

**FOREIGN ACQUISITIONS BY CHINESE MNES:
A COMPOSITION-BASED VIEW**

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Abstract

Drawing on the composition-based view, this study examines the role of innovation-related resource factors on Chinese MNEs' foreign acquisition decisions. We investigate two firm-level resource factors, absorptive capacity and received home-government innovation funds, as well as their effects under the contingency of home-country regional innovation performance. Using data on Chinese listed firms from 2011 to 2017, we find that the number of foreign acquisitions by Chinese MNEs is positively associated with the firms' absorptive capacity, whereas negatively associated with their received home-government innovation funds. Moreover, the relationship between Chinese MNEs' received home-government innovation funds and their decision of foreign acquisitions is contingent on the home-country regional innovation performance. Stronger regional innovation performance reduces the negative relationship between firms' received home-government innovation funds and their likelihood of engaging in acquisitions abroad.

Keywords: Foreign acquisitions, Innovation, Chinese MNEs, Composition-based view

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1. INTRODUCTION

Outward foreign direct investment (FDI) by emerging market multinational enterprises (EMMNEs) has experienced unprecedented growth in the past few decades. Among EMMNEs, the international expansion of Chinese companies through foreign acquisitions has received substantial interests. Previous research drawn from the resource-based view (RBV) assumed that the lack of heterogeneous resource prompts EMMNEs in general and Chinese firms in particular conduct acquisitions abroad to compensate their resource deficiency and compete against established rivals (Deng, 2009; Zhu & Zhu, 2016). It has been found that foreign acquisitions provide EMMNEs with quick access to knowledge, managerial skills, and technologies in overseas markets, hence foster their innovative capabilities (Deng & Yang, 2015; Fu et al., 2018; Luo & Tung, 2018). Although interesting insights have been reaped, extant research tends to take-for-granted the attractiveness of the targeted firms and heterogeneous resources being sold to EMMNEs (Deng, 2009). As a result, little attention has been paid to the acquirers especially what kind of resources may be obtained by these new players from the global strategic factor market (Cuervo-Cazurra et al., 2014; Mathews, 2006).

Barney (1986) defined “strategic factor market” as a market where firms trade resources in order to implement their strategies. As EMMNEs often use foreign acquisitions to offset their innovative backwardness (Deng, 2009), a global strategic factor market may be developed for firms to buy and sell innovation-related resources, include R&D facilities, technologies, and personnel (Luo & Child, 2015). It has been recognized that the majority of EMMNEs are way behind the global leading firms of their respective industries in terms of technological advancement (Fu et al., 2018). In addition, established firms are willing to sell their peripheral and non-core strengths in order to move up in the global value chain (Cuervo-

Cazurra et al., 2014). Thus, what are available for EMMNEs to acquire is likely to be ordinary rather than heterogeneous resources.

Given the current developing stage of emerging markets and most EMMNEs, they are largely deemed as ordinary firms with ordinary resources (Luo & Child, 2015). The innovation-related resources they can obtain abroad are likely to be ordinary that compatible with their existing competencies (Fu et al., 2018). This suggests that EMMNEs' innovation strategies in shaping their foreign acquisition decisions may deviate from previous research emphasizing resource deficiency prompts them to internationalize. By contrast, we provide that EMMNEs tend to innovate by upgrading domestic technologies and modifying existing product features through combining resources of domestic and international sources (Child & Luo, 2015; Lewin et al., 2016). Thus, research builds upon the RBV which assumes resource heterogeneity allow firms to take the global technological frontiers may not be sufficient to explain the innovation strategies adopted by EMMNEs in shaping their foreign acquisition decisions.

Moreover, although mainstream research highlights that domestic innovation bottleneck drives EMMNEs to engage in acquisitions abroad, a growing body of literature provides that these new players must possess some pre-existing strengths to internationalize (Buckley et al., 2016; Luo & Tung, 2018). For example, Chinese firms as latecomers are suffer from the lack of heterogeneous resources, but they have been proactively seeking for and organizing whatever resources are available from the global strategic factor market (Luo & Child, 2015). These paradoxical characteristics resonate with the Chinese cultural tradition which emphasizes embracing diversity to achieve synergy and surmount weaknesses (Zhou et al., 2019). However, few have examined what these advantages and disadvantages are in shaping EMMNEs' decision to engage in acquisitions abroad (Ramamurti, 2012; Luo & Tung, 2018). Such omissions may significantly hinder our understanding about EMMNEs' innovation

strategies, especially the impact of firm-level resource factors, on their foreign acquisition decisions (Luo & Zhang, 2016).

