseline regression table. Robust standard errors clustered at the firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix B.

2.5.6 Additional analysis

2.5.6.1 Migrant TMT and R&D investment

In all the regressions I have used output-based innovation measures. However, prior studies also consider input-based measures such as R&D investment because it considers the amount of resources allocated to innovative projects (Huang et al., 2021). I, therefore, test whether migrant TMT is associated with the inputs of innovation, measured by R&D expenses divided by total assets. The results, as reported in Table 2.10, are similar to those in the baseline model. The coefficient on *Mig_Prop* (0.012) is significant and positive at the 1% level. The result is also economically significant. For instance, the coefficient of 0.012 implies that a one-standard deviation increase in *Mig_Prop* is associated with a 12.4% $[(0.012 \times 0.289)/0.028]$ increase in R&D intensity. The findings supplement the baseline results that a migrant TMT can increase not only innovative outputs, but also input investments.

Table 2.10 Migrant TMT and R&D investment

Variables	<i>RD_Ratio_{t+1}</i>
	(1)
<i>Mig_Prop</i>	0.012*** (0.002)
<i>Home CEO</i>	-0.002* (0.001)
<i>Other controls</i>	Yes
<i>cons</i>	0.053*

	(0.031)
Year	Yes
Industry	Yes
Province	Yes
N	4,713
Adj_R ²	0.295

Note: This table reports the association between R&D investment (RD_Ratio_{t+1}). Control Variables are the same as in the baseline regression table. Robust standard errors clustered at firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix B.

2.5.6.2 Migrant TMT and green innovation

Green innovation combines the characteristics of innovation and corporate social responsibility (CSR). Green innovation can promote financial performance through technological innovation and can also reduce environmental pollution effectively hence, harnessing the harmonious development of the economy and environment (Sun et al.; 2023; Tang et al., 2018).

As discussed above, migrant TMT engage less in opportunistic behaviours and are more likely to make long-term decisions. Several studies have shown that a firm's long-term orientation focuses on strategic resource development that does not yield immediate returns (Berrone et al., 2013). They are more likely to recognise the potential benefits of better stakeholder relations arising from CSR activities. In addition, a migrant TMT inherently lacks social ties, and so would receive less support from local stakeholders. To develop connections and build social capital with key stakeholders, a migrant TMT are likely to put into more resources into the welfare of their workplace. Evidence from previous literature also shows green practices are adopted in some firms to gain government support and social legitimacy (Shu et al., 2015). Also, the disclosure of green innovation is a strong signal of a firm's commitment to environmental protection, which can help develop social trust and a positive reputation in the society. In this case, a migrant TMT would have incentives to engage more in green innovation.

Following prior literature (Quan et al., 2023), two measures of green innovation are used, the number of total green patents, and the number of green invention patents. The green innovation data is retrieved from the CNRDS database, and the regression results reported in Table 2.11. The coefficients on *Mig_Prop* are positive and significant in all specifications. For example, the coefficient of *Mig_Prop* is 0.380 ($p < 0.01$), and 0.230 ($p < 0.05$) in Columns (1) and (3) respectively. The results support the conjecture that a firm with a migrant TMT, and with more migrant managers in the TMT, can promote green innovation.

Table 2.11 Migrant TMT and green patents

Variables	<i>Gpat_App_{t+1}</i>	<i>IGpat_App_{t+1}</i>	<i>Gpat_grant_{t+1}</i>	<i>IGpat_grant_{t+1}</i>
	(1)	(2)	(3)	(4)
<i>Mig_Prop</i>	0.380*** (0.118)	0.341*** (0.094)	0.230** (0.108)	0.103* (0.062)
<i>Home CEO</i>	-0.122* (0.069)	-0.088 (0.059)	-0.095 (0.060)	-0.040 (0.039)
<i>Other controls</i>	Yes	Yes	Yes	Yes
<i>_cons</i>	-8.987*** (1.610)	-7.898*** (1.304)	-7.989*** (1.489)	-5.941*** (0.899)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes
N	4,713	4,713	4,713	4,713
Adj R ²	0.315	0.291	0.311	0.246

Note: This table reports the association between migrant TMT and green innovation, including green patent applications (*Gpat_App_{t+1}*), green invention patent applications (*IGpat_App_{t+1}*), green patents granted (*Gpat_grant_{t+1}*), and green invention patents granted (*IGpat_grant_{t+1}*). The independent variable is the proportion of migrant managers (*Mig_Prop*). Control Variables are the same as in the baseline regression table. Robust standard errors clustered at firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix B.

2.5.6.3 Sub-sample analysis excluding Beijing, Shanghai, Guangzhou and Shenzhen

To address the possibility that my results can be driven by a few large cities such as Beijing, Shanghai, I exclude firms with headquarters in the four largest cities (Beijing, Shanghai, Shenzhen, and Guangzhou) and rerun the baseline regressions. I report the results in Table 2.12. I find that the coefficients on *Mig_Prop* remain positive and significant for all the regression specifications. For example, the coefficient on *Mig_Prop* for *Citation_{t+1}* is 0.461 ($p < 0.05$). The results indicate that the findings of my baseline model are robust after excluding the effects of the four largest cities.

Table 2.12 Migrant TMT and corporate innovation: Sub-sample analysis excluding Beijing, Shanghai, Guangzhou and Shenzhen

Variables	<i>Apply1_{t+1}</i>	<i>Apply2_{t+1}</i>	<i>Iapply_{t+1}</i>	<i>Grant1_{t+1}</i>	<i>Grant2_{t+1}</i>	<i>Igrant_{t+1}</i>	<i>Citation_{t+1}</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Mig_Prop</i>	0.424** (0.174)	0.458*** (0.173)	0.422** (0.170)	0.376** (0.171)	0.424** (0.166)	0.300** (0.145)	0.461** (0.182)
<i>Home CEO</i>	-0.261*** (0.090)	-0.308*** (0.090)	-0.276*** (0.090)	-0.217** (0.087)	-0.267*** (0.086)	-0.121 (0.076)	-0.225** (0.098)
<i>Other controls</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>_cons</i>	-8.704*** (1.983)	-8.125*** (2.161)	-9.270*** (2.068)	-8.028*** (1.892)	-7.534*** (2.024)	-10.383*** (1.677)	-7.128*** (2.259)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3,752	3,752	3,752	3,752	3,752	3,752	2,661
Adj R ²	0.34	0.33	0.31	0.331	0.331	0.300	0.574

Note: This table reports the estimated results using a subsample excluding Beijing, Shanghai, Guangzhou, and Shenzhen. The dependent variable of the regressions is the innovation output measures. *Apply1_{t+1}*, *Apply2_{t+1}*, *Iapply_{t+1}* refer to the number of total patents applied, utility and invention patents applied, and invention patents applied in the following year, respectively. Patents granted, likewise, is proxied by the total number of patents granted (*Grant1_{t+1}*), utility and invention patents granted (*Grant2_{t+1}*), and invention patents granted in the following year (*Igrant_{t+1}*). *Citation_{t+1}* is the patent citations in the following year. Control variables are the same as the

baseline regression table. Robust standard errors clustered at firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix B.

2.5.6.4 Alternative measurement of migrant TMT

I also use an alternative measure of migrant TMT by creating a dummy variable to measure migrant TMT. I define *Mig_Dum*, coded 1 when a firm have at least one migrant manager in the TMT, and zero otherwise. The coefficients on *Mig_Dum* remain significant and positive at the 1% level for all innovation measures (results untabulated). For example, the coefficient on *Mig_Dum* is 0.338 ($p < 0.01$) when innovation is proxied by *Citation_{t+1}*.

2.6 Conclusion

Using a sample of Chinese A-share listed firms from 2008-2020, I examine the association between migrant TMT and corporate innovation. The results show that firms with a larger proportion of migrant managers in the TMT, have greater innovation outputs in terms of patent applications, patent grants, and patent citations. The findings are robust to a set of endogeneity tests. Further, the mediation effect of migrant TMT and corporate innovation is explored, and it is found that migrant TMTs have a longer time horizon and are more willing to take risks, would be more innovative and, thereby cause more innovation outputs. Furthermore, it is found that the positive association between migrant TMT and corporate innovation is more pronounced in SOEs. Finally, subsample analyses show that the positive effect of migrant TMTs on innovation holds in both high- and low-cultural-diversity regions, suggesting that the observed effect is not primarily driven by cultural adaptability, but reflects a robust migration-driven mechanism.

Given the importance of migration and teamwork, these results have important implications for the appointment of TMT and contracting practices. More specifically, given the positive effects of migrant TMT on corporate innovation, when a firm is implementing an innovation-driven development strategy, it would be better if the board of directors considered the proportion of migrant managers in the TMT when appointing TMT managers.

Overall, these findings shed light on whether and how migrant managers working in a TMT relate to corporate decisions. The results enrich the migration literature, by showing that migration impacts corporate practices beyond individual behaviour, which highlights the value of migrant managers working as a team. The results have important implications for corporate decision-making in firm innovation and beyond.

Appendix A Data sources for migrant managers

I first hand-collected the first 6 digits of managers' ID from the initial public offering (IPO) prospectus, but also implement a verification process to confirm each manager's actual birthplace. The verification entailed cross-referencing the birthplace information provided on the ID with data retrieved from various source, including newspapers, journals, interviews, lawsuit records, and alumni reports.

In April 1984, the State Council of China introduced “The People's Republic of China Identity Card Trial Regulations”, marking China's initial set of regulations governing residents' identification cards. Consequently, it is possible for a manager to obtain an ID in the place where they attended university or began their career, even if he/she was born elsewhere. In this case, the birthplace may not be the place where the manager was born or grew up. For example, Qiting Lu was the CEO of Shanghai Kangda Chemical New Material Group Co., Ltd. (SZ: 002669). The prospectus for this firm indicates that the first 6 digits of Qiting Lu's ID are 230107, signifying the unique code of Harbin city, Heilongjiang Province. However, further information derived from newspapers and journals paints a different picture of Qiting Lu's background. It becomes evident that Qiting Lu was actually born in Shanghai in 1940, and spent his early years there, completing his high school education in the city. Subsequently, in 1963, he received his bachelor's degree from Peking University and then began his professional journey at the Heilongjiang Chemical Engineering Research Institute in Harbin, Heilongjiang. In 1988, he returned to his hometown of Shanghai to start his own business and has been living there after then. Given that the firm is headquartered in Shanghai, Qiting Lu is recognized as a local CEO with external experiences, instead of a migrant CEO. Tianyun Lu, who is the daughter of Mr. Qiting Lu, was born in 1969, and served as the firm's CFO. Her ID starts with the digits 230107. Considering Mr. Qiting Lu and his wife's relocation to Shanghai during the late 1980s, it is reasonable to infer that Tianyun Lu was born and spent her early life in Heilongjiang Province and was a migrant to Shanghai. The news in Chinese can be found at http://www.pdtimes.com.cn/html/2012-05/10/content_9_4.htm.

Another example is associated with the managers' early life experiences. Li Huang is the president of the board and CEO of Wuhan Guide Infrared Co., Ltd. (SZ: 002414). His ID, which begins with 420106, indicates his connection to Wuhan City in Hubei Province. However, according to information obtained from newspaper, it has been revealed that Li Huang was originally born in Xi'an, Shaanxi. At the age of 6, he relocated to Wuhan, Hubei with his parents due to their job changes to Wuhan. Considering his residence in Wuhan, Hubei since 6 years old, there is a strong argument for regarding him as a local of Hubei Province, as the environment and culture he grew up was the same as those of the real locals. In this case, I define Li Huang as a local manager, instead of a migrant. The news is available at <http://www.hubeitoday.com.cn/post/34/27991>.

However, it is hard to track each manager's entire life by search relevant news. If the information is not available online, I rely on their public profile and information from ID to determine whether they are locals/migrants. For example, Peizhu Sun was the vice manager of Shandong Meichen Technology & Environment Co. Ltd (SZ 300237). His ID starts with 220222, is the code of Jilin Province. Looking at his public profile, I find that his Jiguan (籍贯) is also in Jilin Province, indicting his family's place of origin. Also, he was studying in Jilin University, and then worked in Jilin Province for several years. Therefore, it is reasonable to predict that he was born and raised In Jilin Province and is a migrant for Shandong.

Appendix B Variable definitions

Variables	Definitions	Data source
Independent variables		
<i>Mig_Prop</i>	The percentage of migrant managers in a TMT equals the number of migrant managers in TMT/ total TMT size.	CSMAR + Manual collection
<i>Mig_Direct</i>	The percentage of direct migrants in the TMT. Direct migrants are managers who migrated once, moving directly from their hometown to their current workplace, as indicated in their public profiles.	Decomposition of <i>Mig_Prop</i>
<i>Mig_Multiple</i>	The percentage of multiple-time migrants in the TMT. Multiple-time migrants are managers who have migrated more than once, involving relocations to several different provinces before arriving at their current workplace.	Decomposition of <i>Mig_Prop</i>
Dependent variables		
<i>Apply1</i>	Natural logarithm of 1 plus the number of patent applications.	CNRDS
<i>Apply2</i>	Natural logarithm of 1 plus the number of invention and utility model patents applied for.	CNRDS
<i>Iapply</i>	Natural logarithm of 1 plus the number of invention patents applied for.	CNRDS
<i>Grant1</i>	Natural logarithm of 1 plus the number of patents granted.	CNRDS
<i>Grant2</i>	Natural logarithm of 1 plus the number of invention and utility patents granted.	CNRDS
<i>Igrant</i>	Natural logarithm of 1 plus the number of invention patents granted.	CNRDS
<i>Citation</i>	Natural logarithm of 1 plus weighted-citations which is scaled by the average citations of all patents applied for in the same year and in the same technology class.	CSMAR
Control variables		
<i>Roa</i>	Firm profitability, calculated as income before extraordinary items (net income) divided by total assets.	CSMAR
<i>Lev</i>	Total debt over total assets.	CSMAR
<i>Size</i>	Natural logarithm of firm's total assets.	CSMAR
<i>Growth</i>	The growth of firm's total assets.	CSMAR
<i>Firm Age</i>	Number of years since a firm was founded.	CSMAR
<i>Tobinq</i>	Company's market value, measured by the ratio of the sum of market values of equity and net liabilities to total assets at the end of period; the market value of unlisted shares is substituted for net assets.	CSMAR
<i>TMT_size</i>	Size of top management team, calculated as the natural logarithm of top managers in the TMT.	CSMAR
<i>TMT_age</i>	Natural logarithm of the average age of TMT.	CSMAR
<i>TMT_edu</i>	The average education level of TMT, where Secondary=1, College=2, Bachelor=3, Master=4, PhD=5.	CSMAR
<i>TMT_gender</i>	The average gender of TMT, with male coded 1 and female coded 0.	CSMAR
<i>Bind</i>	Independence of the board, measured as the ratio of the number of independent directors over the total number of directors on the board.	CSMAR
<i>Top holding</i>	The percentage of total shares held by the largest shareholder.	CSMAR
<i>Home CEO</i>	CEO hometown identity. A dummy variable takes the value of 1 when the firm's headquarters is in the same province as the CEO's hometown, and 0 otherwise.	CSMAR + Manual collection
Others		
<i>Rem</i>	Real earnings management, calculated as $Rem = (-1) * \text{abnormal operating cash flow} + \text{abnormal production cost} + (-1) * \text{abnormal discretionary expenses}$.	CSMAR

<i>Risk</i>	Earnings volatility. The forward-looking rolling standard deviation of EBITDA/Sales over each consecutive 3-year period.	CSMAR
<i>SOE</i>	A dummy variable that takes 1 if the firm is state owned and 0 otherwise.	CSMAR
<i>RD_Ratio</i>	R&D expenses to total assets. Missing R&D expenses are replaced with 0.	CNRDS
<i>Gpat_app</i>	Natural logarithm of 1 plus the number of green patents applied for.	CNRDS
<i>IGpat_app</i>	Natural logarithm of 1 plus the number of green invention patents applied for.	CNRDS
<i>Gpat_grant</i>	Natural logarithm of 1 plus the number of green patents granted.	CNRDS
<i>IGpat_grant</i>	Natural logarithm of 1 plus the number of green invention patents granted.	CNRDS

CHAPTER THREE- MIGRANT TOP MANAGEMENT TEAM MEMBERS AND INSIDER TRADING PROFITABILITY: EVIDENCE FROM CHINA (ESSAY TWO)

3.1 Introduction

From a sociological perspective, hometown ties represent a powerful form of identity attachment that generates distinct emotional connections and social capital, particularly in societies like China where local networks fundamentally shape social interactions (Jiang et al., 2019; Ren et al., 2021; Xu et al., 2024; Yonker, 2017). As labour market mobility increases and career opportunities expand beyond geographical boundaries, working outside one's hometown has become increasingly common (Fang et al., 2016; Zhao and Jin, 2020). This geographic movement separates individuals from their established social networks and regional environment, making it more challenging for migrants to access local social capital in the workplace compared to their local counterparts.

Upper echelons theory posits that personality traits influence executives decision-making and behaviours (Hambrick and Mason, 1984). Existing economic literature reveals that migrants tend to exhibit higher risk tolerance (Wu and Eesley, 2021). Gao et al. (2021) demonstrate that migrant entrepreneurs display greater risk-taking propensity. While research on the migrant managers' characteristics and decision-making remain limited. Xu et al. (2024) find that local officials and other stakeholders impose higher evaluation standards on migrant managers compared to their local counterparts. Focusing on environmental protection, the authors find that migrant chairmen tend to more actively promote corporate green innovation to address these higher thresholds and their limited local social capital.²³ Taken together, the significant personality differences exist between migrant and non-migrant managers, and the distinct social capital contexts they face serve as an important external factor shaping the decision-making processes of migrant managers.

To investigate how migrant TMT members' make decisions differently from their local peers, this study focuses on exploring migrant TMT members' decision-making in the context

²³ Networks of *guanxi* (the culture of favor exchange in Chinese society) are historically and culturally an integral part of business in China (Gold et al., 2002). Hometown ties are essential to establishing and maintaining *guanxi* (Fisman et al., 2018; Shen et al., 2019) and exert significant impacts on political, economic, and social life (Fisman et al., 2018). Working outside their hometowns, migrant managers inherently lack these hometown-based social connections, which constrains their ability to build and leverage local networks. This limitation in hometown-based social capital can create significant challenges for migrant managers in accessing local resources, building business relationships, and navigating the local business environment.

of insider trading. I view insider trading as a particularly powerful setting since it represents an individual and deliberate action on the part of executive and has an immediate impact on the manager's wealth. Prior research has demonstrated that insider trades often convey significant non-public information regarding a firm's future prospects, often resulting in abnormal stock returns (Lakonishok and Lee, 2001; Seyhun, 1986, 1988, 1992). Insider trading can benefit shareholders and other market participants by enhancing stock market efficiency, which reduces information asymmetry and improves market liquidity (Ahern, 2017; Choi, 2020). Opportunistic insider trading behaviours, however, reduce stock market liquidity, damage firm's reputation, elevate litigation risk, and lead to significant price declines (e.g., Chung et al., 2019; Glosten and Milgrom, 1985; Jagolinzer et al., 2020). This is because it is considered unfair for corporate insiders to profit from their access to material non-public information at the expense of other shareholders.

While research by Hillier, Korczak, and Korczak (2015) suggests that personality traits account for a significant portion of the variability in individuals' insider trades, a limited number of studies have explored the specific influence of individuals on their insider trading behaviours and the informativeness of their insider trades (Davidson et al. 2019; Jiang et al., 2021; Sun et al., 2021). This paper seeks to fill this gap by using the migrant experiences of TMT members as one such personality traits. It is crucial to understand the relationship between migrant top managers in the TMT and their engagement in insider trading, as well as the informativeness of their trades. Their risk-taking preferences and potential informational disadvantages due to limited local networks may lead to distinct trading patterns compared to local managers with well-established connections.

There exist at least two competing hypotheses regarding how migrant top managers are potentially associated with insider trading profitability. On one hand, I propose the "risk enhancement hypothesis", which posits that migrant top managers in the TMT are likely to achieve higher abnormal insider trading returns. This hypothesis suggests that migrant top managers, driven by their risk-taking tendencies, are more inclined to leverage private information in insider trading to secure personal gains. In addition, the lack of local social capital among migrant top managers increases their likelihood of acting individualistically, resulting in more aggressive trading activities and higher trading profits. Consequently, insider trades executed by migrant top managers tend to be more profitable than those of non-migrant top managers in the TMT.

In contrast, my alternative hypothesis, the "reputation protection hypothesis", suggests that migrant top managers in the TMT generate lower abnormal returns than non-migrant top

managers. This effect stems from heightened scrutiny from local stakeholders, a consequence of migrant top managers' limited local social capital. Local officers and stakeholders typically subject migrant managers to more rigorous evaluation standards than their local counterparts. To protect their public reputation and career prospects, migrant managers are likely to adopt more ethical practices and avoid acting opportunistically, which would lead to lower insider trading profits than non-migrant top managers.

Using a sample of 20,612 Chinese insider trades (including 5,364 purchases and 15,248 sales), I examine the association between migrant top managers and insider trading profitability. My analysis finds support for the "risk enhancement hypothesis". Specifically, I find that insider purchases made by migrant top managers in the TMT earn higher future abnormal stock returns than those made by non-migrant top managers.²⁴

However, my results could be biased because of endogeneity concerns arising from several sources. First, the determinants of insider trading profitability are numerous, and although I control for several determinants of insider trading profitability, omitted variables bias remains a concern. I therefore employ the firm-fixed effect to control for the effects of time-invariant firm level factors. My firm-fixed effect results remain consistent with the OLS results. Second, I perform an entropy-balanced matching approach to control for endogeneity concerns arising from the observed differences in characteristics between migrant top managers versus non-migrant top managers and find evidence consistent with the baseline result. Third, I also perform a two-stage least square regression (2SLS) to further control the potential bias arising from unobservable features. The consistent outcomes derived from my instrumental variable analysis strengthen the validity of my primary results.

In the cross-sectional tests, I first investigate whether migrant top managers in the TMT profit from private information about future successful innovation outcomes, as measured by subsequent patent performance. I find that the significantly positive association between migrant top managers and future insider trading profitability is more pronounced for firms with successful innovation outcomes, as measured by patent grants, future citations, and breakthrough innovation (defined as patents that fall in the top 10 % of their technology class and year). Second, I find migrant top managers strategically time their trades, as evidenced by a significant positive association between migrant status and trading profitability before the

²⁴ In accordance with the arguments of prior studies, I focus mainly on purchase transactions and the associated profitability. Sales transactions tend to be less informative than purchase transactions because insiders have various reasons to sell their shares that are not related to private information (e.g., Lakonishok and Lee, 2001; Rogers, 2008).

restriction period,²⁵ while this positive association does not exist in the post-restriction period. Third, the positive association between migrant top managers in the TMT and trading profitability is more pronounced when insiders receive higher compensation within the firm, which rules out the possibility that migrant top managers use insider trading as a means of self-compensation. Last, I find the positive association between migrant top managers and trading profitability diminishes when migrant top managers develop local social capital with local officials, this is when migrant top managers share the same hometown as the mayor of the city where the firm is headquartered.

My study contributes to the literature in two ways. First, this study contributes to the growing literature on top managers' decision-making by examining the influence of managers' migration background. Since Yonker (2017) documented the impact of geography on CEO recruitment, researchers have investigated how local CEOs' hometown identity shapes their decision-making processes (e.g., Lai et al., 2020; Ren et al., 2021). In contrast, Gao et al. (2021) highlight the distinct risk-taking preferences of migrant entrepreneurs, while Xu et al. (2024) demonstrate that firms led by migrant chairmen engage more actively in green innovation as a strategic response to heightened scrutiny from local officials and stakeholders. Given that migration represents a self-selection process, and migrant managers face significant social capital constraints, understanding their decision-making patterns is crucial. This study extends this line of research by examining how migration background influences insider trading decisions, providing novel insights into migrant managers' trading behaviour.

Second, this study contributes to the literature on the determinants of corporate insider trading. Existing studies have examined various factors influencing insider trading behaviour, while studies on individual characteristics of managers affecting insider trading decisions are relatively scant. Among this strand of literature, Davidson et al. (2016) finds that the profitability and probability of strategic timing of insider trades are higher for managers with criminal records. Jiang et al. (2021) find that corporate insiders with legal expertise (lawyer-insiders) earn significantly lower abnormal returns than non-lawyer insiders when they purchase their own company's shares. Sun et al. (2021) find that female insiders, with higher ethical values than male, are associated with lower trading profits. Jiang et al. (2025) find that narcissistic CEOs are more likely to engage in opportunistic insider trading, but their trades are

²⁵ The Chinese Security Regulatory Commission introduced the trading ban to minimise the occurrence of opportunistic insider trading (Zhu and Wang, 2015). These regulations forbid directors, supervisors, and senior management officers from trading during the 30 days preceding periodic reports such as annual, interim, and quarterly reports, or during the 10 days before an earnings preannouncement. They also prohibit trading during the 2 days following any price-sensitive corporate news.

less informative. My paper adds to this strand of literature by investigating whether managers' migration background affects their insider trading profits and propensity to trade opportunistically.

The remainder of the paper proceeds as follows. Section 2 introduces the background on the Chinese regulatory environment for insider trading. Section 3 reviews the related literature and develops the hypothesis. Section 4 outlines the sample and specifies the regression models and variables. Section 5 provides the main test results, and Section 6 concludes the paper.

3.2 Chinese Regulatory Environment for Insider Trading

Major Chinese stock exchanges (e.g., the Shanghai Stock Exchange (SHSE) and the Chinese Security Regulatory Commission (CSRC) have taken several steps to regulate insider trading. As the primary regulatory authority, the CSRC oversees the exchanges and is responsible for the enforcement of insider trading laws. The main provisions on insider trading in China are stipulated in the Securities Law of the people's Republic of China (Securities Law), which was proposed on December 29, 1998, implemented on July 1, 1999, and amended on August 28, 2004, and again in late 2005.

The section pertinent to my study, i.e., Section 4 of chapter 3, regulates the share transactions of corporate insiders and states specifically that insiders should not trade shares on the basis of undisclosed privileged information. According to Article 74, an insider is defined as a person or corporation that is directly or indirectly connected with a listed firm. The securities Law gives examples of corporate insiders that include directors, supervisors, senior administrating officers, and any substantial stockholder who holds 5% or more of the outstanding equity. Article 75 further specifies insider information as any undisclosed news that may influence the price of shares such as restructuring, mergers and acquisitions (M&A), takeovers, abnormal earnings and dividend announcements, and changes in the board of directors. Per Chinese regulation, all investors (including corporate insiders) are prohibited from taking advantage of such material nonpublic information. Insiders need to disclose any changes in their stock holdings within 2 days after the occurrence of the change to the firm – which must publish this information on the respective stock exchange's website.

Due to the difficulty involved in identifying illegal insider trading, the CSRC also introduced the trading ban to minimise the occurrence of opportunistic insider trading (Zhu and Wang, 2015). These regulations forbid directors, supervisors, and senior management officers from trading during the 30 days preceding periodic reports such as annual, interim, and

quarterly reports, or during the 10 days before an earnings preannouncement. They also prohibit trading during the 2 days following any price-sensitive corporate news. Following the reporting requirements for insider trading in the U.S., the CSRC requires corporate insiders to report their firm share transactions to their companies no later than the second business day after a transaction. In turn, the corporation must inform its stock exchange of the transaction within 2 business days. The stock exchange then disseminates this information immediately on its own Web platform, i.e., the Disclosure of Interests Integrity Records of Listed Corporations. Similar to the U.S. regulation, there is a 6-month trading rule for short-term trading profits. The capital gains insiders make on price swings within 6 months should be repaid to the company. Any person or corporation who makes false statements or fails to make timely notifications is fined by the stock exchanges. Prior literature documents that the trading volume of insider trading reduced due to high litigation risk. However, insider trading remains highly profitable outside the trading ban period (Zhu and Wang, 2015). This finding shows that even from the perspective of regulatory and enforcement authorities, there is significant legal space for insiders to time their trades to maximise profitability. In summary, this regulatory framework, while comprehensive, still allows insiders significant flexibility to time their trades profitably outside the restricted periods.

3.3 Literature Review and Hypothesis Development

3.3.1 Literature on migration

Jaeger et al. (2010) and Heitmueller (2005) document that migration is full of uncertainties and challenges from economic, social, and psychological aspects, such as future earnings, living conditions, cultural adjustment, developing new connections with local residents, as well as the anxiety of not being able to settle down in a new place (Tunali, 2000). Previous research in Economics has explored the determinants of migration decisions, ranging from traditional economic factors, including income, wages, and networks (Kinnan et al., 2018; Pedersen et al., 2018), to environmental influences, such as climate change, and air pollution (Chen et al., 2022; Feng et al., 2010). Considering the uncertainties and challenges of migration, existing literature on the effect of migrants in the accounting, finance and corporate governance field emphasizes two key aspects of migrant managers: their risk-taking propensity and the outgroup status they face in new environments.

The first stream of research examines the entrepreneurial and innovative traits often seen in migrant managers. They have been seen to exhibit traits like ambition, aggressiveness, and tenacity, which are believed to evolve in response to the myriads of challenges and

uncertainties inherent in the migration experience (Chiswick, 1999). This line of thinking suggests that migrants, in adapting to new environments, have a higher propensity to take risks (Wu and Easley, 2022). Drawing from upper echelons theory, this prior literature explores how the risk-taking personalities of migrant executives shape corporate decision-making. Specifically, Gao et al. (2021) find that migrant entrepreneurs' propensity to take risks leads them to pursue more innovative projects.

The second stream of research primarily draws upon the intergroup relations framework of social identity theory (Tajfel and Turner, 1979), and geographic preference theory (Yonker, 2017). These theories collectively underscore the significant impact of geographic origins on individual preferences and social behaviors, emphasizing how one's place of origin shapes their interactions and affinities towards others. The social identity theory posits that migrant CEOs may be perceived as outgroup members by local stakeholders and, thus create intergroup bias among local stakeholders (Hewstone et al., 2002). This intergroup bias is seen as a liability or disadvantage for migrant CEOs, who often face trustworthiness, legitimacy and local resources disadvantages compared to their local counterparts (Chen et al., 2020; Fisman et al., 2018; Pool et al., 2012). Firms with migrant CEOs will then take action to mitigate these disadvantages, for example, by engaging in a higher level of ESG disclosures (Huang et al., 2023).

According to the geographic preference theory, managers prefer to live and work close to their hometowns (Dahl and Sorenson, 2012; Yonker, 2017). Therefore, it posits that migrant managers, due to the professional and personal challenges of working away from their hometowns, may command higher compensation as a form of rent extraction. Likewise, Guo et al. (2023) identify a similar pattern in China, finding that migrant CEOs in China receive a 7.9% higher cash compensation than their local counterparts.

3.3.2 Literature on insider trading

Alongside the legal ambiguity in insider trading laws, there is significant research alluding to widespread informed insider trading. Studies look at stock prices following insider trades with the idea that an abnormal price increase (decrease) after insider purchases (sales) suggests the trade was likely to be information driven.

There is an extensive literature that investigates the factors that impact insider trading profits. Existing research has consistently found that insider trades are informative in the sense that they have predictive ability for returns (Huddart and Ke, 2007; Lakonishok and Lee, 2001; Seyhun, 1986). Considerable effort has since focused on identifying the factors that determine insider trade profitability, in terms of trade characteristics, firm characteristics, social norms,

and insider characteristics. For trade characteristics, insider trading profitability has been found to be dependent on trade size (Seyhun, 1986) and is more significant for purchases rather than sales (Aboody and Lev, 2000; Jagolinzer et al., 2011; Jeng et al., 2003) although there is evidence that sales that are significant for the insider may be informative (Kallunki et al., 2009; Scott and Xu, 2004). The reduced informativeness of insider sales would be consistent with them being motivated by liquidity, but could also be caused by the increased legal risk for the insider associated with sales. Informativeness is also greater for trades that are classified as being opportunistic rather than routine (Ali and Hirshleifer, 2017; Cohen et al., 2012).

The performance of insider trading is more likely due to related aspects of the information asymmetry between the firm and outside investors (Aboody and Lev, 2000; Tang and Xin, 2023), together with associated features of the firm's corporate governance. Trade informativeness increases with information asymmetry as measured by analyst following (Frankel and Li, 2004; Huddart and Ke, 2007), while a reduction in analyst coverage increases insider trade profitability (Ellul and Panayides, 2018). Additionally, the quality of the firm's corporate governance also impacts on insider trade informativeness. Better governance encourages the implementation of restrictions on insiders, which prevent them from trading on their private information, particularly in respect of sales where there is greater legal risk (Dai et al., 2016), while it also restricts the flow of information on which insiders can trade profitably (Bowen et al., 2023).

