The Economic Impact of Corporate Offshore Investments: A Chinese Perspective

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Abstract

With the development of internationalization and globalization, outward foreign direct investment becomes a crucial factor for Chinese firms to engage with the world. This thesis investigates the economic impact of outward foreign direct investment by Chinese listed firms, consisting of two empirical essays on Chinese outward foreign direct investment.

The first essay investigates the impact of greenfield outward foreign direct investment (OFDI) on firm performance in Chinese listed firms. This study finds a significant increase in Tobin's Q of firms with greenfield OFDI. The study empirically shows that the positive impact of greenfield OFDI on Tobin's Q is more pronounced in non-state-owned enterprises (non-SOEs). Empirical evidence also suggests that engaging in greenfield outward foreign direct investment is associated with lower effective tax rates, higher analyst coverage, and upgraded analyst recommendations. Overall, this study provides new insights into the impact of greenfield OFDI on firms' market-based performance and how political interference shapes the impact.

The second essay investigates the impact of common institutional ownership on Chinese firms' outward foreign direct investment amounts and is the first study to document this impact. The study provides empirical evidence that institutional common owners experience significant positive firm outward foreign direct investment amounts. This positive impact is more pronounced in the presence of privately-owned institutional common owners. This study also suggests that the positive impact of

common ownership on firms' OFDI is in line with the coordination and monitoring effect of common owners. Overall, this study provides new insights regarding the impact of common owners on Chinese firms' OFDI and sheds light on the drivers of firms' outward foreign direct investments.

In sum, the results indicate that while undertaking OFDI would facilitate firm performance for Chinese listed firms, common institutional owners promote the underlying Chinese firms' OFDI at the same time allowing these firms to enjoy the benefit of investing worldwide.

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DEDICATION

To my beloved grandmother,

Yumei Gao

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Chapter One: Introduction

This chapter provides an introduction and overview of the thesis. Section 1.1 provides the background of China's outward foreign direct investment (OFDI) and the motivation of this research. Section 1.2 discusses the aim and objectives of the research. Section 1.3 demonstrates the key contributions of this research. Section 1.4 presents the research output from this thesis, while Section 1.5 concludes by providing a framework for the remainder of the thesis.

1.1. Background and motivation of this research

Since China's "reform and opening up" policy, China has increased its OFDI throughout the world gaining the increased attention of academic researchers. As there are an increasing number of Chinese firms engaging in OFDI worldwide over the past few decades, OFDI has become a choice for firms that tend to expand their business from domestic to foreign markets. According to statistics from the Ministry of Commerce (MOFCOM), since the establishment of China's OFDI statistical system in 2002, China's OFDI has continued to grow rapidly for 14 years with an average annual growth rate of 35.8% as of 2016. By the end of 2017, China's OFDI stock reached $1,809.04 billion with an increase of 33.3% compared to $1,357.39 billion at the end of the 2016. China's OFDI accounted for 5.9% of the world's total OFDI in 2017, ranking the second in the world. The increasing amount of China's OFDI accounted for

9.7% of the increase in the amount of global OFDI in 2017.[1]

Studies have suggested that OFDI plays an important role in developed economies (Herzer & Schrooten, 2008; Yeaple, 2003). After liberalization initiated by Xiaoping Deng, OFDI from China has rapidly increased over the few past decades. Since then, research concerning China's OFDI has become a popular topic in the academic literature. The common view is that China's OFDI plays an increasingly important role in enhancing China's comparative advantages and integrating China into the global economy (Wei & Wang, 2009; Yang, 2006).

According to Buckley and Casson (2003), there are two general principles of theory regarding foreign direct investment. Firms internalize imperfect external markets until the marginal benefits of internalization approach the marginal costs. In addition, firms choose OFDI locations that minimize the overall costs of firm operations. Firms from emerging economies are more likely to use OFDI to replace imperfect external markets via internationalization as it is more likely that there are imperfections in their home country's capital markets.

General theories concerning the location aspect suggest that there are three primary motivations for conducting OFDI. Dunning (1977, 1980) develops and introduces the Eclectic Paradigm, also known as the OLI Framework, which investigates foreign direct investment at both the country and firm levels. The Eclectic Paradigm includes three

[1] Data source: Ministry of Commerce, the National Bureau of Statistics, and the State Administration of Foreign Exchange.

types of advantages: ownership-specific advantages, location-specific advantages, and internationalization incentive advantages. The ownership advantages include various firm specific assets, such as patents, management skills, know-how, and additional forms of intangible asset advantages, monopoly power, better knowledge, and information about international markets. These factors demonstrate firms' comparative competitiveness when compared to other firms. The location advantages include natural and created resources, transportation, communication costs, import controls, the political and cultural environment, and government policies. These factors explain why some firms decide to invest and produce in foreign markets instead of exporting to foreign markets. The internationalization advantages present the different benefits of each entry mode for foreign markets including foreign direct investment, joint ventures, exportation, and licensing. The more market imperfections, the more internationalization advantages that will arise. They include buyer uncertainty, price discrimination permissions, and government intervention. These factors explain why firms are reluctant to undertake licensing agreements. Dunning (1998) further expands and summarizes four types of international production including resource seeking, market seeking, efficiency seeking, and strategic asset seeking, respectively.

However, general theories of foreign direct investment are used to explain overseas investment from developed economies. Therefore, whether OFDI conducted by firms from the largest developing country, China, can be explained by the same theories or others unique to China becomes a popular topic. Although general theories can be applied to emerging economies readily in certain aspects, more specialized application

of the theories is needed. To determine whether the general theories are applicable to Chinese OFDI and whether special application is needed, several studies have investigated the determinants of OFDI and location choices for China at either the country or firm levels (Amighini et al., 2013; Buckley et al., 2007; Deng, 2009; Ramasamy et al., 2012).

Most of the earlier studies were conducted using state-level and provincial-level aggregate data and argued that the purpose of Chinese OFDI are to seek markets, natural resources, and strategic assets. According to Buckley et al. (2007), one of the most important motives for China's OFDI is to seek the continuous supply of resources. Another motive for Chinese OFDI may involve locating strategic assets, but the efficiency seeking motive is unlikely due to China's comparatively low labor costs. Chinese OFDI will continue to obtain access to new markets and natural resources, but, more importantly, Chinese OFDI firms will focus more on seeking strategic assets. This is because both established and fledgling firms need strategic assets, such as technology, knowledge, and brand names, which can be obtained through investment in developed economies, to compensate for their comparative disadvantages (Deng, 2004). Cai (1999) argues that the main reason for Chinese firms to undertake overseas investment is to seek markets, natural resources, technology, and financial capital. Consistently, studies find that both market seeking and resource seeking motivate China's OFDI (Cheng & Ma, 2007; Cheung & Qian, 2009). In addition, some studies find that the preference to invest in countries with rich natural resources is to acquire greater access these resources (Hong & Sun, 2006; Morck et al., 2008). Wu and Chen (2001) also find that

the emergence of China's OFDI is motivated by market seeking to take advantage of low labor costs, advanced technology, and management skills.

After the "Go Global" policy, China's OFDI rose much more significantly promoting technology and skills to enhance the internationalization process. More importantly, it keeps China's domestic economy growing continuously. Since then, more research focuses on the determinants and location choices of undertaking OFDI at either the country or firm level. Buckley et al. (2007) argue that China's OFDI was attracted to those countries with natural resources from 1992-2001. They indicate that the institutional governance of a country has significant influence on China's OFDI. Moreover, they argue that after the liberalization associated with Xiaoping Deng in 1992, these determinants became more relevant in the undertaking of OFDI. in addition to rich resources, countries with large GDP per capita, rapid GDP growth, open economic regimes, and high volumes of exports from China also attracted Chinese OFDI (Zhang & Daly, 2011).

Additional research focuses on market seeking and resource seeking motives using firm level data. Luo et al. (2011) argue that due to the underdevelopment of China's institutions and the market imperfections, private firms' OFDI is motivated to exploit their firm-specific competitive advantages. An increasing number of Chinese firms deal with their competitive disadvantage by acquiring the strategic assets via overseas M&As (Deng, 2009). Consistently, Rui and Yip (2008) use a strategic intent perspective to analyze Chinese cross-border M&As and suggest that Chinese firms address their

competitive disadvantages of accessing strategic capabilities to achieve goals by undertaking overseas M&As.

As discussed above, many studies have investigated the determinants and motives of Chinese OFDI. The questions of why and how Chinese firms undertake OFDI have been well examined. However, one key question, what are the consequences of these OFDI activities, remains relatively less studied. For example, these OFDI activities can be either beneficial or harmful for those firms that opted to undertake them. How will the market and investors respond to these firms' decisions? Specifically, what OFDI can bring to Chinese firms then becomes a new and interesting question for academic researchers. To answer this question, prior studies focus more on some performance indicators, such as productivity, profitability, and accounting-based performance, while the impact of OFDI of Chinese listed firms on firm market-based performance, which is more related to the market and investors' responses, is relatively less studied with mixed empirical results. Thus, Essay One is motivated by this research gap.

At the same time, with the development of Chinese capital markets over the past few decades, large institutional investors gradually started to increase the shareholdings of Chinese listed firms. According to the data and report from the CICC Global Institute, institutional investors have been developing dramatically in the Chinese market, whose shareholding percentage increases from 1.4% in 2003 to 18.7% in 2018.[2] More recently,

[2] The original web link for the report (in Chinese) is: https://m.21jingji.com/article/20190702/herald/b39f0f661609f2353cdfafbb8d88b974.html, which was posted on 2nd of July in 2019.

researchers focused on institutional common owners, the institutional investors who own block holdings in multiple firms within the same industry at the same time, and their impact on corporate decisions and outcomes (Azar et al., 2018; He et al., 2020; He & Huang, 2017; Lewellen & Lowry, 2021; Park et al., 2019) as institutional common owners have strong incentives to maximize their own portfolio returns (He & Huang, 2017).

In general, institutional common owners play a role in corporate governance and become a relevant factor in corporate investment activities. Prior studies find that common institutional ownership can facilitate corporate investment through enhanced coordination and the monitoring effect (Chen et al., 2021; Shahid & Abbas, 2019). However, the further exploration of this association between institutional common owners and corporate investments is still generally lacking. Will OFDI, as a special type of corporate investment activity, be affected by common institutional ownership? Prior studies have provided supportive evidence regarding the impact of common institutional ownership on corporate investment, but the possible association between common institutional ownership and firms' OFDI is still unclear. Based on the fact that undertaking OFDI has been an important part of corporate investment decisions drawing the attention of academic researchers over the past few decades, it is particularly interesting to investigate the relation between common institutional ownership and OFDI. However, to our knowledge, no research has examined the impact of common institutional ownership on firms' OFDI. Thus, this research gap motivates Essay Two of this thesis.

1.2. Aim and objectives of the research

This thesis seeks to explore the emerging aspects of outward foreign direct investment for Chinese listed firms. Essay One and Essay Two focus on the consequences of, and possible drivers of, Chinese listed firms' OFDI.

Essay One (Chapter 2) examines how China's greenfield OFDI affects firms' performance. This essay empirically examines whether and how China's greenfield OFDI has a positive impact on firm performance measured by Tobin's Q. This essay also examines the different impacts of China's greenfield investment on firm performance between state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs) based on their different ownership nature and objectives. In addition, this essay investigates the possible reasons for the positive impact of China's greenfield OFDI and the differences between SOEs vs. non-SOEs.

Essay Two (Chapter 3) attempts to determine whether and how institutional common ownership affects Chinese firms' OFDI. This essay empirically examines whether institutional common ownership affects Chinese firms' OFDI. In addition, this essay investigates the possible moderators of the impact of institutional common ownership. Finally, this essay also investigates the various impacts of institutional common ownership based on the different ownership nature of common owners, namely state-owned and privately-owned institutional common owners.

1.3. Contributions of the research

This thesis contributes to the existing literature in several ways.

1.3.1. Essay One: The value impact of Chinese Listed firms' outward foreign direct investment on firm performance

To the best of our knowledge, This essay is the first to provide empirical evidence of the positive impact of China's greenfield OFDI on firm performance. This essay highlights the use of Tobin's Q as a proxy for the market-based firm performance measure that captures the market and investors responses to Chinese firms' OFDI activities. This result suggests that the market recognizes OFDI as performance-enhancing activities for related firms.

In addition, this essay contributes to the literature on the impact of political interference on OFDI. It provides empirical evidence that state ownership weakens the positive effect of Chinese OFDI on Tobin's Q as the OFDI activities are more likely driven by political objectives for SOEs. Specifically, this essay finds that SOEs are more likely to invest in developing economies and Belt Road countries compared to non-SOEs.

Moreover, this essay also contributes to the literature on the efficiency of the Chinese market. The empirical results indicate that the Chinese market responds relatively efficiently to OFDI activities by identifying the driving factors of undertaking OFDI between SOEs and non-SOEs. This is also consistent with Chong et al. (2012) suggesting that the Chinese stock market has become more efficient after the SOE

reform.

1.3.2. Essay Two: The impact of common institutional ownership on Chinese listed firms' outward foreign direct investment

This essay contributes to the literature on the impact of common institutional ownership on corporate outcomes. To the best of our knowledge, this essay is the first to examine how institutional common ownership affects Chinese listed firms' OFDI. This study provides important implications to policy makers to consider the effects of common institutional ownership when designing polices and strategies toward achieving the long-term goals of the Chinese government.

In addition, this essay provides new evidence regarding the coordination and monitoring effect of common institutional ownership. It also provides new empirical evidence of the possible moderators of institutional common ownership suggesting that firms may share the information, experience, and technological know-how through institutional common owners to facilitate their foreign investments.

Finally, this essay investigates the differential impacts between state-owned and privately-owned institutional common owners on OFDI. This study also provides empirical evidence that institutional common owners with different state ownership have different incentives when undertaking OFDI. Specifically, state-owned institutional common owners need to balance the objectives of return maximization and political incentives, while privately-owned institutional common owners are more

likely to seek return maximization when engaging in the OFDI activities.

1.4. Research output from the thesis

Essay One has been presented at:

- The New Zealand Finance Meeting at Auckland University of Technology in Auckland (2022)
- The School of Economics and Finance Seminar at Massey University in Palmerston North (2020).

Essay Two has been presented at:

- The School of Economics and Finance Seminar at Massey University in Palmerston North (2022).

1.5. Outline of the thesis

The reminder of this thesis is structured as follows. Chapters Two and Three are the two empirical essays included in this thesis. Chapter Two investigates the impact of China's greenfield OFDI on firm performance. Chapter Three examines the impact of common institutional ownership on Chinese listed firms' OFDI. Chapter Four concludes the thesis by summarizing the hypotheses, main findings, and limitations. It also provides a discussion about future research on China's OFDI.

Chapter Two - Essay One:
The Value Impact of Chinese listed firms' Outward Foreign Direct Investment on Firm Performance

Abstract

This essay investigates the impact of greenfield outward foreign direct investments (OFDI) on firm performance in Chinese listed firms. We find a significantly positive relation between greenfield OFDI and firm performance measured by Tobin's Q, in general. Our results remain significant after employing the difference-in-differences approach combined with a propensity score matching technique and a two stage least squares regression with instrumental variables to mitigate potential endogeneity problems. Further tests show that this positive relation is more pronounced in non-state owned enterprises. Additional analysis shows that state-owned enterprises (SOEs) tend to invest more in developing and Belt Road countries, which explains the insignificant relation between OFDI and Tobin's Q in SOEs. Moreover, our mediating test provides direct evidence that China's greenfield OFDI increases Tobin's Q by lowering the effective tax rate and increasing analyst coverage, as well as upgrading analyst recommendations. Overall, our essay contributes to the literature on the impact of OFDI on firms' market-based performance and how political interference shapes the impact.

Keywords: Chinese OFDI, Firm performance, Tobin's Q, State ownership

2.1. Introduction

Since the 1980s, there has been a rapid increase in outward foreign direct investment (OFDI) all over the world. China, the biggest developing economy, has also increased its inward and outward foreign direct investment over the world since China's "reform and opening up" policy. China's OFDI has gained increased attention in the academic literature. China's OFDI has risen significantly after the "Go Global" policy, which enhances the process of internationalization (Gu & Reed, 2013), and the process accelerated even further after the accession of China into WTO in 2001. In this study, we examine whether and how OFDI affects firm performance measured by Tobin's Q, a market-based performance of Chinese listed firms. Even though a few studies have investigated the effect of OFDI on firm performance in developed countries, the influence of OFDI in developing economies is still relatively under-explored.

Several studies on the effect of OFDI on firm performance suggest that OFDI could impede firm performance due to the risks, uncertainties, increased costs, lack of experience, and capacity when deciding to invest overseas (Agyei-Boapeah, 2019; Bertrand & Capron, 2015; Jensen-Vinstrup et al., 2018). However, other research finds that OFDI could increase firm performance by improving technology, efficiency, knowledge, skills, and diversification when exploring foreign markets (Chen et al., 2012; Cozza et al., 2015). As a result, the debate in the literature regarding the impact of OFDI on firm performance becomes one of our research motivations. Moreover, unlike other developed countries, political interference is unique and pronounced in

China's OFDI. For example, state ownership may intervene in SOE' decisions and stimulate SOEs to pursue political goals instead of seeking profit maximization (Cuervo-Cazurra et al., 2014; Wang, Hong, Kafouros, & Boateng, 2012; Wang, Hong, Kafouros, & Wright, 2012). We argue that it is important to take political interference into account if we wish to examine the effect of Chinese OFDI on firm performance. To date, the literature regarding the role of political interference on the impact of OFDI remains unclear. Thus, investigating how political interference shapes the impact of Chinese OFDI on firm performance becomes another motivation for this study.

Greenfield outward direct investment represents the most committed type of ODI as a parent company begins a new venture in a foreign country by constructing new operational facilities from the ground up and without foreign partners. In this study, we investigate whether and how greenfield OFDI affects firm performance of Chinese listed firms as measured by the market-based performance measure, Tobin's Q. We use ordinary least squares regressions to investigate the relation between Chinese firms' overseas greenfield investments and firm performance. We find that undertaking OFDI has a positive effect on Tobin's Q for Chinese firms, in general. We further use a difference-in-differences (DiD) approach combined with a propensity score matching (PSM) technique to address potential self-selection and reverse causality in our empirical analysis. In addition, we run a two stage least squares (2SLS) regression with instrumental variables to deal with the omitted variables problem. Our main results remain significant after considering potential endogeneity issues.

To shed further light on the impact of political interference, we employ a univariate analysis, ordinary least squares regressions, and a difference-in-difference-in-differences (DDD) approach to investigate whether and how state ownership affects the impact of OFDI on firm performance. We investigate the difference between SOEs and non-SOEs by separating them in the regressions. We include related SOEs due to the special connection between SOEs and the government. Numerous studies have found that government policies can influence Chinese firms' investment behavior significantly. Yeung and Liu (2008) argue that SOEs conducted 82% of China's non-financial OFDI activities in 2006. The state also has control of most of the capital and appoints executives though most SOEs are listed on a stock exchange (Morck et al., 2008). We find that our baseline results are more pronounced in non-state-owned enterprises (non-SOEs), while state-owned enterprises (SOEs) tend to invest more in developing economies and Belt Road countries and are associated with a lower level of Tobin's Q. Our findings support the view that Chinese OFDI, especially among SOEs, is induced by various economic and political objectives, and SOEs may be forced to pursue political goals instead of maximizing profits alone, while non-SOEs seek profits and efficiency to survive. We also note that the market responds positively to OFDI activities that are not driven by the political interference, while the positive impact of OFDI on firm performance weakens when OFDI activities are driven by political objectives. Finally, we identify three possible moderators for the positive effect of Chinese OFDI on firm performance including the tax effects, analyst coverage, and

upgraded analyst recommendations, respectively[3]. We find that OFDI has a positive effect on Tobin's Q by lowering the effective tax rate and increasing analyst coverage, as well upgrading analyst recommendations. In particular, the positive effects of lowering the tax rate, increasing analyst coverage, and increasing upgraded analyst recommendations only exists in non-SOEs.

We contribute to the literature in three aspects. First, to the best of our knowledge, this essay is the first to deliver empirical evidence of the impact of China's greenfield OFDI on firm performance based on the market-based performance measure. A few works focus on the effect of OFDI on firm performance in developed countries (Agyei-Boapeah, 2019; Chari et al., 2012; Doukas & Travlos, 1988; Jensen-Vinstrup et al., 2018; Morck & Yeung, 1992; Paul et al., 2004). Researchers should investigate the effect of OFDI on firm performance in emerging markets as the outward foreign direct investment from emerging countries (i.e., China) plays an increasingly important role in the global economy. While existing studies focus primarily on the motivation for or the determinants of OFDI and the effect of OFDI on firm productivity and operating performance in Chinese listed firms, our study emphasizes the effect of Chinese OFDI on Tobin's Q, a market-based measure of firm performance. In addition, this study contributes to the literature regarding the impact of political interference on OFDI. We provide empirical evidence that state ownership weakens the positive effect of Chinese

[3] The mediating test examines whether a third variable, mediator, helps explain the relationship between the dependent and independent variables. It investigates the pathway through which the independent variable affects the dependent variable. Whereas the moderating test investigates whether the relationship between the dependent and independent variables changes based on the presence of a third variable, moderator, which explores the conditions affecting the relationship between dependent and independent variables.

OFDI on Tobin's Q as these OFDI activities are more likely driven by political objectives. For example, we find that when compared to privately owned firms, SOEs are more likely to invest in developing economies and Belt Road countries. Finally, our study contributes to the literature on the efficiency of the Chinese market. Our empirical results on the role of political interference in shaping the impact of OFDI on firm performance suggest that the Chinese market responds efficiently to OFDI activities by identifying the driving factors of undertaking OFDI. Our results are consistent with the recent literature suggesting that the Chinese stock market has become more efficient after SOE reform by examining the profitability of various trading rules with the Shanghai and Shenzhen composite from of 1991-2010 (Chong et al., 2012).

The reminder of this essay proceeds as follows. Section 2 reviews the related literature and builds the hypotheses. Section 3 presents the data and variable construction. Section 4 reports the empirical results, while Sections 5 provides our conclusions.

2.2. Literature Review

2.2.1. OFDI and firm performance

The effects of OFDI on firm performance have been the subject of academic debate and previous literature finds mixed results. The research on the impact of OFDI on firm performance in developed countries are mainly based on cross-border merger and acquisitions (M&As). There are two general approaches to measure firm performance in the previous literature: expected performance and realized performance (Pangarkar

& Lim, 2003). Several studies have used stock market reactions to relevant OFDI announcements as a measure of expected performance (Chari et al., 2012; Doukas & Travlos, 1988; Jensen-Vinstrup et al., 2018; Morck & Yeung, 1992; Paul et al., 2004). However, the empirical results of the previous literature have been inconclusive. Paul et al. (2004) find that Canadian acquirers underperform significantly over the three-year post-acquisition period using alpha and abnormal returns. Consistently, Jensen-Vinstrup et al. (2018) find cross-border acquirer firms underperform those firms without cross-border M&As by investigating the long run stock return performance of European international M&As. However, according to Doukas and Travlos (1988) and Morck and Yeung (1992), overseas M&As increase abnormal returns significantly. They argue that the positive OFDI effect can be explained by the advantages of exploiting resources of foreign countries or imperfections in the financial markets.

In another category, some studies have examined the impact of OFDI on profitability, accounting-based, and market-based performance as measures of realized performance. Agyei-Boapeah (2019) uses a sample of 9,414 acquisitions by UK firms to investigate the impact of cross-border acquisitions on firm performance. They find that overseas acquisitions have a negative impact on firm performance (measured by ROA, Tobin's Q, the operating cash flow ratio, and the operating cost ratio), on average. This decline in financial performance suggests that international diversification is generally associated with more costs than benefits, at least in the short-term. However, Chari et al. (2012) find opposite results by focusing on targets instead of acquirers in the U.S. Specifically, they find that the profitability and ROA of target firms tends to improve

following the acquisitions.

Researchers also investigate the effect of greenfield OFDI on firm performance in developed countries. Doukas and Lang (2003) find that undertaking greenfield OFDI related to core businesses increases shareholders value and improves long-term performance in U.S. firms. Chang and Chang (2012) use a sample of U.S. firms and find that greenfield investment has a positive effect on abnormal stock returns around the announcement day. They also note that greenfield investment can improve ROE and BHARs in both the short-term and the long-term when it enters a host country for the first time or a developing country. However, when compared to the literature on the effect of cross-border M&As, the studies on the effect of greenfield OFDI on firm performance remain scarce.

Similar to the literature in developed countries, the literature on the impact of OFDI on performance in developing countries has commonly investigated the stock market's reaction to foreign M&As and the realized performance of acquirers or targets of overseas M&As (Aybar & Ficici, 2009; Bertrand & Betschinger, 2012; Buckley et al., 2014; Edamura et al., 2014; Gubbi et al., 2010). Aybar and Ficici (2009) find stock markets react negatively to foreign M&As using 433 foreign M&A announcements in developing countries. However, Gubbi et al. (2010) obtain opposite results. They investigate the impact of cross-border M&As on shareholder value by using a sample of Indian firms and find that abnormal returns increase for the acquirers' shareholders. Their findings support the view that firms in developing countries tend to use M&As

as a springboard to overcome their competitive disadvantages and improve their competitive advantages by acquiring strategic assets in overseas markets (Luo & Tung, 2007).

Normally, firms engaging in overseas investments would expect high returns, but also face greater risk and uncertainty. When compared with foreign firms, firms in developing countries have less competitive advantages and international experience when exploring overseas markets that could present negative results (Contractor, 2007). Bertrand and Betschinger (2012) find that international acquisitions have a negative effect on the performance of acquirers using a sample of Russian firms. They argue that the negative relation between cross-border M&As and performance is due to a lack of international M&A experience and expertise. However, Edamura et al. (2014) find offshore M&As have a positive effect on firm performance, including sales and the productivity of the acquirers, using a sample of Chinese listed firms. They argue that the reason for the increase in sales and productivity may be attributed to strategic assets. Additionally, Buckley et al. (2014) note that cross-border M&As made by firms in developing countries improve the performance of the target firms. Acquisitions can be associated with agency problems and organizational costs. Alternatively, they can also be associated with synergy, competitive advantages, and greater market power.

Apart from the studies on the effect of M&As, researchers also investigate the effect of OFDI on firm performance in emerging markets, especially in China, the largest developing economy. Existing studies of Chinese OFDI with firm-level data have

commonly examined the effect of OFDI on firm productivity. It is found that Chinese listed manufacturing firms undertaking OFDI tend to be more productive (Chen & Tang, 2014; Huang & Zhang, 2017; Li et al., 2017; Tian et al., 2016). Additionally, Cozza et al. (2015) determine that Chinese OFDI in advanced European countries improves firm sales and employment, and they argue that the transfer of technology, knowledge, and management skills between parent and overseas affiliates explains this positive effect. In addition, researchers also investigate the effect of Chinese OFDI on firm profitability or account-based performance and provide mixed results (Cozza et al., 2015; Cui & Xu, 2019; Tian et al., 2016). Cozza et al. (2015) find a negative effect of OFDI on ROA, which may be due to a lack of experience and expertise necessary to obtain value from OFDI, especially for those firms that engage in OFDI for the first time. However, Tian et al. (2016) suggest that OFDI has a positive effect on firm profitability measured by the profit to sales ratio. Cui and Xu (2019) note that OFDI can increase intangible assets growth and short-to-medium term profitability measured by net profits and ROA using data on Chinese listed firms from 2002-2009. They argue that it is because multinational firms use OFDI as a tactic to diversify the risk of resource dependence in the home country in the context of early stage of internationalization.

Researchers thus far have investigated the effect of OFDI on some performance indicators, such as productivity, profitability, and accounting-based performance. However, fewer studies examine the impact of the OFDI of Chinese listed firms on firm market-based performance. Yuan et al. (2016) explore the relation between the degree of internationalization and firm performance measured by Tobin's Q using panel data

of Chinese listed multinational corporations from 1992-2005. Their results indicate that multinational corporations' expansion from a developing country to other developing countries has a positive effect on firm performance in short-term, while expansion to developed countries has a negative effect on firm performance. However, the increased performance due to OFDI in other developing countries erodes over time, and the decreased performance in developed countries tends to improve over time due to learning effects.

Due to the problem of overcapacity, especially after the 2008 financial crisis, the economic growth of China slowed down. To compensate, China tends to support economic development by cooperating with other countries using the advantage of its production capacity and promoting international capital flow through outward foreign direct investment. In particular, in 2013, President Xi Jinping unveiled the One Belt One Road (OBOR) initiative to help keep the economy growing by cooperating internationally with China's comparative advantages, such its capacity for production and its capital advantages in the post-financial crisis era. This top-level national cooperation initiative benefits many Chinese firms by providing more contracted projects, foreign income, and international competitiveness. According to the statistics from the Ministry of Commerce, Chinese enterprises have carried out 431 foreign investment M&As involving 56 countries and regions with a total actual transaction volume of $119.62 billion including direct investments of $33.47 billion. In addition, overseas enterprises have made significant contributions to the host country in tax revenues and employment, and the win-win effect of foreign investments is obvious. In

2017, the total amount of various taxes paid by overseas enterprises to the host country reached $37.6 billion and the employed foreign staff was over 1.71 million, 367,000 more than at the end of 2016. However, there are also many Chinese firms that have suffered losses in overseas investments due to the uncertainties and risks.

Given the mixed evidence provided by the literature regarding the effect of OFDI on firm performance, this question remains open. Thus, we use data with greater sample sizes and more empirical techniques to investigate the effect of OFDI on firm performance in Chinese listed firms. Based on the mixed results of overseas investment activities conducted by Chinese enterprises, we submit the following hypothesis.

H1: Chinese listed firms' outward foreign direct investment has an impact on firm performance.

2.2.2. The mediating role of the tax rate

Since the Going Global Strategy was initiated in 1999, the Chinese government has provided various support to promote firms in conducting overseas investments, including simplifying the approval process and providing guidance, financial support, and tax benefits. Sutherland and Anderson (2015) find that China has some favorable regulations concerning enterprise income tax law for firms undertaking overseas investments by granting them lower corporate tax rates. For example, the State Taxation Administration of the People's Republic of China introduced and released several tax reduction and beneficial policies to encourage and provide support for firms to invest

overseas. In addition, the Chinese government also provides support by signing double taxation avoidance treaties with 89 nations to make sure a single corporate income tax rate is used and to avoid double taxation when Chinese firms conduct overseas investing (Luo et al., 2010).