In addition, cross-border acquisitions may be interpreted as resulting from EMMNEs' ambition to compose externally acquired resources with their existing in-house competencies (Luo & Bu, 2018). The positive external economies generated by firms' immediate geographic milieu may provide them with business support and material inputs (Zhou & Li, 2008), which influence the effect of firms-level resource factors on EMMNEs' likelihood of engaging in acquisitions abroad. This highlights the contingent role of geographical locations, specifically regional innovation dynamics in allowing firms to optimize resources over space and utilize locational advantages. Hence, there may be certain boundary conditions where EMMNEs' foreign acquisitions are subject to the interaction between firm-specific attributes and regional innovation dynamics. Previous research has investigated the impact host-country regional innovation effect on Chinese firms' foreign acquisition decisions (Yakob et al., 2018). Yet, the role of home-country regional innovation performance tends to be neglected. Therefore, we know little about the contingent role of home-country regional innovation performance in shaping EMMNEs' decisions to conduct acquisitions abroad.

To fulfil the above research gaps, we investigate: (1) What are the impact of firm-level resource factors on EMMNEs' foreign acquisition decisions? (2) To what extent their effects may be moderated by the home-country regional innovation performance? We address these questions by drawing upon the CBV that focuses on how ordinary firms approach and organize ordinary resources to internationalize (Luo & Child, 2015). China is selected as our research setting given the unique innovation strategies adopted by Chinese companies may exert substantial influence on their foreign acquisition decisions. We suggest that Chinese firms adopt a compositional logic in their foreign acquisition decisions. The innovation strategy of combining resources of various resources to upgrade domestic technology and

knowledge increase their likelihood of engaging in acquisitions abroad. Specifically, stronger absorptive capacity may bolster firms' confidence to conduct foreign acquisitions. The lack of access to home-government innovation-related funds makes these new players to rely on foreign acquisitions as an alternative source of knowledge access. In addition, the strengths of their relationship may be subject to the contingency of home-country regional innovation performance.

We aim to contribute to the literature on EMMNEs' foreign acquisitions in the following ways. First, although research has investigated the attractiveness of the target firms' resource heterogeneity, little attention has been paid to the innovation strategies pursued by EMMNEs in shaping their foreign acquisition decisions. Building upon the CBV, our research fulfils this gap by providing that EMMNEs as ordinary firms may pursue a different innovation strategy from their established Western rivals (Luo & Child, 2015). The possession of ordinary resources by these new players prompt them engage in acquisition abroad to obtain resources from the global strategic factor markets that are compatible with their existing competencies. Second, we move beyond the generic propositions about EMMNEs' possession or lack of competitive advantages drives their foreign acquisition decisions by examining two firm-level resource factors, absorptive capacity and received home-government innovation funds, in shaping Chinese firms' acquisition decisions abroad. Third, we examine the boundary conditions of home-country regional innovation performance by highlighting the role of locational factor and its interaction with firm-level attributes on Chinese firms' likelihood of conducting acquisitions abroad.

This paper is organized in the following way. Section 2 presents the theoretical framework and hypotheses, followed by sample and data sources. We explain our results of hypotheses tests in Section 4. Finally, Section 5 discusses the implications of our findings, and concludes with limitations and future research directions.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1 Theoretical Framework