In addition to corporate factors, social norms have been found to curb managerial self-serving behaviour in the form of opportunistic insider trading. For example, insider trades in firms located in more religious metropolitan areas tend to yield lower profits, and are less likely to be opportunistic, suggesting that religiosity as a source of social norms, curb self-interested behaviour, and accordingly, limits corporate insiders' opportunistic insider trading (Contreras et al., 2023). Chung, Lee and Park (2025) find that the level of social capital in the region surrounding the firm's headquarters is negatively associated with insider trading profitability.

Among the large study of determinants of insider trading, there has been much less work on how individual-specific determine individual decisions. Hillier et al. (2015) argue that the combined explanatory power of these observable insider and firm characteristics remains small. They suggest that unobservable fixed individual attributes or personality traits remain much more significant. Following this study, a stream of literature documents that executives' characteristics, such as legal records, educational experience, gender can influence the extent that corporate insiders exploit their private information even after accounting for potential access to private information (Davidson et al. 2020; Jiang et al, 2021; Sun et al., 2021).

Davidson et al. (2020) find that less frugal executives, and executives with criminal records, make more profits when they trade, and they are more likely to strategically time their trades. They argue that executives with criminal records could have relatively low respect for rules and self-control. However, female insiders who are more ethical in nature, are less likely to exploit their private information in insider trading, and thus, leading to lower insider purchase profitability (Sun et al., 2021). Educational experience, such as insiders' previous legal education are more restrained in their use of private information to make trading profits because executives are more aware of litigation risks associated with insider trading with a better understanding of regulations and laws (Jiang et al., 2021). Literature focusing on the characteristics of CEO also documents that CEOs with a higher level of narcissism engage in opportunistic insider trading more intensively, but their trades are less profitable and less informative than those of non-narcissistic CEOs (Jiang et al., 2025).

3.3.3 Hypothesis development

Hiller et al. (2015) documents that risk aversion- related characteristics is an important factor that are associated with insider trading profits (Hiller et al., 2015). More direct evidence comes from Hedge et al. (2022), who find that married CEOs earn lower trading profits than single CEOs due to their greater risk aversion. While insider trading can be profitable, it carries substantial litigation risk and thus requires high risk tolerance. Prior research highlights a strong link between migration and risk-taking behaviours, as the migration process inherently attracts individuals with a higher tolerance for risk and a willingness to pursue better opportunities (Chiswick, 1998; Jaeger et al., 2010; Wu and Easley, 2022). This propensity for risk-taking is also evident in corporate settings, where migrant entrepreneurs are more likely to engage in innovative projects, reflecting their greater risk tolerance (Gao et al., 2020). Extending this risk-taking tendency of migrant managers to the context of insider trading suggests that they may be more inclined to undertake risky insider trading with the potential for higher returns.

Beyond their risk-taking tendencies, migrant managers typically lack local social capital in their firms' regions (Xu et al., 2024). Research shows that social capital helps reduce opportunistic behaviour and information asymmetry by fostering social norms and mutual trust (Cheng et al., 2017; Guiso et al., 2004; Hasan et al., 2017a, 2017b; Jha and Chen, 2015; Knack and Keefer, 1997; Zak and Knack, 2001). This influence is also applicable to insider trading where the regulation is ambiguous. Specially, regions with stronger social capital networks tend to have significantly lower insider trading profits (Chung et al., 2025). Since migrant top

managers lack these local social capital networks, they face fewer social constraints than their local peers and are more likely to act individualistically, potentially leading to more aggressive trading activities and higher trading profits. Hence, I expect migrant top managers are associated with higher insider trading profits. The first testable hypothesis becomes:

H1a: Migrant TMT members are positively associated with insider trading profitability.

In contrast, my alternative hypothesis, the “reputation protection hypothesis”, proposes that migrant top managers engage in less insider trading, resulting in lower abnormal returns following their trading transactions. This prediction stems from the social capital constraints faced by migrant managers: lacking established local social networks, migrant managers face more stringent evaluation from local officials and stakeholders who tend to be more tolerant of similar behaviour by non-migrant managers (Shen et al., 2019; Xu et al., 2024; Zhu et al., 2022). Under such scrutiny, migrant managers might be even more cautious, as any behaviour that could be perceived as opportunistic or unethical could damage their public reputation and career prospects. Facing differential standards imposed by local stakeholders, migrant managers may strategically adopt more ethical practices to safeguard their local reputations. This notion is supported by Xu et al. (2024) who document that firm with a migrant chairman are more likely to pursue green innovation initiatives in response to higher environmental protection standards from local officials and supply-chain partners.

In the context of insider trading, although insider trading can yield personal gains, the use of non-public information undermines the interests of investors. I propose that migrant managers would similarly be reluctant to engage in opportunistic behaviours when it comes to insider trading. To avoid any negative implications for act unethically, migrant top managers are likely to engage in insider trading less frequently than their local counterparts, which would lead to lower insider trading profits. The alternative to H1a is:

H1b: Migrant TMT members are negatively associated with insider trading profitability.

An extensive literature examines factors that influence the informativeness of insider trades. Existing research has consistently found that insider trades are informative in the sense that they have predictive ability for returns (Huddart and Ke, 2007; Lakonishok and Lee, 2001; Seyhun, 1986). To investigate the informativeness of migrant top managers’ transactions, I examine whether migrant top managers’ trades are informative, i.e., containing valuable information. Specifically, I explore whether migrant top managers trade on private information about future firm innovation outcomes.

Corporate insiders may earn abnormal profits by exploiting private information about upcoming corporate events especially when information asymmetry is high (Davidson et al.,

2016; Jagolinzer et al., 2020). Prior literature suggests that insiders have higher incentives to trade on their firms' innovation outcomes compared to other corporate events, as innovation typically involves significant information asymmetry (Bostan and Mian, 2023). Innovation is considered as the most critical factor for a firm to achieve a competitive advantage. Innovation is a long-term investment that involves more intangible and unique inputs, with the process from idea generation to patent grant often taking several years (See a comprehensive review by Huang et al., 2021). During this period, insiders are likely to know more about the success or failure probabilities of innovation projects than outsiders. They must keep information about innovation private considering competitive industrial pressures. If migrant top managers are more willing to exploit corporate private information for abnormal returns, their trading would be more informative.

Therefore, I predict that migrant top managers have stronger incentives to time their transactions and trade on information embedded in innovation activities, provided that their trades reflect a high degree of informativeness. Conversely, if my findings align with the reputation protection hypothesis, where insiders are reluctant to use private information for personal gains, then insiders would be less likely to extract private benefits from innovation activities. I, thus, put forward two competing hypotheses:

H2a: Migrant TMT members are more likely to profit from firm future innovation.

H2b: Migrant TMT members are less likely to profit from firm future innovation.

3.4 Research Design

3.4.1 Data and sample selection

I collect Chinese corporate insider trading data from the CNRDS database from 2008 - 2020. The dataset details the relevant firm names, corporate insider identities, transaction dates, number of shares bought/sold, and the amount paid or received. To measure insider trading profitability, I focus on secondary market transactions related to open market sales and open market purchases and exclude trades due to stock or option grants. Following prior literature (Sun et al., 2021), I restrict the sample to trades directly made by corporate insiders, excluding transactions made by insiders' family members. I also remove small trades with transaction values below 1,000 RMB. Given that top managers are more engaged in daily operations and decision-making than board of directors, and thus likely have greater access to firm private information, I further limit the sample to members of the top management team. This focus is supported by He and Rui (2016), who document that top managers are the most active buyers. I gather TMT background and demographic information, including birthplace data, from

CSMAR database and manually supplement missing information. I collect the daily stock return and firm-level financial data also from CSMAR database and subsequently merge with the insider trading dataset. My final sample comprises 20, 612 trades, consisting of 5, 364 purchase and 15, 248 sale transactions.²⁶

3.4.2 Variable measurement

3.4.2.1 Measure of insider trading profitability

The main dependent variable in my study is insider trading profitability, which is measured by estimated abnormal returns over the 180 calendar days following the transaction date.

First, I follow Dai et al. (2016) to estimate the Carhart (1997) four-factor model as follows:

$$(R_{j,k,t} - R_{f,t}) = \alpha + \beta_1(R_{m,t} - R_{f,t}) + \beta_2SMB_t + \beta_3HML_t + \beta_4UMD_t + \varepsilon_{j,k,t} \quad (1)$$

where $R_{j,k,t}$ is the daily stock return for firm j on day t after insider trade k ; $R_{f,t}$ is the risk-free interest rate on day t ; $R_{m,t}$ is the daily return on the corresponding stock market composite index (i.e., Shanghai Stock Exchange or Shenzhen Stock Exchange composite index) on day t . SMB_t , HML_t and UMD_t are the market value weighted size, book-to-market, and momentum risk factors on day t , respectively, which are collected from the CNRDS database. I estimate the intercept (alpha) as a measure of abnormal stock return over 180 trading day windows after each insider trade. If insiders' trades only reflect information previously impounded in stock prices, the average abnormal stock returns (alpha) after each insider trade should be zero. However, if alpha is systematically positive (negative) after insider purchases (sales), it suggests insider trades are profitable and outperform the risk-adjusted benchmarks. Since insider sales can be motivated by various reasons, my main results focus on insider purchase transactions that reflect more private information content. Throughout the paper, I multiply post-transaction abnormal returns of sales by -1 to indicate that the numbers reported in the paper are abnormal profits earned by insiders.

Second, as an alternative measure of insider trading abnormal returns, I follow Dai et al. (2016) and use the market-adjusted buy-and-hold abnormal stock returns (BHARs) as follows:

$$BHAR_{K,J,T} = \prod_{t=1}^T(1 + R_{k,j,t}) - \prod_{t=1}^T(1 + M_{k,t}) \quad (2)$$

²⁶ The total number of insider trading observations conducted by top managers in the TMT is 38,025. After excluding transactions smaller than 1,000 RMB, 390 observations are removed. Additionally, 2,475 observations with missing control variables and 9,148 observations with missing hometown data are excluded. As a result, 26,012 observations remain in the final sample.

where $BHAR_{k,j,T}$ is the buy-and-hold-abnormal return for firm j in the period T after insider trade k ; $R_{k,j,t}$ is the daily stock return for firm j on day t after insider trade k ; and $M_{k,t}$ is the daily return of the corresponding stock market composite index on day t after insider trade k . For brevity, I report $BHAR$ only over the 180 trading days ($T=180$) after each insider trade.

3.4.2.2 Measure of migrant top managers

The key independent variable is insiders' migrant background (Mig) that equals 1 for migrant top managers and 0 for non-migrant top managers. To determine migration background, I collect birthplace data through multi-step process. I first collect birthplace information from CSMAR database. For cases with missing data, I manually collect executives' ID numbers from Initial Public Offering (IPO) prospectuses and use these to determine birthplaces. To ensure accuracy, I validate this birthplace information against multiple sources, including newspapers, journals, alumni reports, and public profiles. To maintain focus on domestic migration within mainland China, I exclude firms with executives from foreign countries, Hong Kong, Taiwan, and Macao.

3.4.3 Regression model

To examine the association between migrant top managers on insider trading profitability (HI), I regress post-trade abnormal returns on migrant top managers in the firm, controlling for a set of firm-, trade- and insider-level characteristics documented in prior literature to be related to insider trading profitability. The main regression model is as follows:

$$Profit_{i,j,t} = \beta_0 + \beta_1 Mig_{i,j,t} + \delta_n Controls_{i,j,t}^n + \sum \alpha_m Industry_i^m + \sum \gamma_1 Year_t^l + \varepsilon_{i,j,t} \quad (3)$$

where Profit represents either $Alpha_180$ or $BHAR_180$. $BHAR_180$ is the market-adjusted buy-and-hold abnormal returns over 180 calendar days following the transaction date, while $Alpha_180$ is measured as the intercept from the Carhart (1997) four-factor model estimated over 180 calendar days subsequent to the transaction date. Mig is the dummy variable representing the migration background of the TMT members. I expect the coefficient on Mig to be positive (negative) if the 'Risk enhancement' (Reputation protection) hypothesis holds. Regarding control variables, I control for a comprehensive set of firm, insider, and corporate governance- level characteristics that may affect both insider trading behaviour and migrant top managers.

First, following Bowen et al. (2018), I use several firm-specific variables that may affect insider trading profitability. In specific, BTM is the ratio of the market value of equity to the

book value of equity; *TradingSize* is defined as the log-transformed number of shares transacted by an insider on the transaction date; *Lev* represents the ratio of total liabilities to total assets. *MV* is the natural logarithm of the firm's market capitalisation; *ROA* is the operating income divided by year-end total assets. *SalesGrowth* is the percentage growth rate of the current year's revenue relative to last year's revenue.

In addition, I also control for corporate governance and information/ disclosure environment because insiders generate lower abnormal returns in firms with better corporate governance and more transparent disclosure practices that reduce information asymmetry (Ravina and Sapienza, 2010; Jagolinzer et al., 2011). Consequently, I include board size (*Bsize*), the percentage of independent directors (*Bind*), CEO-chairman duality (*Dual*), institutional (*Institutional*) and managerial (*Managerial*) ownership as broad measures of corporate governance and monitoring. *Institutional* is the percentage of shares owned by institutions in a firm for a given year. *Managerial* is defined as the percentage of shares owned by managers and directors. As a measure of financial reporting quality, I include *Accruals*, calculated as the residuals from the modified-Jones model.

In addition, I also control for analyst coverage (*Analyst*), defined as the number of analysts following the firm as a measure of information asymmetry. At the individual level, I control for two personal characteristics: gender and age. I expect that insider trading made by female and older insiders are followed by lower trading profits (Jiang et al., 2021; Sun et al., 2021). I winsorise all continuous variables at the 1% and 99% levels to mitigate the influence of potential outliers.

In general, I expect that better corporate governance practices (e.g. higher analyst coverage, board independence, larger firm size, non-CEO-Chairman duality) will lead to lower profitability, especially for insider purchases. Firm growth and better future prospect (as proxied by *BTM* and *Salesgrowth*) may enable insiders to generate higher profitability through insider trading. A higher level of prior stock returns may lead to a lower scope for insider trading profitability. For a number of other control variables, such as insider age (*Insiderage*), institutional ownership (*Institutional*), managerial ownership (*Managerial*), there is, however, no clear ex-ante expectation regarding the direction of their effects.

3.5 Empirical Results

3.5.1 Descriptive statistics

Table 3.1 presents summary statistics. The final sample shows 20,612 open market transactions, including 5,364 insider purchases, and 15,248 insider sales. The ratio of insider purchases to sales is 0.359. This is a much smaller ratio than in the US., implying that corporate insiders in China are more likely to be net sellers²⁷. Panel A presents the descriptive statistics for the full sample. The post-trade abnormal returns, measured by *Alpha_180* and *BHAR_180*, exhibit mean values of 1.5% and 2.2%, with corresponding median values of 1.8% and 5.1%, respectively, in line with a large body of literature documenting that insider trades are, on average, profitable (e.g., Seyhun, 1986; Jeng et al., 2003; Cohen et al., 2012; He and Rui, 2016). Purchase transactions yield higher abnormal returns than sales, with *Alpha_180* and *BHAR_180* averaging 2.2% and 4.4% for purchases, compared to -1.3% and -1.4% for sales, respectively. The higher profitability of purchase transactions suggests that insiders are more likely to trade based on information, whereas sales are often motivated by liquidity and diversification reasons. Migrant top managers constitute 39.2% of the purchase subsample and 41.7% of the sales subsample.

In terms of control variables, the full sample means are 0.532 for book-to-market ratio (*BTM*), 22.500 for firm size (*MV*), 0.366 for leverage (*Lev*), 0.004 for earnings quality (*Accruals*), and 2,241 for analyst following (*Analyst*). The results show that insiders are more likely to purchase shares in firms with higher BTM ratios, higher discretionary accruals, and lower analyst coverage. These findings are consistent with He and Rui (2016), suggesting that insiders tend to purchase firm shares when they are undervalued, and when information asymmetry is high due to poor disclosure environment (He and Rui, 2016).

Panel B of Table 3.1 shows the univariate comparison the trading profitability between migrant and non-migrant insider groups. In the purchases subsample, migrant top managers conduct 2198 transactions compared with 3407 of non-migrant top managers. The differences of trading profitability between migrant and non-migrant top managers in the purchase subsample are statistically significant at the 1% level in the t-test. For example, the mean value of *Alpha_180* for migrant insider purchase trades is 0.029, while the corresponding mean value for non-migrant insider purchase trades is 0.016. The univariate test result suggests that trading profitability for purchase transactions is higher for migrant top managers than for non-migrant

²⁷ Seyhun (1986) reports that the insider purchase-to-sale ratio is about 0.7 in the U.S. market.

top managers. However, I do not find any significant difference in trading profitability between migrant and non-migrant top managers for sales transactions. The result supports the argument that insider sales are less informative than regular sales and are confounded by many different motivations (Dai et al., 2016).

Table 3.1 Summary Statistics**Panel A: Descriptive Statistics**

Variable	All Transactions (N=20,612)					Insider Purchase (N=5,364)					Insider sales (N=15,248)				
	Mean	SD	P25	P50	P75	Mean	SD	P25	P50	P75	Mean	SD	P25	P50	P75
<i>Alpha_180</i>	0.015	0.166	-0.083	0.018	0.120	0.021	0.155	-0.080	0.007	0.108	-0.013	0.169	-0.123	-0.023	0.081
<i>BHAR_180</i>	0.022	0.377	-0.153	0.051	0.250	0.044	0.312	-0.152	-0.018	0.193	-0.014	0.397	-0.263	-0.080	0.148
<i>Mig</i>	0.410	0.492	0.000	0.000	1.000	0.392	0.488	0.000	0.000	1.000	0.417	0.493	0.000	0.000	1.000
<i>BTM</i>	0.532	0.215	0.358	0.523	0.689	0.596	0.235	0.405	0.607	0.778	0.508	0.203	0.352	0.499	0.656
<i>TradingSize</i>	11.290	1.973	9.903	11.290	12.610	10.930	1.933	9.575	10.91	12.260	11.420	1.971	10.060	11.380	12.770
<i>Lev</i>	0.366	0.186	0.214	0.343	0.497	0.410	0.192	0.257	0.402	0.575	0.350	0.182	0.205	0.324	0.476
<i>MV</i>	22.500	0.992	21.780	22.360	23.040	22.850	1.069	22.080	22.740	23.460	22.370	0.931	21.690	22.270	22.890
<i>ROA</i>	0.046	0.074	0.022	0.049	0.080	0.048	0.054	0.022	0.046	0.074	0.045	0.080	0.022	0.051	0.083
<i>SalesGrowth</i>	0.193	0.337	0.006	0.151	0.310	0.184	0.333	0.008	0.134	0.304	0.196	0.338	0.005	0.153	0.317
<i>Accruals</i>	0.004	0.082	-0.034	0.009	0.048	0.010	0.075	-0.028	0.007	0.051	0.003	0.084	-0.037	0.009	0.048
<i>Institutional</i>	0.284	0.233	0.087	0.210	0.459	0.339	0.238	0.130	0.300	0.530	0.264	0.228	0.075	0.186	0.424
<i>Managerial</i>	0.286	0.201	0.090	0.290	0.447	0.237	0.215	0.012	0.204	0.418	0.303	0.193	0.129	0.312	0.456
<i>Analyst</i>	2.241	1.443	1.099	2.398	3.466	2.367	1.372	1.099	2.565	3.466	2.196	1.465	1.099	2.398	3.466
<i>BoardSize</i>	8.344	1.427	7.000	9.000	9.000	8.519	1.487	7.000	9.000	9.000	8.281	1.400	7.000	9.000	9.000
<i>Dual</i>	0.458	0.498	0.000	0.000	1.000	0.495	0.500	0.000	0.000	1.000	0.444	0.497	0.000	0.000	1.000
<i>Bind</i>	0.376	0.053	0.333	0.333	0.429	0.376	0.054	0.333	0.333	0.429	0.376	0.053	0.333	0.333	0.429
<i>InsiderAge</i>	3.874	0.134	3.784	3.892	3.970	3.882	0.146	3.784	3.892	3.989	3.871	0.130	3.784	3.871	3.970
<i>InsiderGender</i>	0.138	0.345	0.000	0.000	0.000	0.120	0.325	0.000	0.000	0.000	0.144	0.351	0.000	0.000	0.000
<i>SOE</i>	0.110	0.313	0.000	0.000	0.000	0.185	0.388	0.000	0.000	0.000	0.083	0.276	0.000	0.000	0.000
<i>BHAR_Past</i>	0.113	0.445	-0.168	0.0140	0.293	-0.021	0.401	-0.251	-0.102	0.084	0.161	0.450	-0.135	0.070	0.352
<i>Patent</i>	33.160	217.300	1.000	6.000	17.000	66.010	381.900	0.000	6.000	20.000	21.350	105.900	1.000	6.000	16.000
<i>Citation</i>	1.701	3.698	0.000	0.000	2.000	1.355	2.737	0.000	0.000	2.000	1.825	3.980	0.000	0.000	2.000

Panel B: Univariate Test

Variables	All Transactions (N=20,612)					Insider Purchase (N=5,364)					Insider sales (N=15,248)				
	Non-migrant		Migrant			Non-migrant		Migrant			Non-migrant		Migrant		
	G1(0)	Mean1	G2(1)	Mean2	MeanDiff	G1(0)	Mean1	G2(1)	Mean2	MeanDiff	G1(0)	Mean1	G2(1)	Mean2	MeanDiff
<i>Alpha_180</i>	12,503	0.013	8,694	0.018	-0.005**	3,407	0.016	2,198	0.029	-0.013***	9,096	-0.012	6,496	-0.014	0.002
<i>BHAR_180</i>	12,503	0.016	8,694	0.030	-0.013**	3,407	0.031	2,198	0.065	-0.034***	9,096	-0.011	6,496	-0.018	0.007

Note: This table reports the summary statistics of main variables. Panel A reports the descriptive statistics of main variables. Panel B reports the univariate test results of insider trading profitability between migrant versus non-migrant top managers. All variables are defined in Appendix C.

3.5.2 Baseline regression results

I begin by examining whether abnormal insider trading profitability is associated with migrant top managers. Table 3.2 presents the OLS regression results from Equation (1). Column (1) – (2) report the result for aggregate trades. The coefficient on migrant top managers (*Mig*) is positive and significant for *Alpha_180* (coefficient: 0.006, $p < 0.10$), while the association between *Mig* and *BHAR_180* is positive but insignificant (coefficient: 0.008).

Columns (3) – (4) and (5) – (6) of Table 3.2 present regression results for insider purchases and sales, respectively. The key finding in Table 3.2 is that purchase transactions by migrant top managers generate significantly higher post-trade returns compared to those by non-migrant top managers. Specifically, the coefficients on *Mig* for purchase transactions are 0.014 ($p < 0.01$) and 0.047 ($p < 0.01$) for *Alpha_180* and *BHAR_180*, respectively (Columns (3) – (4)). To gauge the economic significance, a one-standard-deviation increase in migrant top managers (*Mig*) is associated with a 69-basis-point increase in *Alpha_180* (0.492×0.014) and a 2.31% increase in *BHAR_180* (0.492×0.047).

With respect to control variables, I find that growth opportunities and better future prospect may motivate insiders to generate higher profitability through insider trading. Specifically, insider purchases generate higher returns in firms with lower *BTM* ratios (coefficients on *BTM*: -0.131 for *Alpha_180* and -0.321 for *BHAR_180*, both $p < 0.01$) and higher sales growth (coefficients on *SalesGrowth*: 0.062 for *Alpha_180* and 0.104 for *BHAR_180*, both $p < 0.01$). Likewise, insider trading profitability is lower in firms with more analyst following. A higher level of prior stock returns may lead to a lower scope for insider trading profitability. For sale transactions, none of the coefficients on *Mig* are statistically significant. Given that the theoretical prediction builds on disincentives to trade on private information, the result is not surprising because insiders sell mainly for non-information reasons, as indicated by descriptive statistics in Table 3.1 and in line with prior literature.

Taken together, these findings in Table 3.2 show that migrant top managers are more likely to earn higher abnormal returns on insider purchase, supporting hypothesis H1a, which indicates that migrant top managers are positively associated with insider trading profitability. Also, given that the coefficients on *Mig* remain insignificant for sale transactions throughout all specifications, I, in this paper, focus primarily on the association between migrant top managers and future trading profitability for purchase transactions.

Table 3.2 Association between migrant top managers and insider trading profits

Variable	All transactions		Insider purchase		Insider sales	
	<i>Alpha 180</i>	<i>BHAR 180</i>	<i>Alpha 180</i>	<i>BHAR 180</i>	<i>Alpha 180</i>	<i>BHAR 180</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Mig</i>	0.006* (0.003)	0.007 (0.006)	0.014*** (0.005)	0.047*** (0.010)	0.003 (0.003)	-0.004 (0.007)
<i>BTM</i>	0.080*** (0.008)	0.168*** (0.019)	-0.131*** (0.015)	-0.321*** (0.029)	0.151*** (0.010)	0.340*** (0.023)
<i>TradingSize</i>	-0.000 (0.001)	0.003** (0.002)	-0.003*** (0.001)	-0.004 (0.003)	0.001 (0.001)	0.004** (0.002)
<i>Lev</i>	-0.028*** (0.010)	0.007 (0.022)	0.108*** (0.018)	0.342*** (0.035)	-0.066*** (0.012)	-0.097*** (0.027)
<i>MV</i>	-0.011*** (0.002)	-0.031*** (0.005)	0.015*** (0.003)	0.018** (0.007)	-0.017*** (0.003)	-0.046*** (0.006)
<i>ROA</i>	-0.147*** (0.026)	-0.399*** (0.055)	0.360*** (0.066)	0.614*** (0.123)	-0.243*** (0.027)	-0.589*** (0.062)
<i>SalesGrowth</i>	-0.025*** (0.005)	-0.064*** (0.011)	0.062*** (0.009)	0.104*** (0.017)	-0.058*** (0.006)	-0.121*** (0.014)
<i>Accruals</i>	-0.010 (0.019)	-0.028 (0.041)	-0.114*** (0.034)	-0.152** (0.072)	0.023 (0.021)	0.006 (0.047)
<i>Institutional</i>	-0.007 (0.009)	-0.033* (0.020)	0.088*** (0.016)	0.105*** (0.030)	-0.056*** (0.011)	-0.095*** (0.024)
<i>Managerial</i>	-0.027*** (0.011)	-0.100*** (0.023)	0.113*** (0.019)	0.155*** (0.036)	-0.087*** (0.012)	-0.192*** (0.028)
<i>Analyst</i>	0.006*** (0.001)	-0.000 (0.003)	-0.015*** (0.002)	-0.028*** (0.004)	0.011*** (0.002)	0.006* (0.003)
<i>BoardSize</i>	-0.002** (0.001)	-0.009*** (0.003)	-0.001 (0.002)	-0.002 (0.004)	-0.004** (0.001)	-0.013*** (0.003)
<i>Dual</i>	0.003 (0.003)	0.022*** (0.006)	0.010* (0.005)	0.033*** (0.011)	-0.001 (0.003)	0.019*** (0.007)
<i>Bind</i>	-0.073*** (0.028)	-0.137** (0.065)	-0.086* (0.049)	-0.221** (0.103)	-0.065** (0.033)	-0.155** (0.078)
<i>InsiderAge</i>	-0.026*** (0.010)	-0.062*** (0.021)	-0.004 (0.015)	0.010 (0.032)	-0.041*** (0.012)	-0.093*** (0.026)
<i>InsiderGender</i>	-0.003 (0.004)	0.001 (0.008)	0.007 (0.007)	0.015 (0.014)	-0.004 (0.004)	0.003 (0.010)
<i>SOE</i>	0.011** (0.005)	0.056*** (0.010)	-0.013* (0.007)	-0.043*** (0.014)	0.025*** (0.006)	0.117*** (0.013)
<i>BHAR_past</i>	0.025*** (0.004)	0.052*** (0.008)	-0.062*** (0.007)	-0.124*** (0.013)	0.060*** (0.004)	0.123*** (0.009)
_cons	0.378*** (0.060)	0.934*** (0.137)	-0.108 (0.106)	0.185 (0.223)	0.535*** (0.074)	1.164*** (0.173)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes
N	20,612	20,612	5,364	5,364	15,248	15,248
Adj.R ²	0.05	0.09	0.18	0.18	0.10	0.16

Note: This table presents the OLS regression results of the association between migrant TMT members and insider trading profitability. Standard errors shown in brackets are clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.3 Endogeneity tests

3.5.3.1 Fixed effects regression

The baseline results so far indicate a positive association between migrant top managers and insider trading profitability. In this section, I conduct several tests to address endogeneity concerns. Despite my comprehensive set of controls for known determinants of insider trading profitability, concerns about potential omitted variable bias necessitate additional endogeneity tests to validate the robustness of my main findings. To control for the time-invariant firm characteristics that could influence both migrant insider hiring and trading profitability, I include firm-fixed effects in the regressions. Table 3.3 presents the firm-fixed effects regression results. Through all columns, the coefficients on *Mig* remain positive and significant with future returns for purchase transactions (coefficient 0.014, $p < 0.01$ for *Alpha_180*) and (coefficient 0.030, $p < 0.01$ for *BHAR_180*). In contrast, the coefficients on *Mig* remain insignificant for sales transactions. These findings therefore suggest that my main results are robust to potential time-invariant firm-level unobservable factors.

Table 3.3 Firm-fixed effects regression

Variables	All transactions		Insider purchase		Insider sales	
	<i>Alpha_180</i>	<i>BHAR_180</i>	<i>Alpha_180</i>	<i>BHAR_180</i>	<i>Alpha_180</i>	<i>BHAR_180</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Mig</i>	-0.004 (0.003)	-0.014* (0.007)	0.013** (0.005)	0.032*** (0.011)	-0.003 (0.004)	-0.020** (0.008)
<i>BTM</i>	0.077*** (0.014)	0.161*** (0.030)	-0.285*** (0.025)	-0.643*** (0.052)	0.209*** (0.016)	0.451*** (0.035)
<i>TradingSize</i>	0.001** (0.001)	0.006*** (0.001)	0.001 (0.001)	0.002 (0.002)	0.002*** (0.001)	0.005*** (0.002)
<i>Lev</i>	-0.001 (0.018)	0.105*** (0.039)	0.084** (0.033)	0.294*** (0.067)	-0.053** (0.021)	-0.139*** (0.047)
<i>MV</i>	-0.005 (0.005)	-0.033*** (0.011)	-0.032*** (0.010)	-0.047** (0.020)	0.013** (0.006)	-0.005 (0.013)
<i>ROA</i>	-0.229*** (0.031)	-0.498*** (0.067)	0.065 (0.064)	0.043 (0.131)	-0.327*** (0.034)	-0.709*** (0.077)
<i>SalesGrowth</i>	-0.023*** (0.005)	-0.056*** (0.010)	0.071*** (0.008)	0.133*** (0.017)	-0.045*** (0.005)	-0.081*** (0.012)
<i>Accruals</i>	0.017 (0.019)	-0.012 (0.042)	-0.054 (0.035)	-0.044 (0.072)	0.080*** (0.022)	0.065 (0.049)
<i>Institutional</i>	-0.185*** (0.018)	-0.423*** (0.040)	0.285*** (0.036)	0.773*** (0.073)	-0.279*** (0.020)	-0.606*** (0.046)
<i>Managerial</i>	-0.121*** (0.019)	-0.360*** (0.043)	0.183*** (0.045)	0.393*** (0.092)	-0.189*** (0.022)	-0.369*** (0.049)
<i>Analyst</i>	0.011*** (0.002)	0.013*** (0.004)	-0.011*** (0.003)	-0.025*** (0.007)	0.019*** (0.002)	0.024*** (0.005)
<i>BoardSize</i>	0.006*** (0.002)	-0.009* (0.005)	-0.017*** (0.004)	-0.048*** (0.008)	0.011*** (0.002)	0.006 (0.005)
<i>Dual</i>	-0.030*** (0.005)	-0.041*** (0.011)	0.001 (0.010)	-0.012 (0.020)	-0.026*** (0.006)	-0.031** (0.014)
<i>Bind</i>	-0.105**	-0.305***	0.037	-0.076	0.052	0.238*

	(0.053)	(0.116)	(0.099)	(0.204)	(0.059)	(0.133)
<i>InsiderAge</i>	-0.012	-0.009	0.055***	0.100***	-0.014	-0.003
	(0.011)	(0.023)	(0.016)	(0.033)	(0.012)	(0.028)
<i>InsiderGender</i>	-0.004	-0.003	0.005	0.003	0.000	0.012
	(0.004)	(0.008)	(0.006)	(0.012)	(0.004)	(0.009)
<i>SOE</i>	0.026**	0.080***	-0.008	-0.111**	0.075***	0.188***
	(0.012)	(0.027)	(0.027)	(0.055)	(0.015)	(0.033)
<i>BHAR_past</i>	0.041***	0.114***	-0.084***	-0.208***	0.082***	0.212***
	(0.003)	(0.007)	(0.006)	(0.012)	(0.003)	(0.008)
<i>_cons</i>	0.269**	1.089***	0.689***	1.408***	-0.280**	-0.121
	(0.117)	(0.258)	(0.228)	(0.468)	(0.134)	(0.300)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Firm	Yes	Yes	Yes	Yes	Yes	Yes
N	20612	20612	5364	5364	15248	15248
Adj.R ²	0.33	0.38	0.66	0.65	0.42	0.47

Note: This table presents the firm-fixed regression results of the association between migrant TMT members and insider trading profitability. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.3.2 Entropy balanced matching

In recent years, entropy balanced matching has been shown to be more effective than propensity score matching (PSM) as it relies on restrictive assumptions, avoids sample reduction, and achieves balance for multiple moments of the covariate distribution (e.g., Hainmueller, 2012; McMullin and Schonberger, 2020). Entropy balanced matching addresses the endogeneity problem stemming from observable differences between the samples of migrant TMT members and local TMT members. Entropy balancing is used by specifying a set of covariates to be matched, the balance conditions and a tolerance threshold. The balance conditions are the mean, variance and skewness of covariate distributions that should be distributed evenly across treatment and control samples, such as the weighted control sample meets the balance conditions within the specified tolerance level (McMullin and Schonberger, 2020). According to McMullin and Schonberger (2020), the tolerance level sets the minimal degree of covariate balance required before the entropy balancing system stops altering control sample weights, similar to caliper width for PSM.