After receiving tax reductions and benefits from OFDI, this decrease in taxes will decrease the cost of capital and increase firms' Tobin's Q. The market value of the firm should have higher expected future cash flows associated with this lower tax rate and payments, while the book value of total assets is not affected based on the measurement of Tobin's Q. Bryant-Kutcher et al. (2012) find that Tobin's Q is negatively related to foreign effective tax rates. Therefore, based on the discussion above, we propose that Chinese firms with OFDI would have relatively lower effective tax rates compared to firms without OFDI thereby increasing their Tobin's Q. Thus, we propose the following:

H2: The impact of Chinese listed firms' OFDI on firm performance will be mediated by the tax rate.

2.2.3. The mediating role of analyst coverage and recommendations

As one national strategy, the Going Global Strategy has attracted much attention from investors and analysts since it was first initiated in 1999. Both investors and analysts would like to see whether and how this national strategy would change and benefit Chinese firms by undertaking foreign investments. Although some firms start their

foreign business with government support, they face many challenges, such as the underdevelopment of China's institutions, market imperfections, and comparative disadvantages, when initially competing with other foreign firms. However, this strategy has proven to be beneficial for not only Chinese firms with OFDI, but also for China's economy after several years. An increasing number of investors and analysts all over the world began to pay attention to Chinese OFDI firms, even more so after the One Belt One Road initiative was unveiled in 2013. As a result, there are an increasing number of analysts that tend to follow and release their recommendations for such firms.

It has been documented that analyst coverage can reduce information asymmetry and improve market efficiency. The effect is stronger in emerging markets like China as emerging markets tend to have greater growth and information asymmetry (Li et al., 2019). This improvement in transparency and efficiency can help in making better investment decisions and achieving better performance. A few studies have examined the effect of analyst coverage on firm performance. Das et al. (2006) find that greater analyst coverage is positively associated with future stock performance, and they argue that investors can draw valuable and useful inferences from analysts' decisions of selectively following certain firms. In addition, firms with upgraded recommendations tend to outperform those with downgraded recommendations suggesting that the investors can benefit from analyst recommendations if they pay attention to and consider the changes in recommendations (Stickel, 1995; Womack, 1996). Jegadeesh and Kim (2006) suggest that stock prices significantly react to recommendation revisions in all G7 countries except Italy. Thus, we propose that Chinese OFDI firms

would have relatively more analyst coverage and upgraded recommendations when compared to firms without OFDI, which would increase Tobin's Q as a result based on the discussion above. As such, we have the following hypothesis:

H3: The impact of Chinese listed firms' OFDI on firm performance will be mediated by analyst coverage.

H4: The impact of Chinese listed firms' OFDI on firm performance will be mediated by upgraded analyst recommendations.

2.2.4. The moderating role of state ownership

Empirical studies indicate that Chinese OFDI is one of the main channels of political and commercial interaction to build diplomatic connections with other countries and promote future projects that could be in China's national interests (Bräutigam & Xiaoyang, 2011; Jiang, 2009). Chinese OFDI includes various economic and political dimensions that result in location patterns that do not necessarily maximize profits (Kang & Jiang, 2012; Liou, 2009; Ramasamy et al., 2012). For example, state ownership stimulates SOEs to follow and serve political goals rather than seek economic optimization (Wang, Hong, Kafouros, & Boateng, 2012; Wang, Hong, Kafouros, & Wright, 2012). In this case, SOEs tend to seek political goals as a political avatar instead of maximizing profits. In contrast, non-SOEs tend to seek profits and efficiency in order to survive (Li et al., 2017). SOEs can be utilized for economic and political goals by governments in emerging countries (Cuervo-Cazurra et al., 2014).

Economic goals can be achieved by acquiring an economic surplus and accelerating national economic development, while political goals can be achieved through social objectives including increasing the employment rate and social welfare via SOEs (Lin et al., 1998). However, economic and political goals can lead to government support and intervention for SOEs. Accordingly, governments may support SOEs with subsidies, tax benefits, and backing in poor economic circumstances, while governments may also control SOEs by influencing their decisions, strategies, and activities with complicated administrative procedures and policy pressure (Lin et al., 1998; Lioukas et al., 1993).

Governments of emerging countries may intervene in SOEs firm decisions and strategies due to weak institutional systems to achieve their political goals (Cuervo-Cazurra et al., 2014). State ownership of SOEs makes heavily dependent upon the government. This dependence could influence their decision-making and decreases their flexibility and efficiency (Bradley et al., 2011; Pearce et al., 2009). However, sufficient flexibility and efficiency helps firms explore opportunities and development in foreign markets (Liu et al., 2013). Thus, SOEs would not be capable of undertaking overseas investments in this situation (Huang et al., 2017). Due to the connection to state government, SOEs tend to be regarded as political avatars and less socially accepted when engaging in overseas investments in host countries. Therefore, investments made by SOEs would be viewed as threats to the business or even the security of the host country (Deng, 2013; Globerman & Shapiro, 2009). Li et al. (2017) find that OFDI increases productivity premiums for non-SOEs, but not for SOEs. They argue that this is because SOEs are pushed to follow and serve government political

goals with more home country institutional pressures due to government affiliations when undertaking overseas investments.

In addition, host country institutions would put more pressure on these SOEs to prevent them from resource-seeking activities due to their political status (Cui & Jiang, 2012). This result is inconsistent with the resource-based view that argues that SOEs should outperform non-SOEs in international markets with more institution-based resources (Wang, Hong, Kafouros, & Boateng, 2012; Wang, Hong, Kafouros, & Wright, 2012). Special theories are needed to be nested within general theories in explaining Chinese OFDI with state ownership and involvement as SOEs tend to invest in complex and costly projects and make risky acquisitions (Quer et al., 2012).

The different interests of the controlling owners of firms significantly affect their development (Connelly et al., 2010). Controlling owners take a dominant position and have greater influence on the strategic decisions of the firm (Douma et al., 2006; Xu & Zhang, 2008; Young et al., 2008). The type of controlling owners also plays an important role when undertaking outward foreign direct investments. For example, SOEs and non-SOEs tend to have different motives and location choices when undertaking outward foreign direct investments (Amighini et al., 2013; Ramasamy et al., 2012). SOEs tend to invest more in countries with large natural source endowments and risky political environments, while private firms tend to seek large markets and strategic assets. Chinese SOEs are less concerned about the political risks of the host countries compared to non-SOEs (Voss et al., 2010).

Additionally, based on dissimilar support from the government, SOEs and non-SOEs have different motives when undertaking overseas investments. Luo et al. (2010) find that when compared to SOEs, non-SOEs are more vulnerable to political risks, market volatility, and foreign competition without substantial policy and financial support from the government forcing them to set survival in a foreign market as a primary goal and to seek for value adding activities. They argue that the Chinese government provides support to SOEs, such as financial capital, information about foreign markets, and training for management regarding regulations. Moreover, the different incentives between managers of SOEs and non-SOEs would result in different strategies and decisions. Many SOEs tend to undertake overseas investments to follow the guidance, policy, and capital control by the government as their managers are appointed by the state directly as government officials or after serving as government officials (Brockman et al., 2013; Fan et al., 2007), while non-SOEs engage in overseas investments as their managers tend to seek profits, efficiency, and markets.

Accordingly, managers of SOEs are more likely incentivized by not only the prospect of firm performance, but also the political goals and objectives of the government (Cuervo-Cazurra & Dau, 2009) or even the possibility of political promotion, while managers of non-SOEs are incentivized by the prospect of firm development and performance when making OFDI decisions and strategies. As a result, SOEs tend to undertake outward foreign direct investments in not only their interests, but also the interests of the government. Non-SOEs tend to engage in outward foreign direct investment for profits, efficiency, and markets (Li et al., 2017). Thus, based on the

literature previously discussed, we submit the following hypothesis:

H5: The impact of Chinese listed firms' OFDI on firm performance differs between state-owned enterprises and non-state-owned enterprises.

2.3. Data and Variable Construction

2.3.1. Data

Our initial sample includes all A-share firms listed on the Shanghai and Shenzhen Stock Exchanges. We obtain firms' OFDI, financial, accounting, and ownership data from the China Stock Market & Accounting Research (CSMAR) database. The sample period is from 2003-2019. We winsorize all the continuous accounting and financial variables at the 1% and 99% levels to minimize the effect of outliers. We exclude all of the financial firms due to their special nature. Then, we merge all of the greenfield investment, financial, accounting, and ownership data for empirical analyses. Finally, our final sample includes 3,744 firms and 32,484 firm-year observations.

2.3.2 Variables construction

2.3.2.1. Firm performance

Previous studies have used two main performance measures including accounting- and market-based measures. Agyei-Boapeah (2019) suggests using two different, but related measures of financial performance: Tobin's Q and ROA. However, accounting-based measurements, such as ROA and ROS, are likely to be manipulated by firms'

management, especially in transitional economies with weak legal enforcement and information exposure like China (Delios & Wu, 2005; Ma et al., 2006). ROE is not very commonly used in existing studies to measure firm performance of Chinese listed firms as the equity structure of Chinese listed firms is complicated including tradable and non-tradable shares (Delios & Wu, 2005). Tobin's Q is a market-based and popular measurement of firm performance as numerous researchers have used it to gauge firm performance in recent studies (Bennouri et al., 2018; Daniliuc et al., 2020; Ibhagui & Olokoyo, 2018). Chen and Tan (2012) argue that this may be important for firms in a fast-developing economy, such as China. Due to the special nature of Chinese OFDI, the amount of OFDI tends to be large and would generate returns in a relatively long term. Thus, it is proper to use Tobin's Q in this study to investigate the market response to OFDI activities as in our baseline research question. We use Tobin's Q, a market-based measurement, defined as the market value of a firm divided by the total assets of the firm to proxy as a firm performance measurement in this study.

2.3.2.2. OFDI

In existing OFDI literature, researchers usually capture firm-level OFDI in different ways. For example, OFDI is measured by the amount of capital a firm invested overseas in a given year (Wang, Hong, Kafouros, & Wright, 2012), the number of foreign investment projects of a firm in a specific foreign country (Ramasamy et al., 2012), the number of a firm's newly established foreign subsidiaries in a given year (Xia et al., 2014), or a dummy variable that a firm decided to invest in foreign countries (Lu et al., 2014). We follow Lu et al. (2014) and use the dummy variable that a firm invests in

foreign countries as the measurement of OFDI for our baseline regression. Due to data availability, this dummy variable is commonly used in Chinese studies that examine the OFDI effect by providing firm-level evidence (Bu et al., 2019; Yan et al., 2018). *OFDI* is the key independent variable in this study and is equal to one if a firm engages in outward foreign direct investment in a given year and zero otherwise. Moreover, we also use the number of foreign projects (*Nproject*) a firm undertakes in each year and the number of foreign investment destination countries (*Ncountry*) a firm invests in each year for robustness checks.

2.3.2.3. Control variables

Following the literature, we include a vector of control variables correlated with firm performance. We first include financial and accounting measures (i.e., firm size, leverage ratio, percentage of fixed assets, percentage of capital expenditures, percentage of operating cash flows, and firm growth). *Firm Size* is calculated as the natural logarithm of total assets. *Leverage* is total debt to total assets. *PPE/TA* is calculated as the value of the firm's plant, property, and equipment divided by total assets. *CAPEX/TA* is the firm's capital expenditures divided by total assets. *CF/TA* is the firm's operating cash flow divided by total assets. *Firm Growth* is calculated as the firm's revenue growth. We then include corporate governance variables (i.e., board size, percentage of independent directors, firm age, and top ten shares concentration). *Ln (Board Size)* is calculated as the natural logarithm of the number of directors. *Independent Directors%* is the ratio of the number of independent directors to the total number of directors. *Ln (1+Firm Age)* is calculated as the natural logarithm of one plus

firm age. *Top 10 Shareholders* is the total percentage of the top 10 shareholders. We also include CEO characteristics variables (i.e., CEO age and CEO gender). *Ln (CEO Age)* is calculated as the natural logarithm of CEO age. *CEO Gender* is a dummy variable that takes a value of one if the CEO is male and zero otherwise. We also include the variable *Financial Constraint* to measure the firm's financial constraints by following Whited and Wu (2006).[4]

2.3.3 Regression model

We use the ordinary least squares regression to investigate whether firms' OFDI enhances or impedes firm performance as our baseline regression:

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 OFDI_{i,t-1} + \beta_2 X_{i,t-1} + \beta_3 Industry\ (Firm)\ FE_i + \beta_4 Year\ FE_t + \varepsilon_{i,t} \quad (1)$$

where $Tobin's\ Q_{i,t}$ indicates firm performance measured by the market value of a firm divided by the book value of total assets for firm *i* in year *t*. $OFDI_{i,t-1}$ is a dummy variable that takes a value of one if a firm engages in OFDI in year t-1 and zero otherwise. $X_{i,t-1}$ is a vector of control variables for firm *i* in year *t*-1. $\varepsilon_{i,t}$ refers to the error term. The key independent variable and all of the control variables are lagged for one year as firms need to get approval from the government before they can undertake OFDI. Another reason why we use one-year lagged independent and control variables is that it partially mitigates the endogeneity problems. Firm performance may

[4] Detailed variable definitions are described in the Appendix Table A1.

affect firms' decisions whether to undertake outward foreign direct investments or not in the following years. Industry and year fixed effects are included with robust standard errors clustered by firm in all regressions.

2.4. Empirical results

2.4.1. Descriptive statistics

Table 1 reports the descriptive statistics of the main variables used in this study. Tobin's Q is 2.136, on average, in line with previous Chinese studies (Cheng et al., 2018; Yuan et al., 2016). As for the control variables, firms, on average, have a firm size of 21.955, leverage of 43.2%, firm age of 2.743, 93.9% of male CEOs, and a growth rate of 6.4%. In addition, 73.1% of the firms in our sample pay cash dividends.

[*Insert Table 1 here*]

Table 2 reports the difference in the key characteristics of the OFDI and non-OFDI firms. Based on the results, there are significant differences between the two groups. Generally, the OFDI firms have higher Tobin's Q suggesting that OFDI firms, on average, have better market-based performance compared to non-OFDI firms. This result implies that the market recognizes OFDI as a performance-enhancing activity for related firms, and these firms tend to exhibit better firm performance by undertaking overseas investments to gain strategic resources and profits in foreign markets. Furthermore, OFDI firms are larger, higher leveraged, more mature, and lower financially constrained than are non-OFDI firms. In addition, OFDI firms tend to have

a lower property, plant, and equipment to total assets ratio, a lower capital expenditure to total assets ratio, smaller board sizes, more independent directors on boards, and older CEOs. These results provide preliminary evidence that there are significant differences between OFDI and non-OFDI firms after engaging in outward foreign direct investments. We further investigate whether OFDI has an impact on firm performance by a running regression analysis.[5]

[*Insert Table 2 here*]

2.4.2. Baseline regression

The results of the baseline regression are presented in Table 3. OFDI is employed as our main variable of interest here. We begin our analysis by running an ordinary least squares (OLS) regression of the Tobin's Q on OFDI and other control variables with standard errors clustered at the firm level. The results for the robustness check using *Nproject* and *Ncountry* are also provided in Table 3.

The results indicate that undertaking OFDI has a significant and positive effect on Tobin's Q in Column (1). Specifically, the coefficients on *L.OFDI* are 0.122 and are statistically significant at the 1% level. Our results regarding the positive OFDI effect on Tobin's Q indicates that OFDI can increase market-based performance. Generally, undertaking OFDI would result in a 12.2% increase in a firm's Tobin's Q. We argue that the market responds positively to firms engaging in overseas investment as OFDI sends

[5] The correlation matrix for all of the variables included is reported in Appendix Table A2.

a positive signal to the market that they are mature and capable of expanding investments in foreign markets leading to an increase in Tobin's Q. Our baseline results remain significant when replacing the independent variable *OFDI* with *Nproject* and *Ncountry* as robustness checks in Columns (2) and (3).

For the control variables, our results indicate a significant negative relation between firm size and Tobin's Q in all three columns. This indicates that small firms tend to seek value-adding projects to increase their Tobin's Q. We also find a significantly negative relation between *PPE/TA* and Tobin's Q in Columns (1), (2), and (3). According to Gulen and Ion (2016), higher *PPE/TA* represents higher adjustment costs for a firm. The significantly negative relation between *PPE/TA* and Tobin's Q in our results indicate that firms with lower adjustment costs would have higher Tobin's Q. The significantly negative relation between *CAPEX* and Tobin's Q suggests that higher capital expenditures would reduce Tobin's Q. Our results also show a significantly positive relation between firm age and Tobin's Q suggesting that mature firms are more likely to be capable of increasing Tobin's Q. The significantly positive relation between firm growth and Tobin's Q indicates that firms with better growth prospects tend to have higher Tobin's Q. However, no significant relation is found between CEO gender and Tobin's Q implying that the CEO gender has no effect on firm performance.

[*Insert Table 3 here*]

2.4.3. Endogeneity

There is a possible concern that our baseline regression results are subject to endogeneity problems. The first problem is the possibility of self-selection and reverse causality. Although our results indicate that firms undertaking outward foreign direct investments are associated with increased Tobin's Q, firms with higher Tobin's Q may be likely to undertake outward foreign direct investment in the meantime. We re-estimate the baseline regression by controlling for firm and year fixed effects to account for any time-invariant observable or unobservable firm characteristics. Next, due to a possible selection bias and reverse causality problems, we use a difference-in-differences approach combined with a propensity score matching technique to address possible endogeneity concerns in the following section. Another potential endogeneity problem is that our results are influenced by omitted variables and it is possible that there are nonabsorbable factors affecting both Tobin's Q and OFDI decisions. Thus, we use the 2SLS regression with instrumental variables to further address endogeneity problems.

2.4.3.1. Controlling for firm and year fixed effects

Table 4 provides the relation between OFDI and firm performance measured by Tobin's Q by controlling for firm and year fixed effects to account for any time-invariant observable or unobservable firm characteristics. Based on the results in Columns (1), (2), and (3), we find that undertaking OFDI still has a significant and positive effect on Tobin's Q after controlling for firm and year fixed effects. Specifically, the coefficients

on *L.OFDI* are 0.041 and are statistically significant at the 10% level in Column (1) suggesting that undertaking OFDI would result in a 4.1% increase in a firm's Tobin's Q. The results remain significant when using *Nproject* and *Ncountry* as alternative measures in Columns (2) and (3). The coefficient is 0.012 and statistically significant at the 1% level in Column (2), and it is 0.015 and statistically significant at the 5% level in Column (3).

[*Insert Table 4 here*]

2.4.3.2. PSM technique and DiD approach

Following Barba Navaretti and Castellani (2004), Debaere et al. (2010), and Fang et al. (2014), we adopt the PSM technique to build a counterfactual by constructing a treatment group that consists of firms that have OFDI and a control group of comparable firms that do not undertake OFDI. We match the observable characteristics of the treatment and control groups to deal with the concern that the treatment and control firms are fundamentally different. After matching, when compared with the treatment firms, the control firms should have the same observable characteristics, but without overseas investment. We use a Probit model to estimate the probability of undertaking OFDI as a function of firm characteristics:

$$\Pr\left(OFDI_{i,x,t} = 1 \middle| X_{i,x,t-1}\right) \quad (2)$$

where $OFDI_{i,x,t}$ is equal to one if a firm makes OFDI and zero otherwise. $X_{i,x,t-1}$ is a vector of observable lagged firm characteristics that includes all of the control

variables in Equation (1). We also control for industry and year fixed effects. Finally, we employ the propensity score matching approach with one-to-one matching to estimate the propensity of engaging in outward foreign direct investments.

Panel A in Table 5 reports the results of the Probit model estimates using all of the control variables lagged by one year and the post-match diagnostic test. The results in Column (1) indicate that the Probit model captures a good amount of variation in the variables included indicated by a pseudo R^2 of 12.1% and a p-value of the chi-square test of 0.000. We find that larger, less mature, and more leveraged firms are more likely to engage in OFDI. Then, we compute the propensity scores based on the output of the Probit model and use the propensity scores to perform a one-to-one nearest-neighbor propensity score matching. As such, each OFDI firm is matched with a firm without OFDI. Next, we conduct diagnostic tests to evaluate the results of the matching procedures following Cozza et al. (2015); Fang et al. (2014). We first re-run the Probit model using the PSM matched sample, and the results are presented in Column (2) of Panel A, Table 5. The results indicate that none of the variables are significant anymore, suggesting that there are no observable differences between the treatment and the control groups. Moreover, almost all of the coefficients on the variables in Column (2) are all smaller in absolute value than Column (1). Additionally, the pseudo R^2 decreases sharply from 12.1% in the pre-matching sample to 0.18% in the post-matching analysis (Sianesi, 2004). The p-value of the chi-square test changes from 0.000 in Column (1) to 1.0000 in Column (2). In addition, as presented in Panel B of Table 5, we estimate the propensity score distribution for both the treatment and the control groups and

examine the difference between the two groups. The results show that the differences in the propensity scores of the two groups are rather small and all are below or equal to 0.01 in absolute value. Moreover, we also construct a figure to illustrate the distribution of the propensity scores for the treatment and the control groups before (left-side graph) and after (right-side graph) PSM matching as presented in Figure 1. It demonstrates that the distribution of the propensity scores of the two groups almost overlap after the matching. As such, the diagnostic tests suggest that the PSM process removes observable differences between the treatment and the control groups.

[*Insert Table 5 & Figure 1 here*]

Before running the DiD regression, we conduct a parallel trends test (Fang et al., 2014) using the One Belt One Road initiative (OBOR) that was unveiled by President Xi Jinping in 2013 as the exogenous shock. The OBOR initiative is a top-level national strategy that promotes the economic integration of China with Asia, Europe, and Africa. It represents the commitment of the Chinese government to integrate into the world economy. The OBOR initiative is exogenous and unpredictable for firms and is not brought about by them. The changes in firm performance outcomes after the OBOR initiative should result from operations and OFDI projects instead of the OBOR initiative. At the same time, we argue that the OBOR initiative serves as a clear identification for the DiD test. For example, this initiative provides favorable benefits, such as government subsidies and tax reductions for firms with overseas investments. However, this initiative would have no impact for firms without foreign investments

Therefore, we believe it serves as a good exogenous shock to our DiD test. Because the parallel trends assumption is the most important assumption of the DiD regression, we need to satisfy the assumption to verify that our results are reliable. As such, we estimate the coefficients of the interactions of the Treat dummy and the policy dummies from 2010-2016, a seven-year window including the pre-shock period from 2010-2012 and the post-shock period from 2014-2016. The regression we use is shown as below:

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 Treat_i * Before^3 + \beta_2 Treat_i * Before^2$$
$$+\beta_3 Treat_i * Before^1 + \beta_4 Treat_i * Current + \beta_5 Treat_i * After^1$$
$$+\beta_6 Treat_i * After^2 + \beta_6 Treat_i * After^3 + \beta_6 X_{i,t}$$
$$+\beta_7 Industry\ (Firm)\ FE_i + \beta_8 Year\ FE_t + \varepsilon_{i,t} \quad (3)$$

The dependent variable is $Tobin's\ Q_{i,x,t}$. $Treat_i$ is a dummy variable that takes a value of one for treatments firms (i.e., firms engage in OFDI) and zero for the control firms. $Before^3, Before^2, Before^1, Current, After^1, After^2,\ and\ After^3$ are dummy variables take a value of one if the observation year is from 2010, 2011, 2012, 2013, 2014, 2015, and 2016, respectively and zero otherwise. The control variables remain the same as in Equation (1). $\varepsilon_{i,t}$ refers to the error term. The benchmark (i.e., omitted group) includes the firm-year observations during 2012, one year before the OBOR initiative, to avoid multicollinearity.

Column (1) of Table 6 reports the results of the parallel trends test controlling for industry and year fixed effects, while Column (2) presents the results controlling for

firm and year fixed effects. The coefficients on $Treat_i * Before^3$ and $Treat_i * Before^2$ are both statistically insignificant in Columns (1) and (2) suggesting that there are no observably different trends between the treatment and the control groups before the OBOR initiative. Thus, the parallel trends assumption is valid. The results in Column (1) indicate that treatment firms have a higher Tobin's Q in the year of the OBOR initiative (2013) and one to three years after the initiative (2014, 2015, and 2016) as compared to the control firms as the coefficient on $Treat_i * Current$, $Treat_i * After^1$, $Treat_i * After^2$, and $Treat_i * After^3$ is 0.249, 0.288, 0.354, and 0.140 respectively, and the significant level is at least the 5%. The results in Column (2) suggest that treatment firms have higher Tobin's Q in 2014 and 2015 compared to the control firms after controlling for firm and year fixed effects. Overall, the results in Table 6 indicate that the parallel trends assumption is valid for performing the DiD estimation. We can also arrive at the same conclusion that the parallel trends assumption is not violated based on Figure 2.

[*Insert Table 6 & Figure 2 here*]

We use the PSM matched sample to estimate the DiD estimator to address the time-invariant unobservable differences between the treatment and the control groups in Table 7. The DiD model is shown as below:

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 Treat_i * T_i + \beta_2 Treat_i + \beta_3 T_i + \beta_4 X_{i,t}$$

$$+\beta_5 Industry\ (Firm)\ FE_i + \beta_6 Year\ FE_t + \varepsilon_{i,t} \quad (4)$$

The dependent variable is $Tobin's\ Q_{i,t}$. As discussed, $Treat_i$ is a dummy variable that takes a value of one for the treatment firms and zero for the control firms. T_i is a dummy variable that takes a value of one if the year of the observation is from the shock and post-shock period (e.g., 2013-2016) and zero otherwise. $Treat_i * T_i$ (DiD) is the interaction of the *Treat* dummy and the shock dummy. β_1 is the DiD estimator of key interest. The control variables remain the same as in Equation (1). ε_i refers to the error term.

Table 7, Panel A reports the results of the DiD model.[6] Columns (1) and (2) present the difference in Tobin's Q between the treatment and the control groups before and after the OBOR initiative controlling for industry-year fixed effects and firm-year fixed effects, respectively. The coefficients on the DiD estimator are 0.157 in Column (1) and 0.158 in Column (2) and both are statistically significant at the 1% level suggesting that OFDI has a significant and positive impact on Tobin's Q after addressing the endogeneity concern. The result is consistent with our baseline finding in Table 3. In addition, consistent with the results in Table 3, firm size and *PPE/TA* (i.e., a proxy for adjustment costs) has a significantly negative relation with Tobin's Q, while firm age and firm growth have a significantly positive relation with Tobin's Q in Columns (1) and (2).

[*Insert Table 7 here*]

[6] We include the *Treat* dummy and shock variable when running the DiD regression, but they are omitted in the Table 7 because of potential collinearity problem.

2.4.3.3. 2SLS estimate

As previously discussed, there are potential endogeneity problems in investigating the effect of OFDI on Tobin's Q. We have discussed the possibility of self-selection and reverse causality problems and solve them by employing a DiD approach combined with a PSM technique. In this section, we use an instrumental variable 2SLS method to further mitigate potential endogeneity concerns. The first instrumental variable we use is *International school* that is measured by the natural log of one plus the number of international schools in each province where a firm is headquartered. We hand collect the data on international schools from Xinxueshuo, which is a website and dataset of the Chinese international school industry. The number of international schools varies with the local education background and the level of foreign culture acceptance. In addition, the number of foreigners living and working in each province also affects the number of international schools as the international schools were originally established to facilitate the education requirement for foreigners' children. Therefore, we expect firms that locate in provinces with more international schools are more likely to have international exposure and engage in foreign investments.

In addition, we hand collect the latitude and longitude data of international airports in China from Wikipedia. Using hand-collecting data, we calculate and use the natural log of the average distance of a firm's headquarters to two of its nearest international airports as the second instrumental variable (*DIST*). The latitude and longitude data of each firm's headquarters are obtained from the CSMAR database. We expect that a closer distance to international airports could facilitate international travel promoting

international business. Firms with a closer distance to international airports are more likely to have international exposure and undertake overseas investments as a result. The two variables, *International school* and *DIST*, are exogenous as the number of international schools and the average distance to international airports are not correlated with firm performance. Thus, they serve as appropriate instrumental variables for our 2SLS test.

Table 8 reports the 2SLS regression results. Columns (1) and (2) present the results of the first stage analysis controlling for industry and year fixed effects, as well as firm and year fixed effects, respectively. The coefficient of *International school* is significantly positive at the 1% level in Column (1) and it is significantly positive at the 5% level in Column (2). The coefficients of *DIST* are both significantly negative at the 1% level. Several diagnostic tests were conducted to examine the reliability of the instrumental variable estimates. The statistics of the underidentification test and the weak identification test indicates the strength of the instrumental variables. Moreover, the Hansen J test (i.e., the overidentification test) does not reject the null hypothesis that the instrumental variables are valid at the 10% significance level. The results of the second stage analysis are presented in Columns (3) and (4). The coefficient on OFDI is 0.308 in Column (3) and 0.334 in Column (4), and both are significant at the 1% level. Taken together, our results in Table 8 indicate that our baseline finding of the positive effect of OFDI on Tobin's Q remains significant after using the instrumental variable 2SLS estimate.

[*Insert Table 8 here*]

2.4.4. Mediating test

In this section, we identify three mediators, the effective tax rate, analyst coverage, and analyst recommendations, to examine the mediating effect through which OFDI affects Tobin's Q by using a two-step regression approach (Y. Chen et al., 2018; Kim et al., 2014). In the first-step regression, we examine the relation between OFDI and each mediator, respectively, and then examine the relationship between the mediators and Tobin's Q in the second-step analysis. If OFDI has a positive effect on Tobin's Q by reducing the effective tax rate, we expect a negative relationship in both the first- and second-step regressions. If OFDI has a positive effect on Tobin's Q by increasing analyst coverage and upgrading analyst recommendations, we expect a positive relationship in both steps for both mediators.

After the Going Global Strategy, the Chinese government has provided various support to promote firms to undertake overseas investment. For example, the State Taxation Administration of the People's Republic of China introduced and released several tax reduction and beneficial policies to encourage and provide support for firms to invest overseas. The tax benefits, as one of the most obvious support from the government, have a favorable impact on firms with overseas investment by granting lower corporate tax rates (Sutherland & Anderson, 2015). Therefore, firms with overseas investment tend to enjoy more tax benefits. So, we use effective tax rate (*Tax*) as the first mediator. At the same time, as one of the strategic decisions, OFDI announcements may attract

public attention and increase a firm's visibility. As a result, firms with OFDI tend to attract more analysts to follow and give recommendations accordingly. Thus, we use analyst coverage (*AC*), measured by the natural logarithm of the number of analysts following a firm in a year, as the second mediator and analyst recommendations (*AR*), measured by the natural logarithm of the number of upgraded recommendations in a year, as the third mediator.