The CBV addresses how ordinary firms with ordinary resources may pursue growth (Luo & Child, 2015; Zhou et al., 2019). By ‘ordinary’ resources, we refer to resources are neither heterogeneous nor costly to copy that may be acquired from the global strategic factor market (Barney, 1986). By ‘composition’, it is about a firm’s capability to acquire a wide range of resources and knowledge (Luo & Tung, 2018). During the last decade, the RBV has become the dominant theoretical account in explaining the relationship between firms’ resource endowments and their path of international growth (Barney, 1991; Deng, 2009). While the RBV emphasizes the possession of heterogeneous resources in allowing firms to take global technological leadership and internationalize (Wang et al., 2012), the CBV does not assume the role of resource-based advantage in shaping firms’ trajectory of international growth. Instead, an underlying logic of the CBV highlights firms’ capability to acquire and organize multiple contributing resources, domestic and international, by undertaking internationalization (Luo & Bu, 2018). Most EMMNEs are characterized by the lack of superior resources in brand, market power, and technology, which hinder them to effectively compete internationally. As a result, acquiring asset from abroad are applied as a quick route to augment their resources base (Peng, 2012). To pursue international growth, EMMNEs tend to be outward looking and proactively search for opportunities to acquire whatever resources are available (Luo & Child, 2015). Their proficiency in capability to vary strategic intent and resource endowment allow them to access and leverage global resources for their compositional use, typically with the conduct of foreign acquisitions.

Although the RBV provides a useful lens to understand whether and how firms’ resource endowments drive their developmental path for growth, it may not adequately explain EMMNEs’ foreign acquisitions for a number of reasons. First, while EM firms have

proactively sought acquisitions abroad, an important impetus drives these deals to happen attributes to these firms' capability in identifying and absorbing needed resources in the global market (Luo & Child, 2015). Previous research built upon on the RBV has assumed that resource deficiency stimulates firms to augment their assets through cross-border acquisitions (Meyer et al., 2009). However, EMMNEs' possession of non-traditional advantages, for example their capability to identify the interdependency between within-firm and prospective resources, in shaping their decision of foreign acquisitions has been underexplored. Second, it has been suggested that foreign acquisitions provide firms the opportunity to access proprietary knowledge, thus bundle with their existing competencies (Kedia et al., 2012). By contrast, EMMNEs tend to acquire a broader range of resources that may be combined with firms' existing capabilities to offset their weaknesses such as technological and financial gaps (Luo & Child, 2015). Hence, instead of simply augmenting or exploiting external resource, EMMNEs' acquisition activities are influenced by the synchronization of internal resource utilization and international market opportunities that may help to magnify their strengths and surpass weaknesses. As extant research has mostly builds upon the RBV and experiences of developed country firms, it compels us to employ the CBV to explain the functions of the existing compositional resources Chinese firms owned before implementing foreign acquisitions.

Drawn upon the CBV, we examine the firm-level antecedents of foreign acquisitions by Chinese firms. Specifically, we look at Chinese firms' internal technological intensity and access to external finance given the importance of these factors to influence firms' decision of cross-border acquisitions. It has been suggested that firms with strong technological intensity are unlikely to conduct acquisition abroad as it provides little opportunity for resource exploitation (Meyer et al., 2009). Moreover, the shortage of finance hinders firms from paying for targeted assets abroad (Cui et al., 2014). However, Chinese firms' foreign

acquisitions may exhibit a different tendency from the conventional view. As firms in China are experiencing increasingly globalized and competitive market, it is common for many of them to rely substantially on improvising ordinary resources from multiple sources (Luo & Child, 2015). Their adoption of the compositional logic which emphasizes embracing diverse resources is consistent with the Chinese cultural tradition of harmonious arrangements of paradoxical elements and avoiding of going into the extreme (Zhou et al., 2019). The presence of ordinary resources in the global market may not be advantageous by themselves that can spur firms' purchase decision. It is a firm's capability to identify and specify the interconnections between its in-house competencies and prospective resources that bolster the firm's confidence of cross-border acquisitions. Additionally, the CBV emphasises the collaboration of strategic intent and resource endowment (Luo & Child, 2015). Chinese firms joined the global market as latecomers, thus they suffer from the lack of cutting-edged technology and advanced knowledge. They are playing the catch-up role rather than ice-breaker. Resources available from the global strategic market provides them the opportunity acquire substitution of in-house R&D to fill their knowledge deficiency (Fu et al., 2018). Composition broadens their insight on to avoid relying on single source for resource augment. These firm-level characteristics have been under-explored given that research tends to adopt the assumption of the RBV in examining EMMNEs' foreign acquisitions. Thus, our study provides insights into Chinese firms' distinctive characteristics in driving them to undertake acquisitions abroad.