For implementing the entropy balancing test, I proceed as follows. First, I employ entropy balancing to ensure that the mean, variance, and skewness of the observations, conditional on *Mig*. Panel A of Table 3.4 shows that all three moments of the covariates become equal after the entropy balancing procedure is applied. This finding suggests that I achieve desirable covariate balance. Second, using the entropy-balanced sample, I combine the matched pairs into a pooled sample and, re-estimate Equation (3) using *Mig* to indicate the presence of a migrant top managers. I report entropy-balanced regression results in Panel B of

Table 3.4. It is evident that the coefficient on *Mig* is positive and significant for both Alpha_180 (coefficient: 0.033; $p < 0.05$) and BHAR_180 (coefficient: 0.046; $p < 0.01$). These findings therefore suggest that my main results are robust to potential endogeneity concerns arising from observable, rather than unobservable factors.

Table 3.4 Entropy balancing approach

Panel A: Differences in observable (covariates) after entropy balancing

Covariates	Treated			Control		
	Mean	Variance	Skewness	Mean	Variance	Skewness
<i>BTM</i>	0.514	0.046	0.186	0.514	0.046	0.186
<i>TradingSize</i>	11.41	3.813	-0.081	11.410	3.813	-0.081
<i>Lev</i>	0.365	0.036	0.374	0.365	0.036	0.374
<i>MV</i>	22.600	1.147	0.800	22.600	1.147	0.800
<i>ROA</i>	0.041	0.008	-2.336	0.041	0.008	-2.336
<i>Accurals</i>	0.000	0.008	-0.761	0.000	0.008	-0.761
<i>SalesGrowth</i>	0.201	0.123	1.688	0.201	0.123	1.688
<i>Institutional</i>	0.273	0.050	0.790	0.273	0.050	0.790
<i>Managerial</i>	0.300	0.041	0.001	0.300	0.041	0.001
<i>Analyst</i>	2.344	2.221	-0.249	2.344	2.221	-0.249
<i>BoardSize</i>	8.265	2.092	0.128	8.265	2.092	0.129
<i>Dual</i>	0.495	0.250	0.022	0.495	0.250	0.022
<i>Bind</i>	0.380	0.003	1.075	0.380	0.003	1.075
<i>InsiderAge</i>	3.858	0.016	-0.215	3.858	0.016	-0.215
<i>InsiderGender</i>	0.115	0.102	2.417	0.115	0.102	2.417
<i>SOE</i>	0.103	0.092	2.614	0.103	0.092	2.614
<i>BHAR_Past</i>	0.118	0.202	1.536	0.118	0.202	1.536

Panel B: Migrant top managers and purchase profitability after entropy matching		
Variable	<i>Alpha</i> 180	<i>BHAR</i> 180
	(1)	(2)
<i>Mig</i>	0.033** (0.015)	0.046*** (0.013)
<i>BTM</i>	-0.222*** (0.045)	-0.409*** (0.043)
<i>TradingSize</i>	-0.008* (0.004)	-0.012*** (0.004)
<i>Lev</i>	0.284*** (0.054)	0.452*** (0.054)
<i>MV</i>	0.021** (0.009)	-0.002 (0.010)
<i>ROA</i>	0.490*** (0.147)	-0.036 (0.195)
<i>SalesGrowth</i>	0.103*** (0.030)	0.146*** (0.028)
<i>Accruals</i>	-0.193*** (0.040)	-0.312*** (0.089)
<i>Institutional</i>	0.309*** (0.054)	0.153*** (0.044)
<i>Managerial</i>	0.321*** (0.061)	0.333*** (0.053)
<i>Analyst</i>	-0.016** (0.007)	-0.018*** (0.006)
<i>BoardSize</i>	-0.026*** (0.006)	-0.012 (0.008)
<i>Dual</i>	0.006 (0.017)	0.029* (0.015)
<i>Bind</i>	-0.503*** (0.159)	-0.421*** (0.153)
<i>InsiderAge</i>	-0.028 (0.052)	0.148*** (0.048)
<i>InsiderGender</i>	0.071*** (0.023)	0.029 (0.023)
<i>SOE</i>	-0.009 (0.020)	0.017 (0.019)
<i>BHAR_past</i>	-0.098*** (0.026)	-0.137*** (0.020)
_cons	0.392 (0.296)	0.786** (0.335)
Year	Yes	Yes
Industry	Yes	Yes
Province	Yes	Yes
N	5,364	5,364
Adj.R ²	0.09	0.16

Note: This table presents the entropy balanced matching results of the association between migrant TMT members and insider trading profitability. Panel A shows the covariate balance with and without weighting. Panel B shows the entropy balanced regression estimates. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.3.3 Instrumental variable analysis

To further alleviate the endogeneity concern, I employ two instrumental variables that I argue are likely to be associated with the presence of a migrant insider but unlikely to directly affect an insider's trading behaviour.

First, referring to the approach of Ren et al. (2021), I use the proportion of other firms in the same province with nonlocal CEOs in a given year (*Ratio*) as an instrument. First, firms in the same institutional environment (i.e., firms in the same province) may have similar considerations when choosing to hire a migrant CEO. Second, the insider trading profit of a migrant manager is unlikely to be directly influenced by the hiring of migrant CEOs of other firms. Therefore, using *Ratio* as an IV satisfies the relevance and exclusion conditions.

Following Guo et al. (2023), the second instrumental variable is whether the mayor of the city where the company is headquartered comes from the outside. I obtain the names of mayors from CSMAR. I then search each mayor's resume on the internet to decide whether a mayor is airborne or not. I create a dummy variable, *Airborne*, that equals one if this mayorship is the mayor's first job in the city where the company is headquartered and zero if the mayor is promoted from within the city. Having an airborne mayor is likely to signal that the city is more open and receptive to nonlocals and thus more likely to attract migrant managers but unlikely to have a direct impact on a specific managers insider trading behavior and a specific firm's operating performance or value.

Table 3.5 presents the results for 2SLS regressions. In Column (1), the coefficients on *Ratio* (coefficient: 4.846, $p < 0.01$) and *Airborne* (coefficient 0.501, $p < 0.01$) are positive and significant, consistent with my conjecture that hiring migrant managers is highly related across firms in the same province. Moreover, *Airborne* is positively associated with hiring a migrant manager. I next use the predicted value of *Mig* from the first-stage regression in the second stage as an independent variable, together with other variables in Model (1). The results in Column (2) of Table 5 show that *Mig* (predicted) remains positive and significant. For example, the coefficient on *Mig* for *Alpha_180* is 0.024 ($p < 0.05$). In addition, the validity of the instrumental variable is also tested. The K-Paap rk LM statistic (1117.120) for the under-identification test is significant at the 1% level, suggesting that the chosen instruments satisfy the identification criteria. In terms of weak instrumental variable test, the Cragg-Donald Wald F statistic and the K-Paap Wald rk F statistic are much greater than the Stock-Yogo (2005) critical value, hence the instruments in this study also pass the weak instrument test. Overall, the 2SLS regression analysis confirms the robustness of my baseline results that migrant top managers are positively associated with insider purchase profitability.

Table 3.5 2SLS instrumental variable regressions

Variable	First Stage		Second Stage	
	<i>Mig</i>	<i>Alpha 180</i>	<i>BHAR 180</i>	
	(1)	(2)	(3)	
<i>Ratio</i>	4.846*** (0.175)			
<i>Airborne</i>	0.501*** (0.182)			
<i>Mig</i>		0.024** (0.011)	0.074*** (0.026)	
<i>BTM</i>	0.073 0.245	-0.143*** (-0.015)	-0.386*** (-0.035)	
<i>TradingSize</i>	0.019 0.021	-0.004*** (-0.001)	-0.011*** (-0.003)	
<i>Lev</i>	0.041 0.293	0.121*** (0.019)	0.414*** (0.047)	
<i>MV</i>	0.160*** 0.058	0.013*** (0.004)	0.009 (0.009)	
<i>ROA</i>	-3.622*** -0.869	0.332*** (0.073)	0.328** (0.162)	
<i>SalesGrowth</i>	0.293** 0.139	0.073*** (0.01)	0.201*** (0.028)	
<i>Accruals</i>	0.509 0.557	-0.125*** (-0.038)	-0.067 (-0.099)	
<i>Institutional</i>	0.736*** 0.234	0.085*** 0.016	0.095*** (0.035)	
<i>Managerial</i>	1.017*** 0.267	0.116*** 0.019	0.223*** (0.044)	
<i>Analyst</i>	0.126*** 0.039	-0.015*** 0.002	-0.022*** (-0.006)	
<i>BoardSize</i>	-0.078** -0.035	0.000 0.002	-0.01 (-0.007)	
<i>Dual</i>	-0.022 -0.091	0.010* 0.006	0.035*** (0.013)	
<i>Bind</i>	-0.135 -0.852	-0.112** -0.054	-0.340** (-0.147)	
<i>InsiderAge</i>	-1.011*** -0.264	0.009 0.017	0.039 (0.041)	
<i>InsiderGender</i>	-0.425*** -0.115	0.007 0.007	0.031 (0.019)	
<i>SOE</i>	0.425*** 0.129	-0.005 -0.007	-0.006 (-0.016)	
<i>BHAR_past</i>	-0.101 -0.11	-0.065*** -0.009	-0.159*** (-0.019)	
_cons	13.427** 6.371	-0.099 -0.109	0.168 (0.289)	
Year	Yes	Yes	Yes	
Industry	Yes	Yes	Yes	
Province	Yes	Yes	Yes	
N	5,364	5,364	5,364	
Adj.R ²	0.206	0.151	0.149	

Note: This table reports the estimated results from the two-stage least square (2SLS) instrumental variables regressions. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.4 Cross-sectional tests

3.5.4.1 Do migrant top managers trade on innovation?

The baseline results so far indicate that purchase transactions by migrant top managers generate higher abnormal returns. In this section, I investigate whether such abnormal returns arise from migrant top managers' strategic trading before successful innovation. A firm's R&D efforts are typically distinct, relying on intangible and idiosyncratic inputs that contribute to heightened information asymmetry. This asymmetry, in turn, leads to higher insider trading profitability in R&D-intensive firms (Aboody and Lev, 2000). Prior literature also suggests that insiders have strong incentives to trade on firms' innovation outcomes compared to other corporate events (Bostan and Mian, 2023). This is because the informational advantage provided by innovation tends to be more enduring, given its long-term nature. During the innovation process, insiders gain unique opportunities to acquire knowledge about the potential outcomes of innovation projects.

My primary measure of firm's innovation in a year is the number of patents it applies in the year. Specifically, *Apply* refers to the number of patents applications filed by a firm in a given year that were subsequently granted. I follow prior innovation literature in choosing the application year of a patent instead of the grant year to indicate the timing of innovation (Comanor and Scherer, 1969).

Throughout the innovation process, managers may possess an information advantage relative to outside investors, potentially creating opportunities for informed trading at various stages. However, if managers have strong foresight, the opportunities to profit may be greater during the initial stage when managers are developing patent application. This is the period in which the full potential of an innovation should be revealed to top managers since efforts are under way to codify the knowledge in detail for patent application. There may be less new knowledge revealed to top managers in the later periods since much of the information about the innovation project is already codified at the patent application stage. In specific, since the patent data is year-based, and I employ a firm-year perspective, I denote $t+1$ is the year in which the firm files a patent application. Insider trading on these patents is hypothesised to take place in in year t . In the empirical analysis, I therefore examine the association between the patenting activities in year $t+1$ and the insider trading in year t .

Using the total number of patents as an innovation measure has a notable limitation: it fails to account for variations in innovation quality. To address this limitation, I employ additional measures. First, I consider the total number of future citations (excluding self-

citation) received by patents that a firm applies for in a given year (*Citation*). Second, to investigate whether migrant top managers are more likely to purchase firm shares using private information about breakthrough patents, I also break down the patents a firm applies for in each year by quality class patent, I follow prior literature and look at the number of future citations that patent receives in its technology class and year. I define high quality breakthrough patents (*Breakthrough*) alternatively as those that fall among the top 10% of the distribution of future citations in the same technological class and year.

Table 3.6 reports the relationship between migrant top managers and insider purchase profitability conditional on firms' future innovation. I use binary specification of the moderating variables for ease of interpretation. Column (1) and (2) of Table 3.6 reports the results using *Apply_H*, Columns (3) – (4) report results using *Citation_H*, and Columns (5) – (6) report the results on *Breakthrough*. I find that $Mig \times Apply_H$ yields coefficients of 0.032 and 0.054 for *Alpha_180* and *BHAR_180* respectively, significant at the 1% level. The interactive variable $Mig \times Citation_H$ produces coefficients of 0.035 and 0.043, while $Mig \times Breakthrough$ shows coefficients of 0.033 and 0.056. All interactions are statistically significant at the 1% level.

These results indicate that migrant top managers' purchase profitability is consistently higher when their firms achieve future innovation success. Migrant top managers demonstrate superior ability in identifying potentially successful innovations during the patent application process and strategically time their purchases before these successes become public knowledge. This suggests that, compared to non-migrant top managers, migrant top managers appear more inclined to trade based on innovation-related information, supporting H2a that migrant top managers are more prone to exploit private information through future successful innovations.

Table 3.6 Association between migrant top managers, firm innovation, and insider trading profits

Variable	Apply_high		Citation_High		Breakthrough	
	<i>Alpha_180</i>	<i>BHAR_180</i>	<i>Alpha_180</i>	<i>BHAR_180</i>	<i>Alpha_180</i>	<i>BHAR_180</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Mig</i>	-0.003 (0.007)	0.018 (0.014)	-0.008 (0.009)	-0.003 (0.019)	0.007 (0.006)	0.035*** (0.012)
<i>Apply</i>	-0.015** (0.006)	-0.023** (0.012)				
$Mig \times Apply$	0.032*** (0.009)	0.054*** (0.018)				
<i>Citation</i>			0.035*** (0.008)	0.043*** (0.016)		
$Mig \times Citation$			0.028*** (0.010)	0.063*** (0.021)		
<i>Breakthrough</i>					-0.000 (0.007)	0.001 (0.014)
$Mig \times Breakthrough$					0.033***	0.056**

					(0.011)	(0.024)
<i>BTM</i>	-0.133***	-0.325***	-0.126***	-0.312***	-0.133***	-0.325***
	(0.015)	(0.029)	(0.014)	(0.029)	(0.015)	(0.030)
<i>TradingSize</i>	-0.003**	-0.003	-0.003***	-0.004	-0.003**	-0.004
	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)	(0.003)
<i>Lev</i>	0.108***	0.342***	0.108***	0.340***	0.108***	0.342***
	(0.017)	(0.035)	(0.017)	(0.035)	(0.017)	(0.035)
<i>MV</i>	0.015***	0.019**	0.012***	0.014*	0.014***	0.016**
	(0.003)	(0.007)	(0.003)	(0.007)	(0.003)	(0.007)
<i>ROA</i>	0.349***	0.596***	0.364***	0.622***	0.357***	0.610***
	(0.066)	(0.123)	(0.066)	(0.123)	(0.066)	(0.123)
<i>SalesGrowth</i>	0.062***	0.105***	0.063***	0.107***	0.062***	0.105***
	(0.009)	(0.017)	(0.009)	(0.017)	(0.009)	(0.017)
<i>Accruals</i>	-0.111***	-0.146**	-0.111***	-0.149**	-0.107***	-0.139*
	(0.034)	(0.072)	(0.034)	(0.072)	(0.034)	(0.072)
<i>Institutional</i>	0.089***	0.107***	0.097***	0.118***	0.092***	0.112***
	(0.016)	(0.030)	(0.016)	(0.030)	(0.016)	(0.030)
<i>Managerial</i>	0.114***	0.155***	0.113***	0.154***	0.114***	0.155***
	(0.019)	(0.036)	(0.019)	(0.035)	(0.019)	(0.036)
<i>Analyst</i>	-0.015***	-0.028***	-0.016***	-0.029***	-0.016***	-0.029***
	(0.002)	(0.004)	(0.002)	(0.004)	(0.002)	(0.004)
<i>BoardSize</i>	-0.001	-0.002	-0.000	-0.001	-0.001	-0.002
	(0.002)	(0.004)	(0.002)	(0.004)	(0.002)	(0.004)
<i>Dual</i>	0.011**	0.034***	0.009*	0.032***	0.010*	0.033***
	(0.005)	(0.011)	(0.005)	(0.011)	(0.005)	(0.011)
<i>Bind</i>	-0.083*	-0.215**	-0.061	-0.185*	-0.083*	-0.216**
	(0.049)	(0.103)	(0.048)	(0.102)	(0.049)	(0.102)
<i>InsiderAge</i>	-0.004	0.010	-0.008	0.003	-0.006	0.006
	(0.015)	(0.032)	(0.015)	(0.032)	(0.015)	(0.032)
<i>InsiderGender</i>	0.006	0.014	0.006	0.014	0.006	0.014
	(0.007)	(0.014)	(0.007)	(0.014)	(0.007)	(0.014)
<i>SOE</i>	-0.014**	-0.045***	-0.013*	-0.042***	-0.016**	-0.047***
	(0.007)	(0.014)	(0.007)	(0.014)	(0.007)	(0.014)
<i>BHAR_past</i>	-0.062***	-0.123***	-0.060***	-0.122***	-0.061***	-0.122***
	(0.008)	(0.013)	(0.007)	(0.013)	(0.007)	(0.013)
<i>_cons</i>	-0.121	0.167	-0.090	0.228	-0.072	0.253
	(0.106)	(0.225)	(0.106)	(0.224)	(0.106)	(0.223)
<i>Year</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Industry</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Province</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	5364	5364	5364	5364	5364	5364
<i>Adj.R²</i>	0.18	0.18	0.19	0.19	0.18	0.18

Note: This table reports the association of migrant TMT members, corporate innovation, and insider trading profitability. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.4.2 Trading before and after earnings announcement

My findings show that migrant top managers achieve higher returns through insider purchases and are more likely to exploit private information related to their firm's future successful innovations. While my main hypothesis suggests this superior performance stems from migrant top managers' usage of private information in insider trading, an alternative explanation could be that they simply have more direct access to R&D information due to their closer involvement in the innovation process.

To further investigate whether the higher abnormal returns earned by migrant top managers stem from their use of private information rather than their easier access to innovation-related information, I examine their trading patterns around earnings announcements. This analysis provides a broader test of whether migrant top managers strategically time their trades before earnings announcements, when the potential value of private information is particularly high. The reasoning is straightforward: if the higher insider trading profitability stems from migrant top managers' exploitation of private information rather than a general informational advantage, systematic differences in trading patterns around earnings announcements should exist. Specifically, migrant top managers should strategically time their trades and generate higher profits before earnings announcements, when private information holds significant value. However, these differences should show no significant differences between migrant top managers versus non-migrant top managers after earnings announcements, when the private information becomes publicly available, resulting in comparable trading patterns between migrant and non-migrant top managers. Given that the CSRC sets the 30 days before earnings announcement as a restricted period, during which insiders are prohibited from trading firm stocks, this study uses the restricted period as a benchmark and separately investigates the trading behaviours of migrant top managers within 30 days before and after this restricted period.

Earnings announcements are especially unique as they represent a regular informational event around which there is significant information asymmetry between insiders and outsiders. Insiders generally know the informational impact of upcoming announcements and these announcements represent an opportunity for insiders to trade profitably if they choose to exploit this private information. There is significant evidence that insiders do make opportunistic trades in the window right before earnings announcements even though companies often have explicit policies discouraging trading during this window, and during which there may be increased regulatory scrutiny (Ali and Hirshleifer, 2017). If, as I expect, migrant top managers are more likely to exploit their private information, rather than being more involved in the innovation projects, I predict that migrant top managers would be more likely to trade in the window immediately *before* the restricted period but expect no such difference in the unrestricted window *after* the restricted period.

Panel A of Table 3.7 presents the univariate differences between migrant and non-migrant top managers around the restriction period. Before the restriction period, migrant top managers exhibit significantly different trading behaviour from their non-migrant counterparts. Specifically, migrant top managers trade larger volumes, averaging 507,800 shares compared

to 326,300 shares for non-migrant top managers (difference significant at 10%). This higher trading intensity is accompanied by superior returns: migrant top managers achieve a mean 180-day alpha of 3.6% versus 1.6% for non-migrant top managers (difference significant at 5%), and a mean 180-day BHAR of 8.7% compared to 3.1% for non-migrant top managers (difference significant at 1%). However, these differences in both trading volume and profitability disappear during the post-restriction period. These univariate results suggest that migrant top managers strategically time their trades and earn higher abnormal returns from insider purchase.

Panel B of Table 3.7 presents regression results comparing trading profitability before and after the restriction period. Columns (1) – (2) report trading profitability before the restriction period, while Columns (3) – (4) show trading profits after the restriction period. The results reveal that migrant insider purchases earn significantly higher returns, with the *Mig* coefficient being 0.026 ($p < 0.05$) for 180-day alpha (*Alpha_180*) and 0.044 ($p < 0.01$) for 180-day BHAR (*BHAR_180*). However, in the post-restriction period, with coefficients on *Mig* remain positive but insignificant. These findings suggest that migrant top managers' superior trading performance is concentrated in the pre-restriction period, consistent with my prediction that migrant top managers are more likely to exploit private information in insider trading and time their trades to earn higher abnormal returns following purchase transactions.

Table 3.7 Insider trading around the restriction period

Panel A: univariant differences between migrant and non-migrant TMT members around the restriction period

Before					
Variables	Mig=0 (observations)	Mean1	Mig=1	Mean2	MeanDiff
TradingVolume	1,395	326.300	845	507.800	-181.472*
<i>Alpha_180</i>	1,395	0.0160	845	0.0360	-0.020**
<i>BHAR_180</i>	1,395	0.0310	845	0.0870	-0.056***
After					
Variables	Mig=0 (observations)	Mean1	Mig=1	Mean2	MeanDiff
TradingVolume	988	584.000	679	314.700	269.400
<i>Alpha_180</i>	988	0.017	679	0.017	0.000
<i>BHAR_180</i>	988	0.010	679	0.034	-0.024

Panel B: Regression result of Insider trading around the restriction period

Variable	Before		After	
	<i>Alpha_180</i>	<i>BHAR_180</i>	<i>Alpha_180</i>	<i>BHAR_180</i>
	(1)	(2)	(3)	(4)
<i>Mig</i>	0.026** (0.011)	0.044*** (0.015)	0.004 (0.009)	0.026 (0.018)
<i>Controls</i>	Yes	Yes	Yes	Yes
<i>_cons</i>	-0.147 (0.228)	0.779*** (0.284)	0.169 (0.174)	1.060*** (0.356)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes
N	2,240	2,240	1,667	1,667
Adj.R ²	0.17	0.21	0.17	0.13

Notes: This table reports the association between migrant TMT members and insider trading profitability around the restriction period. Panel A presents the univariant differences between migrant and non-migrant TMT members around the restriction period. Panel B presents the regression result between migrant TMT members and insider trading profitability around the restriction period. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.4.3 Is the higher abnormal returns the substitute of compensation?

An alternative explanation for higher migrant insider trading profits could be that they serve as a form of compensation. Prior literature suggests that firms use insider trading as a substitute for other forms of compensation (Roulstone, 2003; Denis and Xu, 2013; Goldman and Ozel, 2023). For example, Roulstone (2003) and Henderson (2011) document a positive relation between insider trading restrictions and executive compensation, while Denis and Xu (2013) find a significant increase in executive compensation following the initial enforcement of insider trading laws.

Moreover, geographic preference theory suggests that managers prefer to work close to their hometowns, and migrant managers presumably sacrifice utility by living far away from family and friends. Yonker (2017) finds that migrant managers demand compensation premiums to offset the costs of relocating away from their hometowns. I thus, propose that migrant managers may also use insider trading as an additional form of self-compensation to mitigate these relocation costs. Following the compensation hypothesis, which predicts that migrant managers demand higher compensation than their non-migrant peers, I expect migrant managers whose compensation falls below the median executive pay level to exhibit a stronger motivation for self-compensation through insider trading. Conversely, if higher-paid migrant top managers generate greater trading profits, this would challenge the compensation hypothesis and instead imply that higher-paid executives benefit from superior access to value-relevant information. To distinguish whether higher migrant insider trading profits represent compensation substitution, I examine how insider trading profitability varies with compensation for migrant versus non-migrant top managers. To determine the level of compensation, I first calculate the median compensation across all top managers within the firm. I then create a dummy variable, *Compensation_High*, which takes the value of one if a manager's compensation exceeds their firm's median executive compensation level, and 0 otherwise.

Table 3.8 presents the results on the compensation hypothesis. In Table 3.8, the coefficient on the interaction term between migrant top managers and compensation (i.e., *Mig* $\times$ *Compensation_High*) is 0.018 ($p < 0.05$) for Alpha_180 and 0.038 ($p < 0.05$) for BHAR_180.

The significant positive coefficient suggests that the association between migrant top managers and their trading profitability is more pronounced for executives whose compensation falls in the top half of their firm's executive pay distribution. This finding does not support the compensation argument. Instead, it reveals that higher-paid migrant top managers generate greater trading profits, indicating that managers with higher compensation benefit from superior access to value-relevant information. This aligns with my underlying prediction that insider trading profits are driven by the utilisation of private information rather than serving as a substitute for compensation.

Table 3.8 Migrant top managers, compensation and insider trading profits

Variable	<i>Alpha 180</i>	<i>BHAR 180</i>
	(1)	(2)
<i>Mig</i>	0.000 (0.006)	0.015 (0.012)
<i>Compensation</i>	0.002 (0.006)	0.010 (0.011)
<i>Mig × Compensation_High</i>	0.018** (0.009)	0.038** (0.018)
<i>Controls</i>	Yes	Yes
<i>_cons</i>	-0.024 (0.103)	0.432** (0.213)
Year	Yes	Yes
Industry	Yes	Yes
Province	Yes	Yes
N	5364	5364
Adj.R ²	0.14	0.15

Note: This table presents the regression result of migrant TMT members, compensation, and insider trading profitability. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.4.4 Types of insider trading: Routine and opportunistic insider trading

In this section, I examine the possibility that my inference is driven by migrant top managers being more disposed to be opportunistic traders than other insiders. Cohen et al. (2012) find that routine trades are followed by lower returns than other insider trades. I distinguish between routine insider trades and opportunistic trades, and concentrate my analysis on the latter, as they are more likely to be propelled by the insider's access to private information about the firm, potentially causing abnormal market reactions and raising regulatory concerns. In contrast, routine insider trades are driven by liquidity or other routine purposes, which are predictable and less informative about a firm's prospects, making them less pertinent to my research objectives. Prior studies (e.g., Cohen et al., 2012; Massa et al., 2015; Akbas et al., 2020; Suk and Wang, 2021) also focus on opportunistic insider trades due to their information-rich nature and strong predictive power.

I adopt the approach proposed by Cohen et al. (2012) to identify these trades at the transaction level. If an insider has conducted same type of transaction in the same month for three consecutive years, these three transactions, along with any subsequent transactions in the same month in the following years, are considered routine insider trades. All other insider transactions are classified as opportunistic insider trades or non-routine insider trades. This classification yields 67% and 33% of all insider purchase transactions in my sample to be routine and opportunistic trades, respectively.

Table 3.9 estimates a logistic regression with *Opportunistic*, which is a dummy variable equal to 1 for opportunistic trades and 0 otherwise, as the dependent variable. I find that the coefficient estimate for *Mig* is positive and significant with an estimate of 0.273 ($p < 0.01$), suggesting that migrant top managers are more likely to engage in opportunistic trades relative to non-migrant trades. In column (2), I present the pooled OLS regression results to determine whether migrant top managers earn higher trading profits through opportunistic trades. I find that the interaction coefficient of $Mig \times Opportunistic$ is positive and significant (coefficient: 0.027, $p < 0.01$), suggesting that migrant top managers earn significantly higher trading profits relative to non-migrant top managers for opportunistic trades.

Table 3.9 Migrant top managers, opportunistic trading and insider trading profits

Variable	<i>Opportunistic</i>	<i>Alpha 180</i>	<i>BHAR 180</i>
	(1)	(2)	(3)
<i>Mig</i>	0.273*** (0.092)	0.010* (0.005)	0.032*** (0.010)
<i>Opportunistic</i>		-0.024*** (0.007)	-0.040*** (0.013)
$Mig \times Opportunistic$		0.027*** (0.010)	0.082*** (0.021)
<i>Controls</i>	Yes	Yes	Yes
_cons	-4.336** (1.794)	-0.115 (0.089)	0.169 (0.180)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
Province	Yes	Yes	Yes
N	5364	5364	5364
Adj.R ²		0.18	0.18

Note: This table presents the regression results of migrant top managers, opportunistic trading and insider trading profits. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.4.5 The effect of local social capital

Given that my main hypothesis posits that limited local hometown ties leads migrant TMT members to behave more opportunistically and are more inclined to exploit private information in their tradings. While existing literature typically examines how hometown tie affects local

managers, it remains unclear whether these hometown connections remain influential after managers migrate to new places. Prior literature in economics find that hometown ties play a significant role in China's migration process. For example, research by Li (2003) confirm that hometown ties help migrants find jobs and adapt to new environment in the workplace. Extending this perspective to the current research context raises the question of whether hometown ties among migrant top management teams can reduce their profits from insider purchases.

I further examine the moderating role of local social capital in the relationship between migrant status and trading profitability. I predict that if migrant top managers' development of local networks attenuates the positive relationship between migrant status and trading profitability, this would confirm that limited local social capital is a mechanism driving my main results. Following Xu et al. (2024), I create a dummy variable to indicate the network with local officials, *CityIE_May* is a dummy variable that equals to one if a firm's insider and the mayor of the city where the firm is headquartered are from the same city, and 0 otherwise. Table 3.10 presents the results of the effect of local social capital. The coefficients on *Mig* × *CityIE_May* is significant and positive for both *Alpha_180* and *BHAR_180*. For example, the coefficient on *Mig* × *CityIE_May* for *Alpha_180* is -0.062, significant at the 5% level. The positive relationship between migrant TMT members and insider trading profitability weakens when migrant executives share their hometown with the mayor of their firm's headquarters city. This attenuation effect provides evidence that the lack of local social capital is one of the mechanisms underlying the superior trading profitability of migrant top managers.

Table 3.10 Migrant top managers, local social network and insider trading profits

Variable	<i>Alpha_180</i> (1)	<i>BHAR_180</i> (2)
<i>Mig</i>	0.021*** (0.005)	0.060*** (0.015)
<i>CityIE_May</i>	0.012** (0.006)	0.018 (0.015)
<i>Mig</i> × <i>CityIE_May</i>	-0.062** (0.029)	-0.136* (0.078)
<i>Controls</i>	Yes	Yes
<i>_cons</i>	-0.122 (0.090)	0.589** (0.239)
Year	Yes	Yes
Industry	Yes	Yes
Province	Yes	Yes
N	5,364	5,364
Adj.R ²	0.18	0.17

Note: This table presents the regression result of migrant top managers, local social network and insider trading profits. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.4.6 The effect of legal experience

Prior research shows that managers with legal expertise earn lower profits from insider purchases, because of their enhanced regulatory awareness and greater hesitancy to exploit private information (Jiang et al., 2021). In this subsection, I examine how legal experience moderate the association between migrant TMT and insider trading profitability. Specifically, I investigate the impact of the managers' legal education and professional background on the relationship between migrant TMT members and insider trading profitability.