The results of the mediating test are presented in Table 9. Panel A reports the results of the first-step regression of the mediating test. The coefficient on *OFDI* from Column (1) is -0.021 and is statistically significant at the 5% level suggesting that firms undertaking OFDI are more likely to receive beneficial tax rates. The coefficients on analyst coverage and analyst recommendation in Columns (2) and (3) are 0.114 and 0.215, respectively, and both are significant at the 1% level indicating that OFDI attracts more attention from analysts and receives more upgraded analyst recommendations. Panel B reports the results of the second-step regression. As shown in Columns (1)-(3), the coefficients on tax rate, analyst coverage, and analyst recommendations are -0.139, 0.148, and 0.156, respectively, and all are significant at the 1% level. The results indicate a significantly negative relationship between the effective tax rate and Tobin's Q and a significantly positive relation between analyst coverage/analyst recommendations and Tobin's Q. Combined together, the above findings support our expectations that OFDI increases Tobin's Q through reduced effective tax rates and increased analyst coverage, as well as upgraded analyst recommendations.

[*Insert Table 9 here*]

2.4.5. Why does state ownership matter?

In this section, we explore the moderating effect of state ownership by re-estimating the tests discussed above to show the differential effects on firm performance for non-SOEs vs. SOEs. We separate our full sample into SOEs and non-SOEs subsamples to investigate whether state ownership reshapes the relationship between OFDI and Tobin's Q. We expect the relationship is stronger in privately owned firms as the political objectives associated with state ownership may weaken the OFDI effect. As discussed, the political connection between SOEs and the government makes political interference much more pronounced in SOEs compared to privately owned firms. As the controlling shareholders of Chinese SOEs, the government agencies need to accomplish social and political objectives by utilizing listed firms' resources to strengthen their political capital (Li et al., 2017). According to Dunning (1998), there are four types of motivations regarding OFDI decisions: international production resource seeking, market seeking, efficiency seeking, and strategic assets seeking. We expect that SOEs and non-SOEs have different goals and objectives when undertaking outward foreign direct investments. Non-SOEs are more likely to seek value-adding projects to increase firm performance. Alternatively, SOEs' OFDI decisions can primarily be driven by political goals. As a result, we expect that the effect of OFDI on Tobin's Q is stronger in non-SOEs than in SOEs.

Table 10 presents the OFDI effect on firm performance in non-SOEs and SOEs (i.e.,

Columns (1) and (2), respectively). The coefficient on OFDI in Column (1) is 0.158 and is significant at the 1% level, while the coefficient on OFDI in the SOEs subsample is insignificant in Column (2) in line with our expectations. The results suggest that the positive effect of OFDI on Tobin's Q exists only in non-SOEs and is consistent with the argument that SOEs pursue political goals rather than seek economic or profit maximization (Kang & Jiang, 2012; Liou, 2009; Luo et al., 2010; Ramasamy et al., 2012; Wang, Hong, Kafouros, & Boateng, 2012; Wang, Hong, Kafouros, & Wright, 2012). This result also implies that the market recognizes those OFDIs driven by political objectives that can potentially weaken the OFDI economic benefits.

The effects of the control variables are also different for non-SOEs and SOEs. There is a significantly negative relation between *CAPEX/TA* and Tobin's Q for non-SOEs, but an insignificantly positive relation for SOEs as SOE's are more likely to receive government subsidies (Lin et al., 1998; Lioukas et al., 1993). In addition, our results show a significantly positive relation between board independence and Tobin's Q for non-SOEs. This, on the other hand, is insignificant for SOEs counterpart. It suggests that the presence of independent directors in non-SOEs are more likely to improve the quality of corporate governance according to agency theory and lead to an increase in Tobin's Q as a result (Li et al., 2015). According to the agency theory, independent directors may improve firm performance by reducing agency costs. However, contradictory to agency theory, stewardship theory suggests that greater managerial trust and power are more likely to be associated with better performance due to the information and knowledge advantage of management (Donaldson & Davis, 1991;

Kallamu, 2016). Thus, independent directors may reduce a board's efficiency and impair firm performance based on the stewardship theory (Koerniadi & Tourani-Rad, 2012; Wang et al., 2006). For non-SOEs, independent directors may improve the quality of governance and increase Tobin's Q due to their reputational concerns. In contrast, independent directors are likely to be truly independent in SOEs where profit maximization may not always be the primary goal (Kang & Jiang, 2012; Liou, 2009; Ramasamy et al., 2012).

[*Insert Table 10 here*]

Table 11 reports the results of the DiD regression in non-SOEs vs. SOEs. Column (1) provides the DiD regression in non-SOEs and the coefficient on the DiD estimator is 0.164 and statistically significant at the 5% level. Column (2) presents the DiD regression in SOEs with the coefficient on the DiD estimator becoming insignificant. Consistent with Table 10, the results indicate that the positive effect of OFDI on Tobin's Q only exists in non-SOEs. The result is in line with our expectations that SOEs are more likely to be politically driven when undertaking OFDI.

[*Insert Table 11 here*]

Next, we rerun the two-step regression of the mediating tests by using non-SOEs vs. SOEs subsamples, respectively. Wu et al. (2012) investigate the differential effect of political connections on firm performance in Chinese listed firms from 1999-2017. They find that politically connected managers of privately owned firms can help their

firms to obtain tax benefits. At the same time, while these managers do not influence taxation in SOEs significantly. Besides, SOEs are less likely to pursue private benefits and engage in tax reduction activities because taxes are actually dividends rather than costs to their controlling shareholders (Bradshaw et al., 2019; Ouyang et al., 2020). Therefore, we expect non-SOEs to benefit more from the tax reductions when undertaking OFDI than SOEs' OFDI. For the analyst coverage and recommendations, we also expect non-SOEs to have a significant increase in analyst coverage and upgraded recommendations when undertaking overseas investments, while SOEs would have an insignificant increase. Investors and analysts generally think SOEs tend to behave in the interests of the government as government agents, while the non-SOEs tend to seek value-adding activities and profit maximization. Investors and analysts also believe that the non-SOEs that decide to conduct foreign investments are mature and capable of expanding their investments in foreign markets.

The results in Columns (1) and (2) in Panel A of Table 12 report that there is a negative relationship between OFDI and the tax rate in non-SOEs. However, such relationship becomes insignificant in SOEs. The results indicate that the tax benefit effect is more pronounced in non-SOEs than in SOEs consistent with the findings in Wu et al. (2012), Bradshaw et al. (2019), and Ouyang et al. (2020). As shown in Columns (3) and (4) in Panel A, there is a positive relationship between OFDI and analyst coverage in non-SOEs, while an insignificant relation in SOEs. Similar with analyst coverage, we find a significantly positive relationship between OFDI and upgraded analyst recommendations in non-SOEs, while the relationship becomes insignificant in SOEs,

as shown in Columns (5) and (6). The results are consistent with our expectations. Viewed collectively, our first-step mediating test suggests that the favorable effects of OFDI on tax benefits, analyst coverage, and upgraded analyst recommendations only exists for non-SOEs.

Panel B of Table 12 reports the results of the second-step regression of non-SOEs vs. SOEs. The coefficients of the tax rate are -0.149 for non-SOEs in Column (1) and -0.134 for SOEs in Column (2), and both are significant at the 1% level. As presented in Columns (3)-(6) in Panel A, the coefficients on the analyst coverage and upgraded analyst recommendation variables are 0.162, 0.120, 0.176, and 0.108, respectively, and all are significantly positive at the 1% level. Overall, our second-step mediating analysis finds supporting evidence that reduced tax rates, increased analyst coverage, and upgraded analyst recommendations help improve firms' Tobin's Q among both non-SOEs and SOEs, but with stronger effect among non-SOEs. Combined the results from Panel A and Panel B of Table 12 together, our findings show that the three mediators through which the positive effect of OFDI on Tobin's Q only exist in non-SOEs due to different potential driving factors of undertaking overseas investment.

[*Insert Table 12 here*]

2.4.6. Additional tests on differential effects of ownership

In this section, we explore the possible explanations as to why outward foreign direct investments have differential effects on firm performance for non-SOEs vs. SOEs.

According to Ramasamy et al. (2012), determinants of outward foreign direct investments differ across different types of ownership. They also find that the destination choice of the host countries differs across different ownership. Inspired by Ramasamy et al. (2012), we separate the host countries of OFDI into different categories to investigate the differential effect of OFDI on firm performance due to state ownership.

We categorize the host countries by continents where firms' investments are located as the first classification. As a result, the destinations of investments are categorized into Asia, Europe, Africa, Oceania, North America, and South America. Next, we separate the host countries into developed and developing economies as the second classification. Finally, according to the OBOR initiative, host countries are classified into Belt Road countries (BRC) and non-Belt Road countries (NBRC). Since the OBOR initiative is a national level strategic initiative, we use it to investigate whether political interference matters on the impact of OFDI on firm performance. Based on the literature previously discussed (Cuervo-Cazurra et al., 2014; Li et al., 2017; Lin et al., 1998; Lioukas et al., 1993; Wang, Hong, Kafouros, & Boateng, 2012; Wang, Hong, Kafouros, & Wright, 2012), we expect non-SOEs to be more likely to invest in developed economies to obtain value-adding incentives, while SOEs are more likely to invest in relatively less developed economies to pursue political objectives. In addition, when compared to non-SOEs, SOEs are expected to invest in Belt Road countries due to political objectives associated with state ownership.

2.4.6.1. Univariate analysis

We first use a univariate analysis to investigate the relation between ownership and OFDI destination choice. The results are presented in Table 13. Panel A reports the number and percentage of firms engaging in OFDI or not based on state ownership. The results show that 37.04% of firms undertake OFDI, further separated as 42.06% of non-SOEs and 28.77% SOEs. The results indicate that non-SOEs firms are more likely to engage in OFDI to improve growth and development in overseas markets. The results of continent choices are presented in Panel B. It reports that non-SOEs invest in relatively more developed continents, including Europe and North America, as the percentages of non-SOEs investing in those continents are larger than that of SOEs. In contrast, SOEs tend to invest in relatively less developed continents including Asia, Africa, Oceania, and South America as the percentages of OFDI in these continents are higher for SOEs.

Panel C presents the results by separating the host countries into developing and developed countries. The results indicate that 88.03% of non-SOEs and 84.54% of SOEs invest in developing countries, respectively, suggesting that state ownership matters when choosing destinations. The results of the Belt Road countries are reported in Panel D. The results indicate that 18.99% of SOEs undertake outward foreign direct investments in Belt Road countries, while 13.50% of non-SOEs invest in these countries. SOEs are more likely invest in Belt Road countries than non-SOEs. Our findings support the notion that state ownership may stimulate SOEs to follow and pursue political goals instead of seeking for economic optimization (Wang, Hong,

Kafouros, & Boateng, 2012; Wang, Hong, Kafouros, & Wright, 2012).

In Panel E, we employ a t-test to investigate the difference in Tobin's Q based on different dimensions discussed in Panels A-Panel D. We find the Tobin's Q of non-SOEs is significantly higher than that of SOEs as the mean difference (i.e., Non-SOE minus SOE) is 0.458 and statistically significant at the 1% level. In addition, the Tobin's Q of firms investing in developing countries is significantly lower than that in developed countries with the mean differences negative and statistically significant at the 1% level. Finally, the Tobin's Q of firms investing in non-Belt Road countries is significantly higher than that in Belt Road countries with the mean differences positive and statistically significant at the 1% level.

[*Insert Table 13*]

To summarize, the univariate analysis in Table 13 suggests that non-SOEs are more likely to invest in developed countries and non-Belt Road countries, while the Tobin's Q of firms investing in developed countries and non-Belt Road countries is higher than their counterparts.

2.4.6.2. Regression analysis

We use a two-step regression approach following Kim et al. (2014) and Y. Chen et al. (2018) to further examine the relation between ownership and destination choice, and the effect of destination choice on Tobin's Q. In the first step regression, we explore the relation between state ownership and destination choice and then examine the relation

between destination choice and Tobin's Q in the second step of the regression. The variables *SOE*, *DVLP*, and *BRC* are used as proxy for ownership, developing/developed countries, and Belt Road countries/non-Belt Road countries, respectively. Specifically, *SOE* is a dummy variable that takes a value of one if the firm is a state-owned enterprise and zero otherwise. *DVLP* is a dummy variable that takes a value of one if the host country is a developed country and zero otherwise. *BRC* is a dummy variable that takes a value of one if the destination is classified as a Belt Road country and zero otherwise. We expect a negative relation between *SOE* and *DVLP* and a positive relation between *SOE* and *BRC* in the first step of the regression. In the second step of regression, we expect a positive relation between *DVLP* and Tobin's Q and a negative relation between *BRC* and Tobin's Q.

[*Insert Table 14*]

Table 14 reports the results of the two-step regression approach. As shown in Panel A, the coefficient on *SOE* from Column (1) is -0.024, the coefficient on SOE from Column (2) is 0.052, and both are statistically significant at the 1% level suggesting that SOEs are more likely to invest in developing countries and Belt Road countries compared to non-SOEs. The results in Panel B indicate that *DVLP* is significantly and positively associated with Tobin's Q at the 1% level, while *BRC* is significantly and negatively associated with Tobin's Q at the 5% level suggesting that firms investing in developing countries or Belt Road countries tend to have lower Tobin's Q. These results are consistent with the results in Table 13 and support our expectation that non-SOEs are

more likely to invest in developed countries and non-Belt Road countries, which results in higher Tobin's Q.

2.4.6.3. DDD approach

In addition, we use a difference-in-difference-in-differences (DDD) approach by extending Equation (4) to examine whether and how political interference, such as the One Belt One Road initiative, affects the impact of OFDI on Tobin's Q as an additional test.

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 Treat_i * T_i * BRC_i + \beta_2 Treat_i * T_i + \beta_3 Treat_i * BRC_i$$

$$+ \beta_4 T_i * BRC_i + \beta_5 X_{i,,t} + \varepsilon_i \quad (5)$$

As discussed in Section 4.2.1, $Treat_i$ is a dummy variable that takes a value of one for treatment firms and zero for control firms. T_i is a dummy variable that takes a value of one if a firm-year observation is from 2013 and afterward. $Treat_i * T_i * BRC_i$ (DDD) is the interaction of treatment, OBOR policy, and *BRC*. The control variables remain the same as in Equation (1).

Table 15 presents the results of the DDD regression.[7] Column (1) reports the results controlling for industry and year fixed effects, while the results controlling for firm and year fixed effects are presented in Column (2). As shown in Column (1), the coefficient on DDD is -0.198 and is statistically significant at the 5% level, while the coefficient

[7] The treats variable ($Treat_i * BRC_i$) and times variable ($T_i * BRC_i$) are included when running the DDD regression, but are omitted in the Table 15 due to potential collinearity issues.

on DDD is -0.267 and is statistically significant at the 1% level in Column (2) indicating that the positive effect of OFDI on Tobin's Q is lower for firms investing in Belt Road countries than in non-Belt Road countries. This result implies that firms investing in Belt Road countries due to the OBOR initiative could be driven by political objectives consistent with (Kang & Jiang, 2012; Liou, 2009; Ramasamy et al., 2012). This result is also consistent with Buckley et al. (2007) in that Chinese OFDI are associated with high levels of political risk in host countries. Overall, the findings indicate that political factors play an important role in OFDI performance by influencing firms' decisions regarding investment destinations. Additionally, this result suggests that the market will not respond positively if OFDI is recognized as politically driven.

[*Insert Table 15*]

2.5. Conclusion

This essay investigates the impact of outward foreign direct investments on firm performance. We find that undertaking greenfield outward foreign direct investments has a positive effect on Tobin's Q, in general. In addition, we use several tests to mitigate the potential endogeneity problems including a DiD approach combined with a PSM technique and a 2SLS regression with instrumental variables. The results remain significant after considering endogeneity problems that support our findings in the baseline regression.

Further analyses demonstrate that our results are more pronounced in non-SOEs than

SOEs. We explore the possible explanations as to why the impact of OFDI on firm performance is differential in non-SOEs and SOEs. Our empirical results indicate that SOEs are more likely to invest in developing countries, as well as Belt Road countries, explaining the lower level of Tobin's Q of SOEs engaging in OFDI and vice versa. The DDD regression, as an additional test, also provides consistent results that the positive effect of OFDI on Tobin's Q is weaker for firms investing in Belt Road countries than in non-Belt Road countries. This finding suggests that the stock market does not respond positively if the outward foreign direct investment is recognized as politically interfered.

We identify three possible mediators, the effective tax rate, analyst coverage, and analyst recommendations, respectively, to explain the mediating effect through which OFDI improves Tobin's Q. We provide direct evidence that OFDI has a positive effect on Tobin's Q by lowering firm effective tax rates, increasing analyst coverage, and increasing upgraded analyst recommendations. Our results suggest that OFDI helps firms receive beneficial tax rates, increased analyst coverage, and upgraded analyst recommendations attracting more public attention and increasing a firm's visibility. Further analyses suggest that the positive effect of OFDI on Tobin's Q through tax rates, analyst coverage, and upgraded analyst recommendations only exists in non-SOEs.

Table 1 Descriptive Statistics

This table provides the descriptive statistics of the main variables used in this study. The full sample is comprised of 32,484 firm-year observations. The definitions of all of the variables are presented in the Appendix Table A1.

Variable	Obs.	Mean	S.D.	Max	Min	P25	P50	P75
Tobin's Q	32,484	2.136	1.446	10.482	0.925	1.280	1.663	2.415
OFDI	32,484	0.391	0.488	1.000	0.000	0.000	0.000	1.000
Firm Size	32,484	21.955	1.282	25.846	19.061	21.027	21.785	22.682
Leverage	32,484	0.432	0.209	1.256	0.052	0.267	0.428	0.587
PPE/TA	32,484	0.228	0.170	0.738	0.002	0.095	0.193	0.326
CAPEX/TA	32,484	0.054	0.052	0.250	0.000	0.016	0.039	0.076
CF/TA	32,484	0.048	0.074	0.261	-0.205	0.008	0.047	0.090
Cash Dividend	32,484	0.731	0.444	1.000	0.000	0.000	1.000	1.000
Ln (Board Size)	32,484	2.155	0.205	2.996	1.099	2.079	2.197	2.197
%Independent Directors	32,484	0.370	0.054	0.800	0.083	0.333	0.333	0.400
Ln (1+Firm Age)	32,484	2.743	0.407	4.139	0.263	2.515	2.802	3.034
Financial Constraint	32,484	-1.064	0.072	-0.880	-1.249	-1.110	-1.065	-1.017
Ln (CEO Age)	32,484	3.875	0.141	4.500	3.178	3.784	3.892	3.970
CEO Gender	32,484	0.939	0.240	1.000	0.000	1.000	1.000	1.000
Top 10 Shareholders	32,484	57.988	16.383	91.190	9.090	47.240	59.680	70.480
Firm Growth	32,484	0.064	0.094	0.448	-0.839	0.023	0.054	0.094

Table 2 The t-test of Key Characteristics

This table provides the t-test results of key characteristics of OFDI firms and non-OFDI firms. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	OFDI	Obs.	Non-OFDI	Obs.	MeanDiff
Tobin's Q	2.167	13,710	2.113	18,774	-0.053***
Firm Size	22.400	13,710	21.630	18,774	-0.767***
Leverage	0.442	13,710	0.424	18,774	-0.018***
PPE/TA	0.198	13,710	0.250	18,774	0.052***
CAPEX/TA	0.051	13,710	0.057	18,774	0.005***
CF/TA	0.048	13,710	0.047	18,774	-0.001
Cash Dividend	0.783	13,710	0.693	18,774	-0.090***
Ln (Board Size)	2.141	13,710	2.166	18,774	0.025***
%Independent Directors	0.376	13,710	0.365	18,774	-0.011***
Ln (1+Firm Age)	2.814	13,710	2.692	18,774	-0.123***
Financial Constraint	-1.091	13,710	-1.045	18,774	0.046***
Ln (CEO Age)	3.885	13,710	3.867	18,774	-0.018***
CEO Gender	0.937	13,710	0.940	18,774	0.003
Top 10 Shareholders	58.240	13,710	57.800	18,774	-0.436**
Firm Growth	0.064	13,710	0.064	18,774	-0.001

Table 3 OFDI Effect on Firm Performance

This table provides the OLS results of Equation (1). It investigates the relation between undertaking overseas investments and firm performance using the full sample controlling for industry and year fixed effects with robust standard errors clustered by firm. The key independent variable and all of the control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	(1) TobinQ	(2) TobinQ	(3) TobinQ
L.OFDI	0.122***		
	(4.45)		
L.Nproject		0.021***	
		(3.12)	
L.Ncountry			0.054***
			(5.45)
L.Firm Size	-0.762***	-0.797***	-0.800***
	(-12.81)	(-12.71)	(-12.75)
L.Leverage	0.059	0.142	0.138
	(0.46)	(1.05)	(1.03)
L.PPE/TA	-0.734***	-0.748***	-0.739***
	(-7.23)	(-7.07)	(-7.01)
L.CAPEX/TA	-0.540***	-0.558**	-0.551**
	(-2.63)	(-2.56)	(-2.54)
L.CF/TA	1.487***	1.563***	1.551***
	(7.35)	(7.39)	(7.34)
L.Cash Dividend	-0.645***	-0.657***	-0.652***
	(-8.81)	(-8.56)	(-8.49)
L.Ln (Board Size)	-0.057	-0.061	-0.051
	(-0.77)	(-0.77)	(-0.65)
L.Independent Directors%	0.748***	0.802***	0.807***
	(3.13)	(3.15)	(3.17)
L. Ln (1+Firm Age)	0.163***	0.177***	0.178***
	(4.32)	(4.47)	(4.51)
L. Financial Constraint	-6.925***	-7.049***	-6.941***
	(-6.21)	(-5.99)	(-5.90)
L.Ln (CEO Age)	0.182*	0.187*	0.193**
	(1.94)	(1.94)	(2.01)
L.CEO Gender	-0.030	-0.008	-0.006
	(-0.61)	(-0.16)	(-0.11)
L.Top 10 Shareholders	-0.004***	-0.004***	-0.004***
	(-4.57)	(-5.06)	(-4.98)
L.Firm Growth	0.377**	0.296*	0.303*
	(2.23)	(1.67)	(1.72)
Constant	10.063***	10.581***	10.680***
	(20.00)	(19.56)	(19.70)
Observations	29,344	26,424	26,424
R-squared	0.379	0.386	0.387
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

Table 4 Firm and Year Fixed Effects

This table provides the OLS results of Equation (1). It investigates the relation between undertaking overseas investments and firm performance by using the full sample controlling for firm and year fixed effects. The key independent variable and all of the control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	(1) TobinQ	(2) TobinQ	(3) TobinQ
L.OFDI	0.041*		
	(1.87)		
L.Nproject		0.012***	
		(2.97)	
L.Ncountry			0.015**
			(2.00)
L.Firm Size	-0.831***	-0.836***	-0.834***
	(-34.76)	(-32.39)	(-32.32)
L.Leverage	0.546***	0.530***	0.532***
	(9.72)	(8.81)	(8.84)
L.PPE/TA	-0.476***	-0.438***	-0.438***
	(-6.64)	(-5.76)	(-5.76)
L.CAPEX/TA	-0.355**	-0.347**	-0.344**
	(-2.39)	(-2.21)	(-2.20)
L.CF/TA	0.542***	0.582***	0.584***
	(5.07)	(5.10)	(5.12)
L.Cash Dividend	-0.187***	-0.212***	-0.211***
	(-5.44)	(-5.71)	(-5.69)
L.Ln (Board Size)	-0.152**	-0.109*	-0.104
	(-2.56)	(-1.70)	(-1.62)
L.Independent Directors%	0.349*	0.394**	0.404**
	(1.95)	(2.04)	(2.10)
L. Ln (1+Firm Age)	0.707***	0.738***	0.736***
	(10.17)	(9.67)	(9.65)
L. Financial Constraint	-3.289***	-3.496***	-3.488***
	(-7.04)	(-6.90)	(-6.88)
L.Ln (CEO Age)	0.221***	0.163**	0.166**
	(3.60)	(2.49)	(2.54)
L.CEO Gender	-0.042	-0.046	-0.046
	(-1.10)	(-1.13)	(-1.13)
L.Top 10 Shareholders	-0.002***	-0.002***	-0.002***
	(-4.18)	(-3.76)	(-3.75)
L.Firm Growth	0.428***	0.396***	0.398***
	(5.85)	(5.09)	(5.10)
Constant	13.537***	13.440***	13.386***
	(33.78)	(31.34)	(31.21)
Observations	29,344	26,424	26,424
R-squared	0.636	0.650	0.650
Firm FE	YES	YES	YES
Year FE	YES	YES	YES

Table 5 Probit Model

This table reports the Probit model results from Equation (2). It estimates the probability of undertaking OFDI as a function of the firm characteristics. The results indicate which firm characteristics are more likely to influence overseas investments. The key independent variable and all of the control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Pre-match Propensity Score Regression and Post-match Diagnostic Regression		
	(1)	(2)
Variables	Pre-match	Post-match
L.Firm Size	0.269***	-0.008
	(8.37)	(-0.24)
L.Leverage	0.174***	0.059
	(3.49)	(1.05)
L.PPE/TA	-1.235***	-0.069
	(-19.20)	(-0.94)
L.CAPEX/TA	1.241***	0.236
	(7.22)	(1.18)
L.CF/TA	0.360***	0.082
	(2.63)	(0.54)
L.Cash Dividend	0.029	0.038
	(0.59)	(0.75)
L.Ln (Board Size)	-0.129***	-0.002
	(-2.69)	(-0.03)
L.Independent Directors%	0.553***	-0.174
	(3.24)	(-0.83)
L. Ln (1+Firm Age)	-0.073***	0.025
	(-2.96)	(0.79)
L. Financial Constraint	-1.046	0.334
	(-1.46)	(0.46)
L.Ln (CEO Age)	-0.477***	0.002
	(-8.17)	(0.03)
L.CEO Gender	-0.033	0.032
	(-0.99)	(0.79)
L.Top 10 Shareholders	0.003***	0.000
	(5.02)	(0.68)
L.Firm Growth	0.076	-0.013
	(0.82)	(-0.13)
Constant	-5.267***	0.545
	(-16.93)	(1.41)
Observations	30,029	18,457
Industry FE	YES	YES
Prob > Chi2	0.000	1.000
Pseudo R-squared	0.121	0.002
Panel B: Estimated Propensity Score Distribution		

P-Score	Obs	Min	p5	Mean	p50	SD	p95	Max
Treatment	9,333	0.040	0.290	0.580	0.592	0.161	0.821	0.994
Control	9,126	0.046	0.296	0.579	0.587	0.155	0.813	0.984
Difference		-0.006	-0.006	0.001	0.005	0.006	0.008	0.010

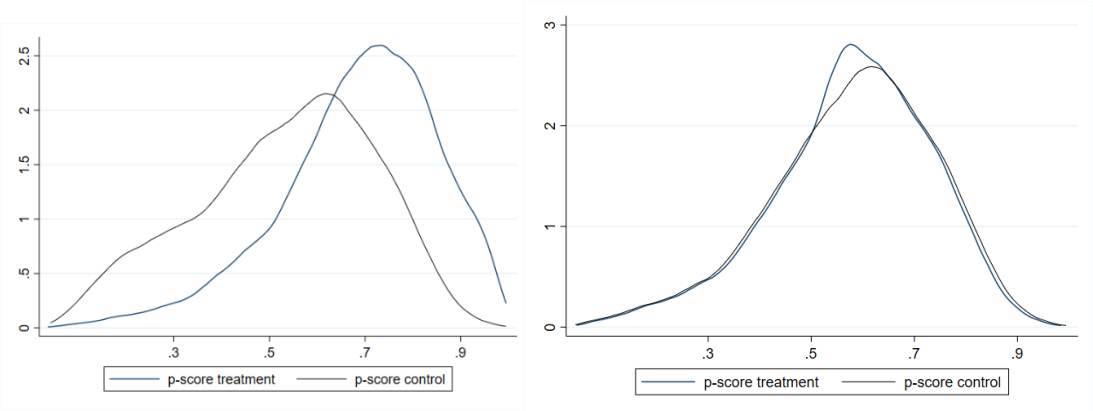

Figure 1. Distribution of the propensity score of the treatment and control groups before (left graph) and after (right graph) matching.

Table 6 Parallel Trends

This table reports the results of the parallel trends assumption test controlling for multiple fixed effects using the One Belt One Road initiative (OBOR) unveiled in 2013 as the exogenous shock. The key independent variable and all of the control variables are lagged for one year. $Treat_i$ is a dummy variable that is equal to one for treatment firms (firms engaged in OFDI) and zero for the control firms. $Before^3, Before^2, Before^1, Current, After^1, After^2,$ and $After^3$ are dummy variables that are equal to one if the year of the observation is from 2010, 2011, 2012, 2013, 2014, 2015, and 2016, respectively, and zero otherwise. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variables	Tobin's Q	Tobin's Q
$Treat_i * Before^3$	-0.086	-0.054
	(-1.03)	(-0.71)
$Treat_i * Before^2$	0.108	0.046
	(1.45)	(0.66)
$Treat_i * Current$	0.249***	0.073
	(3.52)	(1.11)
$Treat_i * After^1$	0.288***	0.123*
	(4.02)	(1.85)
$Treat_i * After^2$	0.354***	0.228***
	(4.89)	(3.39)
$Treat_i * After^3$	0.140**	0.050
	(2.11)	(0.80)
Firm Size	-0.668***	-0.810***
	(-16.29)	(-20.85)
Leverage	-0.201***	0.408***
	(-3.17)	(4.54)
PPE/TA	-0.770***	-0.616***
	(-10.05)	(-5.79)
CAPEX/TA	-0.545***	-0.136
	(-2.63)	(-0.62)
CF/TA	1.609***	0.851***
	(9.55)	(5.32)
Cash Dividend	-0.489***	-0.145***
	(-7.90)	(-2.71)
Ln (Board Size)	-0.035	0.068
	(-0.59)	(0.75)
Independent Directors%	0.481**	0.258
	(2.25)	(0.94)
Ln (1+Firm Age)	0.257***	0.782***
	(7.53)	(5.86)
Financial Constraint	-4.676***	-2.246***
	(-5.11)	(-3.00)
Ln (CEO Age)	0.065	0.003

	(0.93)	(0.04)
CEO Gender	-0.018	0.096*
	(-0.46)	(1.71)
Top 10 Shareholders	-0.002***	-0.003***
	(-3.84)	(-2.92)
Firm Growth	1.608***	1.438***
	(12.98)	(12.07)
Constant	10.486***	14.105***
	(27.40)	(21.69)
Observations	13,902	13,902
R-squared	0.407	0.690
Industry FE	YES	NO
Firm FE	NO	YES
Year FE	YES	YES

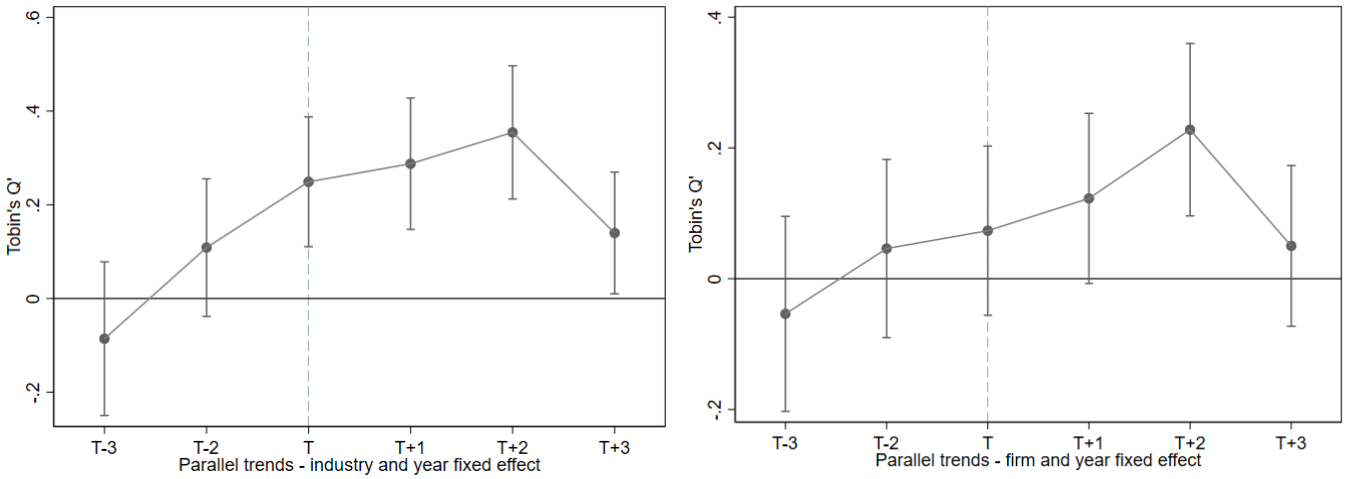

Figure 2 Parallel trends controlling for industry and year fixed effects (left graph), as well as firm and year fixed effects (right graph).