In addition, although Chinese firms could acquire resources from the global market for compositional use, the pursuit of such a strategy requires a clear understanding on their strategic demands and accumulated capacity to gain success from the international activities (Fu et al., 2018; Luo & Child, 2015). The literature in international business and economic geography provides that the regional configuration of economic activities and knowledge

may generate externalities to influence firms' utilization of their existing resources and capabilities (Zhou & Li, 2008). This highlights the role of regional innovation dynamics in shaping firms' accessibility to external networks for relevant resources and services (Yakob et al., 2018). The level of regional innovation performance may affect the fierceness of innovation competition, the intent to gain a place in the domestic and global innovation development, hence interact with firm-level resource to influence Chinese firms' cross-border acquisition decisions.

2.2 Hypotheses

The CBV addresses how ordinary firms may acquire and improvise ordinary resources of various sources to internationalize (Luo & Child, 2015; Zhou et al., 2019). An important first step is to look at firm-level resource factors, i.e. the ownership or deficiency of which kind of resources can impact on their foreign acquisition decisions (Fu et al., 2018). In this study, we investigate Chinese firms' absorptive capacity and received home-government innovation-related funds, in shaping their likelihood of engaging acquisitions abroad.

2.2.1 Absorptive capacity

Absorptive capacity refers to the ability of a firm to recognize the value of new and external information, assimilate and apply it to commercial ends (Cohen & Levinthal, 1990). The CBV highlights that firms acquire resources from the global market should have the ability of quickly reconfigure internal and external competencies to address the changing environment (Luo & Tung, 2018). Therefore, the possession of absorptive capacity may serve as an enabler in driving Chinese firms' foreign acquisitions.

Previous research built upon the RBV assumes that the lack of heterogeneous resource increase Chinese firms' propensity of engaging in acquisitions abroad to compensate for their innovative deficiencies (Deng, 2009; Peng, 2012). Yet, absorptive capacity as a latent capability in prompting firms to conduct foreign acquisitions has been neglected. The CBV

suggests that the possession of absorptive capacity in driving Chinese firms' foreign acquisitions is congruent with the Chinese philosophy which appreciates embracing differences and diversity (Zhou et al., 2019). Under such philosophical tradition, paradoxical values such as different organizational systems, technologies, and cultures may co-exist and co-evolve (Luo & Child, 2015). Chinese firms tend to be resilient in absorbing and extending externally acquired knowledge (Luo & Tung, 2018). Their commitment in research and development (R&D) activities may enable them to identify and obtain needed technology and knowledge through foreign acquisitions. Thus, we suggest that Chinese firms with strong absorptive capacity are more likely to engage in foreign acquisitions.

Hypothesis 1: The number of foreign acquisitions by Chinese firms is positively related to their absorptive capacity.

2.2.2 Received home-government innovation funds

Foreign acquisitions introduce an alternative approach for Chinese firms to seek required assets which are conducive to overcome innovative bottleneck (Fu et al., 2018). However, firms may face a trade-off situation of acquiring resources from the global factor market or making things in house where the latter is more likely to receive home-government innovation-related funds (Guan & Yam, 2015). The Chinese government has developed various funding schemes to support firms' R&D activities, innovation achievements, and engagement of national or local innovation project (Guo et al., 2016).

As both in-house innovation and foreign acquisition activities are costly, firms have to choose their strategy of whether to conduct in-house R&D or engage in acquisitions abroad.

Although firms may use home-government innovation fund to build up their in-house R&D, it may create a backward position if they pursue a technological catch-up strategy. Foreign acquisition plays a role to offer Chinese firms get access to fill their shortage of knowledge (Fu et al., 2018). The limited role of in-house R&D indicates that to achieve better innovation

outcome, comparing to utilize external technological sourcing, firms may need to invest same amount or even more. As China is still an emerging country with a relatively low demand of cutting-edged technology, firms may not necessarily chase a frontier position in the global innovation competition but focus on upgrading domestic technologies and knowledge bases (Fu, 2012). Although Chinese firms' in-house R&D activities may be supported by home-government innovation-related funds, it may take longer for them to achieve technological upgrading. Thus, firms tend to rely on foreign acquisitions as an alternative source of knowledge access. Therefore, we hypothesize that