I divide the sample into two subsamples: managers with legal background and managers without legal background. Following existing literature (Huang et al., 2024), managers are classified as possessing legal background if they either held a law degree or have held professional legal titles such as lawyer, judge, arbitrator, prosecutor, or any other titles related to law. Table 3.11 presents the results examining how migrant TMT members' legal knowledge affects insider trading profitability. The association between migrant TMT members and insider trading profitability is positive and significant in the subsample of migrant managers without legal experience, with *Mig* showing a coefficient of 0.014 ($p < 0.01$) on *Alpha_180*. However, for migrant managers with prior legal experience, the coefficient on *Mig* turns negative and significant. For example, the coefficient of *Mig* on *Alpha_180* is -0.155 ($p < 0.01$). This finding suggests that migrant managers with legal experience are less likely to exploit private information through insider trading. This reluctance to use private information weakens the association between migrant TMT members and insider trading profitability. My findings are consistent with Jiang et al. (2021), who reveal that insiders with legal expertise are more conservative in exploiting private information when executing insider trades.

Table 3.11 The effect of legal experience

Variable	Managers without legal experience		Managers with legal experience	
	<i>Alpha_180</i>	<i>BHAR_180</i>	<i>Alpha_180</i>	<i>BHAR_180</i>
	(1)	(2)	(3)	(4)
<i>Mig</i>	0.014*** (0.005)	0.046*** (0.011)	-0.155*** (0.049)	-0.418*** (0.063)
<i>Controls</i>	Yes	Yes	Yes	Yes
<i>_cons</i>	-0.121 (0.106)	0.147 (0.224)	0.537 (0.437)	3.822*** (0.534)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes
N	4,497	4,497	867	867
R ²	0.17	0.18	0.22	0.25

Note: This table presents the effect of migrant top managers' legal experience on the association between migrant TMT members and insider trading profitability. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.5 Other robustness tests

3.5.5.1 Control for the roles of CEO and CFO

To rule out the possibility that the results are driven by only CEO and CFO, I control for the insiders' role of CEO and CFO to capture the insider's role in the firm, their access to private information, and stronger regulatory scrutiny (Fidrmuc et al., 2006; Jeng et al., 2003; Ravina and Sapienza, 2010; Seyhun, 1986). Specifically, *CEO_CFO* is a dummy variable that equals to 1 if a manager is the CEO or CFO in the firm, and 0 otherwise. Table 3.12 presents the results after controlling for the role of CEO and CFO. In Table 3.12, my baseline results remain robust to this additional control. Specifically, the coefficients on migrant managers (*Mig*) for *Alpha_180* and *BHAR_180* remain positive and statistically significant at the 1% level, with magnitudes of 0.014 and 0.047, respectively (both $p < 0.01$). These findings suggest that the influence of migrant managers on firm performance persists independently of the role of CEO and CFO.

Table 3.12 Control for the roles of CEO and CFO

Variable	<i>Alpha 180</i>	<i>BHAR 180</i>
	(1)	(2)
<i>Mig</i>	0.014*** (0.005)	0.047*** (0.010)
<i>CEO_CFO</i>	0.012** (0.005)	0.034*** (0.010)
<i>Other Controls</i>	Yes	Yes
<i>_cons</i>	-0.095 (0.106)	0.223 (0.223)
Year	Yes	Yes
Industry	Yes	Yes
Province	Yes	Yes
N	5,364	5,364
Adj.R ²	0.18	0.18

Note: This table presents the regression results after controlling for the roles of CEO and CFO. Standard errors shown in brackets are clustered at firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix C.

3.5.6 Conclusion

I investigate whether, and how, insider trades by migrant TMT members differ from those by non-migrant top managers. Using a large sample of Chinese insider trading activities, I find that purchases by insiders who are migrant top managers are followed by higher stock returns than those insiders who are non-migrant top managers. This result holds even after I account for potential access to information that may result from the insider's position in the firm. I further investigate to what extent this pattern is driven by the use of private information, and I find that migrant top managers' purchase profitability is consistently higher when their firms achieve future innovation success. In addition, migrant top managers earn higher profitability before the earnings announcement. However, this positive association between migrant top managers and trading profitability weakens when migrant managers develop local social capital with local officials or possess legal experience. Overall, my findings suggest that migrant TMT members are more likely to exploit private information when making insider trades. These findings contribute to the literature by providing evidence on how migration shapes managerial decision-making in the context of insider trading, contributing to a deeper understanding of corporate governance dynamics.

Appendix C Variable definitions

Variables	Definitions
Main Variables	
<i>Alpha_180</i>	Average daily abnormal return in basis points estimated using Carhart's (1997) four-factor model over 180 calendar days subsequent to be the insider trading date, multiplied by -1 for insider sales transactions.
<i>BHAR_180</i>	Market-adjusted abnormal buy-and-hold return in percentage over 180 calendar days subsequent to the insider trading date, multiplied by -1 for insider sales transactions.
<i>Mig</i>	Migrant insider. It is coded 1 if an insider is a migrant, and 0 otherwise.
Control variables	
<i>BTM</i>	Ratio of book value to the market value of equity
<i>Lev</i>	Total debts divided by total assets
<i>ROA</i>	Profitability, measured as net income divided by total assets
<i>SalesGrowth</i>	Annual growth in sales
<i>Accrual</i>	Residuals of the modified-Jones model, which I estimate as cross-sectional specification by year and two-digits SIC code
<i>Institutional</i>	Institutional ownership. The percentage of shares owned by institutional investors
<i>Managerial</i>	Managerial ownership. The percentage of shares held by firm's managers and directors
<i>Analyst</i>	Analyst coverage, equals to the number of analysts following the firm
<i>Bsize</i>	Natural logarithm of the number of directors on the board
<i>Dual</i>	Firm CEO duality, equal to 1 if the CEO also holds the position of the chair of the board and 0 otherwise
<i>Bind</i>	Independence of the board measured as the ratio of the number of independent directors over the total number of directors on the board
<i>InsiderAge</i>	Natural logarithm of the age of firm insiders
<i>InsiderGender</i>	Insider's gender, equals to 1 if the top manager in the TMT is a female, and 0 otherwise
<i>SOE</i>	State-owned enterprise, equals to 1 if the firm is a state-owned enterprise, and 0 otherwise
Others	
<i>Apply</i>	The number of patents applications filed by a firm in a given year that were subsequently granted
<i>Citations</i>	Total number of forward citations, excluding self-citation, received by the patents that a firm applies for a given year
<i>Breakthrough</i>	The number of patents filed by a firm in a given year that fall in the top 10% of the distribution of future 5-year citations in the same technological field classified under IPC4. Observations with fewer than 10 patents in the same technological field in a given year are excluded

CHAPTER FOUR- MIGRANT CEO AND AUDIT FEES: EVIDENCE FROM CHINA (ESSAY THREE)

4.1 Introduction

Migration involves not only physical relocation but also the movement of accumulated human capital (Wu and Easley, 2021).²⁸ Prior literature in the economics indicates that individuals with higher accumulated human capital have more job opportunities and are more likely to migrate (Xue et al., 2021). Migrants have also been found to be more capable, ambitious, and entrepreneurial than those who remain in their place of origin (Chiswick, 1999). Supporting this, He et al. (2024) find that migrant auditors, particularly those migrating to more economically developed regions, demonstrate greater ability than their local peers.

Extending this logic, migrant CEOs, as a subset of migrants are expected to possess greater human capital than local CEOs.²⁹ Firms typically prefer local CEOs for their knowledge of the local market and stronger business connections (Yonker, 2017). Hence migrants have to compete with local candidates, and rational employers may impose higher standards on migrants due to the opportunity costs of forgoing local talents. Thus, migrant CEOs are only hired when the value of their human capital exceeds that of local candidates. This implies that firms' preference for local talent ensures that migrant CEOs, on average, possess superior human capital. Xue et al. (2021) provide evidence for this, showing that migrant managers, with their higher human capital, tend to generate higher returns than their local counterparts.

CEO human capital significantly influences firm policy and performance, which largely explains the heterogeneity in investment, financing, and organizational performance and practices including financial reporting (e.g. Bertrand and Schoar, 2003; Andreou et al., 2017). Managers with higher human capital are more likely to obtain more precise information on investment opportunities, thereby making better investment choices with a higher likelihood of successful project outcomes (Chemmanur et al., 2009). Auditors as an important watchdog for external stakeholders are responsible for verifying the financial statements approved by the

²⁸ Human capital is a broad term used in the economics literature to conceptualize individuals' knowledge, education, skills, training, and experience that allows for productive labor (Becker, 1962).

²⁹ Unlike the earlier chapters that examine TMT migration and its role in internal decision-making, this chapter focuses on CEO migration. As the most influential member of the TMT, the CEO plays a unique role in shaping firm outcomes (Hambrick & Mason, 1984; Finkelstein, Hambrick & Cannella, 2009). In the Chinese context, where the CEO holds primary responsibility for financial reporting, their personal background is likely to have a more direct impact on external governance outcomes such as audit pricing (DeFond and Zhang, 2014). By contrast, TMT migration reflects the collective diversity that influences internal strategy and innovation. Thus, the CEO-focused analysis in this chapter should be seen as complementing, rather than overlapping with, the TMT-level analyses in the previous essays.

CEO. In this study, I provide evidence on whether and how audit efforts, measured by audit fees in Chinese listed firms, is associated with migrant CEOs, relative to firms with local CEOs. Existing literature often highlights the CFOs' role over CEOs in financial reporting, accounting policies and disclosures (Hsieh et al., 2019). In China, however, the shared responsibilities with board secretaries diminish CFOs' impact on firm financial reporting (Lu et al., 2023).³⁰ In this paper, I, therefore, investigate the association between migrant CEO and audit fees.

Audit fees may be affected by both demand- and supply-side factors (e.g., DeFond and Zhang, 2014). From the demand side, migrant CEOs are more likely than local CEOs to demand higher audit quality in the firm's financial statements, and thus pay higher audit fees, to provide assurance to the stakeholders. Unlike local CEOs, whose abilities are more easily assessed through local information networks, the abilities of migrant CEOs remain relatively less observable (Yonker, 2017). To signal their ability and alleviate investors' concerns, migrant CEOs are more inclined to engage in innovative activities (Chemmanur et al., 2019; Gao et al., 2021). Given that innovation is a long-term, high-risk investment with the potential for big returns but big losses as well, it tends to increase information asymmetry and elevate performance volatility (Hall, 2002; Huang et al., 2021). One way of mitigating heightened information asymmetry is to provide high quality financial reporting which needs to be verified by an independent auditor. Such verification, however, is costly as proxied by high audit fees (Francis et al., 2011; Defond and Zhang, 2014). I, therefore, expect a positive association between migrant CEO and audit fees from the demand side perspective.

However, from the supply side, migrant CEOs may be negatively associated with audit fees, as auditors might perceive lower risks when auditing firms managed by migrant CEOs. Firms managed by migrant CEOs, who possess superior human capital, tend to outperform those managed by local CEOs in addressing complex business challenges and adapting to economic changes. These skills enable migrant CEOs to select better projects, leading to improved operational performance (Chemmanur et al., 2019; Xue et al., 2021) and enhanced corporate information transparency (Hasan, 2020). These better performance and greater

³⁰ The Corporate Law of the People's Republic of China (2005) requires that a listed firm appoints a secretary to the board of directors. Moreover, the Code of Corporate Governance for Listed Companies in China explicitly states that the secretary of the board of directors shall oversee information disclosure, including the formulation of rules for information disclosure. The responsibilities of board secretaries largely overlap with those of a CFO in US firms. Besides having primary responsibility for corporate information disclosure decisions, many board secretaries are also involved in investment and financing decisions. In practice, it is the board secretary who will be held accountable for any financial misconduct, and there are numerous instances when board secretaries were held liable for fraudulent financial reporting (Wang et al., 2019; Lu et al., 2023). Despite evidence suggesting that the influence of CFOs in China might not be as pronounced as in the US, I further explore the association between migrant CFO and audit fees as an additional test later in the paper.

financial reporting quality could lower firms' business risk and misreporting risk. As a result, auditors may charge firms managed by migrant CEOs lower fees for lower risk associated with auditing such firms. I, therefore, expect a negative association between migrant CEO and audit fees from the supply side perspective.

The Chinese market provides an interesting setting for studying the association between migrant CEO and audit fees. First, even though internal migration is a global phenomenon, the scale and regional diversity in China are especially pronounced (Fisman et al., 2018). The Chinese seventh national census conducted in 2020 highlights this trend, noting an increase in internal migrants from 21.35 million in 1990 to 376 million in 2020. Crucially, from a corporate management perspective, it is essential to understand the geographic redistribution of human capital in an environment where the Chinese government's talent policies actively promote internal migration. Second, the auditing environment in China is marked by intense competition, and mainly comprised of medium, and small-sized audit firms, in contrast to countries, like the US, dominated by Big 4 audit firms. In 2020, international Big 4 audit firms and the Top 10 domestic audit firms accounted for just 19% and 25% of market share by revenue from core business (i.e., auditing and assurance service), respectively (Lin et al., 2023), suggesting top audit firms holding a relatively low market share. Third, in the Chinese capital market, investor protection is less developed and hence regulatory intervention is a frequent phenomenon. Auditors in China face lower litigation risk but are more susceptible to regulatory risk. Overall, the distinctive characteristics of auditing environment in China provide a unique setting in examining the association between migrant CEOs and audit fees from both the demand and supply perspectives.

To empirically test the association between migrant CEO and audit fees, this study uses a sample of listed firms in China from 2008 to 2020. By comparing a CEO's birthplace with the location of a firm's headquarter, a CEO is classified as a migrant if his/her place of birth differs from the location where the firm is headquartered (see Section 4 for more details). The results show a positive association between migrant CEO and audit fees. In terms of economic significance, I find that, on average, a one unit increase in migrant CEO increases audit fee by 5.87%, which equates to approximately ¥0.08 Million for my sample mean firm. In addition, I find no significant association between migrant CEO and audit report lag, but a positive relationship between migrant CEOs and the regulatory sanction against auditors.

However, my results could be biased because of endogeneity concerns arising from several sources. First, the determinants of audit fees are numerous, and although I control for several determinants of audit fees, omitted variable bias remains a concern. I therefore perform

fixed effects regression to control for the effects of time-invariant province-, firm-, audit firm-branch office-, and audit partner-level factors. My fixed effects result remains consistent with the OLS result. Second, I perform an entropy-balanced matching approach to control for endogeneity concerns arising from the observed differences in characteristics of migrant CEO versus local CEO and find evidence consistent with the baseline result. Third, I also perform a two-stage least square regression (2SLS) using two instrumental variables namely, the average of migrant CEOs of other firms within the same province, and the annual temperature difference. My baseline results remain robust to 2SLS specification. Finally, I also re-estimate the baseline model using a difference-in-difference (DiD) approach. Specifically, I use CEO switching as an experiment and find that when a firm switches from a local CEO to a migrant CEO, audit fees tend to increase.

Next, I conduct mediation tests to explore whether and how migrant CEOs affect audit fees from both demand and supply sides. I find that migrant CEOs, by investing more in innovative projects, are more likely to demand higher quality auditing, thereby paying higher audit fees.³¹ Meanwhile, I also find that migrant CEOs pay higher audit fees even when they are less prone to real earnings management. This finding indicates a biased assessment of financial reporting quality in firms with migrant CEOs. The heightened risk-taking propensity of migrant CEOs, combined with the intergroup biases against them, may cause auditors to be particularly sensitive to risk changes. These factors might lead auditors to behave more conservatively, thus, prioritising risk over financial reporting quality in their pricing decisions for clients with migrant CEOs. Therefore, financial reporting quality may not be strong enough to alter auditors pricing decisions.

I also conduct two moderating tests. I find that the positive association between migrant CEO and audit fees is less pronounced in firms with gender-diverse audit committees, and firms audited by long-tenured auditors. In additional analysis, I first examine the association between CEO migration direction and audit fees, and find a positive association only for CEO upward migration (i.e., CEOs who migrated from less economically developed regions to more economically developed regions). I then investigate the association between migrant CFO and audit fees and find a marginally negative association. Also, my baseline results remain robust after excluding firms headquartered in the four major cities in China, i.e., Beijing, Shanghai, Guangzhou, and Shenzhen.

³¹ When introducing measures of corporate innovation as mediators, I find that auditors charge higher fees to clients with migrant CEOs due to increased R&D investment, and a higher number of patents. However, innovation quality, measured as patent citations, does not mediate the migrant CEO – audit fees relationship.

My study contributes to the literature in several ways. First, it contributes to the growing body of literature on the consequences of hiring a migrant CEO. This prior literature, grounded in social identity theory³², examines the impact of the external environment on migrant CEOs, who are considered as outgroup leaders to local stakeholders (Huang et al., 2023). Diverging from this perspective, my research, however, shifts the lens toward the characteristics of migrant CEOs themselves. This shift represents a novel approach by examining how migrant CEOs, possessed with superior human capital, shape their strategic choices. By focusing on the characteristics of migrant CEOs, my evidence shows that the audit fees for a client with a migrant CEO are higher than those of other clients. These insights offer a nuanced understanding of the role that the human capital of migrant CEOs plays in influencing both strategic choices and external evaluations of risk, thereby contributing valuable perspectives to the discourse on leadership diversity and corporate governance.

Second, my study also extends my understanding of how CEOs' management of operating styles affects the audit fees. In his seminal study on the pricing of audit services, Simunic (1980) provides the foundation for the substantial body of research that has examined the determinants of audit fees for over the four decades. In a meta-analysis of the research on the determinants of external audit fees, Hay et al. (2006) note that most studies in this area investigate many client and auditor attributes and their associations with audit pricing. However, a growing stream of literature has begun to examine the effect of various personal attributes of executives on audit fees (e.g., Tsui et al., 2001; Krishnan and Wang 2015; Hanlon et al., 2022). I complement this literature by documenting a significant association between migrant CEO and audit fees.

The remainder of the paper proceeds as follows. Section 2 introduces the background on Chinese audit market. Section 3 reviews the related literature and develops the hypothesis. Section 4 outlines the sample and specifies the regression models and variables. Section 5 provides the main test results, and Section 6 concludes the paper.

³² Social identity theory has been widely studied in the realm of social psychology (Ren et al., 2022), which describes the socio-cognitive processes that address individuals' interactions and behaviors as influenced by the different categories to which they belong (Tajfel and Turner, 1979). According to social identity theory, individuals tend to categorize themselves and others into groups and define themselves in terms of a social identity (Ashforth and Mael, 1989). This social categorization may lead to intergroup bias and ingroup favoritism, which generally refers to the systematic tendency to show preference for one's own group membership (ingroup) over the outgroup (Bertrand et al., 2021).

4.2 Auditing in China

Unlike in the US, where audit failures often result in class-action lawsuits, making litigation risk a primary concern for auditors, the litigation risk for auditors in China is much lower since lawsuits are costly and have a low possibility of success (Chen et al., 2005; Lisic et al., 2015).³³ However, public firms and auditors in China do face a risk of regulatory sanctions. Security market regulators in China, most primarily the China Securities Regulatory Commission (CSRC) possess the authority to investigate and sanction public firms and auditors for securities fraud and/or accounting misconduct (Hu et al., 2022; Gunn et al., 2023). Auditors may face consequences including warnings, monetary fines, and/or suspension or termination of practice. Therefore, Chinese auditors face regulatory risk, which could potentially substitute for litigation risk as an incentive to provide high quality auditing (Gunn et al., 2023).

In addition, China's audit market differs from those of other countries in having many small and medium-sized audit companies, and a very low audit market concentration, resulting in intense competition through pricing competition (Huang et al., 2016; Lin et al., 2023). Because of the support provided to domestic audit firms by the Chinese government from the 2000s, domestic audit firms' market share has been increasing year-by-year, whereas the Big 4 accounting firms' share has been gradually declining. Statistics show that in 2020, international Big N audit firms and the top ten domestic audit firms accounted for just 19% and 25% of the market share by revenue from core business (i.e., auditing and assurance services), respectively (Lin et al., 2023).

According to the Chinese Auditing Standards (No. 1101 - Objective and general principles governing an audit of financial statements)³⁴, auditors are required to be familiar with the nature of the firm, and its control environment to identify the risks of clients' misstatements, whether intentional or unintentional. In this process, auditors are expected to access and evaluate the underlying characteristics of managers or management operating styles.

³³ Before 2003, lawsuits could not be filed for false statements in the security market. Then, in 2003, the Supreme People's Court promulgated Provisions on the Trial of Civil Compensation Lawsuits of False Statements in the Securities Market. Under these provisions, administrative sanction by the CSRC or the Ministry of Finance became a procedural prerequisite of investor lawsuits stemming from false statements against companies or financial intermediaries. In addition, lawsuits against auditors and judgments providing compensation for the losses of investors are rare, and even in these cases, the compensation amount was extremely limited. For example, Dazhahui (SH 601519) committed accounting fraud in 2013 and was investigated and punished by the CSRC in 2016. BDO Certified Public Accountants, Dazhahui's auditor, was also punished by the CSRC and fined ¥2.8 Million. Following the penalty, investors sued and won a lawsuit against Dazhahui, and BDO was forced to bear joint liabilities amounting to ¥1.85 Million, which was significantly less than the penalty levied by the CSRC (Hu et al. 2022).

³⁴ Available at <https://www.cicpa.org.cn/xxfb/tzgg/202201/W020220120411482623217.pdf> (In Chinese)

Considering the auditing environment discussed above, auditors are encouraged by the auditing standards to evaluate the underlying characteristics of managers. I posit that the competitive audit market and regulatory environment might make the audit pricing decision in China even complex. I thus explore how firms with migrant CEOs demand audit quality and how do auditors factor in these complexities in their audit fee determinations, particularly for clients with migrant CEOs.

4.3 Literature Review and Hypothesis Development

4.3.1 Literature on migrant CEO

Jaeger et al. (2010) and Heitmueller (2005) document that migration is full of uncertainties and challenges from economic, social, and psychological aspects, such as future earnings, living conditions, cultural adjustment, developing new connections with local residents, as well as the anxiety of not being able to settle down in a new place (Tunali, 2000). Previous research in economics has explored the determinants of migration decisions, ranging from traditional economic factors, including income, wages, and networks (Kinnan et al., 2018; Pedersen et al., 2018), to environmental influences, such as climate change, and air pollution (Feng et al., 2010; Chen et al., 2022). Considering the uncertainties and challenges of migration, existing literature on the effect of migrants in accounting, finance and corporate governance field emphasizes two key aspects of migrant CEOs: their risk-taking propensity and the outgroup status they face in new environments.

The first stream of research examines the entrepreneurial and innovative traits often seen in migrant managers. They have been seen to exhibit traits like ambition, aggressiveness, and tenacity, which are believed to evolve in response to the myriads of challenges and uncertainties inherent in the migration experience (Chiswick, 1999). This line of thinking suggests that migrants, in adapting to new environments, have a higher propensity to take risks (Wu and Easley, 2022). Drawing from upper echelons theory, this prior literature explores how the risk-taking personalities of migrant executives shape corporate decision-making. Specifically, Gao et al. (2021) find that migrant entrepreneurs' propensity to take risks leads them to pursue more innovative projects.

The second stream of research primarily draws upon the intergroup relations framework of social identity theory (Tajfel and Turner, 1979), and geographic preference theory (Yonker, 2017). These theories collectively underscore the significant impact of geographic origins on

individual preferences and social behaviors, emphasizing how one's place of origin shapes their interactions and affinities towards others.

The social identity theory posits that migrant CEOs may be perceived as outgroup members by local stakeholders and, thus creates intergroup bias among local stakeholders (Hewstone et al., 2002). This intergroup bias is seen as a liability or disadvantage for migrant CEOs, who often face trustworthiness, legitimacy and local resources disadvantages compared to their local counterparts (Pool et al., 2012; Fisman et al., 2018; Chen et al., 2020). Firms with migrant CEOs will then take action to mitigate these disadvantages, for example, by engaging in a higher level of ESG disclosures (Huang et al., 2023).

According to the geographic preference theory, CEOs prefer to live and work close to their hometowns (Dahl and Sorenson, 2012; Yonker, 2017). Therefore, it posits that migrant managers, due to the professional and personal challenges of working away from their hometowns, may command higher compensation as a form of rent extraction. Likewise, Guo et al. (2023) identify a similar pattern in China, finding that migrant CEOs in China receive a 7.9% higher cash compensation than their local counterparts.

4.3.2 Literature on audit fees

The determinants of audit fees can be broadly classified into three groups: (i) client characteristics, (ii) auditor characteristics and (iii) engagement characteristics (Hay et al., 2006). Firm size, operational complexity and firm risk are some of the client-specific characteristics that increase audit fees (Hay, 2013). Auditor firm size, auditor tenure and auditor industry specialisation are some of the auditor characteristics that increase audit fees (Mayhew and Wilkins, 2003; Hay, 2013). Audit report lag (Ho and Ng, 1996) and audit partner busyness (Hardies et al., 2015) are considered engagement characteristics that tend to push audit fees up. My research concentrates on the client characteristics domain, specifically on managerial traits and their effects on audit fees. Empirically, there is evidence that auditors consider the CEO's characteristics when assessing the client's business and audit risk.

Studies indicate that CEOs' traits are associated with risk-taking propensities that exacerbate audit risks and hence audit fees. For instance, Johnson et al. (2012) demonstrate that auditors charge higher fees for clients with narcissistic CEOs, as such traits may increase audit risks due to higher inherent risk and control risk. The literature also notes that CEOs affiliated with the Republican Party, in contrast to Democratic and nonpartisan CEOs, are linked to lower inherent and control risks – two components of audit risk – resulting in lower audit fees, while their Democratic counterparts are perceived having higher risks, leading to

higher audit fees (Bhandari et al., 2020). Additionally, Ma et al. (2021) find that audit fees of clients with generalist CEOs are higher than those clients with specialist CEOs as auditors consider generalist CEOs as indicative of more agency problems increasing audit risk.

Conversely, existing research indicates that CEOs perceived as more trustworthy, including those with financial expertise, female CEOs, are often linked to lower audit fees. This is often attributed to a reduced workload for auditors and lower perceived audit risks. Kalelkar and Khan (2016) find that CEOs with financial expertise are deemed to enhance the trustworthiness of financial reporting, potentially reducing both audit effort and audit risk. Additionally, CEO change from male to female reduces audit fees. This trend may reflect the perception that female CEOs are effective in enhancing internal control quality, reducing the likelihood of financial manipulations, improving the quality of financial reporting, and reducing the risk of material misstatement. Such improvements are recognized by auditors in their risk assessments, subsequently lowering audit fees (Gull et al., 2021). Specifically, Hsieh et al. (2019) find that auditors' perceptions of client executives' facial trustworthiness are negatively associated with their audit fee decisions. That is, auditors charge a 5.6% lower audit fees to firms with trustworthy-looking CFOs. Dikolli et al. (2020) also show that low CEO behavioural integrity is associated with high audit fees, suggesting that auditors undertake additional work to respond to low behavioural integrity and mitigate the risks of potential restatements and lawsuits.

4.3.3 Hypothesis development

Audit fees are associated with quality in the audit process (e.g., Simunic, 1980; Johnstone and Bedard, 2004; Lyon and Maher, 2005; DeFond and Zhang, 2014). Previous literature reveals that audit fees are determined by both demand- and supply-side factors (Hilary and Lennox, 2005; DeFond and Zhang, 2014). On the demand side, auditors can charge higher audit fees only if there is increased client demand. On the supply side, audit fees relate to the costs of auditors' efforts and expected legal liabilities (e.g., Simunic, 1980; Lyon and Maher, 2005; Choi et al., 2008). Previous studies provide evidence that auditors are likely to charge a risk premium in the form of higher audit fees when faced with higher litigation risk owing to an increased risk of failing to discover financial misreporting (e.g., Hilary and Lennox, 2005; Weber et al., 2008; Kim et al., 2012).

On the demand side, migrant CEOs are likely to demand higher audit quality of the firm's financial statements, and thus pay higher audit fees, to provide assurance to the stakeholders. Prior literature suggests agency conflicts give managers an incentive to demand

higher quality audits of financial statements, to assure investors that the financial statements are fairly presented and thus can help them monitor the managers (Jensen and Meckling, 1976; Defond and Zhang, 2014). Literature in labour economies indicates that individuals with higher accumulated human capital have more job opportunities and are more likely to migrate (Xue et al., 2021). Migrants have also been found to be more capable, ambitious, and entrepreneurial than those who remain in their place of origin (Chiswick, 1999). However, unlike local CEOs, whose abilities are more easily assessed through local information network, the abilities of migrant CEOs remain relatively less observable (Yonker, 2017). Consequently, migrant CEOs may be more sensitive to firm performance, using it to signal their competitive advantage over local counterparts (Jenter and Lewellen, 2021). To demonstrate their ability and alleviate shareholders' concern on their ability, migrant CEOs, with their superior human capital, are more likely to pursue risky strategies, such as innovation activities (Chemmanur et al., 2019; Gao et al., 2021). Since innovation is a long-term, high-risk investment with potential for upside returns and downside losses, it often exacerbates information asymmetry and increases performance volatility (Hall, 2002; Huang et al., 2021). One way of reducing such increased information asymmetry is to provide independently verified high quality financial disclosures. Such verification, however, is costly as proxied by high audit fees (Francis et al., 2011; Defond and Zhang, 2014). I, therefore, expect a positive association between migrant CEO and audit fees from the demand side perspective.

On the supply side, migrant CEOs may be negatively associated with audit fees, as auditors might perceive lower risks when auditing firms managed by migrant CEOs. First, firms managed by migrant CEOs are likely to have lower engagement risk than firms managed by local CEOs. Migrant CEOs, who are posited to exhibit superior talents and managerial ability, are better than local CEOs at addressing complex business problems and changes in the economic environment (Guo et al., 2023). These skills mitigate the risk of poor performance (Krishnan and Wang, 2015) and hence could lower firms' business risk and misreporting risk. Consequently, auditors may charge lower audit fees due to the lower risk associated with these clients' survival and profitability. Second, better firm performance can also lower the likelihood that investors will initiate lawsuits against the firms. For example, Venkataraman et al. (2008) show that firms with higher litigation risk are associated with higher audit fees than firms with lower litigation risk. If the litigation risk is lower in firms managed by migrant CEOs, the auditors are likely to charge lower fees for firms with migrant CEOs than for firms with local CEOs.

Given the conflicting arguments stated above, it is a priori unclear whether migrant CEOs are associated with higher or lower audit fees in China. Thus, I state my hypothesis as follows.

H1: Migrant CEO is not associated with audit fees.

4.4 Research Design

4.4.1 Data and sample selection

My sample consists of all Chinese A-share listed firms from 2008 to 2020. The sample period starts in 2008 as birthplace data for CEOs required for measuring migrant CEO was largely missing before 2008. I check whether the CEO was born in the same province in which the firm is headquartered to identify whether the CEO is migrant or not, following Guo et al. (2021) and Lai et al. (2020). Several sources were utilized as detailed below.

First, the China Stock Market Accounting Research Database (CSMAR) was used to retrieve birthplace data for CEOs. When this information was not available from CSMAR, I manually collected the ID number from the Initial Public Offering (IPO) prospectus, and then retrieved birthplace data using the CEO's ID number.³⁵ To further validate the accuracy of the retrieval of birthplace information as described above, I cross-referenced the birthplace information provided on the ID with data retrieved from various sources including newspapers, journals, alumni reports and public profiles. I obtain audit-related data, such as audit fees, audit opinion, and audit report lag, as well as other accounting and finance data from CSMAR database.

To focus solely on mainland China, firms with migrant CEOs from foreign countries, Hong Kong, Taiwan and Macao were excluded. Migrant CEO data was then merged with audit fees. Because the special regulations governing financial firms means their financial statements are not comparable to non-financial firms, 1,089 firm-year observations in the financial industry were excluded. A further 15,102 observations with missing control variables were excluded. The missing control variables is primarily due to the financial reporting quality measurements (*Dac* and *CScore*) and audit committee characteristics, I then exclude 9,753 observations with missing CEO birthplace data, resulting in a final sample of 8,760 firm-year observations. Panel A of Table 4.1 details my sample selection process.