Table 7 DiD Estimate

This table presents the DiD estimators to examine the impact of OFDI on Tobin's Q employing the One Belt One Road initiative in 2013 as the exogenous shock. $Treat_i$ is a dummy variable equal to one for treatment firms (firms engaged in OFDI) and zero for the control firms. T_i is a dummy variable that equals one if the year of the observation is from 2013-2016 and zero otherwise. It reports the full sample DiD test results controlling for multiple fixed effects. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variables	Tobin's Q	Tobin's Q
$Treat_i * T_i$ (DiD)	0.157***	0.158***
	(3.04)	(4.04)
Firm Size	-0.667***	-0.815***
	(-8.36)	(-20.98)
Leverage	-0.201	0.411***
	(-1.54)	(4.57)
PPE/TA	-0.780***	-0.625***
	(-6.84)	(-5.88)
CAPEX/TA	-0.536**	-0.143
	(-2.24)	(-0.65)
CF/TA	1.609***	0.848***
	(6.07)	(5.31)
Cash Dividend	-0.485***	-0.143***
	(-4.43)	(-2.69)
Ln (Board Size)	-0.035	0.070
	(-0.37)	(0.78)
Independent Directors%	0.482	0.273
	(1.47)	(0.99)
Ln (1+Firm Age)	0.260***	0.804***
	(4.80)	(6.01)
Financial Constraint	-4.642***	-2.280***
	(-2.79)	(-3.05)
Ln (CEO Age)	0.062	0.008
	(0.55)	(0.09)
CEO Gender	-0.015	0.094*
	(-0.22)	(1.68)
Top 10 Shareholders	-0.002**	-0.003***
	(-2.32)	(-2.88)
Firm Growth	1.610***	1.428***
	(7.71)	(12.00)
Constant	10.499***	14.117***
	(14.46)	(21.73)
Observations	13,902	13,902
R-squared	0.406	0.690
Industry FE	YES	NO
Firm FE	NO	YES
Year FE	YES	YES

Table 8 2SLS Test

This table provides the results of the 2SLS regression with instrumental variables controlling for multiple fixed effects. *International school* is measured by the number of international schools in each province where a firm is headquartered. *DIST* is calculated by averaging the distance of a firm's headquarters to two of its nearest international airports. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% , respectively.

	First stage of 2SLS test		Second stage of 2SLS test	
	(1)	(2)	(3)	(4)
VARIABLES	OFDI	OFDI	Tobin's Q	Tobin's Q
International school	0.051***	0.024**		
	(16.96)	(2.48)		
DIST	-0.061***	-0.058***		
	(-12.62)	(-5.41)		
OFDI			0.308***	0.334***
			(3.59)	(4.04)
Firm Size	0.098***	0.099***	-0.822***	-0.126***
	(10.65)	(12.66)	(-14.82)	(-13.03)
Leverage	0.047***	0.028	0.206***	0.071***
	(3.03)	(1.60)	(2.80)	(6.88)
PPE/TA	-0.185***	0.029	-0.745***	-0.077***
	(-10.03)	(1.31)	(-11.60)	(-6.61)
CAPEX/TA	0.213***	-0.047	-0.112	0.068***
	(4.20)	(-1.10)	(-0.77)	(3.25)
CF/TA	0.119***	0.037	1.205***	0.043**
	(2.88)	(1.10)	(6.95)	(2.44)
Cash Dividend	-0.027*	-0.044***	-0.746***	-0.007
	(-1.88)	(-3.97)	(-9.90)	(-1.08)
Ln (Board Size)	-0.020	0.021	0.056	0.000
	(-1.35)	(1.18)	(1.37)	(0.02)
Independent Directors%	0.154***	-0.000	0.878***	0.052*
	(2.98)	(-0.01)	(5.74)	(1.91)
Ln (1+Firm Age)	-0.023***	0.081***	0.212***	0.072***
	(-2.86)	(3.54)	(10.45)	(5.85)
Financial Constraint	-0.595***	-0.587***	-7.886***	-0.124
	(-2.87)	(-3.85)	(-6.66)	(-1.28)
Ln (CEO Age)	-0.080***	0.002	0.103*	0.008
	(-4.32)	(0.10)	(1.91)	(0.84)
CEO Gender	0.005	0.054***	0.005	-0.015**
	(0.50)	(4.58)	(0.15)	(-2.10)
Top 10 Shareholders	-0.000**	-0.001***	-0.006***	-0.000
	(-2.47)	(-6.28)	(-14.00)	(-1.19)
Firm Growth	-0.099***	-0.085***	1.212***	0.163***
	(-3.43)	(-3.58)	(7.37)	(9.92)
Observations	29,182	29,063	29,182	29,063

Industry FE	YES	NO	YES	NO
Firm FE	NO	YES	NO	YES
Year FE	YES	YES	YES	YES
Wald F statistic	253.649	165.550		
Underidentification test (Kleibergen-Paap rk LM statistic)	1,045.606	41.340		
Weak identification test (Kleibergen-Paap rk Wald F statistic)	548.946	21.320		
Overidentification test (Hansen J statistic)	0.725	0.045		
(Hansen J p-value)	0.394	0.832		

Table 9 Mediating Test

This table reports the results of mediating tests. *Tax* is the effective tax rate of each firm-year observation. *AC* is measured by the natural log of the number of analysts following a firm in each observation year. *AR* is measured by the natural log of the numbers of upgraded recommendations each year. Panel A presents the results of first step of the mediating test. Panel B provides the results of the second step of the mediating test. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: First step of mediating test				Panel B: Second step of mediating test			
	(1)	(2)	(3)		(1)	(2)	(3)
Variables	Tax	AC	AR	Variables	Tobin's Q	Tobin's Q	Tobin's Q
OFDI	-0.021**	0.114***	0.215***	L.Tax	-0.139***		
	(-2.56)	(4.38)	(5.91)		(-5.35)		
Firm Size	0.053***	0.791***	0.925***	L.AC		0.148***	
	(4.29)	(18.00)	(12.36)			(14.81)	
Leverage	0.237***	-1.194***	-1.124***	L.AR			0.156***
	(9.27)	(-15.43)	(-9.81)				(13.63)
PPE/TA	0.189***	-0.544***	-0.954***	L.Firm Size	-0.744***	-0.552***	-0.463***
	(5.90)	(-5.95)	(-6.65)		(-12.70)	(-12.09)	(-4.81)
CAPEX/TA	-0.585***	3.072***	3.370***	L.Leverage	0.099	-0.319***	-0.667***
	(-11.17)	(16.74)	(10.19)		(0.75)	(-3.38)	(-5.23)
CF/TA	0.032	1.848***	2.254***	L.PPE/TA	-0.742***	-0.683***	-0.869***
	(0.67)	(10.93)	(8.76)		(-7.38)	(-6.95)	(-6.83)
Cash Dividend	0.008	0.801***	0.661***	L.CAPEX/TA	-0.588***	-0.876***	-1.130***
	(0.43)	(12.25)	(6.08)		(-2.87)	(-4.49)	(-3.53)
Ln (Board Size)	0.030	0.133**	-0.070	L.CF/TA	1.510***	2.020***	2.204***
	(1.22)	(2.03)	(-0.68)		(7.49)	(9.70)	(6.80)
Independent Directors%	0.136*	0.169	-0.213	L.Cash Dividend	-0.647***	-0.432***	-0.313**
	(1.79)	(0.73)	(-0.63)		(-8.85)	(-6.87)	(-2.32)
Ln (1+Firm Age)	0.025**	-0.271***	-0.254***	L.Ln (Board Size)	-0.059	-0.137*	-0.141
	(2.50)	(-7.52)	(-4.01)		(-0.79)	(-1.91)	(-1.51)
Financial Constraint	0.959***	6.740***	5.936***	L.Independent Directors%	0.782***	0.252	0.289
	(3.44)	(7.00)	(3.56)		(3.26)	(1.15)	(0.99)
Ln (CEO Age)	0.004	-0.097	-0.185	L. Ln (1+Firm Age)	0.165***	0.118***	0.064
	(0.21)	(-1.24)	(-1.57)		(4.36)	(3.32)	(1.12)
CEO Gender	0.013	-0.033	0.032	L. Financial Constraint	-6.894***	-3.853***	-0.247
	(0.99)	(-0.68)	(0.47)		(-6.21)	(-4.07)	(-0.12)
Top 10 Shareholders	-0.001***	0.001	-0.008***	L.Ln (CEO Age)	0.176*	0.186**	0.180
	(-3.87)	(0.98)	(-8.07)		(1.87)	(2.03)	(1.50)
Firm Growth	-0.188***	3.211***	1.893***	L.CEO Gender	-0.028	-0.013	-0.035
	(-4.95)	(22.87)	(10.85)		(-0.56)	(-0.26)	(-0.56)
Constant	-0.003	-9.321***	-10.173***	L.Top 10 Shareholders	-0.004***	-0.003***	0.001
	(-0.02)	(-22.71)	(-15.86)		(-4.70)	(-3.23)	(1.02)
				L.Firm Growth	0.321*	0.800***	0.603**
					(1.90)	(4.82)	(2.56)

				Constant	9.795***	9.083***	12.078***
					(19.90)	(19.81)	(18.38)
Observations	33,573	24,241	16,576	Observations	29,344	21,676	13,563
R-squared	0.201	0.356	0.344	R-squared	0.379	0.414	0.419
Industry FE	YES	YES	YES	Industry FE	YES	YES	YES
Year FE	YES	YES	YES	Year FE	YES	YES	YES

Table 10 Differential Effect on State Ownership

This table provides the OLS results of Equation (1). It reports the relation between undertaking overseas investments and firm performance by using the SOE and non-SOEs subsamples controlling for industry and year fixed effects with robust standard errors clustered by firm. The key independent variable and all of the control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	(1) Tobin's Q	(2) Tobin's Q
	Non-SOE	SOE
L.OFDI	0.158***	0.034
	(4.39)	(0.93)
L.Firm Size	-0.760***	-0.662***
	(-10.21)	(-6.46)
L.Leverage	0.191	-0.235
	(1.12)	(-1.47)
L.PPE/TA	-0.622***	-0.897***
	(-4.76)	(-5.80)
L.CAPEX/TA	-0.910***	0.333
	(-3.31)	(1.17)
L.CF/TA	2.006***	0.741**
	(8.04)	(2.36)
L.Cash Dividend	-0.614***	-0.481***
	(-6.83)	(-3.74)
L.Ln (Board Size)	-0.130	0.049
	(-1.20)	(0.60)
L.Independent Directors%	0.609*	0.331
	(1.70)	(1.25)
L. Ln (1+Firm Age)	0.193***	0.100*
	(4.10)	(1.68)
L. Financial Constraint	-5.157***	-6.353***
	(-3.77)	(-3.15)
L.Ln (CEO Age)	0.123	0.198*
	(1.06)	(1.65)
L.CEO Gender	-0.042	-0.022
	(-0.67)	(-0.36)
L.Top 10 Shareholders	-0.008***	0.002**
	(-6.56)	(2.29)
L.Firm Growth	0.450**	0.578*
	(2.20)	(1.94)
Constant	12.214***	8.198***
	(17.29)	(11.83)
Observations	17,826	11,518
R-squared	0.383	0.387
Industry FE	YES	YES
Year FE	YES	YES

Table 11 DiD Estimate on State Ownership

This table presents the DiD estimators to examine the impact of OFDI on Tobin's Q employing the One Belt One Road initiative in 2013 as the exogenous shock. $Treat_i$ is a dummy variable equal to one for treatments firms (firms engaged in OFDI) and zero for the control firms. T_i is a dummy variable that equals one if the year of the observation is from 2013-2016 and zero otherwise. It reports the subsample regression results by splitting the full sample into SOE and non-SOE subsamples controlling for industry and year fixed effects with robust standard errors clustered by firm. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	(1) Tobin's Q	(2) Tobin's Q
	Non-SOE	SOE
$Treat_i * T_i$ (DiD)	0.164**	0.023
	(2.05)	(0.33)
Firm Size	-0.599***	-0.732***
	(-5.65)	(-7.95)
Leverage	-0.192	-0.542***
	(-1.08)	(-4.10)
PPE/TA	-0.586***	-0.720***
	(-3.65)	(-4.73)
CAPEX/TA	-0.880**	0.498
	(-2.47)	(1.56)
CF/TA	2.276***	0.528
	(6.19)	(1.61)
Cash Dividend	-0.377***	-0.594***
	(-2.74)	(-4.59)
Ln (Board Size)	-0.160	0.043
	(-1.10)	(0.44)
Independent Directors%	0.099	0.004
	(0.21)	(0.01)
Ln (1+Firm Age)	0.252***	0.157*
	(3.69)	(1.90)
Financial Constraint	-1.020	-8.458***
	(-0.48)	(-4.38)
Ln (CEO Age)	-0.077	0.246*
	(-0.56)	(1.81)
CEO Gender	-0.040	0.021
	(-0.50)	(0.27)
Top 10 Shareholders	-0.006***	0.003*
	(-4.59)	(1.74)
Firm Growth	1.870***	1.687***
	(6.41)	(5.77)
Constant	13.717***	7.323***
	(13.31)	(9.54)
Observations	8,109	5,619
R-squared	0.405	0.447
Industry FE	YES	YES
Year FE	YES	YES

Table 12 Mediating Test on State Ownership

This table reports the results of mediating tests by splitting the full sample into SOE and non-SOE subsamples controlling for industry and year fixed effects with robust standard errors clustered by firm. *Tax* is the effective tax rate of each firm-year observation. *AC* is measured by the natural log of the number of analysts following a firm in each observation year. *AR* is measured by the natural log of the numbers of upgraded recommendations each year. Panel A reports the results of the first step of the mediating test in the non-SOEs vs. the SOEs subsample, respectively. Panel B provides the results of the second step of the mediating test in the non-SOEs vs. the SOEs subsample, respectively. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: First step of mediating test in non-SOEs versus SOEs

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Tax	Tax	AC	AC	AR	AR
	Non-SOE	SOE	Non-SOE	SOE	Non-SOE	SOE
OFDI	-0.017**	-0.008	0.129***	-0.029	0.197***	0.057
	(-2.21)	(-0.43)	(4.27)	(-0.62)	(4.57)	(0.86)
Firm Size	0.071***	-0.010	0.765***	0.918***	0.918***	0.863***
	(5.47)	(-0.41)	(13.06)	(12.74)	(9.30)	(6.97)
Leverage	0.132***	0.468***	-1.056***	-1.215***	-0.895***	-1.249***
	(5.03)	(9.19)	(-11.38)	(-9.25)	(-6.50)	(-6.17)
PPE/TA	0.145***	0.198***	-0.934***	0.053	-0.937***	-0.603***
	(4.66)	(3.54)	(-8.19)	(0.39)	(-5.23)	(-2.62)
CAPEX/TA	-0.520***	-0.614***	3.074***	2.809***	3.225***	2.941***
	(-10.13)	(-5.57)	(13.86)	(9.13)	(8.79)	(3.97)
CF/TA	0.086*	-0.043	1.775***	2.083***	2.183***	1.966***
	(1.75)	(-0.44)	(8.35)	(7.63)	(6.87)	(4.40)
Cash Dividend	0.043**	-0.053	0.705***	0.932***	0.486***	0.747***
	(2.19)	(-1.45)	(8.13)	(8.84)	(3.35)	(4.21)
Ln (Board Size)	-0.005	0.049	0.170**	0.248**	-0.040	0.142
	(-0.21)	(1.09)	(2.11)	(2.35)	(-0.31)	(0.81)
Independent Directors%	0.063	0.110	0.426	-0.200	0.082	-0.357
	(0.85)	(0.79)	(1.45)	(-0.58)	(0.19)	(-0.68)
Ln (1+Firm Age)	0.023**	0.032	-0.227***	-0.263***	-0.165**	-0.299**
	(2.40)	(1.26)	(-5.60)	(-3.71)	(-2.30)	(-2.25)
Financial Constraint	1.470***	-0.102	5.246***	9.000***	3.976*	5.419**
	(5.12)	(-0.19)	(4.05)	(5.82)	(1.78)	(2.00)
Ln (CEO Age)	-0.000	-0.022	-0.057	0.050	-0.079	-0.220
	(-0.01)	(-0.41)	(-0.64)	(0.32)	(-0.60)	(-0.89)
CEO Gender	-0.001	0.043	-0.022	-0.010	0.045	-0.054
	(-0.08)	(1.19)	(-0.41)	(-0.10)	(0.58)	(-0.41)
Top 10 Shareholders	-0.001***	-0.000	0.000	0.001	-0.010***	-0.003
	(-5.76)	(-0.22)	(0.19)	(0.44)	(-8.41)	(-1.55)
Firm Growth	0.002	-0.626***	2.917***	3.565***	1.493***	2.790***
	(0.04)	(-6.56)	(17.03)	(14.75)	(7.67)	(6.82)

Constant	0.302**	0.214	-10.498***	-10.812***	-14.642***	-12.656***
	(2.10)	(0.79)	(-19.57)	(-15.24)	(-17.67)	(-10.14)
Observations	21,068	12,505	15,335	8,906	11,659	4,917
R-squared	0.188	0.203	0.332	0.441	0.346	0.434
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Panel B: Second step of mediating test in non-SOEs versus SOEs

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
	Non-SOE	SOE	Non-SOE	SOE	Non-SOE	SOE
L.Tax	-0.149***	-0.134***				
	(-3.46)	(-4.90)				
L.AC			0.162***	0.120***		
			(12.19)	(8.46)		
L.AR					0.176***	0.108***
					(12.37)	(5.84)
L.Firm Size	-0.731***	-0.659***	-0.513***	-0.525***	-0.361***	-0.476***
	(-10.04)	(-6.53)	(-7.82)	(-8.99)	(-3.66)	(-3.00)
L.Leverage	0.226	-0.177	-0.252**	-0.502***	-0.706***	-0.631***
	(1.31)	(-1.09)	(-1.97)	(-4.20)	(-4.60)	(-3.66)
L.PPE/TA	-0.630***	-0.882***	-0.323***	-1.028***	-0.555***	-1.389***
	(-4.85)	(-5.77)	(-2.72)	(-6.64)	(-3.57)	(-6.58)
L.CAPEX/TA	-0.939***	0.245	-1.286***	-0.125	-1.812***	0.628
	(-3.42)	(0.87)	(-4.80)	(-0.53)	(-4.97)	(0.97)
L.CF/TA	2.054***	0.735**	2.667***	0.986***	2.984***	0.635
	(8.24)	(2.37)	(9.80)	(3.45)	(8.44)	(1.15)
L.Cash Dividend	-0.612***	-0.488***	-0.384***	-0.349***	-0.139	-0.310
	(-6.84)	(-3.81)	(-4.25)	(-4.76)	(-0.94)	(-1.54)
L.Ln (Board Size)	-0.131	0.055	-0.234**	-0.007	-0.369***	0.187*
	(-1.21)	(0.68)	(-2.23)	(-0.09)	(-2.80)	(1.66)
L.IndependentDirectors%	0.638*	0.360	0.155	-0.075	-0.281	0.338
	(1.78)	(1.35)	(0.46)	(-0.31)	(-0.69)	(0.94)
L. Ln (1+Firm Age)	0.195***	0.105*	0.149***	0.036	0.143**	-0.088
	(4.14)	(1.78)	(3.34)	(0.65)	(2.01)	(-0.98)
L. Financial Constraint	-5.031***	-6.373***	-1.824	-4.247***	3.196	-1.962
	(-3.72)	(-3.19)	(-1.32)	(-3.90)	(1.43)	(-0.61)
L.Ln (CEO Age)	0.119	0.196*	0.189*	0.165	0.168	0.149
	(1.03)	(1.65)	(1.67)	(1.32)	(1.23)	(0.81)
L.CEO Gender	-0.042	-0.015	-0.058	0.080	-0.063	-0.024
	(-0.66)	(-0.24)	(-0.88)	(1.55)	(-0.84)	(-0.24)
L.Top 10 Shareholders	-0.008***	0.002**	-0.005***	0.002*	-0.001	0.004***
	(-6.72)	(2.29)	(-4.70)	(1.94)	(-0.73)	(3.83)
L.Firm Growth	0.420**	0.486	0.956***	0.740***	1.053***	0.371
	(2.07)	(1.63)	(4.17)	(3.56)	(4.45)	(0.88)

Constant	11.814***	8.124***	10.514***	7.930***	13.933***	10.308***
	(17.08)	(12.09)	(16.61)	(11.63)	(15.55)	(9.96)
Observations	17,826	11,518	13,384	8,292	9,425	4,138
R-squared	0.382	0.389	0.414	0.427	0.419	0.446
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 13 Univariate Analysis

This table reports the results of the univariate analysis. Panel A reports the number and percentage of firms engaging in OFDI or not based on state ownership. Panel B presents the continent choices based on state ownership. Panel C provides the destination choices by separating host countries into developing and developed countries based on state ownership. Panel D reports destination choices by separating host countries into non-Belt Road and Belt Road countries based on state ownership. Panel E presents the results of t-tests on Tobin's Q based on the different dimensions discussed in Panels A-Panel D. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: OFDI, Non-SOE vs. SOE

	(1) Non-SOE		(2) SOE		(3) Total	
OFDI	Freq	Percent	Freq	Percent	Freq	Percent
Non-OFDI	13,800	57.94%	10,315	71.23%	24,115	62.96%
OFDI	10,019	42.06%	4,167	28.77%	14,186	37.04%
Total	23,819		14,482		38,301	

Panel B: Continents

	(1) Non-SOE		(2) SOE		(3) Total	
Majority	Freq	Percent	Freq	Percent	Freq	Percent
Asia	4,886	76.61%	1,547	77.82%	6,433	76.89%
Europe	407	6.38%	123	6.19%	530	6.34%
Africa	64	1.00%	24	1.21%	88	1.05%
Oceania	86	1.35%	53	2.67%	139	1.66%
N.America	927	14.53%	222	11.17%	1,149	13.73%
S.America	8	0.13%	19	0.96%	27	0.32%
Total	6,378		1,988		8,366	

Panel C: Developed vs. developing countries

	(1) Non-SOE		(2) SOE		(3) Total	
DVLP	Freq	Percent	Freq	Percent	Freq	Percent
Developing	966	11.97%	375	15.46%	1,341	12.78%
Developed	7,106	88.03%	2,050	84.54%	9,156	87.22%
Total	8,072		2,425		10,497	

Panel D: Belt Road Countries

	(1) Non-SOE		(2) SOE		(3) Total	
BRC	Freq	Percent	Freq	Percent	Freq	Percent
Non-BRC	6,983	86.50	1,966	81.01	8,949	85.23
BRC	1,090	13.50	461	18.99	1,551	14.77
Total	8,073		2,427		10,500	

Panel E: T-test Table

Two-sample t-test with unequal variances: Full sample

Variables	N	Non-SOE	N	SOE	MeanDiff
Tobin's Q	20,228	2.309	12,256	1.850	0.458***
Two-sample t-test with unequal variances: Developing vs. Developed					
Variables	N	Developing	N	Developed	MeanDiff
Tobin's Q_Full	1,235	1.836	8,313	2.222	-0.386***
Tobin's Q_Non-SOE	896	1.956	6,450	2.351	-0.395***
Tobin's Q_SOE	339	1.520	1,863	1.775	-0.255***
Two-sample t-test with unequal variances: BRC vs. NBRC					
Variables	N	NBRC	N	BRC	MeanDiff
Tobin's Q_Full	8,113	2.210	1,438	1.959	0.250***
Tobin's Q_Non-SOE	6,327	2.338	1,020	2.087	0.251***
Tobin's Q_SOE	1,786	1.756	418	1.647	0.108**

Table 14 Channel SOE & Destinations

This table provides the results of the two-step regression approach. *SOE* is a dummy variable that takes a value of one if the firm is a state owned enterprise and zero otherwise. *DVLP* is a dummy variable that takes a value of one if the host country is a developed country and zero otherwise. *BRC* is a dummy variable that takes a value of one if the destination is classified as a Belt Road country and zero otherwise. Panel A investigates the relation between state ownership and investment destination choices with a first-step regression. Panel B reports the second-step regression between destinations and Tobin's Q. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Regression of ownership and destinations			Panel B: Regression of destinations and Tobin's Q		
	(1)	(2)		(1)	(2)
VARIABLES	DVLP	BRC	VARIABLES	Tobin's Q	Tobin's Q
SOE	-0.024***	0.052**	DVLP	0.157***	
	(-2.61)	(2.28)		(3.95)	
Firm Size	0.005	-0.007	BRC		-0.080**
	(0.25)	(-0.29)			(-2.36)
Leverage	-0.134***	0.143***	L.Firm Size	-0.386***	-0.384***
	(-5.70)	(3.21)		(-3.79)	(-7.23)
PPE/TA	0.027	0.063	L.Leverage	-0.471**	-0.476***
	(0.84)	(1.02)		(-2.48)	(-5.67)
CAPEX/TA	0.299***	-0.232*	L.PPE/TA	-1.074***	-1.065***
	(3.75)	(-1.95)		(-6.52)	(-9.31)
CF/TA	0.033	0.109	L.CAPEX/TA	-0.484	-0.455*
	(0.49)	(1.18)		(-1.32)	(-1.65)
Cash Dividend	-0.032	0.028	L.CF/TA	2.455***	2.478***
	(-1.14)	(0.76)		(7.09)	(11.23)
Ln (Board Size)	-0.090***	0.048	L.Cash Dividend	-0.320**	-0.319***
	(-4.26)	(1.18)		(-2.28)	(-3.99)
Independent Directors%	0.014	0.119	L.Ln (Board Size)	-0.104	-0.112
	(0.20)	(0.78)		(-0.87)	(-1.49)
Ln (1+Firm Age)	-0.065***	0.014	L.Independent Directors%	0.569*	0.592**
	(-6.00)	(0.57)		(1.65)	(2.37)
Financial Constraint	-0.077	-0.021	L. Ln (1+Firm Age)	0.063	0.055
	(-0.18)	(-0.04)		(1.05)	(1.49)
Ln (CEO Age)	-0.037	-0.058	L. Financial Constraint	-1.351	-1.318
	(-1.54)	(-1.32)		(-0.65)	(-1.11)
CEO Gender	0.006	0.023	L.Ln (CEO Age)	0.091	0.077
	(0.46)	(0.92)		(0.62)	(0.89)
Top 10 Shareholders	-0.000	-0.000	L.CEO Gender	-0.030	-0.026
	(-0.29)	(-0.36)		(-0.44)	(-0.53)
Firm Growth	-0.074*	0.087	L.Top 10 Shareholders	-0.003**	-0.003***
	(-1.82)	(1.58)		(-2.56)	(-3.67)
Constant	1.174***	0.482*	L.Firm Growth	0.964***	0.955***
	(7.95)	(1.82)		(3.42)	(6.52)

			Constant	8.449***	8.687***
				(11.28)	(16.78)
Observations	9,846	9,849	Observations	9,156	9,158
R-squared	0.105	0.081	R-squared	0.407	0.406
Industry FE	YES	YES	Industry FE	YES	YES
Year FE	YES	YES	Year FE	YES	YES

Table 15 DDD Regression

This table reports the results of the DDD regression controlling for multiple fixed effects. $Treat_i$ is a dummy variable takes a value of one for treatment firms and zero for the control firms. T_i is a dummy variable that takes a value of one if a firm-year observation is from 2013 and onward. BRC is a dummy variable takes a value of one if the destination is classified as a Belt Road country and zero otherwise. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
VARIABLES	Tobin's Q	Tobin's Q
$Treat_i * T_i * BRC_i$ (DDD)	-0.198**	-0.267***
	(-2.32)	(-3.22)
$Treat_i * T_i$ (DiD)	-0.198	0.763***
	(-1.34)	(3.05)
Firm Size	-0.226	-0.396***
	(-1.63)	(-6.77)
Leverage	-0.540***	0.647***
	(-2.75)	(5.14)
PPE/TA	-1.181***	0.143
	(-7.11)	(0.77)
CAPEX/TA	0.306	0.570**
	(0.87)	(1.96)
CF/TA	2.518***	1.236***
	(6.38)	(5.97)
Cash Dividend	-0.241	0.127
	(-1.24)	(1.63)
Ln (Board Size)	-0.044	0.206*
	(-0.39)	(1.75)
Independent Directors%	0.748**	0.858**
	(2.19)	(2.57)
Ln (1+Firm Age)	0.065	1.140***
	(1.08)	(6.82)
Financial Constraint	1.678	2.556**
	(0.55)	(2.23)
Ln (CEO Age)	-0.095	-0.142
	(-0.71)	(-1.30)
CEO Gender	0.014	0.052
	(0.22)	(0.71)
Top 10 Shareholders	-0.004***	-0.000
	(-4.14)	(-0.43)
Firm Growth	2.132***	1.718***
	(7.81)	(12.98)
Constant	8.630***	8.865***
	(11.86)	(9.26)
Observations	9,551	9,551

R-squared	0.410	0.731
Industry FE	YES	NO
Firm FE	NO	YES
Year FE	YES	YES

Appendix

Table A1 Variable Definitions

Variables	Definition
Tobin's Q	The market value of a firm divided by the total assets of the firm.
OFDI	A dummy variable equal to one if a firm engages in greenfield OFDI in a year and zero otherwise.
Firm Size	Natural log of the total assets.
Leverage	Total debt/Total assets.
PPE/TA	Value of a firm's plant, property, and equipment divided by total assets.
CAPEX/TA	Firm's capital expenditures divided by total assets.
CF/TA	Firm's operating cash flow divided by total assets.
Cash Dividend	Takes a value of one if firm pays cash dividends, and zero otherwise.
Ln (Board Size)	Natural log of the number of directors.
Independent Directors%	The percentage of the independent directors on the board.
Ln (1+Firm Age)	Natural log of one plus firm age.
Financial Constraint	The index of a firm's financial constraints.
Ln (CEO Age)	Natural log of CEO age.
CEO Gender	Takes value of 1 if the CEO is male, 0 otherwise
Top 10 Shareholders	The percentage of the total top 10 shareholders.
Firm Growth	Firm's revenue growth.
SOE	A dummy variable that takes a value of one if the firm is a state owned enterprise and zero otherwise.
DVLP	A dummy variable that takes a value of one if the host country is a developed country and zero otherwise.
BRC	A dummy variable that takes a value of one if the destination is classified as a Belt Road country and zero otherwise.
International school	Natural log of one plus the number of international schools in each province where a firm is headquartered.
DIST	Natural log of the average distance of a firm's headquarters to two of its nearest international airports.
Tax	The effective tax rate.
AC	Natural log of the number of analysts following a firm.
AR	Natural log of the numbers of upgraded recommendations.