Hypothesis 2: The number of foreign acquisitions by Chinese MNEs is negatively related to the firms' received home-government innovation funds

2.2.3 The moderating role of regional innovation performance

Firms' propensity of conducting foreign acquisitions may be critically depending on their geographic locations and their ability to compose opportunities afforded by such locations with firm-specific attributes (Yakob et al., 2018). We suggest that home-country regional innovation performance may generate spill-over effects to influence the types of resource, learning opportunity, and knowledge available to EMMNEs. It may interact with the firm's absorptive capacity and received home-government innovation-related funds to influence their foreign acquisition decisions. A higher level of regional innovation performance may generate positive economic externalities by providing firms with new ideas and learning opportunities that would sharpen firms' ability to absorb knowledge and boost their confidence to acquire resources abroad. Moreover, firms reside in regions with stronger innovation performance may benefit from the location-specific advantage by fostering their international market knowledge, thus weaken the negative effect of received home-government innovation fund on their foreign acquisitions.

Regional innovation performance and firms' absorptive capacity

We define regional innovation performance as external economies accruing from clustered innovative activities in the region (Li & Zhou, 2008). Stronger innovation performance at regional level may enhance firms' absorptive capacity and accelerate their decisions to engage in foreign acquisitions in the following ways.

First, strong regional innovation performance may produce a positive economic spill-over effect that heighten firms' capability to assimilate and extend externally acquired knowledge (Lau & Lo, 2015). Regions enjoy greater commercial success in selling new products tend to attract investment in upgrading local business infrastructure such as upstream and downstream supply chains, logistics, and intermediary services (Luo & Child, 2015). These provide firms with more approximate supply of input components and specialized services, thus reduce their transactional costs. As a result, firms may devote more resources in R&D activities that can boost their confidence to acquire and leverage resources from the global market.

Second, stronger regional innovation performance may create a level of playing field to promote learning and collaboration among firms (Zanello et al., 2015). Regions have achieved greater commercial success in selling new products may cultivate an innovative culture. Firms reside in the region may be more willing to engage in collaborations for joint R&D activities. This may stimulate increased flow of social capital, talents, and business ideas that afford firms the opportunities to combine useful resources with their in-house competencies. The benefits of knowledge diffusion from regional collaborators may enhance firms' ability to value the importance of knowledge and technologies from various sources. Hence, they are more likely to embrace knowledge and resources of various sources by conducting foreign acquisitions.

Hypothesis 3: The positive relationship between Chinese MNEs' absorptive capacity and their number of foreign acquisitions is stronger when there is stronger regional innovation performance at home.

Regional innovation performance and firms' use of home-government innovation fund

The level of regional innovation performance can influence the substitutional effect of foreign acquisition to in-house R&D and transfer it to synergistic effect. Even Chinese firms are playing a catch-up role in the global technological competition, we should admit that the technological gap between Chinese firms and advanced frontiers has been diminished in the recent decades (Fu et al., 2018). Stronger regional innovation performance comes up with a stronger compositional capacity which could more effectively transform or unpack the external sourcing into their own knowledge system (Luo & Child, 2015). These regions have engaged in the innovation activities earlier comparing to those with low regional innovation performance and have a relatively higher requirement on innovation development. Thus, their requirement may not be strictly limited to a trade-off between in-house R&D activities and acquisitions abroad, but synergistically utilize in-house R&D capabilities to build a better understanding of foreign assets and experience a more efficient knowledge transformation and integration in order to win them a more competitive position in the further global technological competition (Luo & Child, 2015).

Consistent with the CBV, Chinese firms located in regions with a high innovation performance have equipped with relatively stronger original innovation resource and more demanding on new technologies to achieve a catch-up or even leapfrogging (Fu et al., 2018). The utilization of in-house R&D funding could enhance their compositional capability in order to better synthesize the resource purchased from the global market. In this case, the substitutional effect between in-house R&D resource and foreign external technological asset may turn to a synergetic effect.

The synergy in regions with a lower innovation performance may experience a failure as firms may not have enough accumulated innovation resources to assimilate the acquired knowledge (Fu, 2012). Conversely, blindly purchasing asset from the global market may result in a budget deficit. As mentioned, the technological gap between China and developed countries has been narrowed down in the past few decades. However, firms located in a low innovative region may not have a high demand on chasing a place in global innovation. Their compositional capability, in this case, may assist them to make a prudential decision to upgrade their underdeveloped technology through internally utilizing the assistance of government in-house R&D resource or purchase the needed asset from the global market (Luo & Child, 2015).