³⁵ Every Chinese citizen must register their residence after birth, and each resident is assigned a unique 13-digit ID number when registering residence. The ID number cannot be changed, even after migration. In most cases, a person's birthplace can be determined by the first 6 digits of the ID number. Specifically, the first 2 digits indicate the province of the residence, the third and fourth digits indicate the city, and fifth and sixth, the district/county.

4.4.2 Regression model

To test my hypothesis on the association between migrant CEO and audit fee, I estimate the following ordinary least square (OLS) regression model (e.g., Hay et al., 2006; Kealey et al., 2007; Hogan and Wilkins, 2008; Venkataraman et al., 2008; Krishnan and Wang, 2015; Judd et al., 2017).

$$\begin{aligned}
 Ln_Fee_{i,t} = & \beta_0 + \beta_1 Mig_CEO_{i,t} + \beta_2 Size_{i,t} + \beta_3 Lev_{i,t} + \beta_4 Roa_{i,t} + \beta_5 Loss_{i,t} \\
 & + \beta_6 current_{i,t} + \beta_7 ARInv_{i,t} + \beta_8 Duality_{i,t} + \beta_9 CEO_Age_{i,t} \\
 & + \beta_{10} CEO_Gender_{i,t} + \beta_{11} Bsize_{i,t} + \beta_{12} Bind_{i,t} + \beta_{13} AC_Size_{i,t} \\
 & + \beta_{14} AC_Age_{i,t} + \beta_{15} Mao_{i,t} + \beta_{16} Lag_{i,t} + \beta_{17} Aud_Tenure_{i,t} \\
 & + \beta_{18} Aud_Change_{i,t} + \beta_{19} Top10_{i,t} + \beta_{20} Gdp_PC_{i,t} + \beta_{21} Population_{i,t} \\
 & + \beta_{22} CScore_{i,t} + \beta_{23} Dac_{i,t} + Year\ FE + Industry\ FE + \varepsilon_{i,t}
 \end{aligned}
 \tag{4.1}$$

where the dependent variable is the natural logarithm of audit fees (*Ln_fee*). My main variable of interest is migrant CEO (*Mig_CEO*), a dummy variable coded 1 when the birthplace of CEO is different from the place in which the firm is headquartered, and 0 otherwise. I control several variables documented in prior research as significant determinants of audit fees. I briefly discuss these variables below and provide more detailed information regarding their calculation in Appendix D.

First, I control for firm-level variables that include firm size (*Size*), firm leverage (*Lev*), firm probability (*Roa*), proxied by return on assets; negative earnings (*Loss*); liquidity (*Current*), proxied by current ratio; the ratio of receivables and inventories (*ARInv*), defined as the sum of accounts receivables and the sum of total inventories divided by total assets. I expect *Size*, *Lev*, *ARInv*, and *Loss* to have positive association with *Ln_Fee*; and *Roa*, *Current* to have negative association with *Ln_Fee*.

I next include a set of corporate governance controls that include Duality (*Duality*), equal to 1 if the CEO also holds the position of the chair of the board and 0 otherwise; CEO age (*CEO_Age*), CEO gender (*CEO_Gender*), board size (*Bsize*), board independence (*Bind*), measured as the proportion of independent directors in the board. I also include audit committee controls, including audit committee size (*AC_Size*), and audit committee average age (*AC_Age*), measured as the natural logarithm of the average age of the audit committee members.

I then control for audit related variables. Specially, I control for the variable indicating whether the client has received a modified audit opinion (*Mao*), a dummy variable that takes the value of 1 for firms receiving a modified opinion in the previous year, and 0 otherwise; audit report lag (*Lag*), the natural logarithm of the number of days between the fiscal year end

date and the audit report issue date; audit tenure (*Aud_Tenure*), calculated as the natural logarithm of 1 plus the number of years the auditor has continuously audited the client. Auditor changes (*Aud_Change*), an indicator variable that equals 1 if the audit firm is in the first year of tenure, and 0 otherwise; whether the firm is audited by Top 10 audit firms (*Top10*), coded 1 if a firm is audited by Top10 audit firms, and 0 otherwise. I expect positive coefficients on *Mao*, *Lag*, and *Top10*, and a negative coefficient on *Aud_Change*. I make no prediction on *Aud_Tenure*, as long-tenured audit service could generate spillover benefits or impair auditor independence (Hay et al., 2006).

I also include control variables capturing the economic and demographic characteristics of where a firm is headquartered. All these variables are measured at the provincial level. Specifically, I include local per capita GDP (*Gdp_PC*), which equals the natural logarithm of GDP divided by population; local population (*Population*), the natural logarithm of the population in ten thousand. In line with Costa and Habib (2023), I next include two variables to control for firm financial reporting quality, i.e., *CScore* and *Dac*. I expect a negative coefficient for *CScore*, reflecting the expectation that auditors charge lower fees to more conservative clients due to the reduced engagement risk they present (Defond et al., 2016). Conversely, I expect the coefficient on *Dac* to be positive because high *Dac* implies greater financial reporting risk and hence higher audit fees (Choi et al., 2022).

Finally, year and industry fixed effects are included in model (1) to capture the differences in the magnitude of audit fees over time and across industries. To avoid the undesirable influence of outliers, all continuous variables are winsorized at the 1st and 99th percentiles. All regressions are estimated with robust standard errors clustered by firm to control for heteroscedasticity as well as the possible correlation between observations of the same firm in different years. Detailed variable descriptions are provided in the Appendix D.

4.5 Empirical Results

4.5.1 Descriptive statistics and correlation

Panel A of Table 4.1 explains the sample selection procedure. Panel B of Table 4.1 presents the distribution of the sample by industry. Columns 1 and 2 report the number of observations and the percentage in the full sample by industry. About 68% of sample observations come from the manufacturing industry (industry code: C). Panel C of Table 4.1 outlines the distribution of my sample by provinces. Columns 1 and 2 contain the number of observations in each province and the proportion of these observations in the full sample, respectively. Columns 3 and 4 report the distribution of CEOs' hometown provinces and the proportion of

each province in the full sample. The last two columns report the number of firm-year observations with migrant CEOs by province and the percentage of these observations in each province. Guangdong emerges as the province with the highest count of firm headquarters (n=1,575) and the largest number of migrant CEOs (n=930), while Ningxia has the smallest presence with only 21 firm headquarters. This trend suggests a CEO migration towards more economically developed eastern coastal regions. Additionally, Zhejiang is noted as the leading birthplace of CEOs in my sample.

Table 4.1 Sample selection procedure and sample distribution

Panel A Sample Selection procedure			
			N
Total number of firm-year observations from 2008-2020			34,704
Less:			
Observations from financial institutions			(1,089)
Observations with missing control variables used in the regression			(15,102)
Observations with missing CEO birthplace data			(9,753)
Final Sample			8,760
Panel B: Sample distribution by industry			
Industry		N	%
A	Agriculture, forestry, animal husbandry and fishery	99	1.14
B	Mining	231	2.66
C	Manufacturing	5,896	68.00
D	Industry of electric power, heat, gas and water production and supply	239	2.76
E	Construction	220	2.54
F	Wholesale and retail	395	4.56
G	Transport, storage and postal service	212	2.45
H	Accommodation and catering	11	0.13
I	Information transmission, software and information technology services	526	6.07
K	Real Estate	369	4.26
L	Leasing and commercial service	124	1.43
M	Scientific research and technical service	82	0.95
N	Water conservancy, environment and public facility management	83	0.96
Q	Health and social work	5	0.06
R	Culture, sports and entertainment	100	1.15
S	Diversified industries	78	0.90
Total		8,670	100.00

Panel C: Sample distribution by province

Province	Headquarters of firms		CEO's birthplace		Migrant CEO	
	N	% of all Obs.	N	% of all Obs.	N	% of all Obs.
	(1)	(2)	(3)	(4)	(5)	(6)
Beijing	702	8.10	237	2.73	545	17.38
Tianjin	74	0.85	78	0.90	42	1.34
Hebei	152	1.75	240	2.77	28	0.89
Shanxi	118	1.36	157	1.81	21	0.67
Inner Mongolia	59	0.68	65	0.75	25	0.80
Liaoning	155	1.79	219	2.53	31	0.99
Jilin	102	1.18	149	1.72	43	1.37
Heilongjiang	55	0.63	111	1.28	28	0.89
Shanghai	569	6.56	231	2.66	367	11.71
Jiangsu	944	10.89	1174	13.54	98	3.13
Zhejiang	1095	12.63	1297	14.96	120	3.83
Anhui	343	3.96	413	4.76	71	2.26
Fujian	361	4.16	379	4.37	76	2.42
Jiangxi	124	1.43	320	3.69	25	0.80
Shandong	473	5.46	591	6.82	79	2.52
Henan	258	2.98	350	4.04	73	2.33
Hubei	249	2.87	380	4.38	87	2.78
Hunan	305	3.52	480	5.54	41	1.31
Guangdong	1575	18.17	714	8.24	930	29.67
Guangxi	100	1.15	94	1.08	42	1.34
Hainan	56	0.65	26	0.30	38	1.21
Chongqing	97	1.12	119	1.37	56	1.79
Sichuan	213	2.46	247	2.85	78	2.49
Guizhou	45	0.52	41	0.47	27	0.86
Yunnan	121	1.40	116	1.34	35	1.12
Tibet	38	0.44	5	0.06	33	1.05
Shaanxi	81	0.93	224	2.58	22	0.70
Gansu	104	1.20	124	1.43	45	1.44
Qinghai	24	0.28	17	0.20	12	0.38
Ningxia	21	0.24	25	0.29	3	0.10
Xinjiang	57	0.66	47	0.54	14	0.45

Note: This table presents the sample distributions. Panel A of Table 4.1 presents the sample selection procedure. Panel B reports the sample distribution by industry. Panel C reports the corresponding percentages of the full sample by province. Columns (1) - (2) report the number of each province identified as firm headquarters and the percentage in the whole sample. Columns (3) - (4) report the distribution of CEOs' hometown provinces and the proportion of each province in the full sample. Columns (5) - (6) report the number of firm-year observations with migrant CEOs by province and the percentage of these observations in the full sample.

I present the descriptive statistics for the variables used in my main analysis in Panel A of Table 4.2. The mean (median) value of *Ln_Fee* is 13.76 (13.65). The average audit fee (*Ln_Fee*) is 1.304 million Chinese Yuan, markedly lower than the audit fees reported in the US studies (e.g., Pham et al., 2021; Costa and Habib, 2023; Bolor-Erdene et al., 2024). The mean value of *Mig_CEO* is 0.362, i.e., migrant CEOs constitute 36.2% of the sample. This proportion aligns with Yonker's (2017) findings that firms tend to favor hiring local CEOs.

The descriptive statistics for the control variables are also within a reasonable range. Firms in my sample are relatively large (average *Size* of 22.230), have high leverage (mean *Lev*

of 0.420), and profitable (mean *Roa* of 0.042). Approximately 8.1% of the sample firms report loss (*Loss*), and the short-term liquidity (*Current*) is strong with a mean of 2.332. 36.3% of the CEOs in my sample also hold the position as board chair (*Duality*). Additionally, a significant majority, 94.3%, of the CEOs are male, and their average age exceeds 50. The mean (median) of *AC_Size* is 1.426 (1.386), indicating an average audit committee size of approximately 3.23 members in the firms within my sample, with their average ages (*AC_Age*) exceeding 51. Approximately 2.2% of the firm-year observations receive a modified audit opinion (*Mao*). The mean (median) *Lag* is 96.623 (101) with a standard deviation of 18.473 days. This audit report lag is marginally longer when compared to some previous studies, yet it aligns with the findings reported by Alkebsee et al. (2022). The mean audit tenure (*Aud_Tenure*) is 1.933 years, indicating the average audit tenure in my sample is 7.479 years, suggesting a relatively long engagement duration. The mean of auditor change (*Aud_Change*) is 0.12, indicting 12%, approximately, of firms hire a new auditor every year. The mean of *Top10* is 0.542, which reveals that 54.2% of the firm-year observations in my sample are audited by Top10 audit firms. Overall, the statistics of the control variables in my sample are consistent with prior Chinese studies (e.g., Tong et al., 2022; Yuan et al., 2023).

Panel B of Table 4.2 provides the univariate comparisons between firms with migrant CEOs (*Mig_CEO*=1) and local CEOs (*Mig_CEO*=0). Specifically, the univariate results show that the mean of audit fees is significantly higher in the subsample of firms with migrant CEOs, compared to firms with local CEOs ($p < 0.01$).³⁶ Panel B also reports differences in many other regression variables between the two groups including risk-taking variables and earnings quality proxies. Importantly, the demand for high quality auditor is higher for firms with migrant CEO (*Top10*=0.57) compared to firms with local CEO (*Top10*=0.53) and the difference is statistically significant.

³⁶ Note that the difference in audit fees for firms with migrant CEOs, relative to firms with local CEOs, does not accurately reflect the effect a migrant CEO has on audit fees. Because many other client characteristics differ between firms with migrant CEOs and those with local CEOs, the true impact on audit fees for having a migrant CEO is lower than reported in this univariate analysis.

Table 4.2 Descriptive statistics and Univariate tests of differences**Panel A: Descriptive statistics**

Variables	N	Mean	Std. Dev.	Min	p25	Median	p75	Max
<i>Ln_Fee</i>	8,670	13.76	0.740	9.210	13.300	13.650	14.120	18.000
<i>AFEE</i> (CNY)	8,670	1.304	1.628	0.270	0.600	0.850	1.350	12.350
<i>Mig_CEO</i>	8,670	0.362	0.480	0.000	0.000	0.000	1.000	1.000
<i>Size</i>	8,670	22.230	1.320	20.030	21.280	22.020	22.930	26.360
<i>Lev</i>	8,670	0.426	0.201	0.056	0.265	0.420	0.577	0.860
<i>Roa</i>	8,670	0.042	0.056	-0.201	0.0170	0.040	0.0700	0.200
<i>Loss</i>	8,670	0.081	0.273	0.000	0.000	0.000	0.000	1.000
<i>Current</i>	8,670	2.393	2.332	0.355	1.141	1.647	2.654	15.200
<i>ARInv</i>	8,670	0.274	0.162	0.011	0.151	0.256	0.370	0.735
<i>Duality</i>	8,670	0.363	0.481	0.000	0.000	0.000	1.000	1.000
<i>CEO_Age</i>	8,670	3.906	0.137	3.497	3.829	3.912	4.007	4.205
<i>CEO_Gender</i>	8,670	0.943	0.232	0.000	1.000	1.000	1.000	1.000
<i>Bsize</i>	8,670	2.139	0.203	1.609	1.946	2.197	2.197	2.708
<i>Bind</i>	8,670	0.375	0.0530	0.333	0.333	0.353	0.429	0.571
<i>AC_Size</i>	8,670	1.426	0.182	0.693	1.386	1.386	1.386	1.946
<i>AC_Age</i>	8,670	3.935	0.098	3.689	3.871	3.936	4.001	4.164
<i>Mao</i>	8,670	0.022	0.149	0.000	0.000	0.000	0.000	1.000
<i>Lag</i>	8,670	4.560	0.219	3.664	4.454	4.625	4.736	4.787
<i>ALag</i> (days)	8,670	96.623	18.473	38.000	85.000	101.000	113.000	119.000
<i>Aud_Tenure</i>	8,670	1.933	0.675	0.693	1.386	2.079	2.485	3.178
<i>Aud_Change</i>	8,670	0.120	0.325	0.000	0.000	0.000	0.000	1.000
<i>Top10</i>	8,670	0.542	0.498	0.000	0.000	1.000	1.000	1.000
<i>Gdp_PC</i>	8,670	11.070	0.502	9.671	10.730	11.120	11.450	12.010
<i>Population</i>	8,670	8.613	0.609	6.750	8.230	8.709	9.157	9.443
<i>CScore</i>	8,670	-0.044	0.862	-5.891	-0.069	0.012	0.148	2.851
<i>Dac</i>	8,670	0.001	0.077	-0.267	-0.038	0.002	0.042	0.244
<i>Rem</i>	8,199	-0.017	0.195	-0.666	-0.108	-0.003	0.091	0.552
<i>R&D</i>	8,670	14.552	7.077	0.000	15.921	17.478	18.487	21.913
<i>Apply</i>	8,670	2.593	1.771	0.000	1.099	2.708	3.829	7.084
<i>Grant</i>	8,670	2.412	1.695	0.000	1.099	2.485	3.584	6.829
<i>Citation</i>	5,442	2.496	1.887	0.000	0.693	2.485	3.807	7.511

Panel B: Univariate tests of differences

Variables	<i>Mig_CEO</i> =0		<i>Mig_CEO</i> =1		Mean Diff
	N	Mean	N	Mean	t-test
	(1)	(2)	(3)	(4)	(5)
<i>Ln_Fee</i>	5,535	13.690	3,135	13.870	-0.177***
<i>Size</i>	5,535	22.140	3,135	22.390	-0.248***
<i>Lev</i>	5,535	0.417	3,135	0.440	-0.023***
<i>Roa</i>	5,535	0.044	3,135	0.040	0.004***
<i>Loss</i>	5,535	0.076	3,135	0.091	-0.016**
<i>Current</i>	5,535	2.380	3,135	2.417	-0.0370
<i>ARInv</i>	5,535	0.270	3,135	0.282	-0.012***
<i>Duality</i>	5,535	0.358	3,135	0.373	-0.015
<i>CEO_Age</i>	5,535	3.905	3,135	3.909	-0.004
<i>CEO_Gender</i>	5,535	0.943	3,135	0.944	-0.001
<i>Bsize</i>	5,535	2.142	3,135	2.133	0.009**
<i>Bind</i>	5,535	0.373	3,135	0.378	-0.005***

<i>AC_Size</i>	5,535	1.416	3,135	1.444	-0.029***
<i>AC_Age</i>	5,535	3.933	3,135	3.938	-0.005**
<i>Mao</i>	5,535	0.978	3,135	0.977	0.001
<i>Lag</i>	5,535	4.561	3,135	4.558	0.003
<i>Aud_Tenure</i>	5,535	1.986	3,135	1.839	0.147***
<i>Aud_Change</i>	5,535	0.110	3,135	0.137	-0.027***
<i>Top10</i>	5,535	0.526	3,135	0.569	-0.043***
<i>Gdp_PC</i>	5,535	11.03	3,135	11.130	-0.094***
<i>Population</i>	5,535	8.692	3,135	8.475	0.217***
<i>CScore</i>	5,535	-0.020	3,135	-0.086	0.067***
<i>Dac</i>	5,535	0.003	3,135	-0.002	0.004**
<i>Rem</i>	5,219	-0.011	2,980	-0.026	0.014***
<i>R&D</i>	5,535	14.760	3,135	14.190	0.565***
<i>Apply</i>	5,535	2.537	3,135	2.693	-0.156***
<i>Grant</i>	5,535	2.355	3,135	2.511	-0.155***
<i>Citation</i>	3,486	2.349	1,956	2.758	-0.409***

Note: This table presents summary statistics of the variables. Panel A of Table 2 reports the descriptive statistics and Panel B of Table 2 reports the univariate tests of differences between the sample of migrant CEOs, and that of non-migrant CEOs. The non-migrant CEOs sample (*Mig_CEO*=0) includes firm-year observations that a CEO's hometown is the same province as the firm's headquarters. The migrant CEO sample (*Mig_CEO*=1) includes firm-year observations that a CEO's hometown is not in the same province as the firm's headquarters. The Column *MeanDiff* reports the mean differences of variables between non-migrant CEOs and migrant CEOs. *, **, and *** denote the mean difference of variables are significant at the 10%, 5%, and 1% level, respectively. Detailed definitions of all variables are provided in Appendix D.

Table 4.3 shows the Pearson correlation matrix for the variables used in the basic regression models. The correlation between *Ln_Fee* and *Mig_CEO* is positive and significant (correlation coefficient 0.115, $p < 0.01$). This provides univariate support that auditors charge higher fees to firms with migrant CEOs. Consistent with previous studies, control variables such as *Size*, *Lev* are correlated with audit fees positively and significantly, whilst *Current* and *Roa* are correlated negatively and significantly (Judd et al., 2017). *CEO_Age*, *CEO_Gender*, *Bsize*, *Bind*, *Ac_Size* and *AC_Gender* are correlated with *Ln_Fee* positively and significantly (e.g., Zhang and Yu, 2016; Sultana et al., 2019; Alkebeese et al., 2021). *Ln_Fee* is higher for firms with longer audit report lag (*Lag*) (coefficient 0.121, $p < 0.01$), firms audited by Top 10 audit firms (coefficient 0.217, $p < 0.01$), and firms audited by auditors with longer audit tenure (coefficient 0.066, $p < 0.01$), whilst audit fees are lower for firms audited by audit firms in the first-year engagement (coefficient -0.055, $p < 0.01$).

The highest variance inflation factor (VIF) is only 3.36 (untabulated), which is well below the conventional threshold of 10.00, indicating low multicollinearity between my variable of interest and other predictors of audit fees (Marquardt, 1970).

Table 4.3 Correlation matrix															
Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1. Ln_Fee	1														
2. Mig_CEO	0.115***	1													
3. Size	0.782***	0.090***	1												
4. Lev	0.391***	0.055***	0.542***	1											
5. Roa	-0.063***	-0.034***	-0.012	-0.361***	1										
6. Loss	0.007	0.028**	-0.057***	0.143***	-0.633***	1									
7. Current	-0.293***	0.008	-0.340***	-0.660***	0.241***	-0.092***	1								
8. ARInv	-0.039***	0.034***	-0.016	0.287***	-0.098***	-0.015	-0.107***	1							
9. Duality	-0.106***	0.015	-0.176***	-0.146***	0.052***	-0.011	0.129***	0.030***	1						
10. CEO_Age	0.125***	0.015	0.127***	0.021**	0.009	-0.021*	-0.029***	-0.033***	0.223***	1					
11. CEO_Gender	0.030***	0.002	0.012	0.008	-0.003	-0.003	-0.014	-0.014	0.051***	0.005	1				
12. Bsize	0.158***	-0.021**	0.247***	0.132***	0.025**	-0.028***	-0.137***	-0.101***	-0.217***	0.025**	0.074***	1			
13. Bind	0.073***	0.050***	0.052***	0.039***	-0.036***	0.019*	-0.017	0.035***	0.129***	0.007	-0.059***	-0.496***	1		
14. AC_Size	0.106***	0.075***	0.171***	0.129***	-0.027**	-0.010	-0.083***	-0.052***	-0.110***	0.026**	-0.006	0.219***	-0.062***	1	
15. AC_Age	0.256***	0.023**	0.253***	0.067***	-0.018*	0.011	-0.034***	-0.056***	-0.049***	0.180***	-0.002	0.031***	0.049***	0.041***	
16. Mao	0.041***	0.004	-0.016	0.092***	-0.243***	0.254***	-0.051***	-0.009	-0.008	-0.011	0.011	0.024**	0.003	0.028***	
17. Lag	0.121***	-0.006	0.034***	0.036***	-0.174***	0.143***	-0.056***	0.025**	0.059***	0.091***	-0.023**	-0.058***	0.021*	-0.061***	
18. Aud_Tenure	0.066***	-0.105***	0.026**	-0.047***	0.048***	-0.026**	-0.007	-0.042***	-0.029***	-0.006	0.000**	-0.005	-0.023**	-0.049***	
19. Aud_Change	-0.055***	0.040***	-0.021**	0.057***	-0.037***	0.035***	-0.030***	0.024**	0.008	-0.012	-0.003	0.022**	-0.005	0.022**	
20. Top10	0.217***	0.042***	0.155***	0.013	0.045***	-0.032***	-0.003	-0.024**	0.044***	0.049***	0.009	-0.008	0.033***	0.004	
21. Gdp_PC	0.234***	0.090***	0.050***	-0.123***	0.001	0.000	0.072***	0.060***	0.140***	0.132***	-0.001	-0.199***	0.081***	-0.134***	
22. Population	-0.095***	-0.171***	-0.066***	-0.029***	0.012	-0.017	0.005	0.075***	0.059***	-0.019*	-0.001	-0.055***	-0.004	-0.004	
23. CScore	-0.221***	-0.037***	-0.256***	-0.058***	-0.047***	0.035***	0.021**	0.066***	0.053***	-0.010	-0.017	-0.080***	-0.001	-0.061***	
24. Dac	-0.027**	-0.027**	0.037***	-0.109***	0.327***	-0.240***	0.088***	0.074***	0.014	-0.003	-0.002	0.008	0.003	0.004	
25. Rem	-0.010	-0.036***	0.038***	0.176***	-0.353***	0.103***	-0.052***	0.172***	-0.058***	-0.015	0.019*	-0.011	-0.003	-0.002	
26. R&D	0.067***	0.038***	-0.027**	-0.212***	0.082***	-0.024**	0.125***	0.005	0.113***	0.046***	0.028***	-0.075***	0.036***	-0.095***	
27. Apply	0.284***	0.042***	0.281***	0.034***	0.067***	-0.053***	-0.061***	0.075***	0.040***	0.039***	0.036***	0.022**	0.035***	-0.026**	
28. Grant	0.301***	0.044***	0.286***	0.047***	0.036***	-0.028***	-0.080***	0.084***	0.044***	0.064***	0.032***	0.011	0.038***	-0.028***	
29. Citation	0.096***	0.104***	0.200***	0.135***	0.077***	-0.061***	-0.046***	0.049***	-0.026*	-0.065***	0.017	0.134***	0.004	0.067***	
Variables	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
15. AC_Age	1														
16. Mao	0.016	1													
17. Lag	0.066***	-0.104***	1												
18. Aud_Tenure	0.051***	0.047***	0.022**	1											
19. Aud_Change	-0.047***	-0.040***	-0.006	-0.546***	1										
20. Top10	0.076***	0.026**	0.061***	-0.057***	-0.020*	1									
21. Gdp_PC	0.119***	-0.026**	0.236***	0.090***	-0.091***	0.170***	1								
22. Population	-0.075***	-0.023**	0.041***	-0.027**	0.015	-0.030***	-0.076***	1							
23. CScore	-0.078***	-0.035***	0.057***	-0.005	0.009	-0.046***	0.043***	0.046***	1						
24. Dac	-0.003	0.111***	-0.024**	-0.014	-0.015	0.013	0.028***	0.003	-0.014	1					
25. Rem	0.020*	-0.045***	0.077***	-0.032***	0.001	-0.039***	-0.012	-0.012	0.005	0.295***	1				
26. R&D	0.062***	0.045***	0.099***	0.007	-0.065***	0.133***	0.268***	0.118***	0.004	0.048***	-0.042***	1			
27. Apply	0.092***	0.063***	0.063***	0.019*	-0.032***	0.103***	0.158***	0.119***	-0.070***	0.031***	-0.076***	0.508***	1		
28. Grant	0.112***	0.049***	0.093***	0.024**	-0.045***	0.110***	0.201***	0.136***	-0.076***	0.023**	-0.067***	0.523***	0.872***	1	
29. Citation	-0.030**	0.060***	-0.155***	-0.049***	0.019	-0.005	-0.246***	0.000	-0.126***	-0.024*	-0.093***	0.027**	0.392***	0.319***	1

Note: This table presents the correlation coefficients of the main regression variables. *, **, and *** denote the significance at the 10%, 5%, and 1% level, respectively. Refer to Appendix D for variable definitions.

4.5.2 Baseline regression results: migrant CEO and audit fees

I estimate the OLS regression to examine the association between migrant CEO and audit fees, and report the results in Table 4.4. As per Equation (1), the independent variable of interest is *Mig_CEO*, with the dependent variable being audit fees (measured as the natural logarithm of audit fees). The initial results are reported in Column (1). The coefficient on *Mig_CEO*, is 0.060 ($p < 0.01$) suggesting that migrant CEOs are positively associated with audit fees. Column (2) extends the baseline regression model by including two financial reporting quality controls, namely, *Dac* and *CScore*. The coefficient on *Mig_CEO* remains positive and significant at the 1% level (coefficient 0.057, $p < 0.01$). The result, therefore, rejects my H1. Importantly, the positive association between migrant CEOs and audit fees is economically significant. For example, the reported coefficient on *Mig_CEO* in Column (2) suggests that a one unit increase in *Mig_CEO* will result in an increase in audit fees by 5.87% ($e^{0.057} - 1$). Given that the mean audit fee in my sample is ¥1.304 Million, this implies an average increase in annual audit fees of approximately ¥0.08 Million – an economically significant increase.

With respect to control variables, I find that audit fees are higher for larger firms as the coefficient estimates on *Size* is positive and significant at the 1% level (coefficient 0.424 in Column (2)). Likewise, audit fees are higher for firms with male CEOs (*CEO_Gender*), firms with older audit committees (*AC_Age*), firms with longer audit report lag (*Lag*), and firms audited by longer-tenure audit firms (*Aud_Tenure*). Additionally, firms pay higher audit fees when they are audited by TOP10 (*Top10*) audit firms. Audit fees are lower for firms with operating profit (*Roa*), and high liquidity (*Current*). Also, the coefficient on *CScore* is negative and significant at the 1% level (coefficient -0.036; $p < 0.01$), implying that conditional conservatism is associated with lower audit fees.³⁷

Simunic's (1980) seminal work on the drivers of audit fees suggests that audit fees consist of a resource cost factor and an expected loss factor. Thus, the enhanced audit fees documented in my study may come from enhanced efforts or litigation risks or both. I therefore examine the relation between migrant CEOs and audit report lag (a proxy for audit efforts), and present the results in Column (3) of Table 4.4. However, the result suggests no significant

³⁷ My univariate result reveals that firms with migrant CEOs choose high quality auditors (see Panel B of Table 4.2). To rule out the voluntary auditor choice biasing my result (self-selection bias), I perform a two-stage Heckman (1979) model. In the first stage I regress *Top10* on a set of variables likely to affect auditor choice. Using estimates from the first-stage probit model, I then calculate an Inverse Mills Ratio (IMR) and include it in Equation (1) in the second stage regression. I find the coefficient on *Mig_CEO* positive and significant (coefficient 0.052, $p < 0.05$) (result untabulated).

association between migrant CEOs and audit report lag, as indicated in Column (3). The lack of significance suggests that audit efforts does not differ significantly between firms with migrant CEOs and those with local ones. This finding is consistent with that in the study conducted by Bolor-Erdene et al. (2024). So far, my findings indicate that the higher audit fees paid by client firms are not linked to the level of audit effort.

As discussed earlier, auditors in China usually face little litigation risk but regulatory risk could potentially substitute for litigation risk as an incentive to provide high quality auditing (Gunn et al., 2023). Following Chen et al. (2010), I test whether clients with migrant CEOs result in more sanctions against auditors. I retrieve data related to sanctions against auditors from CSMAR database. I define the dependent variable, *Sanction*, a dummy variable coded 1 if the sanctioned audit failure occurred in a year, and 0 otherwise.³⁸ I find a positive and significant coefficient on *Mig_CEO* for *Sanction* (coefficient 0.584, $p < 0.05$) (Column 4). Given the limited number of sanctions against auditors (see footnote 5), such sanctions could be more likely to be associated with the size of the audit firms rather than the regulatory risks of client firms. If firms managed by migrant CEOs typically choose larger audit firms, sanctions against auditors may represent the size of the audit firms rather than the lack of compliance by the client firms, thereby supporting the demand side argument.

Table 4.4 Baseline regression results

Variables	<i>Ln Fee</i>	<i>Ln Fee</i>	<i>Lag</i>	<i>Sanction</i>
	(1)	(2)	(3)	(4)
<i>Mig_CEO</i>	0.060*** (0.020)	0.057*** (0.020)	-0.001 (0.008)	0.264** (0.122)
<i>Size</i>	0.429*** (0.015)	0.424*** (0.014)	0.007* (0.004)	0.050 (0.062)
<i>Lev</i>	-0.198** (0.083)	-0.194** (0.081)	-0.028 (0.030)	0.237 (0.498)
<i>Roa</i>	-0.517*** (0.190)	-0.320* (0.193)	-0.520*** (0.087)	-2.699** (1.292)
<i>Loss</i>	0.021 (0.026)	0.015 (0.026)	0.039*** (0.014)	0.198 (0.207)
<i>Current</i>	-0.020*** (0.005)	-0.020*** (0.004)	-0.003 (0.002)	0.042* (0.025)
<i>ARInv</i>	0.022 (0.070)	0.063 (0.070)	0.035 (0.028)	0.558 (0.431)
<i>Duality</i>	0.013 (0.019)	0.014 (0.019)	0.016** (0.008)	0.163 (0.110)
<i>CEO_Age</i>	-0.101 (0.064)	-0.105 (0.064)	0.042* (0.025)	-0.163 (0.462)
<i>CEO_Gender</i>	0.064** (0.031)	0.064** (0.031)	-0.029* (0.015)	-0.249 (0.198)
<i>Bsize</i>	0.072 (0.058)	0.077 (0.058)	0.008 (0.023)	0.343 (0.471)
<i>Bind</i>	0.330 (0.221)	0.346 (0.220)	-0.081 (0.074)	-0.899 (1.236)

³⁸ If the sanction was announced in 2020, for example, against failed audits for the fiscal years of 2018 and 2019, I coded both 2018 and 2019 as the sanctioned firm-years.