Table A2 Correlation Coefficient

	Tobin's Q	OFDI	Firm Size	Leverage	PPE/TA	CAPEX/TA	CF/TA	Cash Dividend	Ln (Board Size)	Independent Directors%	Ln (1+Firm Age)	Financial Constraint	Ln (CEO Age)	CEO Gender	Top 10 Shareholders	Firm Growth
Tobin's Q	1															
OFDI	-0.008	1														
Firm Size	-0.327***	0.290***	1													
Leverage	-0.217***	0.033***	0.429***	1												
PPE/TA	-0.142***	-0.140***	0.072***	0.092***	1											
CAPEX/TA	-0.063***	-0.032***	-0.030***	-0.054***	0.325***	1										
CF/TA	0.087***	0.010*	0.039***	-0.131***	0.272***	0.177***	1									
Cash Dividend	-0.087***	0.118***	0.163***	-0.221***	-0.071***	0.099***	0.132***	1								
Ln (Board Size)	-0.150***	-0.055***	0.211***	0.153***	0.188***	0.070***	0.058***	0.026***	1							
Independent Directors%	0.063***	0.091***	0.048***	-0.021***	-0.090***	-0.028***	-0.035***	0.006	-0.482***	1						
Ln (1+Firm Age)	0.090***	0.125***	0.225***	0.134***	-0.071***	-0.227***	-0.007	-0.051***	-0.066***	0.053***	1					
Financial Constraint	0.230***	-0.316***	-0.810***	-0.138***	0.009	-0.012**	-0.188***	-0.573***	-0.125***	-0.059***	-0.203***	1				
Ln (CEO Age)	0.000	0.060***	0.157***	-0.007	0.023***	-0.026***	0.048***	0.089***	0.020***	0.039***	0.169***	-0.189***	1			
CEO Gender	-0.016***	0.000	0.032***	0.018***	0.049***	0.017***	-0.009*	-0.009	0.072***	-0.052***	-0.026***	-0.019***	0.017***	1		
Top 10 Shareholders	-0.123***	0.027***	0.080***	-0.132***	-0.004	0.128***	0.078***	0.205***	0.016***	0.019***	-0.236***	-0.150***	0.012**	-0.025***	1	
Firm Growth	0.085***	0.000	0.092***	0.016***	-0.067***	0.065***	0.199***	0.125***	0.023***	-0.009*	-0.005	-0.189***	-0.005	-0.014***	0.089***	1

*** p<0.01, ** p<0.05, * p<0.1

Chapter Three - Essay Two:
The Impact of Common Institutional Ownership on Chinese Listed Firms' Outward Foreign Direct Investment

Abstract

We investigate the impact of common institutional ownership on Chinese firms' outward foreign direct investment (OFDI) in this essay. We find that institutional common owners promote firms' OFDI. The positive relationship remains significant after controlling for firm and year fixed effects, employing propensity score matching analysis, and a two-stage least squares regression with instrumental variables to mitigate potential endogeneity problems. Further analysis suggests that the possible moderators of the positive impact of common ownership on firms' OFDI are in line with the coordination and monitoring effect of common owners. Our mediating test provides direct evidence that common institutional ownership facilitates China's OFDI by mitigating the financial distress of portfolio firms. Additional tests indicate that this positive relation is more pronounced in the presence of privately-owned institutional common owners as these owners seek to maximize their risk-adjusted portfolio returns, while state-owned common owners have political objectives.

Keywords: Common institutional ownership; Chinese OFDI; Coordination effect; Monitoring enhancing; State ownership

3.1. Introduction

The importance of institutional investors has attracted the increased attention of researchers. A large stream of the literature has investigated the different impacts of institutional investors on corporate outcomes (Schnatterly et al., 2008). More recently, researchers began to focus on institutional investors who own block holdings in multiple firms within the same industry at the same time, namely, institutional common owners, and their impact on corporate decisions and outcomes (Azar et al., 2018; He et al., 2020; He & Huang, 2017; Lewellen & Lowry, 2021; Park et al., 2019). The institutional common owners have incentives to influence underlying firms as they are motivated to maximize their own portfolios returns (He & Huang, 2017). However, theses incentives do not necessarily maximize the value of the underlying firms (Backus et al., 2021; Matvos & Ostrovsky, 2008). Therefore, researchers have debated as to what and how institutional common owners influence underlying firms.

Generally, there are two strands of views regarding the impact of common institutional ownership: the anti-competitive view and the coordination view. The anti-competitive view implies that common institutional ownership weakens mangers' incentives to compete and reduces competition within the same industry as institutional common owners may exert pressure on managers to internalize the externality of competitive actions (Azar, 2012; Cheng et al., 2022; Gordon, 2003; Hansen & Lott, 1996). In addition, it may also lead to an inefficiency in the economy as a result (Antón et al., 2017; Azar et al., 2018). However, some literature suggests that common institutional ownership may not lead to anti-competitive outcomes (Dennis et al., 2022; Kennedy et al., 2017; Lewellen & Lowry, 2021). The coordination view suggests that the presence of common institutional ownership could benefit underlying firms by building connectedness among firms within the same industries. Under strategic alliances with improved relationships due to common ownership, firms could

coordinate with each other to share new markets, opportunities, and greater economies of scale (Freeman, 2019; He & Huang, 2017). As a result, firms improve their profitability, gross margins, and efficiency with regards to research and development (R&D) expenditures (Bindal & Nordlund, 2022). In addition, this coordination effect of common institutional ownership is more pronounced in industries with higher spillover, such as technology-related industries, as underlying firms can share their information and technology through the bridge-building function of institutional common owners (Kini et al., 2021; Kostovetsky & Manconi, 2020; López & Vives, 2019). Institutional common owners can also enhance monitoring and improve corporate governance due to their superior resources, skills, and information advantages (Anand et al., 2012; Chen et al., 2018; Edmans et al., 2019; He et al., 2019). As a result, institutional common owners facilitate better corporate outcomes with improved monitoring effectiveness, as well as reduced information asymmetry and adverse selection (Brooks et al., 2018; Chen et al., 2021; Fu & Qin, 2021; Gao et al., 2019; He et al., 2020; Kang et al., 2018; Ramalingegowda et al., 2021).

It is argued that common institutional ownership can affect corporate investments. Existing studies find that common institutional ownership can promote corporate investment through improved coordination and monitoring effects (Chen et al., 2021; Shahid & Abbas, 2019), while detractors suggest that common ownership impedes corporate investment as common owners tend to benefit themselves via superior resources and information advantages (Backus et al., 2021; Holden & Subrahmanyam, 1992; Matvos & Ostrovsky, 2008). However, further exploration of this association is still generally lacking. For example, will common institutional ownership affect firm's OFDI as a special type of corporate investment? Existing studies have provided supportive evidence regarding the impact of common institutional ownership on corporate investment as discussed above, but the association between common institutional ownership and firms' OFDI is still unclear. Based on the fact that OFDI has attracted the

attention of researchers over the past few decades, it is particularly interesting to investigate the relation between common institutional ownership and OFDI. However, to our knowledge, no research has examined the impact of common institutional ownership on firms' OFDI.

As the largest developing country, China has played an important role in internationalization and globalization. With the development of the Chinese market, many Chinese firms have been changing their investment strategies from focusing on the domestic market with existing connections to exploring greater investment opportunities in foreign markets. At a same time, China's OFDI has gained increased attention in the academic literature over the past few decades. In addition, institutional investors have also been developing dramatically in the Chinese market whose shareholding percentage increased from 1.4% in 2003 to 18.7% in 2018 based on data and reports from the CICC Global Institute.[8] Thus, this essay seeks to expand the growing literature on common institutional ownership by shedding some light on how institutional common owners affect the OFDI of Chinese listed firms and provide novel insight into the possible mediator and moderators.

We first consider whether and how common institutional ownership affects Chinese firms' OFDI. According to He and Huang (2017), common institutional ownership can enhance resource sharing, reduce information asymmetry, reduce production and distribution costs, and reduce the costs of R&D through coordination among firms within the same industries. The potential benefits of this coordination in the presence of common ownership are crucial when firms decide to conduct OFDI. Firms can mitigate their comparative disadvantage and undertake greater foreign investment with less uncertainty to catch up with their international competitors (Deng, 2004; Dunning, 1977, 1980; Luo & Tung, 2007; Rui & Yip, 2008). In

[8] The original web link for the report (in Chinese) is: https://m.21jingji.com/article/20190702/herald/b39f0f661609f2353cdfafbb8d88b974.html, which was posted on July 2, 2019.

addition, institutional common owners can improve corporate governance and reduce adverse selection for underlying firms, thereby enhancing the access to external financing for investment opportunities (Chen et al., 2021; Shahid & Abbas, 2019). This is especially the case for Chinese listed firms as external financing is crucial for firms in less developed markets when making overseas investments (Oxelheim et al., 2001). Furthermore, institutional common owners may facilitate underlying firms' overseas investments to enjoy additional international diversification provided that under-diversification is the major issue of institutional common owners in traditional views (He & Huang, 2017; Lien et al., 2005). However, common institutional ownership may have a negative impact on firms' OFDI. If the anti-competitive effect works, common ownership may decrease firms' incentive to invest (Lewellen & Lowry, 2021). Firms may prefer to enjoy reduced competition by colluding with competitors instead of trying to engage in overseas investments with the presence of common owners.

We find that common institutional ownership has a significantly positive impact on Chinese listed firms' outward foreign direct investments using a sample of A-share firms listed on the Shanghai and Shenzhen Stock Exchanges from 2008-2020. The positive impact remains significant with alternative measures of common institutional ownership and considering potential endogeneity problems. Specifically, our results are robust with several tests including controlling for firm and year fixed effects, a propensity score matching analysis, and 2SLS regressions with instrumental variables. Furthermore, we find that the positive impact of common institutional ownership is more pronounced when managers have less international experience, firms have greater dependence on external financing, and in firms with weaker monitoring effectiveness environments. The results suggest that institutional common owners can facilitate foreign investment in these firms by enhancing sharing, mitigating adverse selection, and improving monitoring effectiveness and corporate governance environment for them consistent with the coordination and monitoring enhancing effect. Our mediating analysis

indicates that institutional common owners facilitate OFDI through mitigating underlying firms' financial distress.

Our additional test also investigates the differential impact of common institutional ownership on OFDI between state-owned and privately-owned institutional common owners. Based on the different nature of state and private institutional investors, they may have different levels of independence from the government and potential incentives as a result (Lin & Puchniak, 2021). Our results indicate that both state-owned and privately-owned institutional common owners have a positive impact on firms' overseas investments in general. However, this positive impact is more pronounced if common owners are privately owned. Furthermore, the positive impact of privately-owned common owners remains significant when underlying firms are SOEs and investment destinations are developed countries and non-belt road countries, as well as tax havens. This may be due to the potential related risk of undertaking OFDI, the level of institutional development in the destinations, and tax saving incentives.

Our essay makes three contributions to the literature. First, we extend the literature on the impact of common institutional ownership on corporate outcomes. To our knowledge, this essay is the first to examine how common institutional ownership affects the OFDI of Chinese listed firms. Given that internationalization and globalization remain a top priority in China, our findings provide important implications to policy makers to consider the effect of common institutional ownership when designing polices and strategies toward achieving these long-term goals. In addition, our study provides new evidence regarding the coordination and monitoring effect of common institutional ownership due to their bridge-building function, superior resources, skills, and information advantaged (Anand et al., 2012; Chen et al., 2018; Edmans et al., 2019; He & Huang, 2017; He et al., 2019). Our tests for mediator and moderator indicate that firms may share information about foreign markets, successful experiences, management

skills, and technology to facilitate their foreign investment. Moreover, we investigate the different roles of state-owned and privately-owned institutional common owners on OFDI. State-owned institutional common owners must balance the return maximization and political incentives. Therefore, privately-owned institutional common owners play a stronger role in promoting OFDI. The different roles of state-owned and privately-owned institutional common owners are worth future research.

The reminder of this essay proceeds as follows. Section 2 reviews the literature on common institutional ownership and develops the hypotheses. Section 3 discusses the data and variable construction. The empirical results are presented in Section 4, while Section 5 provides our conclusions.

3.2. Literature review

3.2.1. The potential impact of common institutional ownership

Institutional investors have been developing dramatically in the Chinese market. Based on the data and reports from the CICC Global Institute, institutional investors only owned 1.4% of China's A-Shares market in 2003.[9] Then, the percentage of institutional investors increased consistently to 11.8% in 2008, which was over eight times that of 2003. Although this percentage started to go up and down around 11% from 2009-2014, it increased rapidly again from 2015 and reached 18.7% of the market capitalization of A-Share in 2018. At the same time, institutional investor ownership of the free float of China's A-Shares market also increased from 4.6% in 2003 to 47.5% in 2018, over ten times the percentage. As a result, the importance of institutional investors in China has been recognized by the global institutional

[9] The original web link for the report (in Chinese) is: https://m.21jingji.com/article/20190702/herald/b39f0f661609f2353cdfafbb8d88b974.html, which was posted on July 2, 2019.

investor community (Lin & Puchniak, 2021).

Common institutional ownership effects have increasingly attracted the attention of a great number of researchers over the past few decades. It has promoted a surge in new theoretical and empirical research to explore the impact of institutional investors when they invest in multiple firms within the same industry, and also led academics and policymakers to consider how this impact would apply to underlying firms (Lewellen & Lowry, 2021).

Generally, there are two views regarding the impact of common institutional ownership: the anti-competitive view and the coordination view. The anti-competitive view implies that common institutional ownership could weaken competition within the same industry and may not benefit underlying firms. This is because common institutional investors may exert pressure on managers to internalize the externality of competitive actions when investing in multiple firms within the same industry to maximize portfolio value (Azar, 2012; Cheng et al., 2022; Gordon, 2003; Hansen & Lott, 1996). This pressure could also reduce managers incentives to compete within the same industry and reduce the efficiency of the economy (Antón et al., 2017; Azar et al., 2018). Some recent literature supports this anti-competitive view with their empirical findings. Azar et al. (2018) show that common institutional ownership leads to a reduction in product market competition and higher monopolistic airline ticket prices. In addition, Azar et al. (2022) find the anti-competitive view is related to higher banking fees in the U.S. banking industry including lower deposit interest rates and higher maintenance fees. In addition, the anti-competitive view is also associated with increased voluntary disclosures due to fewer concerns about disclosing proprietary information (Park et al., 2019). Cheng et al. (2022) also find that common institutional ownership reduces corporate social responsibility. If common institutional ownership reduces competition, it may decrease firms' incentives to invest (Lewellen & Lowry, 2021). Gutiérrez and Philippon (2016) find that firms in industries

with higher levels of common institutional ownership have relatively lower levels of investment. Therefore, they argue that policymakers may consider establishing relevant regulations to limit common institutional ownership as common institutional investors may lead to reduced competition and increased collusion potential within the same industry, especially in concentrated industries. However, attempts to limit common institutional ownership can come with a cost. Institutional common owners may reduce the offering of lower fee investment options to individual investors (Lewellen & Lowry, 2021).

There are also studies that find little supportive evidence that common institutional ownership leads to anti-competitive outcomes. Kennedy et al. (2017) find no evidence that common institutional ownership raises airline prices contrary to some empirical studies based on the same data from the airline industry. Similarly, Dennis et al. (2022) suggest that the anti-competitive effect on ticket prices in the airline industry is doubtful and unwarranted due to different assumptions and a variation in airline market shares. Consistently, Lewellen and Lowry (2021) find little robust evidence that common institutional ownership affects firm behavior. They argue that previous evidence of common institutional ownership effects is attributed to a combination of inappropriate control samples and instruments. That is, common ownership effects are reflections of the differential responses of firms or industries to the financial crisis in 2008.

In the other strand of the literature regarding common institutional ownership, the coordination view advocates an opposite effect on the impact of common institutional ownership that benefits underlying firms by fostering industry coordination. He and Huang (2017) find that common institutional ownership leads to higher market shares and better performance of underlying firms relative to competitors. This is because institutional investors' objectives are to maximize their risk-adjusted portfolio returns. Therefore, reduced portfolio returns due to

negative externalities (i.e., interfirm lawsuits, advertising wars, and research and development races), especially in industries with intense competition, compel common owners to coordinate (i.e., enter into joint ventures and strategic alliances or even mergers in the extreme). He and Huang (2017) argue that this coordination could be beneficial via the reach to new markets, additional opportunities, and greater economies of scale indicating an important bridge-building function of common institutional ownership. Bindal and Nordlund (2022) also find that increases in common institutional ownership lead to greater profitability and gross margins and decreases in R&D expenditures. In addition, some studies find supportive evidence of coordination in other dimensions. López and Vives (2019) note that common institutional ownership can facilitate investments for firms with positive spillovers on peers, especially in technology-related industries. Kini et al. (2021) find that institutional common owners can promote innovation in industries with higher spillovers. Firms cross held by common owners are more likely to cite each other's patents (Kostovetsky & Manconi, 2020). Common institutional ownership is also found to improve the relationship between customer and supplier firms (Freeman, 2019).

In a different context, institutional common owners can enhance monitoring and improve corporate governance. Institutional common owners have better resources and skills to seek profits in the capital markets (Anand et al., 2012) and improve the efficiency of monitoring due to information advantages (Chen et al., 2018; Edmans et al., 2019; He et al., 2019). Kang et al. (2018) show that common owners can apply their information advantage and governance expertise to enhance their monitoring effectiveness leading to improved governance as a result of executive pay-for-performance sensitivity. Some studies also suggest that common institutional ownership can reduce firm earnings management (He et al., 2020; Ramalingegowda et al., 2021), improve corporate innovation (Gao et al., 2019), and increase corporate philanthropic investments (Fu & Qin, 2021). In addition, Edmans et al. (2019) find

that common institutional ownership can improve price informativeness directly and strengthen governance indirectly. He et al. (2019) argue that institutional common owners have stronger incentives to monitor due to institutional investors' activism in corporate governance, and they find that common owners tend to vote against management on governance proposals. Additionally, institutional common owners have stronger monitoring incentives to improve financial disclosure and reduce information asymmetry, and they have stronger negotiating power that reduces transaction costs and increases the quality of mergers and acquisitions (Brooks et al., 2018). Chen et al. (2021) find that common institutional ownership helps underlying firms get easier access to external financing of investment opportunities as common owners reduce the adverse selection concerns of creditors. Overall, the literature above offers novel insight into as to how firms can be affected by common institutional ownership.

3.2.2. Common institutional ownership and Chinese OFDI

Corporate investment is important to firms as investment creates value to shareholders (Jensen, 1986; Stulz, 1990). However, exploration of the connection between common institutional ownership and corporate investment are lacking. There are two opposite viewpoints regarding how common institutional ownership affects corporate investment. The first stream of the literature suggests that the presence of common institutional ownership facilitates corporate investment due to improved coordination and monitoring. Institutional common owners are specialists with intensive industry expertise (Chen et al., 2021). Existing studies argue that industry expertise can have a significant influence in capital markets and corporate outcomes. For example, financial analysts consistently rank industry knowledge as the most important trait based on Institutional Investor Magazine's annual survey (Chen et al., 2021). Industry experience is a valuable factor with the greatest impact on financial analysts' performance and career (Brown et al., 2015). In addition, financial analysts with industry experience make more

accurate forecasts confirming that industry expertise is important (Bradley et al., 2017).

Furthermore, as discussed in a previous section, institutional common owners can improve shareholder monitoring and have better governance outcomes for underlying firms by applying their information advantages and governance expertise gained from crossholding multiple firms (Chen et al., 2021; Gul et al., 2009; He et al., 2019; Kang et al., 2018; Ramalingegowda et al., 2021; Wang et al., 2015). As a result, the positive impact of common institutional ownership on corporate governance can promote corporate investment accordingly (Shahid & Abbas, 2019). Consistently, improved monitoring from institutional common owners can alleviate adverse selection concerns of capital providers and promote corporate investment indirectly (Chen et al., 2021).

Alternatively, the opposite camp suggests that common institutional ownership impedes corporate investment as institutional common owners can use information advantages to benefit themselves, which could be adverse for other shareholders. Holden and Subrahmanyam (1992) argue that institutional common owners could benefit from buying (or selling) shares after obtaining useful information that is good (or bad) for the underlying firms from other cross-owned firms. Consistently, institutional common owners have incentives to transfer capital from firms with lower common owner rights to firms with higher rights, which could defraud minority shareholders of the former firms (Backus et al., 2021). Matvos and Ostrovsky (2008) find that institutional common owners have a negative impact on acquirers in merger and acquisition transactions. They find that common owners can vote for mergers that are bad for the acquirers by compensating the losses with the benefits of the targets if they own both the acquirers and the targets at the same time. In addition, some existing studies also argue that common owners may undertake adverse trades using their information advantages that can spill over onto the firm in the same industry (Beatty et al., 2013; Boone & Ivanov, 2012; Qiu & Wan,

2015).

Many Chinese firms have been changing their investment strategies from focusing on domestic markets with existing connections to exploring more investment opportunities in foreign markets since the process of internationalization and globalization began. As a special type of corporate investment, OFDI has attracted much attention of researchers over the past few decades. Existing studies have provided supportive evidence regarding the impact of common institutional ownership on corporate investment as discussed above. However, the association between common institutional ownership and Chinese firms' OFDI is still unclear. Therefore, our motivation is to investigate the relation between common institutional ownership and Chinese outward foreign direct investments.

Due to the underdevelopment of Chinese institutions and the market imperfections in China, firms that start their foreign business must face comparative disadvantages when competing with other firms internationally. To resolve these disadvantages, firms may coordinate to share the information about foreign markets, successful experiences, management skills, and technology to distribute the underlying initial costs and uncertainties to catch up with foreign competitors (Deng, 2004; Dunning, 1977, 1980; Luo & Tung, 2007; Rui & Yip, 2008). Institutional common owners may help with coordination in this case. According to He and Huang (2017), institutional common owners can promote coordination by sharing resources, reducing information asymmetry, and sharing technology to lower production and distribution costs and reduce the costs of research and development duplication among firms in the same industry.

Oxelheim et al. (2001) find that firms in less developed markets need to find external financing to support their overseas investment activities. According to Shahid and Abbas (2019), common institutional ownership can improve corporate governance and lead to a higher level

of corporate investment. Chen et al. (2021) argue that common institutional ownership enhances underlying firms' access to external financing when facing potential investment opportunities. They suggest that it is because institutional common owners reduce the adverse selection concerns of capital providers by enhancing corporate governance. More importantly, this is rather relevant to firms in China based on the fact that the Chinese market is now the largest emerging market in the world and institutional development in China is relatively less developed.

In addition, institutional common owners tend to maximize the combined returns of their portfolio (He & Huang, 2017), so they have incentives to facilitate underlying firms to engage in overseas investment. In addition, institutional common owners can enjoy greater diversification if underlying firms in their portfolios pursue business abroad (Lien et al., 2005). In a traditional view, under-diversification is a major problem for institutional common owners as the firms they cross held are all in the same industry (He & Huang, 2017). Thus, institutional common owners may favor overseas investment of underlying firms as a means of diversification. Thus, we formulate our hypothesis as follows:

H1: Common institutional ownership has a significant positive impact on Chinese firms' OFDI.

3.2.3. The mediating role of financial distress

Corporate financial distress consists of four categories including failure, insolvency, default, and bankruptcy. Financial distress does not necessarily mean that a distressed company will eventually fail. However, bankruptcy will eventually occur if the firm's financial performance declines significantly and consistently leading to considerable losses to investors and creditors (Habib et al., 2020). Institutional common owners have better industry experience and expertise (Chen et al., 2021). Thus, this industry experience and expertise can improve management and

firm performance leading to a decline in financial distress. Additionally, existing studies suggest that institutional investors play an important and active role in monitoring and improving firm performance, as well as in financial reporting quality (Chung et al., 2002; Shleifer & Vishny, 1997). Shleifer and Vishny (1997) argue that corporate governance is a set of mechanisms that outside investors apply to protect themselves against insiders. Controlling shareholders and top management may pursue personal benefits due to weak corporate governance at the cost of minority shareholders. Hence, we expect common institutional ownership can lead to reduced financial distress via its impact on firms.

According to Ogawa (2003), financial distress seriously hurts the investment behavior of firms. This is because financially distressed firms have higher leverage, lower sales growth rates, lower free cash flows, and fewer investments as a result (Bhagat et al., 2005). Gupta and Mahakud (2022) find that financial distress can increase investment cash flow sensitivity and result in a decrease in corporate investment. Thus, we expect that underlying firms may have more free cash flows after improving their financial distress situation with the help of institutional common owners and eventually have greater incentives and expertise to undertake investments as a result. Therefore, we posit the following hypothesis:

H2: The positive impact of common institutional ownership on Chinese firms' OFDI is mediated by financial distress.

3.2.4. The moderating role of information and experience sharing, dependence of external financing, and monitoring effectiveness

The logic behind the impact of common institutional ownership on overseas investment is through the coordination effect or the monitoring effect of common institutional owners. Next, we develop several hypotheses to examine possible moderators to explain the relation between

common ownership and OFDI. The objective of these analyses is to offer greater insight into the impact of common institutional ownership and how it might explain its association with Chinese firms' OFDI.

We begin by investigating what the possible moderators could be with respect to coordination through the institutional common owners. Firms within the same industry tend to avoid leaking confidential information to each other as they fear losing business secrets and advantages (Asker & Ljungqvist, 2010). However, as discussed, institutional common owners can reduce information asymmetry and improve the information environment among firms within the same industry by improving information sharing by coordinating with others (He & Huang, 2017). Gao et al. (2019) argue that common institutional ownership enables common owners to gain knowledge and experience in one of the underlying firms and share it to another firm, resulting in synergies that benefit all related underlying firms. Thus, the presence of common institutional ownership can promote information, knowledge, or experience sharing among competing firms. As a result, firms lacking information, knowledge, or experience will benefit more if common institutional ownership truly helps.

Another potential consequence is economies of scale (Kacperczyk et al., 2005). This effect could lead to lower production costs, create cost leadership, and increase the incentives to start business abroad for underlying firms. He and Huang (2017) argue that one of the potential consequences of the coordination effect of institutional common owners is to lower production and distribution costs by sharing resources and strategic assets. In a different context, institutional common owners can also share information costs making them lower for multiple underlying firms by promoting the economies of scale (Ramalingegowda et al., 2021). Some existing studies argue that firms with comparative disadvantages tend to be reluctant to engage in foreign investment as it is harder for them to compete with foreign firms, especially when

facing greater uncertainties in foreign markets (Deng, 2004; Dunning, 1977, 1980; Luo & Tung, 2007; Rui & Yip, 2008). However, the reduced costs and potential cost leadership could promote underlying firms to obtain comparative advantages and increase the incentives to undertake overseas investments with the help of institutional common owners. Thus, the presence of common institutional ownership can promote multiple underlying firms to share the costs through economies of scale. As a result, firms with less experience will benefit more if common institutional ownership really helps. Thus, we formulate our hypothesis as follows:

H3: The positive impact of common ownership on OFDI is more pronounced in firms with less information and experience sharing.

Firms can use internal or external capital to finance their investment activities. Firms will use internal capital as their first source of financing if they have sufficient internal funds. If there are insufficient internal funds for the firm's investments, then they will seek external financing from outside entities. Normally, firms with greater profitability or less financial constraints would have less dependence on external financing as these firms are more likely to have sufficient cash flows available for further investment opportunities. There is no concern of adverse selection when firms are using internal capital to make investments, but when firms are using external capital for financing these concerns could arise for capital providers. However, with the help of institutional common owners, underlying firms could have better access to external financing with reduced concerns about adverse selection (Chen et al., 2021). Rajan and Zingales (1996) also find that institutions and financial markets could help with moral hazards and adverse selection problems for firms leading to lower costs of external financing. If common institutional ownership truly helps, firms that are more dependent on external financing will benefit more. Therefore, we posit the following hypothesis:

H4: The positive impact of common ownership on OFDI is more pronounced in firms with

greater dependence on external financing.

Finally, we examine the role of monitoring and we expect that one moderator that explains the positive relation between common institutional ownership and firms' OFDI is the improvement in monitoring and corporate governance due to the presence of common institutional owners. Common institutional owners are found to vote against the governance proposals of management as they have strong incentives to monitor due to the activism of institutional investors in corporate governance (He et al., 2019). In addition, Gao et al. (2019) find that the positive impact of common ownership on corporate innovation is more pronounced for firms with highly concentrated ownership or weak checks-and-balances. They argue that the findings corroborate with the logic of enhanced monitoring in the presence of common institutional ownership. Kang et al. (2018) note improved governance as a result of executive pay-for-performance sensitivity as institutional common owners can facilitate their monitoring effectiveness with governance expertise. Thus, we expect firms with weak corporate governance will benefit more from the presence of common institutional ownership. Therefore, we formulate the following hypothesis:

H5: The positive impact of common ownership on OFDI is more pronounced in firms with weaker monitoring.