Hypothesis 4: The negative relationship between Chinese MNEs' access to home-government innovation funds and their number of foreign acquisitions is weaker when there is stronger regional innovation performance at home.

3. METHODS

3.1 Data and Sample

We constructed a dataset of foreign acquisitions by Chinese firms listed on the Shanghai and Shenzhen Stock Exchanges from 2011 to 2017. The year of 2011 was selected as a starting point because (1) the size and volume of foreign acquisitions conducted by Chinese companies may have considerably changed a decade after the government introduced the “go-global” policy (Financial Times, 2017); (2) the Chinese government has prioritized innovation as a national strategy and broadly requested listed firms to disclose innovation-related expenditure and income in their annual report since 2011.¹ We manually collected information about Chinese firms' foreign acquisitions from a number of sources, including

¹ Accounting Standards for Business Enterprises No.6 --- Intangible Assets. The 12th Five-Year Plan for Economic and Social Development of the People's Republic of China (2011-2015)

leading commercial information providers (e.g. CSMAR), firms' annual reports, and press media. The use of these multiple data sources enabled us to create a comprehensive database in relation to Chinese firms' acquisitions abroad. In addition, we removed acquisition deals in Hong Kong, Macau, and tax havens (British Virgin Islands and Cayman Islands). As a result, our sample includes 293 Chinese firms conducted 492 foreign acquisitions, with 1,253 observations.

3.2 Measurements

3.2.1 Dependent variable

Our dependent variable is the number of foreign acquisitions conducted by Chinese firms each year. It was measured by the number of complete acquisitions made by each firm every year. Using the number of foreign acquisitions by each firm to measure the level of acquisition activity enables us to treat each deal equally and avoid observations of extreme sizes or values.

3.2.2 Independent variables

Absorptive capacity

A firm's absorptive capacity indicates its ability to identify and configure external resources, technologies, and knowledge to its own advantage (Fu, 2008). We follow previous research by measuring firms' absorptive capacity as the percentage of a firm's annual R&D expenditure divided by its total revenue (Cassiman & Veugelers, 2006).

Received home-government innovation-related funds

Finance is important for firms to carry out R&D and innovation projects. A large portion of R&D and innovation activities by Chinese firms would depend on their access to government funding support (Guan & Yam, 2015). We measure firms' access to government innovation-related funds as the percentage of funding received by the Chinese acquiring firm from the central and/or local governments to the company's total revenue. Data about firms' access to

home-government innovation-related funds were manually collected from the CSMAR database. These funding schemes include direct earmarks, tax credits, and financial awards to firms' achievements in technological and R&D activities.

3.2.3 Moderating variable

Regional innovation performance

The introduction of new products and their market values may indicate the direct link between a region's overall capability to convert new ideas and technological opportunities into innovative sales and competitive market advantages (Fu et al., 2018). Thus, we operationalize regional innovation performance as the proportion of new product sales revenue generated by each province to the total national new product sales.

3.2.4 Control variables

We control for firm size, age, ownership, and industrial sector for heterogeneity. The firm size was measured by logarithm of a firm's total employees (Cui & Jiang, 2012). As older firms can have more resources and experiences in conducting acquisition abroad, we control for firm age as each firm's total years since incorporation (Buckley et al., 2016). The state-owned background may affect firms' resource accessibility (Cui & Jiang, 2012). Therefore, we include a control variable of firms' ownership form using the percentage of shares which hold by the central and local governments, or government-related institutions. We also control for the influence of foreign companies, which is captured by the percentage of shares owned by foreign firms (Luo & Bu, 2018).

Moreover, we combined the High-tech Industry Classification issued by Chinese National Bureau of Statistics (CNBS) and Chinese Securities Regulatory Commission Industry Classification (CSRC) to control for industry effects. In order to develop a finer-grained measurement of firms operating in the high-tech industries, we collected the published firms' high-tech certification and their CSRC code. Based on the High-tech Industry Classification

provided by the CNBS, we categorized a firm in the high-tech industry if it has the high-tech certification with CSRC code in the high-tech class in CNBS (1 = high-tech industry, 0 = otherwise).