<i>AC_Size</i>	-0.007 (0.056)	-0.005 (0.055)	-0.037** (0.019)	0.990*** (0.375)
<i>AC_Age</i>	0.176* (0.091)	0.164* (0.089)	-0.005 (0.035)	-0.316 (0.576)
<i>Mao</i>	0.183*** (0.039)	0.177*** (0.038)	0.095*** (0.022)	0.806*** (0.178)
<i>Lag</i>	0.071** (0.035)	0.077** (0.035)	- (0.007)	1.342*** (0.347)
<i>Aud_Tenure</i>	0.041*** (0.015)	0.038*** (0.015)	0.009 (0.007)	0.113 (0.109)
<i>Aud_Change</i>	-0.010 (0.018)	-0.013 (0.018)	0.019* (0.011)	0.342** (0.174)
<i>Top10</i>	0.095*** (0.018)	0.092*** (0.017)	0.007 (0.007)	-0.260** (0.128)
<i>Gdp_PC</i>	0.185*** (0.031)	0.182*** (0.030)	0.028*** (0.011)	-0.004 (0.143)
<i>Population</i>	-0.034* (0.018)	-0.034* (0.018)	0.010 (0.006)	0.128 (0.101)
<i>CScore</i>		-0.036*** (0.010)	0.004 (0.003)	-0.059 (0.083)
<i>Dac</i>		-0.480*** (0.081)	0.048 (0.039)	-0.886 (0.683)
<i>_cons</i>	1.629** (0.694)	1.768*** (0.670)	4.019*** (0.226)	-10.164** (4.247)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	8670	8670	8670	8670
Adj R ²	0.68	0.69	0.14	0.24

Note: This table reports the results from OLS regressions of the associations between migrant CEO and audit outcomes. Specifically, Column (1) and Column (2) present the results from OLS regressions of the association between migrant CEO (*Mig_CEO*) and audit fees (*Ln_Fee*). Column (3) presents the results from OLS regressions of the association between migrant CEO (*Mig_CEO*) and audit report lag (*Lag*). Column (4) present the results from OLS regressions of the association between migrant CEO (*Mig_CEO*) and regulatory sanction (*Sanction*). Robust standard errors clustered at firm level are in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix D.

4.5.3 Endogeneity tests

4.5.3.1 Fixed effects regression

The baseline results so far indicate a positive association between migrant CEO and audit fee. In this section, I conduct several tests to address endogeneity concerns. Although I control for several determinants of audit fees, given the concerns related to omitted variable bias, I perform a set of fixed-effect regressions to control for the time-invariant unobservable factors from various sources to substantiate my findings.

First, one potential issue with my analysis is that firm-specific fundamentals could drive my findings. I, therefore, perform a firm fixed-effect regression to control for the firm-specific time-invariant unobservable factors. I report the results in Column (1) of Table 4.5. The coefficient on *Mig_CEO* remains positive and significant (coefficient 0.038, $p < 0.01$). Second, although I have included control variables in my baseline model to control for the economic and demographic characteristics at the provincial level, there remains a concern that unobservable, time-invariant provincial specific factors could bias my results. For example, prior literature has documented that local culture, such as local gambling culture, local creative culture is associated with audit outcomes (Tong et al., 2022; Costa and Habib, 2023). I, thereby,

also control for the province-fixed effects, where each province indicator variable is defined as the province in which the firm is headquartered. Column (2) of Table 5 presents the results after including province fixed effect. The coefficient on *Mig_CEO* remains positive and significant (coefficient 0.042, $p < 0.05$).

Third, recent research indicates variability in audit outcomes not only at the firm level but also among individual auditors, attributing significance to styles and traits of auditor partners (Reynolds and Francis, 2000; DeFond and Francis, 2005; Francis, 2011; DeFond and Zhang, 2014; Knechel et al., 2015). Gul et al. (2013) find that partner fixed-effects are incrementally significant after the audit firm and audit office fixed-effects are controlled for. They conclude that individual partners differ systematically in their levels of audit quality. More recent studies have explored how auditors' characteristics are linked with audit fees. For example, Tong et al. (2022) find higher audit fees for firms audited by individual auditors from larger cities. Yuan et al. (2023) argue that auditors are likely to charge higher fees if their colleges are in the same cities or provinces as their clients. Recognizing the influence of auditor partners' characteristics on audit fees, unobservable audit partner-specific traits would influence my findings. To address this concern, I incorporate auditor partner fixed-effects in my regression estimate. Besides, due to the continued relevance of firm-level perspective, I also include audit firm and branch office fixed-effects, in line with Gul et al. (2013). Specifically, I use observations at the individual-client-year level as each audit report in China is signed by two auditors. Following Pittman et al. (2022), I obtain the information of audit partners from the CSMAR database. If audit-related data is missing, I rely on the online public accountant database compiled by the Chinese Institute of Certified Public Accountants (CICPA) (<http://cmispub.cicpa.org.cn/>) to minimize the missing observations. I then manually assign a unique ID to each audit partner. For audit partners with identical names, I distinguish them based on their associated audit firms. The final sample includes 14,435 observations. Column (3) of Table 4.5 presents the results including these set of fixed-effects.³⁹ *Mig_CEO* is positively and significantly associated with audit fees (coefficient 0.046; $p < 0.01$) after controlling for the industry, year, province, audit firm, branch office and audit partner- fixed effects.

³⁹ Since each audit report is signed by two auditors in China, the sample size in Column (3) of Table 5 has nearly doubled compared to that in the baseline regression.

Table 4.5 Fixed effects (Province, Firm, Audit firms, branch offices, and audit partner)

Variables	<i>Ln_Fee</i> (1)	<i>Ln_Fee</i> (2)	<i>Ln_Fee</i> (3)
<i>Mig_CEO</i>	0.038*** (0.012)	0.042** (0.021)	0.046*** (0.017)
<i>Size</i>	0.368 (0.009)	0.425*** (0.013)	0.370*** (0.013)
<i>Lev</i>	-0.008 (0.036)	-0.186** (0.079)	-0.018 (0.055)
<i>Roa</i>	-0.322*** (0.085)	-0.371** (0.182)	-0.611*** (0.137)
<i>Loss</i>	0.005 (0.013)	0.010 (0.025)	-0.001 (0.019)
<i>Current</i>	-0.007*** (0.002)	-0.021*** (0.004)	-0.012*** (0.003)
<i>ARInv</i>	0.083** (0.038)	0.015 (0.068)	0.048 (0.056)
<i>Duality</i>	0.006 (0.011)	0.000 (0.019)	0.019 (0.015)
<i>CEO_Age</i>	0.003 (0.033)	-0.065 (0.061)	-0.067 (0.048)
<i>CEO_Gender</i>	-0.033 (0.022)	0.056* (0.031)	0.051** (0.026)
<i>Bsize</i>	0.107*** (0.030)	0.078 (0.056)	0.101** (0.042)
<i>Bind</i>	-0.173* (0.093)	0.263 (0.213)	0.205 (0.173)
<i>AC_Size</i>	0.015 (0.022)	-0.017 (0.054)	-0.012 (0.038)
<i>AC_Age</i>	0.046 (0.040)	0.202** (0.088)	0.070 (0.061)
<i>Mao</i>	0.069*** (0.020)	0.182*** (0.036)	0.093*** (0.036)
<i>Lag</i>	0.038*** (0.014)	0.064* (0.034)	0.063*** (0.023)
<i>Aud_Tenure</i>	-0.012* (0.007)	0.028* (0.015)	0.014 (0.015)
<i>Aud_Change</i>	-0.021** (0.010)	-0.027 (0.018)	-0.017 (0.015)
<i>Top10</i>	-0.002 (0.008)	0.076*** (0.018)	-0.024* (0.014)
<i>Gdp_PC</i>	-0.003 (0.035)	-0.179** (0.077)	-0.089 (0.081)
<i>Population</i>	0.049 (0.051)	-0.128 (0.187)	0.067 (0.166)
<i>CScore</i>	-0.002 (0.003)	-0.035*** (0.010)	-0.006 (0.005)
<i>Dac</i>	-0.086** (0.036)	-0.424*** (0.079)	-0.110** (0.055)
_cons	4.476*** (0.731)	6.334*** (1.933)	5.214*** (1.909)
Firm	Yes	No	No
Year	Yes	Yes	Yes
Industry	No	Yes	Yes
Province	No	Yes	Yes
Audit Firm	No	No	Yes
Branch Office	No	No	Yes
Audit Partner	No	No	Yes
N	8,670	8,670	14,435
Adj_R ²	0.56	0.70	0.85

Note: This table reports the results from a set of fixed effect regressions of the association between migrant CEO (*Mig_CEO*) and audit fees (*Ln_Fee*). Specifically, Column (1) presents the results from firm-fixed effect regression. Column (2) presents the result including province fixed effect. Column (3) presents the result including audit firm-, branch office-, and audit partner- fixed effects. Robust standard errors clustered at firm

level are in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix D.

4.5.3.2 Entropy balanced regression

Entropy balanced matching has been shown to be more effective than propensity score matching as it relies on restrictive assumptions, avoids sample reduction, and achieves balance for multiple moments of the covariate distribution (e.g., Hainmueller, 2012; McMullin and Schonberger, 2020). This is to address the endogeneity problem stemming from observable differences between the samples of migrant CEOs and local CEOs. Entropy balancing is used by specifying a set of covariates to be matched, the balance conditions and a tolerance threshold. The balance conditions are the mean, variance and skewness of covariate distributions that should be distributed evenly across treatment and control samples, such as the weighted control sample meets the balance conditions within the specified tolerance level (McMullin and Schonberger, 2020). According to McMullin and Schonberger (2020), the tolerance level sets the minimal degree of covariate balance required before the entropy balancing system stops altering control sample weights, similar to caliper width for propensity score matching (PSM).

For implementing the entropy balancing test, I proceed as follows. First, I employ entropy balancing to ensure that the mean, variance, and skewness of the observations, conditional on *Mig_CEO*. Panel A of Table 4.6 shows that all three moments of the covariates become equal after the entropy balancing procedure is applied. This finding suggests that I achieve desirable covariate balance. Second, using the entropy-balanced sample, I combine the matched pairs into a pooled sample and, re-estimate Equation (1) using *Mig_CEO* to indicate the presence of a migrant CEO. I report entropy-balanced regression results in Panel B. It is evident that the coefficient on *Mig_CEO* is positive and significant (coefficient 0.062, $p < 0.05$). These findings therefore suggest that my main results are robust to potential endogeneity concerns arising from observable, rather than unobservable factors.

Table 4.6 Entropy balancing approach

Panel A: Covariate balance

Covariates	Weight variables before entropy balancing						Weight variables after entropy balancing					
	Treated			Control			Treated			Control		
	Mean	Variance	Skewness	Mean	Variance	Skewness	Mean	Variance	Skewness	Mean	Variance	Skewness
<i>Size</i>	22.390	2.117	0.820	22.140	1.508	0.804	22.390	2.117	0.820	22.390	2.116	0.820
<i>Lev</i>	0.440	0.041	0.022	0.417	0.04	0.204	0.440	0.041	0.022	0.440	0.041	0.022
<i>Roa</i>	0.040	0.003	-1.052	0.044	0.003	-0.728	0.040	0.003	-1.052	0.040	0.003	-1.052
<i>Loss</i>	0.091	0.083	2.839	0.076	0.07	3.213	0.091	0.083	2.839	0.091	0.083	2.839
<i>Current</i>	2.417	6.215	3.195	2.38	5.001	3.021	2.417	6.215	3.195	2.417	6.215	3.195
<i>ARInv</i>	0.282	0.029	0.585	0.27	0.025	0.684	0.282	0.029	0.585	0.282	0.029	0.585
<i>Duality</i>	0.373	0.234	0.526	0.358	0.23	0.592	0.373	0.234	0.526	0.373	0.234	0.526
<i>CEO_Age</i>	3.909	0.014	-0.256	3.905	0.022	-0.545	3.909	0.014	-0.256	3.909	0.014	-0.256
<i>CEO_Gender</i>	0.944	0.053	-3.843	0.943	0.054	-3.804	0.944	0.053	-3.843	0.944	0.053	-3.843
<i>Bsize</i>	2.133	0.044	-0.123	2.142	0.04	-0.272	2.133	0.044	-0.123	2.133	0.044	-0.123
<i>Bind</i>	0.378	0.003	1.294	0.373	0.003	1.392	0.378	0.003	1.294	0.378	0.003	1.294
<i>AC_Size</i>	1.444	0.037	0.289	1.416	0.031	-0.136	1.444	0.037	0.289	1.444	0.037	0.289
<i>AC_Age</i>	3.938	0.01	0.020	3.933	0.01	-0.115	3.938	0.010	0.020	3.938	0.010	0.020
<i>Mao</i>	0.023	0.023	6.322	0.022	0.022	6.511	0.023	0.023	6.322	0.023	0.023	6.322
<i>Lag</i>	4.558	0.046	-1.423	4.561	0.049	-1.575	4.558	0.046	-1.423	4.558	0.046	-1.423
<i>Aud_Tenure</i>	1.839	0.465	-0.168	1.986	0.442	-0.461	1.839	0.465	-0.168	1.839	0.465	-0.168
<i>Aud_Change</i>	0.137	0.118	2.109	0.11	0.098	2.492	0.137	0.118	2.109	0.137	0.118	2.109
<i>Top10</i>	0.569	0.245	-0.279	0.526	0.249	-0.104	0.569	0.245	-0.279	0.569	0.245	-0.279
<i>Gdp_PC</i>	11.13	0.280	-0.463	11.03	0.233	-0.509	11.130	0.280	-0.463	11.130	0.280	-0.463
<i>Population</i>	8.475	0.551	-0.271	8.692	0.252	-1.058	8.475	0.551	-0.271	8.475	0.551	-0.271
<i>CScore</i>	-0.086	0.919	-3.770	-0.02	0.642	-3.333	-0.086	0.919	-3.770	-0.086	0.919	-3.770
<i>Dac</i>	-0.002	0.006	-0.152	0.0003	0.006	-0.168	-0.002	0.006	-0.152	-0.002	0.006	-0.152

Panel B: Migrant CEO and audit fee after entropy matching

Variables	<i>Ln Fee</i> (1)
<i>Mig_CEO</i>	0.062** (0.025)
<i>Size</i>	0.436*** (0.017)
<i>Lev</i>	-0.159 (0.106)
<i>Roa</i>	-0.271 (0.242)
<i>Loss</i>	0.030 (0.034)
<i>Current</i>	-0.018*** (0.005)
<i>ARInv</i>	0.080 (0.084)
<i>Duality</i>	0.023 (0.024)
<i>CEO_Age</i>	-0.082 (0.090)
<i>CEO_Gender</i>	0.094** (0.041)
<i>Bsize</i>	0.086 (0.076)
<i>Bind</i>	0.319 (0.257)
<i>AC_Size</i>	-0.047 (0.075)
<i>AC_Age</i>	0.198 (0.129)
<i>Mao</i>	0.160*** (0.044)
<i>Lag</i>	0.097** (0.043)
<i>Aud_Tenure</i>	0.025 (0.018)
<i>Aud_Change</i>	-0.029 (0.023)
<i>Top10</i>	0.091*** (0.024)
<i>Gdp_PC</i>	0.193*** (0.036)
<i>Population</i>	-0.008 (0.020)
<i>CScore</i>	-0.040*** (0.015)
<i>Dac</i>	-0.518*** (0.106)
<i>_cons</i>	0.822 (0.881)
Year	Yes
Industry	Yes
N	8,670
Adj_R ²	0.71

Note: This table reports the results from entropy balance test of the association between migrant CEO and audit fees. Panel A shows the covariate balance with and without weighting. Panel B shows the entropy balanced regression estimates. Robust standard errors clustered at firm-level are in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix D.

4.5.3.3 Instrumental variable analysis

I note that a statistical association between the presence of migrant CEO and audit fees could be attributable to a higher demand for migrant CEOs in certain firms. This leads to either a selection bias or reverse causality issue. For example, firms paying higher audit fees, possibly due to complex operations or higher risks, might be more inclined to seek out CEOs from a broader national pool, rather than the local market. In addition, these firms could be more attractive for migrant CEO candidates, who may be drawn to opportunities that present challenges and require a higher tolerance for risks. I start by verifying that my baseline results hold across Instrumental variable (IV) specifications. An ideal instrument should be related to the choice of migrant CEOs, but exogenous to audit fees. I use two instrumental variables (IV) in the two-stage least squares regression (2SLS) analysis.

First, referring to the approach of Ren et al. (2021), I use the average of migrant CEOs of other firms within the same province as an IV, which I label as *Other_Mig_Ave*. First, firms in the same institutional environment (i.e., firms in the same province) may have similar considerations when choosing to hire a migrant CEO. Second, whether a firm is charged higher fees or not is unlikely to be directly influenced by the hiring of migrant CEOs of other firms. Therefore, using *Other_Mig_Ave* as an IV satisfies the relevance and exclusion conditions. I thus expect *Other_Mig_Ave* to be positively associated with *Mig_CEO*.

Second, motivated by Lai et al. (2020) who use the percentage of clear days in firm's headquarters as an instrument, I use annual temperature differences in the firm's headquarters province (*Temp_Diff*) as my second instrument. As firms in regions with more desirable weather can more easily attract talented managers from across the country (Lai et al., 2020), it is anticipated that regions with lower annual temperature differences have more pleasant weather and are therefore more attractive to migrant managers. Furthermore, weather conditions, as exogenous factors, are less likely to directly influence audit fees, thereby, satisfying the exclusion criteria.

Weather condition data is collected from the China Meteorological Data Sharing Service System (CMDSSS) which records daily minimum, maximum, and average temperatures, sunshine duration, precipitation, wind speed, and relative humidity for 820 weather stations in China.⁴⁰ To calculate the temperature difference, first the daily provincial-level average temperature are calculated using the daily minimum and maximum temperature

⁴⁰ CMDSSS was developed and is currently managed by the Climatic Data Center, National Meteorological Information Center, China Meteorological Administration. See <http://data.cma.cn/> for details.

data from the CMDSSS and then annualized. Then a relative temperature difference variable, *Temp_Diff*, is created. *Temp_Diff* is calculated as the annual provincial temperature difference minus the annual country-level temperature difference excluding the focal province, multiplied by -1 so that higher values imply more pleasant weather. I expect *Temp_Diff* to be positively associated with migrant CEO hiring.

Table 4.7 presents the results for 2SLS regressions. In Column (1), the coefficients on *Other_Mig_Ave* (coefficient 0.754, $p < 0.01$) and *Temp_Diff* (coefficient 0.069, $p < 0.05$) are positive and significant, consistent with my conjecture that hiring migrant CEOs is highly related across firms in the same province, and CEOs are more likely to migrate to provinces with lower temperature differences. I next use the predicted value of *Mig_CEO* from the first-stage regression in the second stage as an independent variable, together with other variables in Model (1). The results in Column (2) of Table 4.7 show that *Mig_CEO* (predicted) remains positive and significant (coefficient 0.153, $p < 0.01$). In addition, the validity of the instrumental variable is also tested. The K–Paap rk LM statistic (894.205) for the under-identification test is significant at the 1% level, suggesting that the chosen instruments satisfy the identification criteria. In terms of weak instrumental variable test, the Cragg–Donald Wald F statistic and the K–Paap Wald rk F statistic are much greater than the Stock–Yogo (2005) critical value, hence the instruments in this study also pass the weak instrument test. Overall, the 2SLS regression analysis confirms the robustness of my baseline results that auditors charge higher fees to clients with migrant CEOs.

Table 4.7 2SLS instrumental variable regressions

Variables	First Stage	Second Stage
	<i>Mig_CEO</i>	<i>Ln_Fee</i>
	(1)	(2)
<i>Other_Mig_Ave</i>	0.754*** (0.025)	
<i>Temp_Diff</i>	0.069** (0.029)	
<i>Mig_CEO</i>	-	0.153*** (0.027)
<i>Size</i>	0.041 (0.046)	0.426*** (0.007)
<i>Lev</i>	-0.085 (0.131)	-0.168*** (0.044)
<i>Roa</i>	0.032 (0.025)	-0.459*** (0.120)
<i>Loss</i>	0.006** (0.003)	-0.000 (0.022)
<i>Current</i>	0.083** (0.040)	-0.018*** (0.003)
<i>ARInv</i>	0.015 (0.011)	0.034 (0.037)

<i>Duality</i>	-0.034 (0.037)	0.010 (0.010)
<i>CEO_Age</i>	0.023 (0.022)	-0.077** (0.035)
<i>CEO_Gender</i>	-0.070** (0.032)	0.057*** (0.020)
<i>Bsize</i>	0.052 (0.115)	0.078** (0.031)
<i>Bind</i>	0.143*** (0.030)	0.303** (0.118)
<i>AC_Size</i>	0.066 (0.053)	-0.026 (0.030)
<i>AC_Age</i>	0.048 (0.034)	0.147*** (0.052)
<i>Mao</i>	0.008 (0.026)	0.198*** (0.033)
<i>Lag</i>	-0.035*** (0.010)	0.054** (0.024)
<i>Aud_Tenure</i>	-0.010 (0.021)	0.038*** (0.009)
<i>Aud_Change</i>	0.017 (0.010)	-0.028 (0.020)
<i>Top10</i>	0.037** (0.015)	0.084*** (0.010)
<i>Gdp_PC</i>	-0.038*** (0.011)	0.167*** (0.014)
<i>Population</i>	0.000*** (0.000)	-0.026*** (0.009)
<i>CScore</i>	-0.041 (0.052)	0.000*** (0.000)
<i>Dac</i>	0.754*** (0.025)	-0.294*** (0.047)
<i>_cons</i>	-2.839*** (1.005)	1.964*** (0.346)
Industry	Yes	Yes
Year	Yes	Yes
N	7,555	7,555
Adj R ²	0.202	0.675
K-Paap-LM stat.	894.205	
	0.000	
Cragg-Donald Wald F	590.648	
K-Paap Wald F stat.	536.079	
Stock-Yogo critical value at 10%	19.930	

Note: This table reports the estimated results from the two-stage least square (2SLS) instrumental variables regressions. The first instrumental variable, *Other_Mig_Ave* is the average value of *Mig_CEO* of all other firms excluding the focal firm in the same province in year t. The second instrumental variable is temperature differences (*Diff_Temp*), which is the average annual temperature difference multiplied by -1 in the province where the firm's headquarter is located. Robust standard errors clustered at firm-level are in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix D.

4.5.3.4 The Difference-In-Difference (DiD) Approach

I recognize that the IV approach may not fully mitigate endogeneity concerns. The dynamic matching of CEOs to firms should be a concern, because the CEO turnover may not be typically exogenous (Schoar and Zuo, 2016). Unobservable firm style may affect both CEOs'

employment and audit fees. To mitigate this concern, I also adopt a DiD approach with the treatment group consisting of firms replacing local CEOs with migrant CEOs, *Local_Migrant*, coded as 1, and 0 otherwise. The control group consists of firms replacing a local CEO with a local CEO. *Post* is an indicator variable that equals 1 for the three years after CEO turnover and 0 for the three years before the turnover. The interaction variable (*Local_Migrant* $\times$ *Post*) captures the difference in the changes in audit fees following CEO turnover for the treated group (i.e., from local CEOs to migrant CEOs) relative to the control group (i.e., from local CEOs to local CEOs).

Table 4.8 presents the results for DiD regression. The coefficient of my variable of interest, *Local_Migrant* $\times$ *Post*, is positive and statistically significant at the 5% level (coefficient: 0.046). The result indicates that when a firm switches from a local CEO to a migrant CEO, audit fees tend to increase.

Table 4.8 Difference-in-differences analysis

Variables	<i>Ln Fee</i> (1)
<i>Local_Migrant</i>	0.096** (0.047)
<i>Post</i>	-0.011 (0.025)
<i>Local_Migrant</i> $\times$ <i>Post</i>	0.046** (0.035)
Other controls	Yes
_cons	2.488** (0.972)
Year	Yes
Industry	Yes
N	1,238
Adj R ²	0.72

Note: This table reports the estimated results from the difference-in-difference (DiD) analysis. *Local_Migrant*, defined as an indicator variable that equals 1 for CEO switching from local CEOs to migrant CEOs, and 0 otherwise. *Post* is an indicator variable that equals 1 for the three years after CEO turnover, and 0 for the three years before the turnover. Robust standard errors clustered at firm-level are in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix D.

4.5.4 Migrant CEO and audit fees: Mediation test

My findings so far suggest that auditors charge higher fees to clients with migrant CEOs. I now conduct mediation tests to explore whether and how migrant CEOs affect audit fees from both demand and supply sides. I conduct the mediation analysis approach of Baron and Kenny (1986) to examine the potential channels through which migrant CEO is associated with audit fees. Specifically, I run the following two regressions:

$$Mediators = \alpha_0 + \beta_1 Mig_CEO_{i,t} + \sum Controls_t + Industry\ Fe + Year\ Fe + \varepsilon_1 \quad (2)$$

$$Ln_Fee_{i,t} = \alpha_0 + \beta_1 Mig_CEO_{i,t} + \beta_2 Mediators_{i,t} + \sum Controls_t + Industry\ Fe + Year\ Fe + \varepsilon_2 \quad (3)$$

where Mediators are the two mediation variables (Corporate innovation and REM) and control variables defined as before.

4.5.4.1 Mediation effect of corporate innovation

In developing my hypothesis, I propose that firms with migrant CEOs are more prone to risk-taking, such as innovative activities, which tend to increase information asymmetries and elevate performance volatilities. Given that greater information asymmetry between firms and investors, migrant CEOs have greater incentives than local CEOs to provide higher quality financial statements to assure investors: assurance that will incur costs in the form of higher audit fees. Thus, I examine the role of corporate innovation as a potential channel that leads to higher audit fees for firms with migrant CEOs.

I use both input- and output-based measures to evaluate firm's innovation. (1) R&D intensity equals to the natural logarithm of 1 plus R&D expenses. (2) Patent applications, the natural logarithm of 1 plus the number of patent applications. (3) Patents granted, the natural logarithm of 1 plus the number of patents granted. (4) Patent citations, the natural logarithm of 1 plus weighted-citations which is scaled by the average citations of all patents applied for in the same year and in the same technology class.

Panel A of Table 4.9 presents the results. In the first stage, I find that migrant CEOs are more innovative. Specifically, the positive and significant coefficient on *Mig_CEO* on *R&D* in Column (1) (coefficient 0.193, $p < 0.01$) indicates that migrant CEOs invest more in R&D projects. Column (3) and Column (5) show positive and significant coefficients on *Mig_CEO*, at 0.141 ($p < 0.01$), and 0.121 ($p < 0.01$), respectively. Additionally, a positive and significant association between *Mig_CEO* and *Citation* (coefficient 0.298, $p < 0.01$) (Column (7)) suggests that migrant CEOs contribute to an increase in patent citations, implying improved innovation quality.

The second stage results are reported in Columns (2), (4), (6) and (8). I find that both *Mig_CEO* and innovation measures (*R&D*, *Apply*, *Grant*) are positive and significant. For example, the coefficient on *Grant* in Column (4) is positive and significant at the 1% level (coefficient 0.052 on *Mig_CEO*, and 0.039 on *Grant*). Despite the significant association between migrant CEO and increased patent citations, the coefficients on *Mig_CEO* and *Citation* are both insignificant. The results show that firms managed by migrant CEOs, than local CEOs, pay higher audit fees when they invest more in R&D projects and produce more

patents (patent applications and grants). However, the insignificance of *Citation* as a mediator suggests that firms with migrant CEOs do not pay higher audit fees when their successful innovation become publicly disclosed. Taken together, the results in Panel A of Table 4.9 lend support to the conjecture that migrant CEOs choose to pay higher audit fees to provide high quality financial reports that can reduce heightened information asymmetry stemming from innovative activities undertaken by migrant CEOs.⁴¹

4.5.4.2 Mediation effect of real earnings management

Like other risky corporate practices, such as acquisitions and innovations, REM is risky because financial misreporting exposes firms to the risk of regulatory scrutiny (Abbott et al., 2006; Badertscher et al., 2009). Because auditors consider REM increasing clients' business risk, they charge higher audit fees (Choi et al., 2022). In this section, I examine the mediation effect of REM in the association between migrant CEOs and audit fees. Panel B of Table 4.9 presents the results. The coefficient on *Mig_CEO* in Column (1) is negative and significant in the first stage (coefficient: -0.020, $p < 0.01$), suggesting that migrant CEOs engage in less real earnings management activities. However, in the second stage, the coefficient on *Rem* for audit fees is negative and significant (coefficient -0.153, $p < 0.01$), implying that auditors tend to charge higher fees to clients with migrant CEOs who engage in less REM. The above evidence implies the higher financial reporting quality of clients with migrant CEOs may not be strong enough to alter auditors' pricing decision. Migrant CEOs are risk-takers and are subjected to intergroup bias among local stakeholders, who tend to exert greater pressures on migrant CEOs (Ren et al., 2021). This can lead to more severe consequences of any misconduct by migrant CEOs. The heightened risk-taking propensity of migrant CEOs, combined with the intergroup biases against them, may cause auditors to be particularly sensitive to risk changes. These factors might lead auditors to behave more conservatively, thus, prioritizing risk over financial reporting quality in their pricing decisions for clients with migrant CEOs. Therefore, financial reporting quality may not be strong enough to alter auditors pricing decisions. This finding is supported by Wu and Ye (2020), who document that when auditors are more risk-sensitive, even more conservative financial reporting by clients does not result in lower audit fees.

⁴¹ Since innovation is a risky investment by nature and accompanied by greater uncertainty regarding its success and the firm's future profitability (Kothari et al., 2002), it naturally increases firm business risk, and hence, higher audit fees. We, therefore, cannot rule out the possibility that auditors charge higher fees for firms with migrant CEOs due to high business risks.

Table 4.9 Mediation effect

Panel A: Mediation effect of corporate innovation

Variables	<i>R&D</i>		<i>Apply</i>		<i>Grant</i>		<i>Citation</i>	
	<i>R&D</i> (1)	<i>Ln_Fee</i> (2)	<i>Apply</i> (3)	<i>Ln_Fee</i> (4)	<i>Grant</i> (5)	<i>Ln_Fee</i> (6)	<i>Citation</i> (7)	<i>Ln_Fee</i> (8)
<i>Mig_CEO</i>	0.193*** (0.049)	0.046** (0.020)	0.141*** (0.050)	0.051** (0.020)	0.121*** (0.046)	0.052*** (0.020)	0.298*** (0.068)	0.037 (0.024)
<i>R&D</i>		0.016* (0.009)						
<i>Apply</i>				0.036*** (0.011)				
<i>Grant</i>						0.039*** (0.013)		
<i>Citation</i>								-0.000 (0.009)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
_cons	-9.577*** (1.682)	3.192*** (0.660)	-15.009*** (1.523)	2.321*** (0.620)	-13.367*** (1.461)	2.294*** (0.620)	-15.524*** (2.171)	1.834** (0.840)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	8,670	8,670	8,670	8,670	8,670	8,670	5,442	5,442
Adj_R ²	0.560	0.642	0.283	0.688	0.281	0.688	0.525	0.719
Direct Effect		0.046***		0.051***		0.052***		
Indirect Effect		0.002**		0.005***		0.005***		

Panel B: Mediation effect of real earnings management

Variables	<i>Rem</i> (1)	<i>Ln_Fee</i> (2)
<i>Mig_CEO</i>	-0.020*** (0.006)	0.057*** (0.021)
<i>Rem</i>		-0.153*** (0.045)
Other controls	Yes	Yes
_cons	-0.148 (0.187)	1.640** (0.683)
Year	Yes	Yes
Industry	Yes	Yes
N	8,199	8,199
Adj_R ²	0.230	0.685
Direct Effect		0.055***
Indirect Effect		-0.002**

Note: This table reports the mediation effect. Panel A of Table 4.9 reports the result of the mediation effect of corporate innovation, measured with R&D expenditures (*R&D*), the number of patent applications (*Apply*), the number of patents granted (*Grant*), and the number of patent citations (*Citation*). Panel B reports the result of the mediation effect of real earnings management (*Rem*). Control Variables are the same as in the baseline regression table. Robust standard errors clustered at firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix D.