3.2.5. Different types of China's institutional investors

Institutional investors in China's A-shares market can generally be categorized as domestic professional institutional investors and foreign institutional investors. However, we focus on the domestic ones in our essay. Specifically, we expect to investigate the difference between state-owned institutional investors (SOIIs) and privately-owned institutional investors (POIIs) based on the ultimate controller of the institutions.

Depending upon the different ownership nature of the institutional investors, they may have different levels of independence from the government (Lin & Puchniak, 2021). The government can control SOIIs more directly to seek national interests and policy channeling. For example, in China, the government exercises control over SOIIs via shareholding and the appointment of the top management team to stabilize the Chinese stock market and intervene in times of market volatility as stabilizer. At the same time, the government also uses this control to achieve some political goals, such as preventing national capital flight. In addition, SOIIs are becoming important gradually. According to Megginson et al. (2021), sovereign wealth funds and public pension funds, the two major state-owned investors, are the third largest group of global asset owners with $27 trillion under management in 2020.

As a result, SOIIs have consistently been afforded great importance by the Chinese government. For example, the State-owned Assets Supervision and Administration Commission (SASAC) initiated a pilot program of state-owned capital investment and operating firms in 2014 and 2018 to improve the monitoring of state-owned capital and the management of state-owned capital. It seeks to maintain and realize the appreciation of state-owned capital through investment, but without engaging in any production or operations. At the same time, it also strengthens the role of the state when serving national interests with state-owned capital on behalf of the government. This initiative signals that the state-owned capital plays an increasingly important role in the Chinese capital market. For example, Chinese Investment Corporation, a sovereign wealth fund located in Beijing China, ranked first with over $1.2 trillion in the top 100 largest sovereign wealth fund rankings by total assets in 2022.[10]

However, POIIs tend to seek value adding investment activities when compared to SOIIs as

[10] The original web link for the report is: https://www.swfinstitute.org/fund-rankings/sovereign-wealth-fund, which was ranked by total assets.

POIIs, without direct government control, are institutional investors by nature whose objective is to maximize risk-adjusted portfolio returns (He & Huang, 2017). According to Lin and Puchniak (2021), institutional investors may have different levels of independence from the government based on their different ownership nature. As such, POIIs are able to behave much more independently without the direct control or pressure from the government. In this case, POIIs can focus on maximizing their own returns and welfare via joint ownership in different firms (Chen et al., 2021).

Both the Going Global Strategy and the One Belt One Road initiative are top-level national policies with national interests. As government agents, SOIIs tend to behave the same as SOEs to promote and achieve the political goals of the government. However, SOIIs and SOEs would behave differently in this case as they are naturally different. Specifically, SOIIs are still institutional investors who tend to maximize risk-adjusted portfolio returns (He & Huang, 2017), although they still need seek to maintain and realize the appreciation of state-owned capital through investment based on the SASAC initiative and prevent state-owned capital flight. Thus, SOIIs must balance both the state and the investors' interests well. In contrast, POIIs only need focus on their own returns and welfare maximization, which generally relates to the risks associated with invested firms, the institutional development background of investment destinations, and taxation. Based on the discussion and literature above, we postulate that state ownership in common institutional investors has an influential role in firms' investment decisions leading to a different impact when undertaking overseas investment. Thus, we propose the following hypothesis:

H6: The positive impact of common institutional ownership on firms' OFDI differs between state-owned and privately-owned common owners.

3.3. Data and variable construction

3.3.1. Data

The initial sample includes all A-share firms listed on the Shanghai and Shenzhen Stock Exchanges from 2008-2020. We obtain firms' OFDI, financial, and accounting data from the China Stock Market & Accounting Research (CSMAR) database. We select our sample from 2008 as the data on OFDI is mainly available from 2008. Institutional ownership data are also collected from CSMAR. All the common institutional ownership measurements are manually calculated. We winsorize all the continuous accounting and financial variables at the 1% and 99% levels to minimize the effect of outliers. We exclude all financial firms due to their special nature. The final sample includes 2,081 firms and 11,477 firm-year observations. We employ 10,705 firm-year observations due to a one-year lag when running the regression.

3.3.2. Variables construction

3.3.2.1. Common institutional ownership

To construct the common institutional ownership variables, we first obtain the data of the proportion of shares held by institutional investors in each quarter for each firm from CSMAR by following He and Huang (2017) and Chen et al. (2021). We define institutional common owners as institutional investors that hold at least 5% of the shares outstanding in at least two firms in the same industry. Industries are classified based on the three-digit codes in CSMAR.

Our main independent variable is the common institutional ownership dummy (*DUMCom*), a dummy variable equal to one if the firm is commonly owned by at least one institutional common owner in any of the four quarters of a fiscal year and zero otherwise. We also use four alternative common ownership variables for robustness checks. The first alternative measure, the number of cross-owned firms (*NUMConn*), is the number of peers that share a common

institutional owner of the firm for the quarter within the same industry. Next, the number of institutions with common ownership (*NUMCom*) is the number of institutional common owners that commonly own a firm for the quarter. Then, the average number of commonly held firms (*AVGNum*) is the average number of peers with common owners for the quarter within the same industry. The last measure, the percentage of cross-ownership (*PCTCom*), is the sum of the average percentage of shareholdings by all institutional common owners of each firm for the quarter. In addition, we use the natural logarithm of one plus *NUMConn*, *NUMCom*, and *AVGNum* in the empirical analysis to correct for skewness in these variables. Finally, we obtain the annual measures by averaging the four quarters of a given fiscal year for the four alternative measures.

3.3.2.2. OFDI

There are several ways to capture firm-level OFDI in the existing literature. For example, a dummy variable of a firm's decision to undertake overseas investment (Lu et al., 2014), the number of projects of foreign investment of a firm in foreign destinations (Ramasamy et al., 2012), the number of new foreign subsidiaries a firm has in a given year (Xia et al., 2014), or the amount of foreign investment a firm invested in each year (Buckley et al., 2007; Wang, Hong, Kafouros, & Wright, 2012). In this essay, we use the natural logarithm of the actual amount in CNY of the annual foreign investment of a firm in a given year as the measurement of OFDI (*Investment*) following Wang, Hong, Kafouros and Wright (2012) and Buckley et al. (2007). The variable is able to show the impact of common institutional ownership more precisely, although we lose some observations compared to using a dummy variable as in prior studies (Bu et al., 2019; Yan et al., 2018). The continuous variable can reflect the actual level of foreign investment and is easier in making comparisons (Wang, Hong, Kafouros, & Wright, 2012).

3.3.2.3. Control variables

We include a vector of firm characteristics that may affect a firm's OFDI as control variables. We first include financial and accounting variables (i.e., firm size, leverage ratio, the ratio of fixed assets to total assets, the ratio of operating cash flows to total assets, the ratio of capital expenditures to total assets, return on assets, Tobin's Q, firm age, and firm growth). *Firm Size* is calculated as the natural logarithm of total assets. *Leverage* is the ratio of total debt to total assets. *FA/TA* is calculated as the value of fixed assets divided by total assets. *CF/TA* is calculated as operating cash flow divided by total assets. *CAPEX/TA* is measured as a firm's capital expenditures divided by total assets. *ROA* is calculated as net profit divided by total assets. *Tobin's Q* is measured by the market value to the book value of total assets. *Firm Age* is calculated as the natural logarithm of one plus firm age. *Firm Growth* is the annual growth of a firm's revenue. We also include corporate governance variables (i.e., board size, the percentage of independent directors, the top five share concentrations, and institutional ownership). *Board Size* is calculated as the natural logarithm of one plus the number of directors on the board. *Independence* is the ratio of the number of independent directors to the total number of directors. *Top5* is the total percentage of shares held by the top five shareholders. *Institutions* is the total percentage of shares held by institutions, which seeks to separate the impact of common institutional ownership from institutional shareholdings in general (He & Huang, 2017). The definitions of all of the control variables are presented in Appendix A1.

3.3.3. Regression model

We use an ordinary least squares regression to investigate whether common institutional ownership affects firms' OFDI as our baseline regression:

$$Investment_{i,t} = \alpha + \beta_1 CIO_{i,t-1} + \beta_2 Controls_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

where $Investment\ Q_{i,t}$ indicates the firm's overseas investments measured by the natural logarithm of the actual amount in CNY of annual foreign investments of firm *i* in year *t*. $CIO_{i,t-1}$ represents the measure of common institutional ownership in year *t*-1. $Controls_{i,t-1}$ is a vector of control variables as discussed in the control variables section for firm *i* in year *t*-1. $\varepsilon_{i,t}$ refers to the error term. All of the continuous variables are winsorized at the 1% and 99% levels to minimize the effect of outliers. We lag the key independent variable and all of the control variables for one year as the possible time lag that common institutional ownership needs to have an impact on foreign investment. Another reason of using one-year lagged key independent and control variables is that it could partially mitigate potential endogeneity problems. Industry and year fixed effects are included with robust standard errors clustered by firm in all regressions.

3.4. Empirical results

3.4.1. Descriptive statistics

Table 1 reports the descriptive statistics of the key variables used in this study. The mean value of *DUMCom* is 0.106 suggesting that 10.6% of the firm-year observations, which is 1,214 firm-year observations in our sample, are commonly held by at least one institution. The *PCTCom* has a maximum value of 0.518 suggesting the total shares held by institutional common owners are more than half of the shares outstanding. Therefore, common institutional ownership is expected to have a significant impact on firm decisions in the Chinese markets. For the control variables, the distributions are generally consistent with the average level of existing Chinese studies (Bu et al., 2019; Gao et al., 2019; Zhang et al., 2020).

[*Insert Table 1 here*]

Table 2 reports the t-test results comparing the difference in the key characteristics of firms

with and without common institutional ownership. Based on the results, there are several significant different characteristics between the two groups of firms. Generally, the commonly held firms have greater foreign investments suggesting that firms with common ownership tend to undertake more overseas investments compared to firms without common ownership. This result implies that these firms are more likely to increase their foreign investments with the presence of institutional common owners. Furthermore, commonly held firms are generally larger, highly leveraged, and more mature than firms that are not commonly held. Additionally, firms with common ownership have a higher fixed asset to total asset ratio, larger board size, and more independent directors on the board. We further investigate the impact of common institutional ownership on firms' OFDI by running a regression analysis.[11]

[*Insert Table 2 here*]

3.4.2. Baseline regression

The results of the baseline regression are presented in Table 3. *DUMCom* is employed as our main variable of interest here. We begin our analysis by running an ordinary least squares (OLS) regression of firms' overseas investments on common institutional ownership. The results for alternative measures of common ownership, *NUMConn*, *NUMCom*, *AVGNum*, and *PCTCom*, are also provided in Table 3.

The results indicate that common institutional ownership has a significant and positive effect on firms' foreign investments in Column (1). Specifically, the coefficient on *L.DUMCom* is 0.417 and statistically significant at the 5% level. Our results regarding the positive common ownership effect on foreign investment indicates that common institutional ownership can increase the overseas investments of underlying firms. Generally, firms commonly held by the

[11] The correlation matrix for all of the variables included is reported in Appendix Table A2.

institutional common owners would result in a 4.15% increase in a firm's OFDI. This result is also economically significant. For instance, the coefficient of 0.415 on *L.DUMCom* implies that a one-standard deviation increase is associated with a 4.1% increase in overseas investments relative to the mean. We argue that firms tend to invest more in foreign markets with institutional common owners as common ownership can facilitate the coordination among firms within the industry and enhance monitoring effectiveness. Our baseline results remain significant when replacing the major independent variable *DUMCom* with alternative independent variables (*NUMConn*, *NUMCom*, *AVGNum*, and *PCTCom*) as robustness checks in Columns (2)-(5). Specifically, all of the coefficients on the alternative common ownership variables are positive and statistically significant at least at the 5% level suggesting our results are robust with different common institutional ownership measures. For example, the coefficient on *L.DUMCom* is 1.726 and statistically significant at the 1% level implying that each 1% increase in the percentage shareholdings by all institutional common owners of a firm over the four quarters of a fiscal year would result in a 1.726 increase in firm's OFDI.

For the control variables, our results indicate a significant positive relation between firm size and firms' OFDI in all columns. This suggests that large firms are more likely to invest in foreign markets as they tend to keep growing by seeking greater opportunities. We also find a significantly negative relation between *FA/TA* and overseas investments in all columns. According to Gulen and Ion (2016), higher *FA/TA* represents higher adjustment costs for a firm. The significantly negative relation between *FA/TA* and *Investment* in our results indicates that firms with lower adjustment costs would have more foreign investments. In addition, the significantly negative relation between *Leverage* and *Investment* suggests that overseas investments will be reduced due to higher leverage. The significantly positive relation between *CAPEX/TA* and overseas investments suggests that higher capital expenditures would induce greater foreign investments. We observe no significant relation between firm growth, board

size, percentage of independent directors, top concentrations, firm age, percentage of institutional shareholdings, and firms' foreign investment.

[*Insert Table 3 here*]

3.4.3. Endogeneity

There is a possible concern that our baseline regression results are subject to endogeneity problems, such as the possibility of selection bias, omitted variables, and reverse causality. For example, although our results demonstrate that common institutional ownership can lead to a higher level of OFDI of underlying firms, firms with greater foreign investments may be more likely to be commonly held by institutional common owners. To deal with these concerns, we re-estimate the baseline regression by controlling for firm and year fixed effects to account for any time invariant observable or unobservable firm characteristics. Next, we use a propensity score matching (PSM) analysis to address the possible selection bias concern in the following section. Finally, we use an 2SLS regression with instrumental variables to address the omitted variables concerns as it is possible that there are nonabsorbable factors affecting both common institutional ownership and firms' OFDI.

3.4.3.1. Controlling for firm and year fixed effects

Table 4 reports the relation between common institutional ownership and Chinese firms' OFDI by controlling for firm and year fixed effects to account for any time invariant observable or unobservable firm characteristics. Based on the results in all columns, we find that the positive impact of common institutional ownership on Chinese firms' OFDI remains significant after controlling for firm and year fixed effects. Specifically, the coefficient on *L.DUMCom* is 0.161 and statistically significant at the 10% level in Column (1) indicating that the presence of common institutional ownership results in a 16.1% increase in a firm's outward foreign direct

investments, which is also economically significant. The coefficient of 0.161 on *L.DUMCom* implies that a one-standard deviation increase is associated with a 1.6% increase in overseas investments relative to the mean. The results remain significant when using alternative measures in Columns (2)-(5). Specifically, the coefficients are 0.162, 0.238, 0.173, and 0.781, respectively, with a 10% significance level in Columns (2)-(4) and a 5% significance level in Column (5). Thus, our results are robust after controlling for firm and year fixed effects.

[*Insert Table 4 here*]

3.4.3.2. PSM analysis

In this section, we employ a propensity score matching (PSM) analysis to address the potential selection bias concern following Barba Navaretti and Castellani (2004), Debaere et al. (2010), Fang et al. (2014), and Cheng et al. (2022). We adopt the PSM technique to build a counterfactual by constructing a treatment group that consists of firms that have common institutional ownership and a control group of comparable firms without institutional common owners. By doing so, we match observable characteristics of the treatment and the control groups to mitigate the concern that the treatment and the control firms are fundamentally different. The treatment firms should have the same observable characteristics, but only with common ownership when compared to the control firms after matching. We use a Probit model to estimate the probability of being commonly held as a function of firm characteristics:

$$\Pr\left(DUMCom_{i,x,t} = 1 \middle| Controls_{i,x,t-1}\right) \quad (2)$$

where $DUMCom_{i,x,t}$ is equal to one if the firm is commonly owned by at least one institutional common owner in any of the four quarters of a fiscal year and zero otherwise. $Controls_{i,x,t-1}$ is a vector of observable lagged firm characteristics that includes all of the

control variables in Equation (1). We also control for industry fixed effects by using three-digit industry codes and year fixed effects. Finally, we employ the propensity score matching approach with one-to-ten matching to estimate the propensity of being commonly held by institutional investors.

Panel A in Table 5 reports the results of the Probit model estimates using all of the control variables lagged by one year. The results in Panel A indicate that the Probit model captures a good amount of variation of the variables included indicated by the pseudo R^2 of 18.8% and the p-value of the chi-square test of 0.000. We find that larger and more matured firms are more likely to be commonly held by institutional investors. Then, we compute the propensity scores based on the output of the Probit model and use the propensity scores to perform one-to-ten nearest neighbor propensity score matching. As such, each commonly held firm is matched with ten firms without common ownership due to the sample size.[12]

Next, we re-estimate the baseline regressions by using the matched sample controlling for industry and year fixed effects with robust standard errors clustered by firm. The results are presented in Panel B, Table 5. Based on the results, all of the coefficients on the major independent variable and the alternative independent variables are positive and statistically significant at the 5% level in Columns (1)-(4) and statistically significant at the 1% level in Column (5). The results also suggest that our baseline results are robust after considering the selection bias concern.

Panel C in Table 5 reports the balance test of the propensity score matching analysis. Based on the results, the differences in the control variables between the matched treatment and the control groups are all insignificant except for *FA/TA* and *Institutions* indicating that our PSM

[12] The reason to use one-to-ten nearest neighbor propensity score matching is due to the sample size. However, we also derived similar results by using one-to-one nearest neighbor propensity score matching. The results are available upon request.

process successfully removes observable differences in the treatment and control groups. Thus, our results in Panel B are robust with selection bias concern.

[*Insert Table 5 here*]

3.4.3.3. Instrumental variable 2SLS regression

As discussed, there are potential endogeneity problems in investigating the effect of common institutional ownership on firms' OFDI. In this section, we use an instrumental variable 2SLS method to further mitigate potential endogeneity concerns. The first instrumental variable we use is *Rail*, which is a dummy variable that is equal to one if the headquarters of a firm is located in a city that has high speed railway station and zero otherwise. We hand collect the data regarding high speed railway stations from the National Railway Administration and the China Railway Corporation Website. The availability of high speed railway stations can improve the convenience of site visits for institutional investors (Zhang et al., 2020). Institutional investors can access further information regarding underlying firms through site visits and make decisions to invest or not accordingly. Thus, we expect that firms located in cities with high speed railway stations are more likely to have common institutional ownership.

In addition, we use a dummy variable (*CSI300*) that is equal to one if the firm is newly added to the Shanghai Shenzhen 300 Stock Market Index as the instrumental variable to mitigate potential endogeneity following Boone and White (2015), Kang et al. (2018), and Gao et al. (2019). The firms in the index, which are blue chip firms, would attract the interest of institutional investors when the firm is newly added to the index. Therefore, we expect that firms in the Index are more likely to have common institutional ownership. The two variables, *Rail* and *CSI300*, are exogenous as the availability of high speed railway stations and being newly added to the Index is unlikely to affect firms' foreign investments and can serve as

appropriate instrumental variables for the 2SLS estimation.

Table 6 reports the 2SLS regression results. Column (1) presents the results of the first stage analysis controlling for industry and year fixed effects. The coefficients on *Rail* and *CSI300* are both significantly positive at the 1% level in line with our expectations that the availability of high speed railway stations and being newly added to the Shanghai Shenzhen 300 Index are more likely to attract common owners. The results of the second stage analysis are presented in Column (2). The coefficient on *DUMCom* is positive and statistically significant at the 1% level indicating that common institutional ownership has a positive impact on firms' foreign investments using the instrumental variable analysis. Several diagnostic tests are conducted to examine the validity and reliability of the instrumental variable estimates. The statistics of the underidentification test and the weak identification test indicate the strength of the instrumental variables. For example, the Wald F statistic is greater than 10 and the p-values for both tests are less than 0.01. Moreover, the Hansen J test (overidentification test) statistic is insignificant indicating that we cannot reject the null hypothesis that the instrumental variables are valid at the 10% significance level. Combined together, our instrumental variables are reliable and valid. In sum, the results in Table 6 indicate that our baseline finding of the positive impact of common institutional ownership on a firm's OFDI remains significant after using the instrumental variable 2SLS estimate.

[*Insert Table 6 here*]

3.4.4. Mediating test

In this section, we analyze the mediator of the impact of common institutional ownership on Chinese firms' OFDI. Following Alesina and Zhuravskaya (2011), we examine the relation between *DUMCom* and possible mediators in the first regression and then we examine the

relation between mediators and Investment with the presence of *DUMCom* at the same time in the second regression. If both of the coefficients on *DUMCom* in the first and second regressions are significant, and the coefficient on *DUMCom* in the second regression is significant with a decrease compared to the coefficient in our baseline regression, then these mediators can be recognized. As discussed, financially distressed firms tend to have higher leverage, lower sales growth rates, negative cash flows, and fewer investments as a result (Bhagat et al., 2005). Thus, we expect institutional common owners can improve firms' state of financial distress due to their industry experience and expertise by enhancing coordination among commonly held firms. As a result, we expect common institutional ownership is associated with better financial distress situations measured by the Z-score and distance-to-default (*DTD*), which, in turn, facilitate Chinese firms' OFDI. Therefore, we expect a positive relation in both steps for both variables. According to Altman (1968), the Z-score is used to assess the financial health and predict the likelihood of financial distress of a firm. A higher Z-score indicates a lower risk of financial distress, while lower Z-score represents higher risk. In addition, the distance-to-default indicates the estimate of how far the firm's asset value is from the default (Merton, 1974). A higher distance-to-default suggests that the firm is less likely to experience financial distress in the near future, while a lower distance-to-default represents higher risk.

The results of the mediating test are presented in Table 7. Panel A reports the results of the first regression of the mediating test. The coefficients on *DUMCom* in Columns (1) and (2) are 0.117 and 0.440, respectively, and both are statistically significant at the 1% level suggesting that firms with common institutional ownership are more likely to mitigate financial distress. Panel B presents the results of the second regression. As shown in Columns (1) and (2), the coefficients on *L.Z-score* and *L.DTD* are 0.176 and 0.086, and are significant at the 5% and 1% level indicating a significantly positive relation between *Z-score*/*DTD* and firms' OFDI. At the

same time, the coefficients on *L.DUMCom* in Panel B are smaller than that in Table 3, which are consistent with the approach of Alesina and Zhuravskaya (2011). Therefore, the above findings support our expectations that common institutional ownership facilitates Chinese firms' overseas investments through mitigating financial distress measured by the Z-score and the distance-to-default.

[*Insert Table 7 here*]

3.4.5. Moderating test

As discussed, the intuition behind the positive impact of common institutional ownership on OFDI is through the coordination effect and/or the monitoring effect of common institutional owners. In this section, we employ several tests to investigate the possible moderators following Gao et al. (2019).

First, common institutional ownership can enhance sharing, such as sharing information, experience, expertise, and even costs, through improved coordination among firms with institutional common owners. Thus, we divide the full sample into two groups by several categories. We first divide the sample firms based on the management teams' foreign experience that includes either foreign education or work experience. Managers without foreign experience are less likely to undertake overseas investments as they are less familiar and confident about foreign markets when to those with foreign experience. However, firms run by managers without foreign experience can also benefit from information and experience sharing through the coordination of common owners. Thus, if common institutional ownership enhances information and experience sharing through coordination, we expect the impact of common ownership on firms' OFDI is more pronounced in firms run by managers with less international experience. Next, we divide the sample into two groups based on the annual

median value of the number of firms with foreign investment experience within the same industry. The group with less foreign investment experience means the industries of these firms have less experience in overseas investments. The firms in this group would be more sensitive about the information and experience of undertaking foreign investments. We expect the impact of common ownership on firms' OFDI is more pronounced in groups with less experience in overseas investment if common institutional ownership is really helpful.

Additionally, we perform a subsample analysis based on the median value of the geographical distance of firms within the same industry as the third category inspired by Jang et al. (2022). The far-distance group includes firms that are geographically distant from each other. As such, they are less likely to be connected informationally due to the information frictions (Jang et al., 2022). If common institutional ownership can promote information and experience sharing, the impact of common ownership on firms' OFDI will be more pronounced in the far-distance group. Finally, we employ the annual median value of the number of foreign subsidiaries and projects in foreign markets for each firm as the category of economies of scale. The group that is below the median value suggests firms in this group are less likely to have economies of scale leading to higher production costs and reduced level of investments as a result. Thus, we expect the impact of common ownership on firms' OFDI is more pronounced in groups with less foreign subsidiaries and projects in foreign markets if common institutional ownership really helps enhance sharing through coordination.

We present the findings of first moderator in Table 8. Panel A reports the results of different levels of information and experience sharing. The coefficient on *L.DUMCom* in Column (1) is 0.612 and is significant at the 5% level, while the coefficient on *L.DUMCom* in Column (2) is insignificant, in line with our expectations. The results suggest that firms without management teams having foreign experience benefit more from common ownership when undertaking

overseas investments. Next, the coefficient on common ownership in Column (3) is 0.565 and is significant at the 5% level, while the coefficient in Column (4) is insignificant. The results in Columns (3) and (4) are also consistent with our expectation that firms from the industries with less experience in overseas investments would benefit more from institutional common owners through information and experience sharing. Based on the results in Columns (5) and (6), we also find supportive evidence that common ownership can improve information and experience sharing as the coefficient on *L.DUMCom* in Column (5) (i.e., firms that are distant with each other) is 0.624 and significant at the 5% level, while the coefficient on *L.DUMCom* in Column (6) (i.e., firms with near distance) is insignificant.

Panel B of Table 8 provides the results of different economies of scale. The results in Columns (1), (2), (3), and (4) represent firms with less foreign subsidiaries, more foreign subsidiaries, less foreign projects, and more foreign projects, respectively. The coefficient on *L.DUMCom* in Column (1) is 0.575 and is significant at the 5% level, while the coefficient on in Column (2) is insignificant. The results suggest that firms with less foreign subsidiaries benefit more in the presence of common ownership, which is in line with our expectations. The coefficient on common ownership in Column (3) is 0.862 and is significant at the 1% level, while in Column (4), it becomes negative and insignificant. The results in Columns (3) and (4) are also consistent with our expectations that firms with less foreign projects would benefit more from institutional common owners through sharing the related costs.

[*Insert Table 8 here*]

Furthermore, underlying firms could have better access to external financing with reduced concerns about adverse selection with the help of institutional common owners (Chen et al., 2021). We divide the sample into two groups based on the annual median value of profitability and financial constraints. Firms with relatively lower profitability are less likely to have

considerable retained earnings and sufficient internal capital to undertake and finance OFDI. Using the same reasoning, firms with greater financial constraints are less likely to have sufficient capital available to undertake much overseas investment. Thus, we expect the impact of common ownership on firms' OFDI is more pronounced in groups with less profitability (measured by net operating profit and net profit margin) and more financial constraints (measured by KZ index and WW index) if common institutional ownership enhances a firm's access to external financing. Specifically, higher KZ index and WW index indicates more financial constraints of the firm (Kaplan & Zingales, 1997; Whited & Wu, 2006).

Similarly, we present the findings of the second moderator in Table 9. Panel A reports the results of firms with different levels of profitability measured by net operating profits and the net profit margin. The coefficient on *L.DUMCom* in Column (1) is 0.706 and is significant at the 1% level, while the coefficient on that in Column (2) is insignificant. This is in line with our expectations that firms with lower profitability need to access external financing in the presence of common ownership when undertaking overseas investments. The results in Columns (3) and (4) are consistent with this as the coefficient on *L.DUMCom* in Column (3) is 0.751 and is significant at the 1% level, while the coefficient on *L.DUMCom* in Column (4) is insignificant.[13]

Panel B of Table 9 provides the results of firms with different level of financial constraints measured by the KZ index and the WW index (Kaplan & Zingales, 1997; Whited & Wu, 2006). The coefficient on *L.DUMCom* in Column (1) for firms with high financial constraints measured by the KZ index is 0.510 and is statistically significant at the 5% level, while the coefficient on that in Column (2) is insignificant. The results are in line with our expectations.

[13] We also use industry-adjusted net operating profits and net profit margins to separate the groups and get consistent results.

In Column (3), the coefficient on *L.DUMCom* is 0.687 and is statistically significant at the 5% level, while the coefficient on *L.DUMCom* in Column (4) is insignificant. The results confirm that common institutional ownership can help firms in obtaining access to external financing with reduced concerns about adverse selection.

[*Insert Table 9 here*]

Finally, institutional common owners may improve monitoring effectiveness and corporate governance. To test this, we divide the sample into two groups, with weak and strong monitoring, respectively, based on the median value of shareholder concentration and checks-and-balances (i.e., the ratio of the largest shareholder/the second to the ninth shareholder) (Gao et al., 2019). Firms with a high shareholding concentration or weak checks-and-balances (i.e., higher ratio of the largest shareholder/the second to the ninth shareholder) are more likely to have more severe agency problems compared to those with a low shareholding concentration and strong checks-and balances. As such, we expect firms with a high shareholding concentration or weak checks-and-balances would benefit more from the presence of common institutional ownership. In addition, different CEO characteristics, such as CEO duality and CEO salary, could also result in different levels of agency problems. CEOs without duality who receive relatively lower salaries are more likely to behave in their own interests instead of that of shareholders and to compensate for themselves resulting in higher levels of agency problems. We divide the sample into two groups based on CEO duality and the median value of the CEO's salary. If common institutional ownership improves monitoring effectiveness and corporate governance, we expect the impact of common ownership on firms' OFDI is more pronounced in groups without CEO duality and with lower CEO salaries.

We report the findings of the third moderator in Table 10, which explores enhanced monitoring effectiveness and the corporate governance environment. Panel A provides the results of firms

with high and low shareholding concentrations in Columns (1) and (2), as well as the results of firms with weak and strong checks-and-balances in Columns (3) and (4). The coefficient on *L.DUMCom* in Column (1) is 0.466 and is significant at the 5% level, while the coefficient in Column (2) is insignificant. It is in line with our expectations that firms with more potential agency problems can benefit more from the presence of common ownership when engaging in foreign investments. The coefficient on *L.DUMCom* of firms with weak checks-and-balances in Column (3) is 0.531 and is statistically significant at the 5% level, while the coefficient on *L.DUMCom* in Column (4) is insignificant suggesting that common ownership can help these firms improve monitoring effectiveness.

Panel B of Table 10 provides the results of different CEO characteristics. Column (1) provides the results when the CEO works as a CEO only, while Column (2) reports the results when the CEO works as both the CEO and board chair at the same time. The results of CEOs with low and high salaries are presented in Columns (3) and (4). The coefficient on *L.DUMCom* in Column (1) is 0.458 and is significant at the 5% level, while the coefficient on that in Column (2) is insignificant, in line with our expectations. The coefficient on *L.DUMCom* in Column (3) is 1.132 and is significant at the 1% level, while the coefficient on *L.DUMCom* in Column (4) is negative and insignificant. The results in Columns (3) and (4) are also consistent with our expectations that firms with more potential agency problems would benefit more from institutional common owners through enhanced corporate governance. In sum, our results in Table 10 confirm that the presence of common ownership can improve the monitoring effectiveness and the corporate governance environment.