4.5.5 Migrant CEO and audit fees: Moderating test

4.5.5.1 Moderating effect of audit committee gender diversity

The audit committee plays a vital role in overseeing firms' financial reporting, engaging in regular reviews of financial statements, audit process, and internal accounting controls (Klein,

2002). In particular, previous research finds that the gender diversity on the audit committee curbs earnings management practices (Thiruvadi and Huang, 2011; Zalata et al., 2018; Oradi and Izadi, 2019). This is mainly because female directors enhance the depth and breadth of discussion and deliberations, particularly those related to challenging issues, and impose stricter monitoring on management's actions (Srinidhi et al., 2011). Prior literature documents that the presence of female directors on the audit committee improves internal monitoring and communication, which reduce the perceived audit risk, and lead to lower audit fees (Alkebsee et al., 2021).

Following prior literature, I measure audit committee gender diversity with a continuous variable, *AC_Female*, which is defined as the proportion of female directors on the audit committee. Panel A of Table 4.10 reports the results. The coefficient on the interactive variable *Mig_CEO* $\times$ *AC_Female* is negative and significant at the 5% level (coefficient -0.118, $p < 0.05$). This suggests that the positive association between migrant CEO and audit fee is less pronounced in firms with gender-diverse audit committees.

4.5.5.2 Moderating effect of audit tenure

Auditors accrue firm specific knowledge through repeated interactions with clients (Jia and Gao, 2023). In the initial audit engagement, auditors face a challenge due to limited knowledge about clients' financial and operational contexts (Hsieh et al., 2019). However, audits may become simpler as the auditor becomes more familiar with the client due to continuous audit demands, thus causing a reduction in audit fees (Xiang and Song, 2021). Overall, I predict that the positive association between migrant CEOs and audit fees is weakened in firms audited by long-tenured auditors. I report the results in Panel B of Table 4.10. The coefficient on the interactive variable *Mig_CEO* $\times$ *Tenure* is negative and significant at the 10% level (coefficient -0.053, $p < 0.10$), indicating that audit tenure weakens the positive association between migrant CEOs and audit fees.

Table 4.10 Migrant CEO and audit fee: Cross-sectional tests

Panel A: Moderating effect of audit committee gender diversity

Variables	<i>Ln Fee</i> (1)
<i>Mig_CEO</i>	0.068*** (0.021)
<i>AC_Female</i>	0.011 (0.030)
<i>Mig_CEO</i> × <i>AC_Female</i>	-0.118** (0.046)
Other controls	Yes
_cons	1.813*** (0.669)
Year	Yes
Industry	Yes
N	8,670
Adj_R ²	0.69

Panel B: Moderating effect of audit tenure

Variables	<i>Ln Fee</i> (1)
<i>Mig_CEO</i>	0.087*** (0.027)
<i>Tenure</i>	0.069*** (0.019)
<i>Mig_CEO</i> × <i>Tenure</i>	-0.053* (0.032)
Other controls	Yes
_cons	1.795*** (0.671)
Year	Yes
Industry	Yes
N	8,670
Adj_R ²	0.69

Note: This table presents results from the regression of the moderating effects on the association between migrant CEO and audit fees. Panel A presents the moderating effect of audit committee gender diversity on the association between migrant CEO and audit fees. *AC_Female* is the percentage of female in the firm's audit committee. Panel B presents the moderating effect of audit tenure on the association between migrant CEO and audit fees. *Audit Tenure* is the natural log of the number of 1 plus the consecutive years the audit firm audited the client. Robust standard errors clustered at firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix D.

4.5.6 Additional analysis

4.5.6.1 The effect of migration direction on audit fees

Prior literature suggests that the social environments of people's hometowns shape their values, skills, and behavioural patterns to a large extent (Grusec and Hastings, 2015), and affect the level of accumulated human capital. Specifically, people who were born in more economically developed regions may be perceived to have higher level of human capital than those in less economically developed regions. This perception may lead employers to set higher standards

for CEOs who migrated from less economically developed regions, given an unobserved advantage to CEOs from migrating from more economically developed regions. Consequently, migrant CEOs who migrated from less economically developed regions to more economically developed regions (hereafter, upward migration CEOs) are considered to have higher ability. I construct two indicator variables to capture CEO's migration direction, *Up* for upward migration and *Down* for downward migration, where *Up* (*Down*) equals 1 when the migrated CEO firm's headquarter is located in a more (less) economically developed province than the province where the CEO was born. To gauge the economic development of provinces and cities in China, I use the marketization index developed by Fan and Wang (2003) (see also Fan et al. (2016)). The results are reported in Panel A of Table 4.11. I find that the coefficient on *Up* is positive and significant (coefficient 0.053, $p < 0.05$), and the coefficient on *Down* is positive but insignificant. The results indicate that migrant CEOs with higher level of human capital tend to pay higher audit fees.

4.5.6.2 The effect of migrant CFO on audit fee

Prior literature suggests that CFOs play a more significant role than CEOs in communicating with auditors and in shaping financial reporting strategies (Chava and Purnanandam, 2010). Hsieh et al. (2019) find that auditors charge a higher audit fee to firms whose CFOs have lower facial trustworthiness, whilst CEOs' facial trustworthiness is not significantly related to auditors' pricing decisions. Due to the importance of CFO characteristics in determining audit price, in this section, I examine the effect of migrant CFOs on audit fees. To measure migrant CFOs, I create a dummy variable *Mig_CFO*, which equals 1 if the CFO is born in a province different from the province where the firm is headquartered, and 0 otherwise. The results are reported in Panel B of Table 4.11.

First, when I include both *Mig_CEO* and *Mig_CFO* in the regression, the positive coefficient on *Mig_CEO* becomes marginally significant (coefficient 0.054, $p < 0.10$), whereas *Mig_CFO* shows no significant association with audit fees (Column (1)). In Column (2), I introduce a variable, *Mig_CEO_CFO*, to identify firms with both a migrant CEO and CFO. The results indicate that *Mig_CEO_CFO* is not significantly associated with audit fees. To differentiate the effects of a migrant CEO and CFO, I further introduce two variables, *Mig_CEO_Only* and *Mig_CFO_Only*. *Mig_CEO_Only* identifies firms with only a migrant CEO, where the CFO is a local recruitee (the CFO's birth province is the same as the province of firm's headquarter). *Mig_CFO_Only* identifies firms with only a migrant CFO. The results, presented in Column (3) to (4) respectively, provide insights into the distinct impact of each

role on audit fees. The coefficient on *Mig_CEO_Only* is positive and significant at the 1% level (coefficient 0.094, $p < 0.01$), and the coefficient on *Mig_CEO_Only* is negative and significant at the 10% level (coefficient -0.035, $p < 0.10$). These findings indicate migrant CFO in my sample might not be as influential as migrant CEO in determining audit fees.

4.5.6.3 Sub-sample analysis excluding Beijing, Shanghai, Guangzhou and Shenzhen

To address the possibility that my results can be driven by few large cities such as Beijing and Shanghai, I delete firms with headquarters in the four largest cities (Beijing, Shanghai, Shenzhen, and Guangzhou) and rerun the baseline regressions. I report the results in Panel B of Table 4.11. I find that the coefficients on *Mig_CEO* remain positive and significant (coefficient 0.062, $p < 0.05$). The results indicate that the findings of my baseline model are robust after excluding the effects of the four largest cities.

Table 4.11 Migrant CEO and audit fee: Additional tests

Panel A: The association between CEO migrant direction and audit fees

Variables	<i>Ln_Fee</i> (1)
<i>Up</i>	0.053** (0.024)
<i>Down</i>	0.043 (0.027)
Other controls	Yes
_cons	1.883*** (0.681)
Year	Yes
Industry	Yes
N	8,224
Adj_R ²	0.69

Panel B: The association between migrant CFO and audit fees

Variables	<i>Ln_Fee</i> (1)	<i>Ln_Fee</i> (2)	<i>Ln_Fee</i> (3)	<i>Ln_Fee</i> (4)
<i>Mig_CEO</i>	0.054* (0.029)			
<i>Mig_CFO</i>	-0.006 (0.026)			
<i>Mig_CEO_CFO</i>		-0.007 (0.033)		
<i>Mig_CEO_Only</i>			0.094*** (0.027)	
<i>Mig_CFO_Only</i>				-0.035* (0.018)
_cons	3.353*** (0.930)	2.231** (0.985)	2.312** (0.975)	2.267*** (0.518)
Controls	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	3,044	3,912	3,912	3,912
Adj_R ²	0.61	0.64	0.65	0.64

Panel C: Excluding Beijing, Shanghai, Guangzhou and Shenzhen

Variables	<i>Ln Fee</i>
	(1)
<i>Mig_CEO</i>	0.062** (0.024)
_cons	2.999 (.676)
Controls	Yes
Year	Yes
Industry	Yes
N	6,257
Adj_R ²	0.65

Note: Panel A reports the association between CEO migration direction and audit fees. *Up* is an indicator variable equal to 1 when a CEO migrated from a less economically developed province to a more economically developed province (measured by the Marketization Index), and 0 otherwise. *Down* is an indicator variable equal to 1 when a CEO migrated from a more economically developed province to a less economically developed province (measured by the Marketization Index), and 0 otherwise. Panel B reports the association between migrant CFOs and audit fees. Panel C reports the estimated results using subsample excluding Beijing, Shanghai, Guangzhou, and Shenzhen. Robust standard errors clustered at firm-level are in brackets. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix D.

4.6 Conclusion

Using a sample of Chinese A-share listed firms from 2008-2020, I examine the association between migrant CEO and audit fees. I find that firms with migrant CEOs, known for their high propensity for risk-taking, are perceived as being riskier and hence tend to pay higher audit fees than those of other firms. I also find firms with migrant CEOs lead to higher regulatory sanctions against auditors, but do not face longer audit report lag. The positive association between migrant CEOs and audit fees remains robust after implementing a set of fixed effects, including firm-, province-, audit firm-, branch office-, and audit partner- fixed effects, entropy balanced matching, 2SLS regression, and DiD analysis to mitigate endogeneity concerns.

The mediation analysis reveals that the positive link between migrant CEOs and audit fees can be attributed to migrant CEO's demand for high quality auditing. Specifically, managers who are more inclined towards innovation, as demonstrated by increased investments in R&D and a higher output of patent applications and grants, result in higher audit fees, whilst no evidence to suggest that the number of patent citations, a proxy for patent quality mediates the relationship between migrant CEOs and audit fees. Regarding financial misreporting, although migrant CEOs are less prone to real earnings management, firms with migrant CEOs still pay higher audit fees.

My study adds to the literature on the consequences of hiring migrant CEOs and the extant literature on audit fees. Specifically, I provide evidence on how CEO's migration experience is associated with audit fees. Also, my study adds to prior literature on the effect that executive characteristics have on firm-level outcomes. I explore the extent to which the

superior human capital of migrant CEOs drives their demand for high-quality auditing and shapes auditors' perceptions of firms with migrant CEOs.

My study still has certain limitations. For instance, I cannot completely address endogeneity, and some alternative explanations discussed in the previous section despite my best effort. One challenge is that the difference between migrant CEOs and local CEOs is inferred rather than directly measured. Future research can explore more direct measures of the differences between migrant CEOs and local CEOs, which could also help mitigate concerns about endogeneity.

Appendix D Variable definitions (ESSAY THREE)

Variables	Definitions
Main Variables	
<i>Audit_Fee</i>	Natural logarithm of audit fees
<i>Mig_CEO</i>	Migrant CEO. Indicator variable coded 1 when the birthplace of CEO is different from the place where the firm is located, and 0 otherwise
Client control variables	
<i>Size</i>	The natural logarithm of total assets
<i>Lev</i>	Total debts divided by total assets
<i>RoA</i>	Profitability, measured as net income divided by total assets
<i>Loss</i>	An indicator variable coded 1 if ROA is less than zero, and 0 otherwise
<i>Current</i>	Current ratio, measured as current assets divided by current liabilities
<i>ARInv</i>	Accounts receivables and inventory ratios, defined as (accounts receivable + inventory) / Total assets
<i>Duality</i>	Firm CEO duality, equal to 1 if the CEO also holds the position of the chair of the board and 0 otherwise
<i>CEO_Age</i>	The natural logarithm of the age of CEO
<i>CEO_Gender</i>	Indicator variable, equals 1 when the CEO is a male, and 0 otherwise
<i>Bsize</i>	Natural logarithm of the number of directors on the board
<i>Bind</i>	Independence of the board measured as the ratio of the number of independent directors over the total number of directors on the board
<i>AC_Size</i>	The number of audit committee members
<i>AC_Age</i>	Natural logarithm of the average age of audit committee
Audit firm control variables	
<i>Mao</i>	Indicator variable equals 1 when a firm received a modified opinion in the previous year, and 0 otherwise
<i>Lag</i>	Natural logarithm of the number of days between the fiscal year end and the audit report issue date
<i>Aud_Tenure</i>	Audit tenure at audit firm level, measured as the natural log of the number of 1 plus the consecutive years the audit firm audited the client
<i>Aud_Change</i>	Equals 1 if the audit firm is in the first year of tenure, and 0 otherwise
<i>Top10</i>	Equals 1 when a client company is audited by Top 10 audit firms, and 0 otherwise

Provincial-specific control variables

<i>Gdp_PC</i>	The natural logarithm of GDP per capita of the province where firm's headquarter is located
<i>Population</i>	The natural logarithm of the population of the province where firm's headquarter is located
Financial reporting quality control variables	
<i>Cscore</i>	The conservatism score estimated following Khan and Watts (2009)
<i>Dac</i>	Discretionary accruals calculated using the Modified Jones model controlling for firm performance (Kothari et al., 2005)
Others	
<i>Local_Migrant</i>	Indicator variable equals 1 when a firm changes CEO from a local CEO to a migrant CEO, and 0 otherwise
<i>Post</i>	Indicator variable that equals 1 for the three years after CEO turnover and 0 for the three years before the turnover
<i>R&D</i>	Natural logarithm of 1 plus R&D expenses
<i>Apply</i>	Natural logarithm of 1 plus the number of patent applications
<i>Grant</i>	Natural logarithm of 1 plus the number of patents granted
<i>Citation</i>	Natural logarithm of 1 plus weighted-citations which is scaled by the average citations of all patents applied for in the same year and in the same technology class
<i>Rem</i>	Real earnings management, calculated as $Rem = (-1) * \text{abnormal operating cash flow} + \text{abnormal production cost} + (-1) * \text{abnormal discretionary expenses}$ (Roychowdhury, 2006)
<i>Other_Mig_Ave</i>	The mean value of migrant CEO of other firms in the same province
<i>Diff_Temp</i>	The average annual temperature difference multiplied by -1 in the province where the firm's headquarter is located
<i>Mig_CEO_CFO</i>	Indicator variable coded 1 if both CEO and CFO in the firm are migrants
<i>Mig_CEO_Only</i>	Indicator variable coded 1 if CEO is a migrant and CFO is a local
<i>Mig_CFO_Only</i>	Indicator variable coded 1 if CFO is a migrant and CEO is a local
<i>Up</i>	Indicator variable equals to 1 when a CEO migrated from a less economically developed province to a more economically developed province (measured by the Marketization Index), and 0 otherwise.
<i>Down</i>	Indicator variable equals to 1 when a CEO migrated from a more economically developed province to a less economically developed province (measured by the Marketization Index), and 0 otherwise.

CHAPTER FIVE - CONCLUSION

5.1 Conclusion

In this thesis, Essay One examines the association between migrant TMT and corporate innovation using a sample of Chinese A-share listed firms from 2008-2020. The results show that firms with migrant TMT, and that have more migrant managers in the team, have greater innovation outputs in terms of patent applications and patent grants. The findings are robust to a set of endogeneity tests. Further, the mediation effect of migrant TMT and corporate innovation is explored, and it is found that migrant TMTs have a longer time horizon and are more willing to take risks, would be more innovative and, thereby cause more innovation outputs. Furthermore, it is found that the positive association between migrant TMT and corporate innovation is more pronounced in SOEs and in firms with more managers migrating from Central and Western regions to Eastern regions.

In Essay Two, I examine the association between migrant TMT members and insider trading profitability. Using a large sample of Chinese insider trading activities, I find that migrant TMT members earn significantly higher abnormal returns than non-migrant TMT members when they purchase their own firms' shares. These migrant managers are more likely to exploit their private information related to future successful innovation, and are more likely to trade before the restriction period. This positive association between migrant top managers and trading profitability weakens when migrant managers develop local social capital with local officials or possess legal experience. My findings suggest that migrant TMT members are more likely to exploit private information when making insider trades. These findings contribute to the literature by providing evidence on how migration shapes managerial decision-making in the context of insider trading.

Essay Three examines the association between migrant CEO and audit fees. I find that firms with migrant CEOs, known for their high propensity for risk-taking, are perceived as being riskier and hence tend to pay higher audit fees than those of other firms. I also find firms with migrant CEOs lead to higher regulatory sanctions against auditors, but do not face longer audit report lag. The positive association between migrant CEOs and audit fees remains robust after implementing a set of fixed effects, including firm-, province-, audit firm-, branch office-, and audit partner- fixed effects, entropy balanced matching, 2SLS regression, and DiD analysis to mitigate endogeneity concerns. The mediation analysis reveals that the positive link between migrant CEOs and audit fees can be attributed to migrant CEO's demand for high quality

auditing. Specifically, managers who are more inclined towards innovation, as demonstrated by increased investments in R&D and a higher output of patent applications and grants, result in higher audit fees, whilst no evidence to suggest that the number of patent citations, a proxy for patent quality mediates the relationship between migrant CEOs and audit fees. Regarding financial misreporting, although migrant CEOs are less prone to real earnings management, firms with migrant CEOs still pay higher audit fees.

5.2 Research Implications and Limitations

This research contributes to the literature on top managers' decision-making by examining the influence of managers' migration backgrounds in the context of corporate innovation and insider trading. While prior studies have primarily focused on the roles of individual managers, such as the CEO or CFO, this research emphasizes the collective influence of top management teams. The exploration of the association between migrant TMT and corporate innovation offers new insights into team dynamics in managerial decision-making, providing a broader perspective compared to studies that focus solely on the CEO or CFO. Additionally, this research deepens the understanding of how CEOs' management styles affect audit fees by investigating the relationship between migrant CEOs and audit fees.

My findings on the consequences of migrant TMT members provide insights into human capital movement, with implications for both corporate governance and policy making. For example, the evidence that migrant TMT enhance corporate innovation suggests firms pursuing innovative strategies could benefit from expanding their management recruitment beyond local markets. This broader approach to talent acquisition could inject fresh perspectives and drive organisational dynamism. However, my finding that migrant managers tend to profit more from insider trading raises governance concerns. While such trading activities are legal, they may disadvantage other investors. Firms should therefore consider strengthening their governance systems and incentive structures to balance the benefits of diverse leadership with the need to protect shareholder interests. For policymakers, these findings highlight the need to carefully design talent migration initiatives. While encouraging the flow of human capital, policymakers should also strengthen formal institutions to reduce the unfairness caused by hometown-based social networks. This balanced approach can help regions attract talent while maintaining market integrity.

My research still has some limitations. First, the manual collection of data on migrant managers in the TMT may not be completely accurate for several reasons. For example, information regarding the specific year when migrant managers relocated is not available in

any existing databases or resources. The absence of this information makes it challenging to accurately measure migrant managers' experiences, as it limits the ability to capture their actual personal migration histories.

Second, the measurement of migrant managers in this study is based on a dummy variable. However, future research could explore alternative measures, such as the geographical distance of migration, to examine whether the distance travelled by migrant managers influences their managerial behaviour. This approach could provide deeper insights into how the extent of migration shapes managerial behaviour and firm outcomes.

Third, since this study focuses on internal migration within China, it does not consider migrant managers with overseas work experience. Prior literature has examined the effects of overseas experience on managerial decision-making (for example, Li et al., 2023; Fu et al., 2024). Given that managers with overseas experience are highly likely to be classified as migrants, future research could distinguish between the effects of overseas experience and internal migration experience to provide a more comprehensive understanding.

Finally, with respect to methodology, this thesis adopts the Baron and Kenny (1986) approach for mediation analysis. Although this approach is widely applied and offers clear, intuitive steps, it has been subject to considerable criticism in subsequent methodological research. In particular, Zhao et al. (2010) highlight that the Baron and Kenny procedure may fail to detect important indirect effects and may impose overly restrictive conditions for establishing mediation. Accordingly, the mediation results reported in this thesis should be interpreted in light of these limitations.

References

- Abbott, L. J., Parker, S., & Peters, G. F. (2006). Earnings management, litigation risk, and asymmetric audit fee responses. *Auditing: A Journal of Practice & Theory*, 25(1), 85-98.
- Aboody, D., & Lev, B. (2000). Information asymmetry, R&D, and insider gains. *The Journal of Finance*, 55(6), 2747-2766.
- Abrams, D., and Hogg, M. A. (1988). Comments on the motivational status of self-esteem in social identity and intergroup discrimination. *European Journal of Social Psychology*, 18(4), 317-334.
- Acharya, V. V., and Subramanian, K. V. (2009). Bankruptcy codes and innovation. *The Review of Financial Studies*, 22(12), 4949-4988.
- Adhikari, B. K., and Agrawal, A. (2016). Religion, gambling attitudes and corporate innovation. *Journal of Corporate Finance*, 37, 229-248.
- Aghion, P., Van Reenen, J., and Zingales, L. (2013). Innovation and institutional ownership. *American Economic Review*, 103(1), 277-304.
- Ahern, K. R. (2017). Information networks: Evidence from illegal insider trading tips. *Journal of Financial Economics*, 125(1), 26-47.
- Akbas, F., Jiang, C., & Koch, P. D. (2020). Insider investment horizon. *The Journal of Finance*, 75(3), 1579-1627.
- Akcigit, U., Grigsby, J., & Nicholas, T. (2017). The rise of American ingenuity: Innovation and inventors of the golden age (No. w23047). National Bureau of Economic Research.
- Ali, U., & Hirshleifer, D. (2017). Opportunism as a firm and managerial trait: Predicting insider trading profits and misconduct. *Journal of Financial Economics*, 126(3), 490-515.
- Alkebeese, R. H., Habib, A., Huang, H. J., & Tian, G. (2022). The gender-diverse audit committee and audit report lag: Evidence from China. *International Journal of Auditing*, 26(2), 314-337.
- Alkebeese, R. H., Tian, G. L., Usman, M., Siddique, M. A., & Alhebry, A. A. (2021). Gender diversity in audit committees and audit fees: evidence from China. *Managerial Auditing Journal*, 36(1), 72-104.
- Allen, J. M., and Eaton, B. C. (2005). Incomplete information and migration: The grass is greener across the higher fence. *Journal of Regional Science*, 45(1), 1-19.
- Andreou, P. C., Karasamani, I., Louca, C., & Ehrlich, D. (2017). The impact of managerial ability on crisis-period corporate investment. *Journal of Business Research*, 79, 107-122.
- Armstrong, C. S., Jagolinzer, A. D., and Larcker, D. F. (2010). Chief executive officer equity incentives and accounting irregularities. *Journal of Accounting Research*, 48(2), 225-271.
- Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14(1), 20-39.
- Audretsch, D. B., Falck, O., Feldman, M. P., and Heblich, S. (2012). Local entrepreneurship in context. *Regional Studies*, 46(3), 379-389.
- Badertscher, B. A., Phillips, J. D., Pincus, M., & Rego, S. O. (2009). Earnings management strategies and the trade-off between tax benefits and detection risk: To conform or not to conform?. *The Accounting Review*, 84(1), 63-97.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173.
- Batalova, J., and Fix, M. (2017). New brain gain: Rising human capital among recent immigrants to the United States. Washington, DC: Migration Policy Institute.

- Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy*, 70(5, Part 2), 9-49.
- Beladi, H., Hou, Q., and Hu, M. (2022). The party school education and corporate innovation: Evidence from SOEs in China. *Journal of Corporate Finance*, 72, 102143.
- Bernile, G., Bhagwat, V., and Rau, P. R. (2017). What doesn't kill you will only make you more risk-loving: Early-life disasters and CEO behavior. *The Journal of Finance*, 72(1), 167-206.
- Bertrand, M., & Schoar, A. (2003). Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics*, 118(4), 1169-1208.
- Bertrand, O., Betschinger, M. A., & Moschieri, C. (2021). Are firms with foreign CEOs better citizens? A study of the impact of CEO foreignness on corporate social performance. *Journal of International Business Studies*, 52, 525-543.
- Bhandari, A., Golden, J., & Thevenot, M. (2020). CEO political ideologies and auditor-client contracting. *Journal of Accounting and Public Policy*, 39(5), 106755.
- Bhattacharya, S., and Ritter, J. R. (1983). Innovation and communication: Signalling with partial disclosure. *The Review of Economic Studies*, 50(2), 331-346.
- Bian, W., Ji, Y., and Zhang, H. 2019, Does dialect similarity add value to banks? Evidence from China. *Journal of Banking and Finance*, 101, 226-241.
- Bolor-Erdene, B., Jung, K., Lee, W. J., Park, S., & Sunwoo, H. Y. (2024). CEO locality and audit fees. *International Journal of Auditing*, 28(1), 44-61.
- Boneva, B. S., Frieze, I. H., Ferligoj, A., Jarosova, E., Pauknerova, D., and Orgocka, A. (1998). Achievement, power, and affiliation motives as clues to (e)migration desires: A four-countries comparison. *European Psychologist*, 3(4), 247-254.
- Bostan, I., & Mian, G. M. (2023). Do insiders trade on innovation?. *Journal of Contemporary Accounting & Economics*, 19(1), 100350.
- Bowen, R. M., Dutta, S., Tang, S., & Zhu, P. (2023). Does corporate governance quality influence insider trading around private meetings between managers and investors?. *Accounting Horizons*, 37(3), 27-57.
- Brown, J. R., and Martinsson, G. (2019). Does transparency stifle or facilitate innovation?. *Management Science*, 65(4), 1600-1623.
- Bushee, B. J. (1998). The influence of institutional investors on myopic R&D investment behaviour. *The Accounting Review*, 305-333.
- Camperio Ciani, A. S., Capiluppi, C., Veronese, A., and Sartori, G. (2007). The adaptive value of personality differences revealed by small island population dynamics. *European Journal of Personality: Published for the European Association of Personality Psychology*, 21(1), 3-22.
- Canache, D., Hayes, M., Mondak, J. J., and Wals, S. C. (2013). Openness, extraversion and the intention to emigrate. *Journal of Research in Personality*, 47(4), 351-355.
- Chava, S., & Purnanandam, A. (2010). CEOs versus CFOs: Incentives and corporate policies. *Journal of Financial Economics*, 97(2), 263-278.
- Chemmanur, T. J., Kong, L., Krishnan, K., & Yu, Q. (2019). Top management human capital, inventor mobility, and corporate innovation. *Journal of Financial and Quantitative Analysis*, 54(6), 2383-2422.
- Chemmanur, T. J., Paeglis, I., & Simonyan, K. (2009). Management quality, financial and investment policies, and asymmetric information. *Journal of Financial and Quantitative Analysis*, 44(5), 1045-1079.
- Chen, G., Firth, M., Gao, D. N., & Rui, O. M. (2006). Ownership structure, corporate governance, and fraud: Evidence from China. *Journal of Corporate Finance*, 12(3), 424-448.

- Chen, H., Chen, J. Z., Lobo, G. J., and Wang, Y. (2010). Association between borrower and lender state ownership and accounting conservatism. *Journal of Accounting Research*, 48(5), 973-1014.
- Chen, S., Oliva, P., & Zhang, P. (2022). The effect of air pollution on migration: Evidence from China. *Journal of Development Economics*, 156, 102833.
- Chen, S., Sun, S. Y., & Wu, D. (2010). Client importance, institutional improvements, and audit quality in China: An office and individual auditor level analysis. *The Accounting Review*, 85(1), 127-158.
- Chen, S., Ying, S. X., Wu, H., and You, J. (2021). Carrying on the family's legacy: Male heirs and firm innovation. *Journal of Corporate Finance*, 69, 101976.
- Chen, Y., Fan, Z., Gu, X., and Zhou, L. A. (2020). Arrival of young talent: The send-down movement and rural education in China. *American Economic Review*, 110(11), 3393-3430.
- Chen, Y., Huang, J., Xiao, S., & Zhao, Z. (2020). The “home bias” of corporate subsidiary locations. *Journal of Corporate Finance*, 62, 101591.
- Cheng, C. S. A., Wang, J., Zhang, N., & Zhao, S. (2017). Bowling alone, bowling together: Is social capital priced in bank loans? *Journal of Accounting, Auditing and Finance*, 32(4), 449-479.
- Chircop, J., Collins, D. W., Hass, L. H., and Nguyen, N. N. Q. (2020). Accounting comparability and corporate innovative efficiency. *The Accounting Review*, 95(4), 127-151.
- Chiswick, B. (1999). Are immigrants favorably self-selected?. *American Economic Review*, 89(2), 181-185.
- Choi, A., Lee, E. Y., Park, S., and Sohn, B. C. (2022). The differential effect of accrual-based and real earnings management on audit fees: international evidence. *Accounting and Business Research*, 52(3), 254-290.
- Choi, J. H., Kim, J. B., Liu, X., and Simunic, D. A. (2008). Audit pricing, legal liability regimes, and Big 4 premiums: Theory and cross-country evidence. *Contemporary Accounting Research*, 25(1), 55-99.
- Choi, W. (2020). Disclosure tone of the spin-off prospectus and insider trading. *Journal of Accounting and Public Policy*, 39(1), 106692.
- Chung, S. G., Goh, B. W., Lee, J., & Shevlin, T. (2019). Corporate tax aggressiveness and insider trading. *Contemporary Accounting Research*, 36(1), 230-258.
- Chung, S. G., Lee, J., & Park, S. H. (2025). Does social capital mitigate managerial self-dealing? Evidence from insider trading. *Journal of Accounting, Auditing & Finance*, 40(1), 270-305.
- Cohen, L., Malloy, C., & Pomorski, L. (2012). Decoding inside information. *The Journal of Finance*, 67(3), 1009-1043.
- Comanor, W. S., & Scherer, F. M. (1969). Patent statistics as a measure of technical change. *Journal of Political Economy*, 77(3), 392-398.
- Contreras, H., Korczak, A., & Korczak, P. (2023). Religion and insider trading profits. *Journal of Banking & Finance*, 149, 106778.
- Costa, M. D., and Habib, A. (2023). Local creative culture and audit fees. *The British Accounting Review*, 55(2), 101151.
- Cox, T. H., Lobel, S. A., and McLeod, P. L. (1991). Effects of ethnic group cultural differences on cooperative and competitive behavior on a group task. *Academy of Management Journal*, 34(4), 827-847.
- Cui, H., Dai, L., and Zhang, Y. (2021). Organization capital and corporate innovation: evidence from China. *Finance Research Letters*, 43, 101956.

- Czaika, M., and Vothknecht, M. (2014). Migration and aspirations—are migrants trapped on a hedonic treadmill?. *IZA Journal of Migration*, 3(1), 1-21.
- Dahl, M. S., & Sorenson, O. (2012). Home sweet home: Entrepreneurs' location choices and the performance of their ventures. *Management Science*, 58(6), 1059-1071.
- Dahlin, K. B., Weingart, L. R., and Hinds, P. J. (2005). Team diversity and information use. *Academy of Management Journal*, 48(6), 1107-1123
- Dai, L., Fu, R., Kang, J. K., & Lee, I. (2016). Corporate governance and the profitability of insider trading. *Journal of Corporate Finance*, 40, 235-253.
- Davidson, R. H., Dey, A., & Smith, A. (2020). Executives' legal records and the deterrent effect of corporate governance. *Contemporary Accounting Research*, 37(3), 1444-1474.
- DeFond, M. L., and Francis, J. R. (2005). Audit research after Sarbanes-Oxley. *Auditing: A Journal of Practice & Theory*, 24(s-1), 5-30.
- DeFond, M. L., Lim, C. Y., and Zang, Y. (2016). Client conservatism and auditor-client contracting. *The Accounting Review*, 91(1), 69-98.
- DeFond, M., & Zhang, J. (2014). A review of archival auditing research. *Journal of Accounting and Economics*, 58(2-3), 275-326.
- Denis, D. J., & Xu, J. (2013). Insider trading restrictions and top executive compensation. *Journal of Accounting and Economics*, 56(1), 91-112.
- Dikolli, S. S., Keusch, T., Mayew, W. J., & Steffen, T. D. (2020). CEO behavioral integrity, auditor responses, and firm outcomes. *The Accounting Review*, 95(2), 61-88.
- Du, H., Li, S. M., and Hao, P. (2018). 'Anyway, you are an outsider': Temporary migrants in urban China. *Urban Studies*, 55(14), 3185-3201.
- Du, X., Jian, W., Du, Y., Feng, W., and Zeng, Q. (2014). Religion, the nature of ultimate owner, and corporate philanthropic giving: Evidence from China. *Journal of Business Ethics*, 123(2), 235-256.
- Ellul, A., & Panayides, M. (2018). Do financial analysts restrain insiders' informational advantage?. *Journal of Financial and Quantitative Analysis*, 53(1), 203-241.
- Faggian, A., & McCann, P. (2009). Human capital, graduate migration and innovation in British regions. *Cambridge Journal of Economics*, 33(2), 317-333.
- Faggian, A., Rajbhandari, I., and Dotzel, K. R. (2018). The interregional migration of human capital and its regional consequences: a review. *Transitions in Regional Economic Development*, 227-256.
- Fan, G., & Wang, X. (2003). *China Marketization Index: Report on Relative Marketization Progress in Provinces*. Economic Science Press. (in Chinese)
- Fan, G., Wang, X., & Zhu, H. (2016). *The Marketization Index in China: The 2016 Report on the Relative Process of Marketization of Each Region*. The Economic Science Press. (in Chinese)
- Fang, T., Gunderson, M., & Lin, C. (2016). The use and impact of job search procedures by migrant workers in China. *China Economic Review*, 37, 154-165.
- Fassio, C., Montobbio, F., and Venturini, A. 2019, Skilled migration and innovation in European industries. *Research Policy*, 48(3), 706-718.
- Feng, S., Krueger, A. B., & Oppenheimer, M. (2010). Linkages among climate change, crop yields and Mexico-US cross-border migration. *Proceedings of the National Academy of Sciences*, 107(32), 14257-14262.
- Fisman, R., Shi, J., Wang, Y., & Xu, R. (2018). Social ties and favoritism in Chinese science. *Journal of Political Economy*, 126(3), 1134-1171.
- Francis, J. R. (2011). A framework for understanding and researching audit quality. *Auditing: A Journal of Practice & Theory*, 30(2), 125-152.

- Francis, J. R., Khurana, I. K., Martin, X., & Pereira, R. (2011). The relative importance of firm incentives versus country factors in the demand for assurance services by private entities. *Contemporary Accounting Research*, 28(2), 487-516.
- Frankel, R., & Li, X. (2004). Characteristics of a firm's information environment and the information asymmetry between insiders and outsiders. *Journal of Accounting and Economics*, 37(2), 229-259.
- Frieze, I. H., and Li, M. Y. (2010). Mobility and personality. In *The psychology of global mobility* (pp. 87-103). Springer, New York, NY.
- Fu, P., Zhang, C., & Zhong, X. (2024). Overseas-Returned Executives, R&D and Innovation. *Asia-Pacific Journal of Accounting & Economics*, 1-12.
- Galasso, A., and Simcoe, T. S. (2011). CEO overconfidence and innovation. *Management Science*, 57(8), 1469-1484.
- Gao, H., Hsu, P. H., and Li, K. (2018). Innovation strategy of private firms. *Journal of Financial and Quantitative Analysis*, 53(1), 1-32.
- Gao, J., Wu, H., You, J., & Smith, M. (2021). Migrant entrepreneurs and firm innovation. *Accounting & Finance*, 61(5), 6069-6112.
- Glosten, L. R., & Milgrom, P. R. (1985). Bid, ask and transaction prices in a specialist market with heterogeneously informed traders. *Journal of Financial Economics*, 14(1), 71-100.
- Gold, T., Guthrie, D., & Wank, D. (Eds.). (2002). *Social connections in China: Institutions, culture, and the changing nature of guanxi* (No. 21). Cambridge University Press.
- Goldman, N. C., & Ozel, N. B. (2023). Executive compensation, individual-level tax rates, and insider trading profits. *Journal of Accounting and Economics*, 76(1), 101574.
- Guariglia, A., Liu, X., and Song, L. (2011). Internal finance and growth: Micro-econometric evidence on Chinese firms. *Journal of Development Economics*, 96(1), 79-94.
- Guiso, L., Sapienza, P., & Zingales, L. (2004). The role of social capital in financial development. *American Economic Review*, 94(3), 526-556.
- Gul, F. A., Wu, D., & Yang, Z. (2013). Do individual auditors affect audit quality? Evidence from archival data. *The Accounting Review*, 88(6), 1993-2023.
- Gull, A. A., Atif, M., Issa, A., Usman, M., & Siddique, M. A. (2021). Female CEO succession and audit fees: evidence from China. *Managerial Auditing Journal*, 36(3), 485-509.
- Gunn, J. L., Li, C., Liao, L., & Zhou, S. (2023). Is it better to kill two birds with one stone? Internal control audit quality and audit costs for integrated versus nonintegrated audits. *The Accounting Review*, 98(1), 251-283.
- Guo, L., Peng, D., Rao, Y., & Zhuang, Z. (2023). Visiting monks: Are nonlocal CEOs paid more?. *International Review of Financial Analysis*, 85, 102465.
- Hainmueller, J. (2012). Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political analysis*, 20(1), 25-46.
- Hall, B. H. (2002). The financing of research and development. *Oxford Review of Economic Policy*, 18(1), 35-51.
- Hall, B. H., and Ziedonis, R. H. (2001). The patent paradox revisited: an empirical study of patenting in the US semiconductor industry, 1979-1995. *Rand Journal of Economics*, 101-128.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.
- Hamel, G., and Prahalad, C. K. (1990). Strategic intent. *Mckinsey Quarterly*, (1), 36-61.
- Hamilton, B. H., Papageorge, N. W., and Pande, N. (2019). The right stuff? Personality and entrepreneurship. *Quantitative Economics*, 10(2), 643-691.

- Hanlon, M., Yeung, K., & Zuo, L. (2022). Behavioral economics of accounting: A review of archival research on individual decision makers. *Contemporary Accounting Research*, 39(2), 1150-1214.
- Hardies, K., Breesch, D., & Branson, J. (2015). The female audit fee premium. *Auditing: A Journal of Practice & Theory*, 34(4), 171-195.
- Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2017a). Does social capital matter in corporate decisions? Evidence from tax avoidance. *Journal of Accounting Research*, 55(3), 629–668.
- Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2017b). Social capital and debt contracting: Evidence from bank loans and public bonds. *Journal of Financial and Quantitative Analysis*, 52(3), 1017– 1047.
- Hasan, M. M. (2020). Readability of narrative disclosures in 10-K reports: does managerial ability matter?. *European Accounting Review*, 29(1), 147-168.
- Hay, D. (2013). Further evidence from meta-analysis of audit fee research. *International Journal of Auditing*, 17(2), 162-176.
- Hay, D. C., Knechel, W. R., & Wong, N. (2006). Audit fees: A meta-analysis of the effect of supply and demand attributes. *Contemporary Accounting Research*, 23(1), 141-191.
- He, Q., & Rui, O. M. (2016). Ownership structure and insider trading: Evidence from China. *Journal of Business Ethics*, 134, 553-574.
- He, W., Li, C. K., & Si, Y. (2024). Is Auditors' Migration Status Associated with their Performance?. *European Accounting Review*, 1-26.
- Healy, P. M., and Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31(1-3), 405-440.
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica*, 47,153–161.
- Hegde, P., Liao, S., Ma, R., & Nguyen, N. H. (2023). CEO marital status and insider trading. *British Journal of Management*, 34(4), 1974-1991.
- Heitmueller, A. (2005). Unemployment benefits, risk aversion, and migration incentives. *Journal of Population Economics*, 18(1), 93-112.
- Henderson, M. T. (2011). Insider trading and CEO pay. *Vand. L. Rev.*, 64, 503.
- Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup bias. *Annual Review of Psychology*, 53(1), 575-604.
- Hilary, G., & Lennox, C. (2005). The credibility of self-regulation: Evidence from the accounting profession's peer review program. *Journal of Accounting and Economics*, 40(1-3), 211-229.
- Hillier, D., Korczak, A., & Korczak, P. (2015). The impact of personal attributes on corporate insider trading. *Journal of Corporate Finance*, 30, 150-167.
- Hirshleifer, D., Low, A., and Teoh, S. H. (2012). Are overconfident CEOs better innovators?. *The Journal of Finance*, 67(4), 1457-1498.
- Ho, S. W., & Ng, P. P. (1996). The determinants of audit fees in Hong Kong: An empirical study. *Asian Review of Accounting*, 4(2), 32-50.
- Hochberg, Y. V., and Lindsey, L. (2010). Incentives, targeting, and firm performance: An analysis of non-executive stock options. *The Review of Financial Studies*, 23(11), 4148-4186.
- Hogan, C. E., & Wilkins, M. S. (2008). Evidence on the audit risk model: Do auditors increase audit fees in the presence of internal control deficiencies?. *Contemporary Accounting Research*, 25(1), 219-242.
- Holmstrom, B. (1989). Agency costs and innovation. *Journal of Economic Behavior & Organization*, 12(3), 305-327.

- Holzman, E. R., Marshall, N. T., Schroeder, J. H., and Yohn, T. L. (2021). Is all disaggregation good for investors? Evidence from earnings announcements. *Review of Accounting Studies*, 26(2), 520-558.
- Hsieh, T. S., Kim, J. B., Wang, R. R., & Wang, Z. (2020). Seeing is believing? Executives' facial trustworthiness, auditor tenure, and audit fees. *Journal of Accounting and Economics*, 69(1), 101260.
- Hu, N., Xu, J., & Xue, S. (2022). Regulatory risk and auditors' reporting conservatism: Evidence from Chinese comment letters. *Journal of Accounting and Public Policy*, 41(6), 106997.
- Huang, B., Yang, E., and Zhang, Y. (2022). Board surname sharing and investment efficiency: Evidence from Chinese state-owned enterprises. *Corporate Governance: An International Review*, 31(4), 597-624.
- Huang, H. J., Habib, A., Sun, S. L., Liu, Y., & Guo, H. (2021). Financial reporting and corporate innovation: a review of the international literature. *Accounting & Finance*, 61(4), 5439-5499.
- Huang, M., Li, M., & Li, X. (2023). Do non-local CEOs affect environmental, social and governance performance?. *Management Decision*, 61(8), 2354-2373.
- Huang, T. C., Chang, H., & Chiou, J. R. (2016). Audit market concentration, audit fees, and audit quality: Evidence from China. *Auditing: A Journal of Practice & Theory*, 35(2), 121-145.
- Huang, X., Ren, Y., & Ren, X. (2024). Legal background executives, corporate governance and corporate ESG performance. *Finance Research Letters*, 69, 106120.
- Huddart, S. J., & Ke, B. (2007). Information asymmetry and cross-sectional variation in insider trading. *Contemporary Accounting Research*, 24(1), 195-232.
- Hunt, J., & Gauthier-Loiselle, M. (2010). How much does immigration boost innovation?. *American Economic Journal: Macroeconomics*, 2(2), 31-56.
- Ichino, A., and Maggi, G. 2000, Work environment and individual background: Explaining regional shirking differentials in a large Italian firm. *The Quarterly Journal of Economics*, 115(3), 1057-1090.
- Jaeger, D. A., Dohmen, T., Falk, A., Huffman, D., Sunde, U., & Bonin, H. (2010). Direct evidence on risk attitudes and migration. *The Review of Economics and Statistics*, 92(3), 684-689.
- Jaffe, A. B. (2000). The US patent system in transition: policy innovation and the innovation process. *Research Policy*, 29(4-5), 531-557.
- Jagolinzer, A. D., Larcker, D. F., & Taylor, D. J. (2011). Corporate governance and the information content of insider trades. *Journal of Accounting Research*, 49(5), 1249-1274.
- Jagolinzer, A. D., Larcker, D. F., Ormazabal, G., & Taylor, D. J. (2020). Political connections and the informativeness of insider trades. *The Journal of Finance*, 75(4), 1833-1876.
- Janis, I. L. (1982). *Groupthink* (2nd ed.). Boston: Houghton Mifflin.
- Jeng, L. A., Metrick, A., & Zeckhauser, R. (2003). Estimating the returns to insider trading: A performance-evaluation perspective. *Review of Economics and Statistics*, 85(2), 453-471.
- Jenter, D., & Lewellen, K. (2021). Performance-induced CEO turnover. *The Review of Financial Studies*, 34(2), 569-617.
- Jha, A., & Chen, Y. (2015). Audit fees and social capital. *The Accounting Review*, 90(2), 611-639.
- Jia, N. (2019). The impact of accounting restatements on corporate innovation strategy. *Journal of Accounting and Public Policy*, 38(3), 219-237.

- Jia, Y., & Gao, X. (2023). Auditor changes and management's issuance of earnings forecasts. *Contemporary Accounting Research*, 41(2), 748-780.
- Jiang, C., John, K., Kim, J. J., & Zhang, J. (2025). CEOs' narcissism and opportunistic insider trading. *Journal of Corporate Finance*, 91, 102695.
- Jiang, C., Wintoki, M. B., & Xi, Y. (2021). Insider trading and the legal expertise of corporate executives. *Journal of Banking & Finance*, 127, 106114.
- Jiang, F., Qian, Y., & Yonker, S. E. (2019). Hometown biased acquisitions. *Journal of Financial and Quantitative Analysis*, 54(5), 2017-2051.
- Johnson, E. N., Kuhn, J. R., Apostolou, B. A., & Hassell, J. M. (2013). Auditor perceptions of client narcissism as a fraud attitude risk factor. *Auditing: A Journal of Practice & Theory*, 32(1), 203-219.
- Johnstone, K. M., & Bedard, J. C. (2004). Audit firm portfolio management decisions. *Journal of Accounting Research*, 42(4), 659-690.
- Jokela, M. (2009). Personality predicts migration within and between US states. *Journal of Research in Personality*, 43(1), 79-83.
- Kalelkar, R., & Khan, S. (2016). CEO financial background and audit pricing. *Accounting Horizons*, 30(3), 325-339.
- Kallunki, J. P., Nilsson, H., & Hellström, J. (2009). Why do insiders trade? Evidence based on unique data on Swedish insiders. *Journal of Accounting and Economics*, 48(1), 37-53.
- Kang, J. K., Liu, W. L., Low, A., and Zhang, L. (2018). Friendly boards and innovation. *Journal of Empirical Finance*, 45, 1-25.
- Kealey, B. T., Lee, H. Y., & Stein, M. T. (2007). The association between audit-firm tenure and audit fees paid to successor auditors: Evidence from Arthur Andersen. *Auditing: A Journal of Practice & Theory*, 26(2), 95-116.
- Kerr, W. R., & Lincoln, W. F. (2010). The supply side of innovation: H-1B visa reforms and US ethnic invention. *Journal of Labor Economics*, 28(3), 473-508.
- Khan, M., & Watts, R.L. (2009). Estimation and empirical properties of a firm-year measure of accounting conservatism. *Journal of Accounting and Economics*. 48 (2-3), 132-150.
- Kim, J. B., Liu, X., & Zheng, L. (2012). The impact of mandatory IFRS adoption on audit fees: Theory and evidence. *The Accounting Review*, 87(6), 2061-2094.
- Kim, K., Patro, S., and Pereira, R. (2017). Option incentives, leverage, and risk-taking. *Journal of Corporate Finance*, 43, 1-18.
- Kinnan, C., Wang, S. Y., & Wang, Y. (2018). Access to migration for rural households. *American Economic Journal: Applied Economics*, 10(4), 79-119.
- Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, 33(3), 375-400.
- Knack, S., & Keefer, P. (1997). Does social capital have an economic payoff? A cross-country investigation. *Quarterly Journal of Economics*, 112(4), 1251-1288.
- Knechel, R. W., Vanstraelen, A., & Zerni, M. (2015). Does the identity of engagement partners matter? An analysis of audit partner reporting decisions. *Contemporary Accounting Research*, 32(4), 1443-1478.
- Koirala, S., Marshall, A., Neupane, S., and Thapa, C. (2020). Corporate governance reform and risk-taking: Evidence from a quasi-natural experiment in an emerging market. *Journal of Corporate Finance*, 61, 101396.
- Kong, D., Zhao, Y., and Liu, S. (2021). Trust and innovation: Evidence from CEOs' early-life experience. *Journal of Corporate Finance*, 69, 101984.
- Korpi, M., and W. Clark. (2015). Internal migration and human capital theory: To what extent is it selective? *Economics Letters*, 136, 31-34.

- Kothari, S. P., Laguerre, T. E., & Leone, A. J. (2002). Capitalization versus expensing: Evidence on the uncertainty of future earnings from capital expenditures versus R&D outlays. *Review of Accounting Studies*, 7(4), 355-382.
- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163–197.
- Krishnan, G. V., & Wang, C. (2015). The relation between managerial ability and audit fees and going concern opinions. *Auditing: A Journal of Practice & Theory*, 34(3), 139-160.
- Lai, S., Li, Z., & Yang, Y. G. (2020). East, West, home's best: Do local CEOs behave less myopically?. *The Accounting Review*, 95(2), 227-255.
- Lakonishok, J., & Lee, I. (2001). Are insider trades informative?. *The Review of Financial Studies*, 14(1), 79-111.
- Lanjouw, J. O., and Schankerman, M. (2004). Patent quality and research productivity: Measuring innovation with multiple indicators. *The Economic Journal*, 114(495), 441-465.
- Lei, G., Shao, Y., Zhang, H. 2020. Executives' work out of hometown and corporate innovation. *Foreign Economics & Management*, (12),44-55. (In Chinese)
- Li P (2003) Social network of rural migrants in China. *Social Sciences in China* 24(4): 138–148.
- Li, W., Rong, M., & Wu, J. (2023). Does executives' overseas experience improve firms' labor investment efficiency?. *China Journal of Accounting Research*, 16(4), 100332.
- Li, W., Xu, Q., and Zhu, Q. (2021). CEO Hometown favoritism in corporate environmental Policies. Available at SSRN 3859116.
- Lin, N., Li, A., Ke, J., and Yuan, J. (2022). The governance role of corporate party organization on innovation. *International Review of Economics & Finance*, 84, 657-670.
- Lin, Y., Shi, R., Yuan, Y., & Zuo, L. (2023). The Economics of Auditing in China. *Research Handbook of Chinese Corporate Governance*, Forthcoming.
- Lisic, L. L., Silveri, S. D., Song, Y., & Wang, K. (2015). Accounting fraud, auditing, and the role of government sanctions in China. *Journal of Business Research*, 68(6), 1186-1195.
- Liu, F. C., Simon, D. F., Sun, Y. T., & Cao, C. (2011). China's innovation policies: Evolution, institutional structure, and trajectory. *Research Policy*, 40(7), 917-931.
- Lu, H., Shin, J. E., & Zhang, M. (2023). Financial reporting and disclosure practices in China. *Journal of Accounting and Economics*, 101598.
- Luo, D., Wu, Z., Zhuo, J., and He, J. (2022). Market misvaluation and corporate innovation: “Catering” or “risk aversion”?—Empirical evidence from China capital market. *China Journal of Accounting Research*, 15(3), 100249.
- Lv, J., and Zhang, S. (2022). Hometown sentiment: CEO hometown identity and company audit fees. *Managerial Auditing Journal*, 37(8), 993–1016.
- Lyon, J. D., & Maher, M. W. (2005). The importance of business risk in setting audit fees: Evidence from cases of client misconduct. *Journal of Accounting Research*, 43(1), 133-151.
- Ma, Z., Wang, R., & Zhou, K. (2021). Generalist CEOs and audit pricing. *Auditing: A Journal of Practice & Theory*, 40(4), 123-147.
- Malmendier, U., Tate, G. and Yan, J. 2011. Overconfidence and early-life experiences: The effect of managerial traits on corporate financial policies. *The Journal of Finance*, 66 (5): 1687–733.
- Manso, G. (2011). Motivating innovation. *The Journal of Finance*, 66(5), 1823-1860.
- Marquardt, D.W. (1970). Generalized inverses, ridge regression, biased linear estimation, and nonlinear estimation. *Technometrics*, 12(3), 591–612.

- Massa, M., Qian, W., Xu, W., & Zhang, H. (2015). Competition of the informed: Does the presence of short sellers affect insider selling?. *Journal of Financial Economics*, 118(2), 268-288.
- Mayhew, B. W., & Wilkins, M. S. (2003). Audit firm industry specialization as a differentiation strategy: Evidence from fees charged to firms going public. *Auditing: A Journal of Practice & Theory*, 22(2), 33-52.
- McClelland, D. C. (1987). Human motivation. Cup Archive.
- McMullin, J. L., & Schonberger, B. (2020). Entropy-balanced accruals. *Review of Accounting Studies*, 25(1), 84-119.
- Merkley, K., Michaely, R., and Pacelli, J. (2020). Cultural diversity on Wall Street: Evidence from consensus earnings forecasts. *Journal of Accounting and Economics*, 70(1), 101330.
- Milliken, F. J., and Martins, L. L. (1996). Searching for common threads: Understanding the multiple effects of diversity in organizational groups. *Academy of Management Review*, 21(2), 402-433.
- Oltra, V. (2008). Environmental innovation and industrial dynamics: the contributions of evolutionary economics. *Cahiers du GREThA*, 28(27), 77-89.
- Oradi, J., & E-Vahdati, S. (2021). Female directors on audit committees, the gender of financial experts, and internal control weaknesses: evidence from Iran. *Accounting Forum*, 45(3), 273-306.
- Pedersen, P. J., Pytlikova, M., & Smith, N. (2008). Selection and network effects—Migration flows into OECD countries 1990–2000. *European Economic Review*, 52(7), 1160-1186.
- Pham, A. V., Pham, M. H., & Truong, C. (2022). CEO cultural heritage and the pricing of audit services. *Journal of Business Finance & Accounting*, 49(1-2), 181-214.
- Pittman, J., Wang, L., & Wu, D. (2022). Network analysis of audit partner rotation. *Contemporary Accounting Research*, 39(2), 1085-1119.
- Polavieja, J. G., Fernández-Reino, M., and Ramos, M. (2018). Are migrants selected on motivational orientations? Selectivity patterns amongst international migrants in Europe. *European Sociological Review*, 34(5), 570-588.
- Pool, V. K., Stoffman, N., & Yonker, S. E. (2012). No place like home: Familiarity in mutual fund manager portfolio choice. *The Review of Financial Studies*, 25(8), 2563-2599.
- Quan, X., Ke, Y., Qian, Y., and Zhang, Y. (2021). CEO foreign experience and green innovation: evidence from China. *Journal of Business Ethics*, 1-23.
- Ravina, E., & Sapienza, P. (2010). What do independent directors know? Evidence from their trading. *The Review of Financial Studies*, 23(3), 962-1003.
- Ren, S., Cheng, Y., Hu, Y., & Yin, C. (2021). Feeling right at home: Hometown CEOs and firm innovation. *Journal of Corporate Finance*, 66, 101815.
- Reynolds, J. K., & Francis, J. R. (2000). Does size matter? The influence of large clients on office-level auditor reporting decisions. *Journal of Accounting and Economics*, 30(3), 375-400.
- Rocha, R., Ferraz, C., & Soares, R. R. (2017). Human capital persistence and development. *American Economic Journal: Applied Economics*, 9(4), 105-136.
- Rouen, E. (2020). Rethinking measurement of pay disparity and its relation to firm performance. *The Accounting Review*, 95(1), 343-378.
- Roulstone, D. T. (2003). The relation between insider-trading restrictions and executive compensation. *Journal of Accounting Research*, 41(3), 525-551.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335–370.
- Schoar, A., & Zuo, L. (2016). Does the market value CEO styles?. *American Economic Review*, 106(5), 262-266.

- Scott, J., & Xu, P. (2004). Some insider sales are positive signals. *Financial Analysts Journal*, 60(3), 44-51.
- Seyhun, H. N. (1986). Insiders' profits, costs of trading, and market efficiency. *Journal of financial Economics*, 16(2), 189-212.
- Seyhun, H. N. (1988). The information content of aggregate insider trading. *Journal of Business*, 1-24.
- Seyhun, H. N. (1992). The effectiveness of the insider-trading sanctions. *The Journal of Law and Economics*, 35(1), 149-182.
- Shen, Y. (2021). CEO characteristics: a review of influential publications and a research agenda. *Accounting & Finance*, 61(1), 361-385.
- Shen, Y., Gao, D., Bu, D., Yan, L., & Chen, P. (2019). CEO hometown ties and tax avoidance-evidence from China's listed firms. *Accounting & Finance*, 58(5), 1549-1580.
- Shleifer, A., and Vishny, R. W. (1994). Politicians and firms. *The Quarterly Journal of Economics*, 109(4), 995-1025.
- Shu, C., Wang, Q., Gao, S., and Liu, C. (2015). Firm patenting, innovations, and government institutional support as a double-edged sword. *Journal of Product Innovation Management*, 32(2), 290-305.
- Simunic, D. A. (1980). The pricing of audit services: Theory and evidence. *Journal of accounting research*, 161-190.
- Srinidhi, B. I. N., Gul, F. A., & Tsui, J. (2011). Female directors and earnings quality. *Contemporary Accounting Research*, 28(5), 1610-1644.
- Stets, J. E., and Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, 224-237.
- Studenmund, A. H. (2016). *Using econometrics: A practical guide* (7th ed.). Boston, MA: Pearson.
- Suk, I., & Wang, M. (2021). Does target firm insider trading signal the target's synergy potential in mergers and acquisitions?. *Journal of Financial Economics*, 142(3), 1155-1185.
- Sultana, N., Singh, H., & Rahman, A. (2019). Experience of audit committee members and audit quality. *European Accounting Review*, 28(5), 947-975.
- Sun, F., Dutta, S., Zhu, P., & Ren, W. (2021). Female insiders' ethics and trading profitability. *International Review of Financial Analysis*, 74, 101710.
- Sunder, J., Sunder, S. V., and Zhang, J. (2017). Pilot CEOs and corporate innovation. *Journal of Financial Economics*, 123(1), 209-224.
- Tajfel, H. (1982). Experimental studies of intergroup behaviour. In *Cognitive Analysis of Social Behavior* (pp. 227-246). Springer, Dordrecht.
- Tajfel, H. and Turner, J.C. (1979), "Psychology of intergroup relations", in Austin, W.G. and Worchel, S. (Eds), *The Social Psychology of Intergroup Relations*, Brooks/Cole, Monterey, CA, pp. 33-47.
- Tan, Y., Xiao, J., Zeng, C. C., and Zou, H. (2021). What's in a name? The valuation effect of directors' sharing of surnames. *Journal of Banking and Finance*, 122, 105991.
- Tang, M., & Xin, H. (2023). Asymmetric Timing of Gain and Loss Recognition and Insider Trading Profitability. *Journal of Accounting, Auditing & Finance*, 38(4), 749-776.
- Tang, X., Shi, J., Han, J., Shu, A., and Xiao, F. (2021). Culturally diverse board and corporate innovation. *Accounting and Finance*, 61(4), 5655-5679.
- Thiruvadi, S., & Huang, H. W. (2011). Audit committee gender differences and earnings management. *Gender in Management: An International Journal*, 26(7), 483-498.
- Tian, M., Deng, P., Zhang, Y., and Salmador, M. P. (2018). How does culture influence innovation? A systematic literature review. *Management Decision*, 56(5), 1088-1107.

- Tong, L., Wu, B., & Zhang, M. (2022). Do auditors' early-life socioeconomic opportunities improve audit quality? Evidence from China. *The British Accounting Review*, 54(2), 101040.
- Tsui, J. S., Jaggi, B., & Gul, F. A. (2001). CEO domination, growth opportunities, and their impact on audit fees. *Journal of Accounting, Auditing & Finance*, 16(3), 189-208.
- Tunali, I. (2000). Rationality of migration. *International Economic Review*, 41(4), 893-920.
- Turner, J. C., Brown, R. J., & Tajfel, H. (1979). Social comparison and group interest in ingroup favouritism. *European journal of social psychology*, 9(2), 187-204.
- Venkataraman, R., Weber, J. P., & Willenborg, M. (2008). Litigation risk, audit quality, and audit fees: Evidence from initial public offerings. *The Accounting Review*, 83(5), 1315-1345.
- Wan, Q., Cheng, X., Chan, K. C., and Gao, S. (2021). Born to innovate? The birth-order effect of CEOs on corporate innovation. *Journal of Business Finance & Accounting*, 48(9-10), 1846-1888.
- Wang, C., Ye, Q., & Goyal, A. (2019). Does tenure matter: role of the corporate secretary in Chinese-listed firms. *Accounting Horizons*, 33(1), 181-205.
- Wang, W. W., and Fan, C. C. (2012). Migrant workers' integration in urban China: Experiences in employment, social adaptation, and self-identity. *Eurasian Geography and Economics*, 53(6), 731-749.
- Weber, J., Willenborg, M., & Zhang, J. (2008). Does auditor reputation matter? The case of KPMG Germany and ComROAD AG. *Journal of Accounting Research*, 46(4), 941-972.
- West, M. A., and Anderson, N. R. (1996). Innovation in top management teams. *Journal of Applied Psychology*, 81(6), 680.
- Wouterse, F. (2016). Can human capital variables be technology changing? An empirical test for rural households in Burkina Faso. *Journal of Productivity Analysis*, 45(2), 157-172.
- Wu, D., & Ye, Q. (2020). Public attention and auditor behavior: The case of Hurun Rich List in China. *Journal of Accounting Research*, 58(3), 777-825.
- Wu, Y., & Eesley, C. E. (2022). Regional migration, entrepreneurship and university alumni. *Regional Studies*, 56(6), 1015-1032.
- Wu, Y., Eesley, C. E., & Yang, D. (2022). Entrepreneurial strategies during institutional changes: Evidence from China's economic transition. *Strategic Entrepreneurship Journal*, 16(1), 185-206.
- Xiang, R., & Song, C. (2021). CFO narcissism and audit fees: Evidence from listed companies in China. *China Journal of Accounting Research*, 14(3), 257-274.
- Xu, N., Li, M., Xie, R., & Chan, K. C. (2024). Double standards? The adverse impact of chairperson hometown ties on corporate green innovation. *Journal of Corporate Finance*, 88, 102640.
- Xu, Q., Deng, L., Li, S., and Huang, W. 2021. Do hometown connections affect corporate governance? Evidence from Chinese Listed Companies. *International Review of Economics & Finance*, 73, 290-302.
- Xue, S., Zhang, B., & Zhao, X. (2021). Brain drain: The impact of air pollution on firm performance. *Journal of Environmental Economics and Management*, 110, 102546.
- Yin, H., Jin, X., Quan, X., and Yu, J. (2022). Does social network improve corporate financing efficiency? Evidence from China. *Pacific-Basin Finance Journal*, 74, 101802.
- Yonker, S. E. (2017). Geography and the market for CEOs. *Management Science*, 63(3), 609-630.
- Yuan, R., & Wen, W. (2018). Managerial foreign experience and corporate innovation. *Journal of Corporate Finance*, 48, 752-770.
- Yuan, S., Zhang, W., & Zhu, K. (2023). Place attachment, audit pricing and audit quality. *Journal of Contemporary Accounting & Economics*, 100365.

- Zak, P. J., & Knack, S. (2001). Trust and growth. *The Economic Journal*, 111, 295–321
- Zalata, A. M., Tauringana, V., & Tingbani, I. (2018). Audit committee financial expertise, gender, and earnings management: does gender of the financial expert matter?. *International Review of Financial Analysis*, 55, 170-183.
- Zhang, D. 2019. Top management team characteristics and financial reporting quality. *The Accounting Review*, 94(5), 349-375.
- Zhang, J. Z., & Yu, Y. (2016). Does board independence affect audit fees? Evidence from recent regulatory reforms. *European Accounting Review*, 25(4), 793-814.
- Zhao, M., & Jin, Y. (2020). Migrant workers in Beijing: How hometown ties affect economic outcomes. *Work, Employment and Society*, 34(5), 789-808.
- Zhong, R. I. (2018). Transparency and firm innovation. *Journal of Accounting and Economics*, 66(1), 67-93.
- Zhou, D., Bai, M., Liang, X., and Qin, Y. (2021). The Early-life Political Event Experience of the Chair of the Board and the Firm's Innovation Decision. *Australian Accounting Review*, 31(3), 186-212.
- Zhu, C., & Wang, L. (2015). Insider trading under trading ban regulation in China's A-share market. *China Journal of Accounting Research*, 8(3), 169-191.
- Zhu, H., Pan, Y., Qiu, J., & Xiao, J. (2022). Hometown ties and favoritism in Chinese corporations: Evidence from CEO dismissals and corporate social responsibility. *Journal of Business Ethics*, 1-28.