[*Insert Table 10 here*]

3.4.6. Additional tests on state ownership

In this section, we explore the possible differential effects of common institutional ownership on firms' OFDI between SOIIs and POIIs.

3.4.6.1. The differential effects of ownership on common owners

We first re-estimate the baseline regression with the full sample by replacing the common ownership variable (*DUMCom*) with state-owned institutional common ownership (*STATECom*) and privately-owned institutional common ownership (*PRIVATECom*) controlling for industry and year fixed effects with robust standard errors clustered by firm. Based on the discussed in the previous section, we expect common owners with different ownership would have a different impact on firms' OFDI due to their different potential incentives. Next, we estimate an alternative regression by using several subsamples with different classifications that would magnify the differential effects between state-owned and privately-owned common owners. These classifications include the underlying firms state-owned or privately-owned, the destinations of the foreign investments of underlying firms in developed or developing countries, the destinations of these investments in belt road or not, and are these destinations tax havens. However, we need to re-estimate baseline regression before the alternative regression by using these subsamples as benchmarks to investigate the effect of state ownership on common owners.

We present the results of the additional tests in Table 11. Panel A reports the results of the alternative regression with the full sample controlling for industry and year fixed effects with robust standard errors clustered by firm. The coefficient on *L.STATECom* is 0.377 and is significant at the 10% level, while the coefficient on *L.PRIVATECom* is 0.697 and significant at the 1% level suggesting that both state-owned and privately-owned common owners have a

positive impact on Chinese firms' OFDI. However, the significance level and magnitude of the coefficients indicate that privately-owned common owners have a more pronounced positive impact on firms' OFDI compared to state-owned common owners. It is consistent with our expectations as the objective of institutional investors is to maximize risk-adjusted portfolio returns (He & Huang, 2017). Furthermore, unlike the POIIs, which consistently seek value adding investment activities, SOIIs still have some objectives other than seeking profits, such as serving national interests and political goals under the control of the government. The results in Panel A provide supportive evidence for our arguments.

3.4.6.2. The differential effects of ownership on commonly held firms

Panel B of Table 11 reports the results of re-estimating the baseline regression by splitting the full sample into subsamples based on several classifications of commonly held firms for further analysis, including state ownership and different investing destination's natures. Specifically, the coefficient on *L.DUMCom* in Column (1) is 0.661 with a 1% significance level and is insignificant in Column (2) indicating that the positive impact of common institutional ownership is more pronounced in SOEs. We argue it is due to the underlying risks when engaging in foreign investments. According to He and Huang (2017), institutional investors are seeking maximizing risk-adjusted portfolio returns. Therefore, institutional investors would consider the related risks when shareholding firms are foreign investments. When compared to private firms, SOEs are generally less risky due to government support and assistance when undertaking overseas investments, which is in line with our results. Furthermore, the coefficient on common ownership in Column (3) is 0.612 and significant at the 1% level, while in Column (4), it is negative and insignificant. We argue the difference between developed and developing destinations is due to the institutional development environment. Investors tend to invest in locations where the institutional environment facilitates their development globally (Bevan et

al., 2004). The results in Columns (5) and (6) are also consistent with this. The coefficient on *L.DUMCom* is significantly positive in the non-belt road countries group, while the coefficient is insignificant in the belt road countries group. It is because most of the belt road countries are developing countries based on the One Belt One Road initiative. As for the results in Columns (7) and (8), the coefficients are 1.107 (significant at the 5% level) and 0.537 (significant at the 1% level), respectively, suggesting that some institutional investors have more pronounced incentives to facilitate the foreign investment in tax havens. The underlying firms may benefit from avoiding certain taxes by investing in tax havens.

3.4.6.3. The differential effects of ownership on both the common owners and commonly held firms

Panel C of Table 11 provides the results of re-estimating the alternative regression with subsamples based on several classifications to investigate the differential effects between state-owned and privately-owned ownership of common owners on firms' OFDI. Consistent with the results in Panel B, the coefficients on *L.STATECom* and *L.PRIVATECom* are 0.635 and 0.733, respectively, and both are significant at the 5% level, while the coefficients on same variables are insignificant in Column (2) in Panel C. The results suggest that both the state-owned and privately-owned common owners consider risk-adjusted portfolio returns when seeking profits. However, based on the results in Columns (3)-(6), the state-owned and privately-owned common owners behave differently when undertaking foreign investments. Specifically, the positive impact of common institutional ownership on firms' overseas investments is more pronounced for privately-owned common owners in developed countries and non-belt road countries as the investment destinations, while it is insignificant for state-owned common owners. This is because the government's ability to control resources and intervene in decisions may decrease as institutional environments of investment destinations to improve (Cuervo-Cazurra & Dau, 2009; Huang et al., 2017; Sun et al., 2015). Thus, the state-

owned institutional common owners are less likely to undertake much investment in these destinations. This also provides supportive evidence for explaining our results in Columns (3)-(6) in Panel B concerning the risk of institutional environment. For the subsamples of Tax Haven, the coefficients on *L.STATECom* are insignificant in Columns (7) and (8). However, the coefficients on *L.PRIVATECom* are 2.173 with a 5% significance level and 0.895 with a 1% significance level in Columns (7) and (8). The results and reasons are consistent with our discussion in Panel B. The underlying firms may undertake foreign investments in tax havens to avoid certain taxes. In addition, our results indicate that private ownership has a stronger tendency to invest in tax havens compared to state ownership, which is in line with Deng et al. (2020). They argue it is because SOEs are more likely to receive stronger support from the government.

[*Insert Table 11 here*]

3.5. Conclusion

We investigate the impact of common institutional ownership on Chinese firms' outward foreign direct investments in this essay. We find that institutional common owners facilitate firms' OFDI. In addition, our results are robust to using alternative common institutional ownership measures. Our results remain significant after considering potential endogeneity problems with several tests including controlling for firm and year fixed effects, a propensity score matching analysis, and a 2SLS instrumental variable approach that supports our findings in the baseline regression.

Additionally, the tests of possible moderators suggest that the positive impact of common institutional ownership is more pronounced when firms lack sharing experience with peers, which is in line with the underlying logic of the coordination effect. Specifically, firms can

share information, experience, expertise, and even costs when coordinating with peer firms within the same industry. In terms of the enhanced monitoring of institutional common owners, the positive impact of common ownership on firms' OFDI is more pronounced when firms are more dependent on external financing as common owners can reduce the adverse selection concerns of capital providers. At the same time, the positive impact of common ownership on firms' foreign investments is more pronounced for firms with high shareholding concentrations and weak checks-and-balances. Further mediating analysis indicates that the presence of common institutional ownership mitigates firms' financial distress, which, in turn, promotes firms' OFDI.

The results of additional tests indicate that both state-owned and privately-owned institutional common owners have a positive impact on firms' foreign investments, in general. However, this positive impact is more pronounced for privately-owned common owners. Furthermore, the positive impact of privately-owned common owners remains more pronounced in the subsamples of firms making OFDI in the developed countries, non-belt road countries, and tax havens. We argue it is because the objective of privately-owned institutional common owners is to maximize their risk-adjusted portfolio returns by considering the related risks, the institutional environment, and the tax savings without the control and support of the government.

Table 1 Descriptive Statistics

This table provides descriptive statistics of the main variables used in this study. The sample comprises 11,477 firm-year observations. The definitions of all of the variables are presented in Appendix A1.

Variable	Obs	Mean	SD	Max	Min	P25	P50	P75
Investment	11,477	16.874	3.056	22.997	6.473	15.324	17.226	18.857
DUMCom	11,477	0.106	0.308	1.000	0.000	0.000	0.000	0.000
NUMConn	11,477	0.108	0.344	1.609	0.000	0.000	0.000	0.000
NUMCom	11,477	0.066	0.198	0.693	0.000	0.000	0.000	0.000
AVGNum	11,477	0.101	0.320	1.504	0.000	0.000	0.000	0.000
PCTCom	11,477	0.024	0.086	0.518	0.000	0.000	0.000	0.000
Firm Size	11,477	22.431	1.349	25.847	19.074	21.455	22.241	23.224
FA/TA	11,477	0.920	0.091	1.000	0.545	0.904	0.952	0.976
CF/TA	11,477	0.050	0.068	0.263	-0.202	0.012	0.049	0.089
Leverage	11,477	0.433	0.205	1.258	0.053	0.273	0.427	0.582
ROA	11,477	0.042	0.073	0.233	-0.341	0.016	0.042	0.076
CAPEX/TA	11,477	0.051	0.047	0.253	0.000	0.018	0.038	0.071
Firm Growth	11,477	0.167	0.406	3.588	-0.703	-0.014	0.112	0.265
Tobin’s Q	11,477	1.980	1.268	8.995	0.883	1.222	1.574	2.243
Board Size	11,477	2.237	0.183	2.944	0.000	2.079	2.303	2.303
Independence	11,477	37.901	5.875	80.000	0.000	33.330	36.360	42.860
Top5	11,477	54.253	15.757	88.556	19.335	42.629	54.508	66.261
Firm Age	11,477	2.877	0.354	4.002	0.843	2.679	2.922	3.123
Institutions	11,477	6.515	7.044	32.944	0.000	1.050	4.154	9.671

Table 2 The t-test of Key Characteristics

This table reports t-test results of key characteristics of firms with and without common institutional ownership. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels. respectively.

Variables	Commonly held	Obs	Non-commonly	Obs	MeanDiff
Investment	18.49	1214	16.68	10263	1.806***
Firm Size	23.78	1214	22.27	10263	1.513***
FA/TA	0.931	1214	0.919	10263	0.012***
CF/TA	0.0620	1214	0.0480	10263	0.014***
Leverage	0.507	1214	0.424	10263	0.083***
ROA	0.0480	1214	0.0410	10263	0.007***
CAPEX/TA	0.0500	1214	0.0510	10263	-0.00100
Firm Growth	0.151	1214	0.169	10263	-0.0180
Tobin's Q	1.914	1214	1.987	10263	-0.073*
Board Size	2.316	1214	2.228	10263	0.088***
Independence	38.59	1214	37.82	10263	0.768***
Top5	61.19	1214	53.43	10263	7.759***
Firm Age	2.940	1214	2.869	10263	0.071***
Institutions	7.859	1,214	6.357	1,0263	1.502***

Table 3 Common Ownership Effect on Firm OFDI

This table provides the OLS results of Equation (1). It investigates the relation between common institutional ownership and Chinese firms' OFDI by using the full sample controlling for industry and year fixed effects with robust standard errors clustered by firm. The key independent variable and all control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Variables	Investment	Investment	Investment	Investment	Investment
L.DUMCom	0.415**				
	(2.36)				
L.NUMConn		0.402**			
		(2.36)			
L.NUMCom			0.664**		
			(2.41)		
L.AVGNum				0.441**	
				(2.44)	
L.PCTCom					1.726***
					(2.72)
L.Firm Size	1.039***	1.035***	1.038***	1.034***	1.038***
	(16.88)	(16.75)	(16.86)	(16.76)	(17.07)
L.FA/TA	-3.252***	-3.227***	-3.249***	-3.225***	-3.249***
	(-4.96)	(-4.93)	(-4.96)	(-4.93)	(-4.98)
L.CF/TA	1.239*	1.223*	1.236*	1.222*	1.226*
	(1.94)	(1.92)	(1.94)	(1.92)	(1.92)
L.Leverage	-1.132***	-1.125***	-1.133***	-1.123***	-1.147***
	(-3.15)	(-3.13)	(-3.15)	(-3.13)	(-3.19)
L.ROA	-1.356*	-1.340*	-1.348*	-1.346*	-1.315*
	(-1.88)	(-1.86)	(-1.87)	(-1.87)	(-1.82)
L.CAPEX/TA	2.039**	2.039**	2.041**	2.043**	2.046**
	(2.33)	(2.33)	(2.33)	(2.33)	(2.34)
L.Firm Growth	-0.013	-0.011	-0.011	-0.010	-0.009
	(-0.17)	(-0.14)	(-0.14)	(-0.14)	(-0.12)
L.Tobin's Q	0.070	0.068	0.071	0.068	0.072
	(1.41)	(1.36)	(1.41)	(1.36)	(1.44)
L.Board Size	-0.125	-0.126	-0.128	-0.123	-0.139
	(-0.35)	(-0.36)	(-0.36)	(-0.35)	(-0.39)
L.Independence	0.011	0.010	0.010	0.010	0.010
	(1.10)	(1.07)	(1.08)	(1.07)	(1.04)
L.Top5	0.002	0.002	0.002	0.002	0.001
	(0.45)	(0.39)	(0.43)	(0.40)	(0.29)
L.Firm Age	-0.293	-0.286	-0.293	-0.288	-0.293
	(-1.55)	(-1.52)	(-1.56)	(-1.53)	(-1.55)
L.Institutions	0.003	0.004	0.003	0.004	0.004
	(0.45)	(0.49)	(0.46)	(0.49)	(0.48)
Constant	1.039***	1.035***	1.038***	1.034***	1.038***
	(16.88)	(16.75)	(16.86)	(16.76)	(17.07)
Observations	10,705	10,705	10,705	10,705	10,705
R-squared	0.226	0.226	0.226	0.226	0.226
Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Table 4 Firm and Year Fixed Effects

This table reports the OLS results of Equation (1) investigating the relation between common institutional ownership and Chinese firms' OFDI by controlling for firm and year fixed effects. The key independent variable and all control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Variables	Investment	Investment	Investment	Investment	Investment
L.DUMCom	0.161*				
	(1.87)				
L.NUMConn		0.162*			
		(1.82)			
L.NUMCom			0.238*		
			(1.70)		
L.AVGNum				0.173*	
				(1.87)	
L.PCTCom					0.781**
					(2.02)
L.Firm Size	0.586***	0.586***	0.588***	0.586***	0.590***
	(12.13)	(12.13)	(12.17)	(12.12)	(12.25)
L.FA/TA	-0.971***	-0.967***	-0.969***	-0.969***	-0.966***
	(-3.37)	(-3.36)	(-3.37)	(-3.37)	(-3.36)
L.CF/TA	-0.284	-0.288	-0.284	-0.289	-0.292
	(-1.05)	(-1.07)	(-1.05)	(-1.07)	(-1.08)
L.Leverage	0.408**	0.408**	0.406**	0.409**	0.396**
	(2.36)	(2.36)	(2.35)	(2.37)	(2.30)
L.ROA	-0.396	-0.398	-0.398	-0.399	-0.401
	(-1.25)	(-1.26)	(-1.26)	(-1.26)	(-1.27)
L.CAPEX/TA	0.663	0.667	0.661	0.666	0.669
	(1.59)	(1.60)	(1.58)	(1.60)	(1.60)
L.Firm Growth	-0.023	-0.022	-0.022	-0.022	-0.023
	(-0.60)	(-0.58)	(-0.58)	(-0.58)	(-0.60)
L.Tobin's Q	-0.011	-0.011	-0.010	-0.011	-0.009
	(-0.53)	(-0.55)	(-0.51)	(-0.56)	(-0.44)
L.Board Size	0.117	0.123	0.118	0.123	0.111
	(0.65)	(0.68)	(0.66)	(0.68)	(0.61)
L.Independence	0.006	0.007	0.006	0.007	0.006
	(1.39)	(1.41)	(1.40)	(1.41)	(1.33)
L.Top5	-0.001	-0.001	-0.001	-0.001	-0.001
	(-0.34)	(-0.37)	(-0.32)	(-0.37)	(-0.32)
L.Firm Age	1.059***	1.056***	1.058***	1.055***	1.065***
	(4.64)	(4.63)	(4.64)	(4.62)	(4.67)
L.Institutions	-0.007**	-0.007**	-0.007**	-0.007**	-0.008**
	(-2.47)	(-2.44)	(-2.48)	(-2.44)	(-2.50)
Constant	0.892	0.881	0.851	0.898	0.809
	(0.68)	(0.67)	(0.64)	(0.68)	(0.61)
Observations	10,705	10,705	10,705	10,705	10,705
R-squared	0.841	0.841	0.841	0.841	0.841
Firm FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Table 5 Propensity Score Matching Analysis

This table reports the regression results with propensity score matching analysis. Panel A presents Probit model results from Equation (2). It estimates the likelihood of being commonly held by institutional investors. Panel B provides the results of the baseline regression using the PSM matched sample. Industry and year fixed effects are included with robust standard errors clustered by firm. Panel C shows the balance test after the propensity score matching procedure. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Probit model

Variables	DUMCom
Firm Size	0.352***
	(32.56)
FA/TA	0.601***
	(4.60)
CF/TA	0.262*
	(1.73)
Leverage	0.061
	(1.02)
ROA	-0.605***
	(-3.50)
CAPEX/TA	-0.889***
	(-4.19)
Firm Growth	-0.108***
	(-4.65)
Tobin's Q	0.109***
	(12.35)
Board Size	0.419***
	(6.20)
Independence	0.004**
	(1.97)
Top5	0.010***
	(14.90)
Firm Age	0.307***
	(9.23)
Institutions	-0.005***
	(-3.57)

Panel B: Baseline regression with matched sample

Variables	(1) Investment	(2) Investment	(3) Investment	(4) Investment	(5) Investment
L.DUMCom	0.402**				
	(2.31)				
L.NUMConn		0.409**			
		(2.40)			
L.NUMCom			0.649**		
			(2.37)		
L.AVGNum				0.438**	
				(2.43)	
L.PCTCom					1.732***
					(2.75)
L.Firm Size	1.038***	1.032***	1.037***	1.033***	1.037***
	(15.85)	(15.68)	(15.81)	(15.70)	(16.04)
L.FA/TA	-3.248***	-3.222***	-3.246***	-3.220***	-3.247***
	(-4.87)	(-4.84)	(-4.87)	(-4.84)	(-4.89)
L.CF/TA	0.939	0.920	0.935	0.920	0.923
	(1.36)	(1.33)	(1.35)	(1.33)	(1.33)
L.Leverage	-1.026***	-1.017**	-1.027***	-1.016**	-1.044***
	(-2.58)	(-2.56)	(-2.59)	(-2.56)	(-2.63)
L.ROA	-1.189	-1.165	-1.180	-1.174	-1.143
	(-1.50)	(-1.47)	(-1.49)	(-1.48)	(-1.44)
L.CAPEX/TA	1.932**	1.935**	1.935**	1.938**	1.940**
	(2.03)	(2.03)	(2.03)	(2.03)	(2.04)
L.Firm Growth	-0.016	-0.014	-0.014	-0.013	-0.012
	(-0.19)	(-0.17)	(-0.17)	(-0.16)	(-0.14)
L.Tobin's Q	0.037	0.033	0.037	0.033	0.038
	(0.66)	(0.60)	(0.66)	(0.61)	(0.70)

Constant	-12.289***	L.Board Size	-0.134	-0.138	-0.138	-0.134	-0.150
	(-38.09)		(-0.36)	(-0.37)	(-0.37)	(-0.36)	(-0.40)
		L.Independence	0.012	0.012	0.012	0.012	0.011
			(1.14)	(1.10)	(1.12)	(1.12)	(1.08)
		L.Top5	0.001	0.000	0.000	0.000	-0.000
			(0.13)	(0.06)	(0.11)	(0.07)	(-0.04)
		L.Firm Age	-0.391*	-0.384*	-0.392*	-0.387*	-0.393*
			(-1.89)	(-1.86)	(-1.90)	(-1.87)	(-1.90)
		L.Institutions	0.003	0.004	0.004	0.004	0.004
			(0.44)	(0.48)	(0.45)	(0.48)	(0.47)
		Constant	-2.341	-2.198	-2.290	-2.221	-2.195
			(-1.27)	(-1.19)	(-1.24)	(-1.20)	(-1.20)
Observations	10,053	Observations	9,173	9,173	9,173	9,173	9,173
Pseudo R2	0.188	R-squared	0.237	0.237	0.237	0.237	0.238
Industry FE	YES	Industry FE	YES	YES	YES	YES	YES
Year FE	YES	Year FE	YES	YES	YES	YES	YES

Panel C: Balance test

Variable	Commonly held	Non-commonly held	Standardized Bias	T-stat	P-value
Firm Size	22.88	22.86	1.4	0.57	0.569
FA/TA	0.94	0.95	-4.6	-2.23	0.026
CF/TA	0.06	0.06	1.5	0.71	0.479
Leverage	0.51	0.51	-0.3	-0.15	0.879
ROA	0.04	0.04	-0.3	-0.14	0.889
CAPEX/TA	0.05	0.05	2.9	1.37	0.171
Firm Growth	0.16	0.17	-1.3	-0.63	0.530
Tobin’s Q	1.76	1.77	-0.8	-0.38	0.705
Board Size	2.33	2.33	-1.2	-0.52	0.600
Independence	36.92	36.75	3.0	1.35	0.176
Top5	59.05	58.13	5.8	2.58	0.010
Firm Age	2.82	2.83	-0.8	-0.35	0.726
Institutions	6.37	6.48	-1.5	-0.68	0.499

Table 6 2SLS Test

This table provides the results of the 2SLS regression with instrumental variables. *Rail* is a dummy variable that is equal to one if the headquarters of a firm is located in a city that has a high-speed railway station and zero otherwise. CSI300 is a dummy variable that is equal to one if the firm is newly added to the Shanghai Shenzhen 300 Stock Market Index. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	First stage	Second stage
	(1)	(2)
VARIABLES	DUMCom	Investment
Rail	0.030***	
	(3.47)	
CSI300	0.041***	
	(3.09)	
DUMCom		12.652***
		(3.65)
Firm Size	0.079***	-0.026
	(18.88)	(-0.09)
FA/TA	0.143***	-5.599***
	(5.03)	(-8.10)
CF/TA	-0.019	1.617**
	(-0.44)	(2.34)
Leverage	-0.027	-0.589*
	(-1.52)	(-1.95)
ROA	-0.106**	-0.299
	(-2.52)	(-0.38)
CAPEX/TA	-0.115**	3.386***
	(-1.99)	(3.33)
Firm Growth	0.001	-0.115
	(0.15)	(-0.98)
Tobin's Q	0.031***	-0.359***
	(9.76)	(-2.87)
Board Size	0.175***	-2.260***
	(8.40)	(-3.32)
Independence	0.004***	-0.035**
	(5.80)	(-2.25)
Top5	0.002***	-0.029***
	(11.73)	(-3.26)
Firm Age	0.021**	-0.461***
	(2.35)	(-2.88)
Institutions	-0.001**	0.016**
	(-2.43)	(2.11)
Observations		10,902
Industry FE		YES
Year FE		YES
Wald F statistic		47.754
Underidentification test (Kleibergen-Paap rk LM statistic)		21.364
p-value		0.000
Weak identification test (Kleibergen-Paap rk Wald F statistic)		10.622
p-value		0.000
Overidentification test (Hansen J statistic)		0.000
p-value		0.983

Table 7 Mediating Test

This table reports the results of the mediating tests. *Z-score* is the Altman Z-score of each firm-year observation. *DTD* is the distance-to-default of each firm-year observation. Panel A presents the results of the first step of the mediating test. Panel B provides the results of the second step of the mediating test. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: First step of mediating test

	(1)	(2)
Variables	Z-score	DTD
DUMCom	0.117***	0.440***
	(3.79)	(4.06)
Firm Size	-0.111***	-0.308***
	(-10.27)	(-8.67)
CF/TA	0.527***	1.293***
	(5.10)	(5.07)
Leverage	-2.008***	-3.584***
	(-36.01)	(-23.43)
ROA	2.188***	-0.056
	(18.91)	(-0.22)
CAPEX/TA	-0.710***	-0.668
	(-4.62)	(-1.48)
Firm Growth	-0.003	-0.127***
	(-0.21)	(-2.95)
Tobin's Q	0.086***	0.039**
	(8.29)	(2.39)
Firm Age	0.046	0.126
	(1.64)	(1.58)
Institutions	0.009***	0.025***
	(8.27)	(6.87)
Constant	4.928***	7.578***
	(20.50)	(10.17)

Panel B: Second step of mediating test

	(1)	(2)
Variables	Investment	Investment
L.Z-score	0.176**	
	(1.99)	
L.DTD		0.086***
		(2.86)
L.DUMCom	0.397**	0.342**
	(2.26)	(2.01)
L.Firm Size	1.058***	1.095***
	(17.19)	(17.62)
L.FA/TA	-3.321***	-3.237***
	(-5.06)	(-4.96)
L.CF/TA	1.159*	1.143*
	(1.81)	(1.75)
L.Leverage	-0.778*	-1.062***
	(-1.95)	(-2.74)
L.ROA	-1.732**	-1.603**
	(-2.33)	(-2.08)
L.CAPEX/TA	2.187**	2.291***
	(2.49)	(2.61)
L.Firm Growth	-0.013	-0.002
	(-0.17)	(-0.02)
L.Tobin's Q	0.054	0.046
	(1.06)	(0.93)
L.Board Size	-0.123	-0.140
	(-0.35)	(-0.40)
L.Independence	0.011	0.011
	(1.18)	(1.11)
L.Top5	0.002	0.002

				(0.48)	(0.58)
			L.Firm Age	-0.298	-0.319*
				(-1.58)	(-1.71)
			L.Institutions	0.002	0.002
				(0.21)	(0.21)
			Constant	-3.548**	-3.877**
				(-2.05)	(-2.26)
Observations	11,477	11,284	Observations	10,705	10,560
R-squared	0.634	0.450	R-squared	0.227	0.231
Industry FE	YES	YES	Industry FE	YES	YES
Year FE	YES	YES	Year FE	YES	YES

Table 8 Moderating the Effect of Sharing

This table reports the OLS results of Equation (1). It investigates the relation between common institutional ownership and Chinese firms' OFDI using the subsamples by sharing experience controlling for industry and year fixed effects with robust standard errors clustered by firm. The key independent variable and all of the control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Information and experience sharing

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Investment	Investment	Investment	Investment	Investment	Investment
	Management foreign experience		Number of experienced firms		Distance	
	No	Yes	Less	More	Far	Near
L.DUMCom	0.612**	0.266	0.565**	0.313	0.624**	0.246
	(1.97)	(1.44)	(2.08)	(1.39)	(2.40)	(1.21)
L.Firm Size	0.980***	1.035***	0.932***	1.106***	0.966***	1.158***
	(9.72)	(15.26)	(11.15)	(12.89)	(11.70)	(14.15)
L.FA/TA	-3.648***	-2.889***	-2.769***	-3.629***	-3.583***	-3.075***
	(-3.21)	(-3.99)	(-2.62)	(-4.59)	(-3.60)	(-3.86)
L.CF/TA	1.243	1.414*	0.576	2.029**	1.957**	0.598
	(1.37)	(1.75)	(0.71)	(2.10)	(2.19)	(0.74)
L.Leverage	-1.429***	-0.837**	-0.890*	-1.375***	-1.331***	-0.997**
	(-2.68)	(-1.98)	(-1.78)	(-2.78)	(-2.89)	(-1.99)
L.ROA	-2.201*	-0.605	-0.041	-2.492***	-1.631*	-1.143
	(-1.90)	(-0.73)	(-0.04)	(-2.61)	(-1.66)	(-1.19)
L.CAPEX/TA	-0.712	2.858***	2.606**	1.628	1.797	2.305*
	(-0.53)	(2.76)	(2.10)	(1.35)	(1.50)	(1.94)
L.Firm Growth	0.103	-0.089	-0.147	0.140	-0.052	-0.004
	(0.82)	(-0.98)	(-1.49)	(1.23)	(-0.55)	(-0.03)
L.Tobin's Q	0.177**	0.012	0.051	0.080	0.036	0.129*
	(2.13)	(0.22)	(0.63)	(1.26)	(0.59)	(1.75)
L.Board Size	-0.655	-0.207	0.239	-0.435	0.205	-0.449
	(-1.31)	(-0.51)	(0.50)	(-0.92)	(0.43)	(-0.94)
L.Independence	0.008	0.009	0.016	0.004	0.018	0.003
	(0.45)	(0.81)	(1.26)	(0.27)	(1.36)	(0.23)
L.Top5	0.005	-0.002	0.009	-0.004	0.001	0.002
	(0.74)	(-0.43)	(1.41)	(-0.75)	(0.21)	(0.37)
L.Firm Age	-0.440	-0.123	-0.325	-0.219	-0.293	-0.276
	(-1.34)	(-0.63)	(-1.19)	(-0.85)	(-1.09)	(-1.20)
L.Institutions	0.013	-0.004	0.012	-0.004	0.014	-0.011
	(1.06)	(-0.48)	(1.12)	(-0.37)	(1.37)	(-1.20)
Constant	0.240	-2.724	-1.958	-2.481	-1.158	-5.024**
	(0.09)	(-1.45)	(-0.77)	(-1.13)	(-0.50)	(-2.12)
Observations	3,481	7,224	5,017	5,670	5,488	5,112
R-squared	0.218	0.254	0.249	0.194	0.219	0.260
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Panel B: Economies of scale

	(1)	(2)	(3)	(4)
Variables	Investment	Investment	Investment	Investment
	Foreign subsidiaries		Foreign projects	
	Less	More	Less	More
L.DUMCom	0.575**	0.075	0.862***	-0.034
	(2.36)	(0.36)	(3.45)	(-0.16)
L.Firm Size	0.828***	0.970***	0.815***	0.979***
	(9.76)	(12.43)	(9.41)	(12.55)
L.FA/TA	-3.081***	-2.380**	-2.939***	-2.412**

	(-3.98)	(-2.58)	(-3.56)	(-2.57)
L.CF/TA	1.553*	0.927	1.506*	0.865
	(1.82)	(1.15)	(1.66)	(1.10)
L.Leverage	-1.378***	-1.273***	-1.360***	-1.271***
	(-3.00)	(-2.79)	(-2.86)	(-2.77)
L.ROA	-1.899**	-1.220	-1.698*	-1.376
	(-1.99)	(-1.19)	(-1.70)	(-1.36)
L.CAPEX/TA	0.732	2.614**	0.440	3.337***
	(0.67)	(2.31)	(0.39)	(3.01)
L.Firm Growth	-0.036	-0.042	-0.020	-0.044
	(-0.36)	(-0.39)	(-0.20)	(-0.40)
L.Tobin's Q	0.050	0.050	0.013	0.055
	(0.82)	(0.71)	(0.20)	(0.83)
L.Board Size	-0.343	0.493	-0.328	0.516
	(-0.76)	(1.10)	(-0.68)	(1.15)
L.Independence	0.009	0.014	0.004	0.021*
	(0.74)	(1.18)	(0.28)	(1.74)
L.Top5	0.002	0.007	-0.002	0.008
	(0.30)	(1.21)	(-0.45)	(1.49)
L.Firm Age	-0.343	-0.215	-0.416*	-0.230
	(-1.49)	(-0.84)	(-1.72)	(-0.89)
L.Institutions	-0.009	0.011	-0.010	0.013
	(-0.93)	(1.16)	(-1.00)	(1.34)
Constant	2.245	-3.013	2.742	-3.493
	(1.00)	(-1.30)	(1.16)	(-1.50)
Observations	6,124	4,581	5,557	4,380
R-squared	0.173	0.283	0.181	0.284
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 9 Moderating Effect of Dependence on External Financing

This table investigates the relation between common institutional ownership and Chinese firms' OFDI using the subsamples based on the dependence on external financing. The key independent variable and all of the control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Profitability				
	(1)	(2)	(3)	(4)
Variables	Investment	Investment	Investment	Investment
	Net operating profit		Net profit margin	
	Low	High	Low	High
L.DUMCom	0.706***	0.007	0.751***	0.018
	(3.27)	(0.03)	(3.45)	(0.08)
L.Firm Size	1.012***	1.136***	1.025***	1.124***
	(12.90)	(15.39)	(12.90)	(15.37)
L.FA/TA	-3.325***	-3.097***	-3.379***	-3.172***
	(-3.62)	(-4.20)	(-3.63)	(-4.40)
L.CF/TA	1.420*	1.209	1.596**	1.006
	(1.82)	(1.20)	(2.08)	(1.00)
L.Leverage	-0.750	-1.643***	-0.810*	-1.527***
	(-1.62)	(-3.62)	(-1.70)	(-3.55)
L.ROA	-0.531	-2.893**	-0.757	-2.461**
	(-0.69)	(-2.52)	(-0.92)	(-2.34)
L.CAPEX/TA	1.817	2.279**	1.568	2.417**
	(1.50)	(2.11)	(1.26)	(2.30)
L.Firm Growth	0.073	-0.096	0.031	-0.038
	(0.82)	(-0.72)	(0.30)	(-0.31)
L.Tobin's Q	0.172***	0.021	0.200***	0.011
	(2.62)	(0.34)	(2.94)	(0.18)
L.Board Size	-0.497	0.416	-0.639	0.535
	(-1.17)	(0.88)	(-1.47)	(1.16)
L.Independence	0.007	0.018	0.005	0.021*
	(0.55)	(1.39)	(0.39)	(1.71)
L.Top5	0.000	0.003	-0.000	0.002
	(0.05)	(0.54)	(-0.07)	(0.40)
L.Firm Age	-0.489*	-0.080	-0.574**	-0.018
	(-1.94)	(-0.36)	(-2.22)	(-0.08)
L.Institutions	0.010	-0.001	0.005	0.001
	(0.94)	(-0.14)	(0.54)	(0.14)
Constant	-0.877	-6.493***	-0.129	-6.365***
	(-0.40)	(-3.20)	(-0.06)	(-3.14)
Observations	5,604	5,101	5,571	5,134
R-squared	0.237	0.252	0.237	0.256
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Panel B: Financial constraints				
	(1)	(2)	(3)	(4)
Variables	Investment	Investment	Investment	Investment
	KZ index		WW index	
	High constraints	Low constraints	High constraints	Low constraints
L.DUMCom	0.510**	0.103	0.687**	0.277
	(2.28)	(0.50)	(1.97)	(1.57)
L.Firm Size	1.118***	1.047***	0.805***	1.176***

	(13.81)	(14.20)	(8.02)	(15.95)
L.FA/TA	-3.616***	-3.279***	-3.295***	-3.411***
	(-4.27)	(-4.18)	(-3.49)	(-4.74)
L.CF/TA	1.451	0.653	0.848	1.667**
	(1.49)	(0.91)	(0.99)	(1.98)
L.Leverage	-0.929*	-0.963*	-0.657	-1.912***
	(-1.80)	(-1.91)	(-1.38)	(-3.99)
L.ROA	-1.101	-1.820	-0.804	-1.608
	(-1.14)	(-1.57)	(-0.90)	(-1.20)
L.CAPEX/TA	1.413	2.556**	0.622	2.837***
	(1.17)	(2.41)	(0.51)	(2.60)
L.Firm Growth	-0.005	-0.062	-0.219*	0.080
	(-0.04)	(-0.52)	(-1.74)	(0.86)
L.Tobin's Q	0.106*	0.059	0.010	0.116
	(1.69)	(0.98)	(0.17)	(1.60)
L.Board Size	-0.447	0.193	-0.226	-0.239
	(-0.99)	(0.41)	(-0.44)	(-0.56)
L.Independence	0.002	0.022*	0.022	0.003
	(0.13)	(1.89)	(1.60)	(0.29)
L.Top5	0.003	-0.001	0.001	0.003
	(0.49)	(-0.20)	(0.12)	(0.54)
L.Firm Age	-0.479	-0.094	-0.288	-0.217
	(-1.61)	(-0.51)	(-1.22)	(-0.96)
L.Institutions	0.006	-0.003	-0.023*	0.008
	(0.58)	(-0.34)	(-1.93)	(0.91)
Constant	-2.771	-4.293**	2.001	-4.613**
	(-1.23)	(-2.10)	(0.71)	(-2.40)
Observations	4,926	5,385	4,015	6,495
R-squared	0.259	0.239	0.164	0.237
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 10 Moderating Effect of Monitoring and Corporate Governance

This table investigates the relation between common institutional ownership and Chinese firms' OFDI using the subsamples based on corporate governance. The key independent variable and all of the control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% , respectively.

Panel A: Monitoring

	(1)	(2)	(3)	(4)
Variables	Investment	Investment	Investment	Investment
	Ownership Concentration		Check-and-Balance	
	High	Low	Weak	Strong
L.DUMCom	0.466**	0.258	0.531**	0.208
	(2.07)	(1.14)	(2.34)	(0.90)
L.Firm Size	1.016***	1.042***	1.018***	1.051***
	(12.17)	(13.11)	(12.48)	(12.70)
L.FA/TA	-3.956***	-2.694***	-3.682***	-3.013***
	(-4.33)	(-3.14)	(-3.80)	(-3.62)
L.CF/TA	1.070	1.613*	0.884	1.717*
	(1.40)	(1.66)	(1.16)	(1.76)
L.Leverage	-0.721	-1.511***	-0.783	-1.417***
	(-1.46)	(-3.30)	(-1.60)	(-3.09)
L.ROA	-0.197	-2.465***	-0.836	-2.129**
	(-0.18)	(-2.73)	(-0.77)	(-2.34)
L.CAPEX/TA	2.082*	1.841	2.178*	1.886
	(1.79)	(1.52)	(1.85)	(1.59)
L.Firm Growth	0.055	-0.039	0.129	-0.103
	(0.40)	(-0.46)	(0.93)	(-1.14)
L.Tobin's Q	-0.012	0.126**	0.008	0.112*
	(-0.17)	(2.07)	(0.12)	(1.79)
L.Board Size	-0.415	0.338	-0.408	0.313
	(-0.93)	(0.67)	(-0.93)	(0.60)
L.Independence	0.010	0.019	0.010	0.019
	(0.75)	(1.46)	(0.78)	(1.41)
L.Top5	0.002	0.001	0.004	-0.000
	(0.39)	(0.11)	(0.72)	(-0.06)
L.Firm Age	-0.444*	-0.193	-0.288	-0.288
	(-1.70)	(-0.79)	(-1.10)	(-1.17)
L.Institutions	0.008	-0.002	0.007	-0.002
	(0.77)	(-0.17)	(0.71)	(-0.27)
Constant	-0.499	-4.512**	-1.577	-4.124*
	(-0.22)	(-2.06)	(-0.69)	(-1.86)
Observations	5,176	5,529	5,197	5,508
R-squared	0.247	0.249	0.255	0.241
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Panel B: Corporate governance

	(1)	(2)	(3)	(4)
Variables	Investment	Investment	Investment	Investment
	CEO duality		CEO salary	
	No	Yes	Low	High
L.DUMCom	0.458**	0.429	1.132***	-0.136
	(2.32)	(1.38)	(3.53)	(-0.62)
L.Firm Size	1.073***	0.980***	0.766***	1.167***
	(15.49)	(8.49)	(7.05)	(14.50)

L.FA/TA	-3.430***	-2.408**	-2.385**	-3.370***
	(-4.51)	(-2.30)	(-2.32)	(-3.97)
L.CF/TA	0.960	1.699	1.568*	0.451
	(1.41)	(1.30)	(1.70)	(0.43)
L.Leverage	-1.229***	-1.077**	-0.314	-1.708***
	(-2.89)	(-1.96)	(-0.64)	(-3.14)
L.ROA	-1.240	-1.757	-0.784	-2.474**
	(-1.56)	(-1.29)	(-0.77)	(-2.21)
L.CAPEX/TA	2.650**	0.937	0.664	1.856
	(2.40)	(0.72)	(0.53)	(1.45)
L.Firm Growth	-0.099	0.115	0.183*	-0.157
	(-1.12)	(0.89)	(1.71)	(-1.31)
L.Tobin's Q	0.104*	0.037	-0.006	0.069
	(1.90)	(0.46)	(-0.09)	(1.08)
L.Board Size	-0.353	0.574	-0.229	-0.193
	(-0.88)	(0.93)	(-0.44)	(-0.36)
L.Independence	0.005	0.025	0.022	0.012
	(0.48)	(1.45)	(1.61)	(0.92)
L.Top5	-0.000	0.001	-0.001	0.005
	(-0.02)	(0.15)	(-0.24)	(0.91)
L.Firm Age	-0.348	-0.065	-0.431*	-0.304
	(-1.55)	(-0.23)	(-1.77)	(-1.24)
L.Institutions	0.001	0.007	0.005	0.001
	(0.08)	(0.64)	(0.49)	(0.15)
Constant	-1.967	-5.095*	2.816	-5.196**
	(-0.98)	(-1.74)	(1.06)	(-2.22)
Observations	7,482	3,223	4,142	4,202
R-squared	0.246	0.228	0.171	0.248
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 11 Additional Tests on State Ownership

This table investigates the relation between common institutional ownership and Chinese firms' OFDI by using the subsamples based on the nature of common owners and investment destinations. The key independent variable and all of the control variables are lagged for one year. The definitions of all of the variables are presented in the Appendix Table A1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Alternative regression with full sample

Variables	Investment
L.STATECom	0.377*
	(1.71)
L.PRIVATECom	0.697***
	(2.83)
L.Firm Size	1.028***
	(15.45)
L.FA/TA	-3.338***
	(-4.52)
L.CF/TA	1.379**
	(2.18)
L.Leverage	-0.989**
	(-2.43)
L.ROA	-1.492*
	(-1.92)
L.CAPEX/TA	1.889*
	(1.85)
L.Firm Growth	-0.027
	(-0.33)
L.Tobin's Q	0.085
	(1.54)
L.Board Size	-0.248
	(-0.64)
L.Independence	0.011
	(1.03)
L.Top5	0.005
	(1.10)
L.Firm Age	-0.241
	(-1.13)
L.Institutions	0.004

	(0.53)
Constant	-2.498
	(-1.36)
Observations	8,838
R-squared	0.241
Industry FE	YES
Year FE	YES

Panel B: Subsample analysis based on several classifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Investment	Investment	Investment	Investment	Investment	Investment	Investment	Investment
	SOE		Developed countries		Belt-road countries		Tax Haven	
	Yes	No	Yes	No	Yes	No	Yes	No
L.DUMCom	0.661***	0.184	0.612***	-0.029	0.537	0.539**	1.107**	0.537***
	(2.84)	(0.68)	(2.90)	(-0.07)	(1.46)	(2.45)	(2.14)	(2.79)
L.Firm Size	1.027***	1.102***	1.092***	1.030***	1.030***	1.090***	1.067***	1.054***
	(9.04)	(13.62)	(15.16)	(7.53)	(9.36)	(14.70)	(6.46)	(15.25)
L.FA/TA	-4.586***	-2.447***	-3.489***	-3.013	-3.792**	-3.619***	-4.200*	-3.188***
	(-2.99)	(-3.41)	(-4.61)	(-1.23)	(-2.13)	(-4.56)	(-1.84)	(-4.23)
L.CF/TA	0.490	1.177	1.642**	0.761	1.957*	1.488*	1.215	1.814**
	(0.42)	(1.54)	(2.12)	(0.72)	(1.66)	(1.91)	(0.71)	(2.52)
L.Leverage	-1.817**	-0.904**	-1.068***	-0.989	-0.599	-1.159***	-1.253	-1.009**
	(-2.29)	(-2.31)	(-2.62)	(-1.09)	(-0.94)	(-2.70)	(-1.32)	(-2.52)
L.ROA	-3.188*	-0.958	-1.856**	1.463	1.277	-1.939**	-3.359	-1.044
	(-1.94)	(-1.22)	(-2.22)	(0.89)	(0.83)	(-2.31)	(-1.48)	(-1.31)
L.CAPEX/TA	2.124	1.281	1.626	6.198***	3.907***	1.572	2.585	1.863*
	(0.99)	(1.34)	(1.58)	(3.43)	(2.66)	(1.46)	(1.03)	(1.90)
L.Firm Growth	-0.113	0.003	0.069	-0.054	-0.211	0.045	0.313	-0.002
	(-0.84)	(0.04)	(0.79)	(-0.34)	(-1.27)	(0.52)	(1.16)	(-0.02)
L.Tobin's Q	0.049	0.060	0.071	0.160	0.286***	0.052	0.164	0.084
	(0.48)	(1.06)	(1.20)	(1.27)	(3.33)	(0.85)	(1.33)	(1.47)
L.Board Size	-0.143	0.058	-0.192	0.148	-0.294	-0.035	0.516	-0.128
	(-0.23)	(0.14)	(-0.47)	(0.20)	(-0.39)	(-0.08)	(0.42)	(-0.33)
L.Independence	0.016	0.011	0.006	0.032*	0.038**	0.002	0.032	0.007
	(0.97)	(0.94)	(0.53)	(1.87)	(2.18)	(0.18)	(1.02)	(0.65)

L.Top5	0.021**	-0.005	0.000	0.005	-0.000	0.001	0.018	-0.001
	(2.52)	(-1.07)	(0.02)	(0.68)	(-0.06)	(0.18)	(1.35)	(-0.26)
L.Firm Age	-0.045	-0.147	-0.403*	-0.163	-0.565	-0.333	-0.753	-0.302
	(-0.11)	(-0.69)	(-1.77)	(-0.44)	(-1.33)	(-1.46)	(-1.08)	(-1.43)
L.Institutions	0.000	0.002	0.004	-0.018	0.007	-0.003	0.032	0.000
	(0.01)	(0.27)	(0.43)	(-1.24)	(0.50)	(-0.39)	(1.58)	(0.04)
Constant	-4.243	-5.064**	-3.043	-5.537	-2.312	-3.262	-3.865	-2.920
	(-1.15)	(-2.34)	(-1.50)	(-1.50)	(-0.70)	(-1.58)	(-0.78)	(-1.52)
Observations	2,850	7,855	8,140	1,276	1,745	7,671	944	8,472
R-squared	0.357	0.199	0.245	0.365	0.352	0.250	0.496	0.234
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES

Panel C: Alternative regression with subsamples based on several classifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Investment	Investment	Investment	Investment	Investment	Investment	Investment	Investment
	SOE		Developed countries		Belt-road countries		Tax Haven	
	Yes	No	Yes	No	Yes	No	Yes	No
L.STATECom	0.635**	-0.038	0.489*	0.304	0.652	0.368	0.550	0.399
	(2.12)	(-0.12)	(1.94)	(0.48)	(1.29)	(1.35)	(0.90)	(1.55)
L.PRIVATECom	0.733**	0.558	1.120***	-0.112	0.506	1.050***	2.173**	0.895***
	(2.32)	(1.58)	(3.60)	(-0.25)	(1.10)	(3.40)	(2.44)	(3.35)
L.Firm Size	1.043***	1.065***	1.076***	1.011***	0.975***	1.083***	1.025***	1.045***
	(9.13)	(11.80)	(13.74)	(6.72)	(7.82)	(13.48)	(5.74)	(13.95)
L.FA/TA	-4.603***	-2.498***	-3.711***	-1.500	-2.887	-3.937***	-4.211	-3.329***
	(-2.97)	(-3.04)	(-4.28)	(-0.54)	(-1.48)	(-4.34)	(-1.64)	(-3.85)
L.CF/TA	0.408	1.369*	1.748**	0.230	1.664	1.463**	1.051	1.758**
	(0.35)	(1.82)	(2.31)	(0.20)	(1.18)	(1.96)	(0.48)	(2.50)
L.Leverage	-1.807**	-0.653	-0.905*	-0.262	-0.062	-1.043**	-1.529	-0.810*
	(-2.26)	(-1.43)	(-1.93)	(-0.26)	(-0.08)	(-2.12)	(-1.57)	(-1.77)
L.ROA	-3.327**	-0.897	-1.991**	2.870*	2.692	-1.965**	-2.966	-1.009
	(-2.00)	(-1.05)	(-2.16)	(1.69)	(1.46)	(-2.17)	(-1.04)	(-1.16)
L.CAPEX/TA	1.869	0.982	1.728	6.727***	4.764**	1.436	2.327	1.828
	(0.86)	(0.85)	(1.45)	(3.02)	(2.54)	(1.17)	(0.82)	(1.59)
L.Firm Growth	-0.105	0.003	0.064	-0.107	-0.163	0.023	0.485*	-0.032

	(-0.78)	(0.03)	(0.69)	(-0.66)	(-0.97)	(0.24)	(1.71)	(-0.37)
L.Tobin's Q	0.055	0.062	0.080	0.150	0.278***	0.058	0.090	0.101
	(0.53)	(0.97)	(1.24)	(1.08)	(2.87)	(0.88)	(0.63)	(1.61)
L.Board Size	-0.065	-0.174	-0.360	0.016	-0.672	-0.134	0.561	-0.248
	(-0.11)	(-0.36)	(-0.79)	(0.02)	(-0.78)	(-0.29)	(0.38)	(-0.57)
L.Independence	0.016	0.010	0.003	0.031	0.033	0.001	0.019	0.005
	(0.95)	(0.78)	(0.26)	(1.61)	(1.58)	(0.05)	(0.48)	(0.44)
L.Top5	0.023***	-0.004	0.004	0.005	0.001	0.004	0.027	0.001
	(2.69)	(-0.75)	(0.67)	(0.58)	(0.07)	(0.65)	(1.44)	(0.26)
L.Firm Age	-0.071	-0.122	-0.299	-0.520	-0.706	-0.265	-0.572	-0.218
	(-0.18)	(-0.49)	(-1.16)	(-1.12)	(-1.33)	(-1.03)	(-0.71)	(-0.91)
L.Institutions	-0.000	0.005	0.005	-0.021	0.013	-0.003	0.039*	0.000
	(-0.03)	(0.46)	(0.56)	(-1.28)	(0.77)	(-0.35)	(1.71)	(0.01)
Constant	-3.329	-3.995	-2.553	-5.753	-1.119	-2.935	-3.481	-2.760
	(-0.91)	(-1.63)	(-1.16)	(-1.41)	(-0.29)	(-1.31)	(-0.56)	(-1.32)
Observations	2,835	6,003	6,662	1,050	1,404	6,308	759	6,953
R-squared	0.360	0.213	0.260	0.388	0.366	0.269	0.525	0.250
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES

Appendix

Table A1 Variables Definition

Variables	Definition
Investment	Natural logarithm of the actual amount in CNY of annual foreign investment of a firm in a fiscal year.
DUMCom	A dummy variable equal to one if the firm is commonly owned by at least one institutional common owner in any of the four quarters of a fiscal year within the same industry and zero otherwise.
NUMConn	Natural logarithm of one plus the number of peers that share a common institutional owner of the firm over the four quarters within the same industry of a fiscal year.
NUMCom	Natural logarithm of one plus the number of institutional common owners that commonly own a firm over the four quarters of a fiscal year.
AVGNum	Natural logarithm of one plus the average number of peers with common owners over the four quarters within the same industry of a fiscal year.
PCTCom	The sum of the average percentage shareholdings by all institutional common owners of each firm over the four quarters of a fiscal year.
Firm Size	Natural logarithm of the total assets.
FA/TA	Value of s firm's fixed assets divided by total assets.
CF/TA	Firm's operating cash flow divided by total assets.
Leverage	Total debt divided by total assets.
ROA	Net profit divided by total assets.
CAPEX/TA	Firm's capital expenditures divided by total assets.
Firm Growth	Firm's revenue growth.
Tobin's Q	The market value of a firm divided by total assets of the firm.
Board Size	Natural logarithm of the number of directors.
Independence	The percentage of the independent directors on the board.
Top5	The percentage of the total top five shareholders.
Firm Age	Natural log of one plus firm age.
Institutions	Total percentage of shares held by institutions.
Rail	A dummy variable that is equal to one if the headquarters of a firm is located in a city that has a high speed railway station and zero otherwise.
CSI300	A dummy variable that is equal to one if the firm is newly added to the Shanghai Shenzhen 300 Stock Market Index.
Z-score	The Altman Z-score by following Altman (1968).
DTD	The distance-to-default by following Merton (1974).
STATECom	A dummy variable that is equal to one if the firm is commonly owned by at least one state-owned institutional common owner only in any of the four quarters of a fiscal year within the same industry and zero otherwise.
PRIVATECom	A dummy variable that is equal to one if the firm is commonly owned by at least one privately-owned institutional common owner only in any of the four quarters of a fiscal year within the same industry and

	zero otherwise.
SOE	A dummy variable that takes a value of one if the firm is a state owned enterprise and zero otherwise.
DVLP	A dummy variable that takes a value of one if the host country is a developed country and zero otherwise.
BRC	A dummy variable that takes a value of one if the destination is classified as a Belt Road country and zero otherwise.
Tax Haven	A dummy variable that takes a value of one if the destination is classified as a tax haven and zero otherwise.
DIST	Natural logarithm of the average distance of a firm's headquarters to two of its nearest international airports.

Table A2 Correlation Coefficient

	Investment	DUMCom	Firm Size	FA/TA	CF/TA	Leverage	ROA	CAPEX/TA	Firm Growth	Tobin's Q	Board Size	Independence	Top5	Firm Age	Institutions
Investment	1														
DUMCom	0.182***	1													
Firm Size	0.410***	0.345***	1												
FA/TA	-0.117***	0.042***	0.000	1											
CF/TA	0.064***	0.062***	0.040***	-0.002	1										
Leverage	0.147***	0.125***	0.516***	0.066***	-0.188***	1									
ROA	-0.027***	0.029***	-0.032***	0.064***	0.386***	-0.401***	1								
CAPEX/TA	0.007	-0.006	-0.061***	0.031***	0.149***	-0.078***	0.140***	1							
Firm Growth	-0.009	-0.014	0.012	-0.147***	0.017*	-0.004	0.242***	0.079***	1						
Tobin's Q	-0.121***	-0.018*	-0.352***	-0.024***	0.141***	-0.268***	0.191***	0.015	0.043***	1					
Board Size	0.088***	0.147***	0.256***	0.033***	0.023**	0.146***	0.002	-0.004	-0.026***	-0.132***	1				
Independence	0.039***	0.040***	0.026***	-0.019**	-0.003	-0.005	-0.010	-0.000	-0.002	0.043***	-0.497***	1			
Top5	0.049***	0.151***	0.103***	0.079***	0.120***	-0.096***	0.221***	0.090***	0.047***	-0.102***	-0.023**	0.077***	1		
Firm Age	0.076***	0.062***	0.217***	-0.013	0.026***	0.201***	-0.117***	-0.181***	-0.082***	-0.048***	0.061***	-0.026***	-0.176***	1	
Institutions	0.099***	0.066***	0.232***	-0.029***	0.094***	0.038***	0.190***	0.083***	0.109***	0.218***	0.042***	0.005	-0.117***	0.003	1

*** p<0.01, ** p<0.05, * p<0.1

Chapter Four - Conclusions

This chapter concludes our Essays One and Two. This study was motivated by the current research gap concerning the impact of China's greenfield OFDI on firm performance, and the impact of institutional common ownership on China's listed firms' OFDI. It's important to note that significant attention has been paid to the performance indicators, such as productivity, profitability, and accounting-based performance, but less attention has been paid to market-based performance that captures the responses of the market and investors. Thus, our Essay One examined the impact of China's greenfield OFDI on market-based performance that is measured as Tobin's Q. The findings provide insights into the consequences of the OFDI for a company. Essay Two investigated how Chinese listed firms' OFDI can be affected by institutional common ownership. These results provide a perspective from the drivers of the OFDI, which is from the institutional investors' perspective.

This chapter has two sections. Section 4.1 summarizes the hypotheses and the main findings from the two essays. Then, the limitations of this research and a discussion of potential areas for future research are provided in Section 4.2.

4.1. Review of the hypotheses and main findings

The table below summarizes the research objectives and hypotheses of two essays.

Essay One: To investigate the impact of China's greenfield outward foreign direct investment on firm performance.	
Hypothesis 1: *Chinese listed firms' outward foreign direct investment has an impact on firm performance.*	Support
Hypothesis 2: *The impact of Chinese listed firms' OFDI on firm performance will be mediated by the tax rate.*	Support

Hypothesis 3: *The impact of Chinese listed firms' OFDI on firm performance will be mediated by analyst coverage.*	Support
Hypothesis 4: *The impact of Chinese listed firms' OFDI on firm performance will be mediated by upgraded analyst recommendations*.	Support
Hypothesis 5: *The impact of Chinese listed firms' OFDI on firm performance differs between state-owned enterprises and non-state-owned enterprises.*	Support
Essay Two: To investigate the impact of common institutional ownership on Chinese firms' outward foreign direct investment.	
Hypothesis 1: *Common institutional ownership has a significant positive impact on Chinese firms' OFDI.*	Support
Hypothesis 2: *The positive impact of common ownership on OFDI is more pronounced in firms with less information and experience sharing.*	Support
Hypothesis 3: *The positive impact of common ownership on OFDI is more pronounced in firms with greater dependence on external financing.*	Support
Hypothesis 4: *The positive impact of common ownership on OFDI is more pronounced in firms with weaker monitoring.*	Support
Hypothesis 5: *The positive impact of common institutional ownership on Chinese firms' OFDI is mediated by financial distress.*	Support
Hypothesis 6: *The positive impact of common institutional ownership on firms' OFDI differs between state-owned and privately-owned common owners.*	Support

4.1.1. Essay One: The value impact of Chinese listed firms' outward foreign direct investment on firm performance

Based on a sample of all A-share firms (excluding financial firms) listed on the Shanghai and Shenzhen Stock Exchanges from 2003-2019, this essay examines the impact of outward foreign direct investment on firm performance. The results indicate that firms engaging in greenfield outward foreign direct investment have a positive effect on Tobin's Q, in general. The results remain robust with alternative measures of OFDI and significant after considering endogeneity

problems.

In addition, this essay highlights the differential impacts of China's greenfield OFDI between SOEs and non-SOEs. Based on the results, the positive impact is more pronounced in non-SOEs than SOEs. Further analyses show that SOEs are more likely to invest in developing countries, as well as Belt Road countries, which explains the lower level of Tobin's Q of SOEs engaging in OFDI. The results of an additional test, a DDD regression, are also consistent. Moreover, this essay investigates the possible mediators of the positive impact of China's greenfield OFDI. The results are also more pronounced in non-SOEs.

In sum, this essay provides new insights into the impact of China's greenfield OFDI on firm performance that is measured by Tobin's Q as a market-based indicator. Additionally, the findings about SOEs vs. non-SOEs suggests that the stock market does not respond positively if the outward foreign direct investment is recognized as politically interfered.

4.1.2. Essay Two: The impact of common institutional ownership on Chinese listed firms' outward foreign direct investment

This essay fills the gap in the recent literature on the impact of common institutional ownership on Chinese listed firms' outward foreign direct investment. Using a sample of A-share firms (excluding financial firms) listed on the Shanghai and Shenzhen Stock Exchanges from 2008-2020, this essay provides evidence that institutional common owners facilitate firms' OFDI. The results remain robust with alternative measures of common institutional ownership and significant after considering endogeneity problems. The findings from Essay Two are consistent with the coordination and monitoring enhancing effects of common institutional ownership.

In addition, this essay explores the possible moderators of the positive impact of common

institutional ownership. Specifically, this essay provides empirical evidence that firms can share information, experience, expertise, and even costs when coordinating with peer firms within the same industry. In addition, institutional common owners can promote the monitoring effect due to a reduction in adverse selection and agency problems. Moreover, the results of additional tests suggest that the institutional common owners with different state ownership may have different incentives.

Overall, to the best of our knowledge, this essay is the first study that investigates the association between common institutional ownership and Chinese firms' OFDI. It highlights a positive consequence of institutional common owners holding multiple firms within the same industry at the same time. This provides important policy implications for the emerging development of common institutional ownership that should be considered when designing polices and strategies for policy makers in the future.

4.2. Limitations and potential future research

As with all research, there are some limitations in this thesis. For Essay One, one important limitation is that the measure of firm performance is rather limited. Although there are several alternative indicators of firm performance, such as productivity and accounting-based performance, the indicators for market-based performance are relatively less. Thus, this study is unable to provide other alternative measures of performance.

For Essay Two, one limitation concerns the proxies of information and experience sharing. As an important part of the study, a solid measure for this will definitely help this study to become more robust and convincing. For now, the proxies for information and experience sharing are not measured directly for each firm-year observation and cannot reflect the possible linear relationship between common institutional ownership and information, as well as experience

sharing.

Finally, there is an interesting research question related to both essays concerning the functions of state ownership. In Essay One, the state ownership causes SOEs to behave as political avatars from the perspective of controlling the firm. In Essay Two, state ownership causes institutional common owners to follow their political incentives from the perspective of investing the firm. Thus, whether and how state ownership can affect differently as different roles in Chinese capital market. However, this thesis has not been able to investigate this question. This can be a potential research question in the future.

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STATEMENT OF CONTRIBUTION
DOCTORATE WITH PUBLICATIONS/MANUSCRIPTS

We, the student and the student's main supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the student's contribution as indicated below in the Statement of Originality.	
Student name:	Baizhou Lu
Name and title of main supervisor:	Jeff Wongchoti, Professor
In which chapter is the manuscript/published work?	Chapter Two

Describe the contribution that the student and members of the supervisory team have made to the manuscript/published work:[1]

Chapter Two includes my Essay One - The Value Impact of Chinese listed firms' Outward Foreign Direct Investment on Firm Performance. Data collection, methodology, formal analysis, and overall writing of Essay One were performed by Baizhou Lu. This essay was completed under the supervision of Prof. Jeff Wongchoti, A.P. Jing Liao, and Dr. Maggie Hao. There is a variation of the published work to what is in the dissertation as they reflect revisions at the journal.

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