In addition, foreign acquisitions maybe conducted for the purpose of increasing geographical influence or transferring domestic overcapacity (Cheng, 2016). We include a dummy variable to control for acquisitions took place in countries along China's Belt & Road Initiative (BRI), i.e. 1 = the host country is located along China's BRI route, 0 = otherwise². In addition, we exclude Israel and Singapore from the BRI list given these two countries constantly outperforms China in relation to their innovation performance according to the Global Innovation Index since its inception in 2007.

4. RESULTS

4.1 Estimation Model

We use panel data regression to display a time-related effect of Chinese firms' compositional resources on shaping their foreign acquisition decisions. Panel data estimation allows us to catch the dynamic changes of each sample distinguishing from cross-sectional data.

Additionally, the panel dataset may help to overcome the potential collinearity among independent variables compared to time-series estimation. Taking panel data to deliver econometric estimation, it considers the individual heterogeneity and creates more variations. As listed firms in China are obliged to publish their annual reports by the end of each calendar year, our sample includes firms' information for the whole year. Thus, endogeneity is unlikely to be a major threat in our research. As our dependent variable is a discrete

² China has started developing its relationship with countries and regions on the BRI list before the programme's official announcement in 2013. For example, the China – ASEAN 10+1 Cooperation Mechanism has been activated since 1997. The “16+1” Summit between China and Central and Eastern European countries have been introduced since 2012.

variable, we use negative binomial regression to process the data analysis. The model we constructed is shown below

$$MAN_{it} = \beta_1 x_{it} + \beta_2 (x_{it} * m_{it}) + \beta_3 C_{it} + \alpha_i + \mu_{it}$$

Where MAN_{it} represents the total number of foreign acquisitions by the Chinese acquiring firm i in time t ; x_{it} are the independent variables which hypothesized to have direct effects on the dependent variable; m_{it} represents the moderating variable; $x_{it} * m_{it}$ is the vector of interaction while C_{it} is a vector of control variables; μ is the error item.

The panel data in this research is a short panel which means data are on many individual units but only few time periods. The default standard errors method treats disturbances as independent and identically distributed items. However, panel data estimation assumes that the disturbances among different individuals are independent, but in a same individual, autocorrelation may exist among disturbances in different time periods. Therefore, in order to eliminate the inaccuracy of using the default standard error treatment, we undertake the block bootstrap method to re-sample on the individual units on each consecutive time block, not just one single time period. It means if an individual unit is resampled, observations of this unit in all time periods will be selected at the same time.

4.2 Result

Table 1 presents the descriptive statistics and variable correlations. Variance inflation factors among variables were well below the acceptable level of 10 (Neter et al., 1985), which suggests no issue of multi-collinearity.

Table 1 Correlation matrix

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Number of foreign acquisitions	0.39	0.84									
2. Absorptive capacity	0.05	0.04	0.04								
3. Received innovation-related funds	0.01	0.01	-0.047*	0.279***							
4. Regional innovation performance	0.08	0.05	-0.011	-0.016	-0.072**						
5. State ownership	0.08	0.17	0.019	-0.243***	-0.046	-0.135***					
6. Foreign ownership	0.03	0.12	-0.025	0.044	-0.045	0.056**	-0.117***				
7. Firm size	7.87	1.32	0.093***	-0.264***	-0.150***	0.02	0.425***	-0.049*			
8. Firm age	14.61	5.63	0.097***	-0.126***	0.007	-0.019	0.204***	-0.074***	0.121***		
9. Industry	0.58	0.49	-0.037	0.284***	0.059**	0.124***	-0.207***	0.037	-0.135***	-0.090***	
10. BRI countries	0.04	0.19	0.267***	-0.024	-0.035	-0.007	0.044	-0.033	0.032	0.092***	-0.002

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

Table 2 presents the results of our regression analysis. The influence of the control variables is displayed in Model 1. Model 2 included the independent variables of Chinese firms' absorptive capacity, their received home-government innovation funds, and the moderating factor of regional innovation performance. Models 3 and 4 introduced the interaction effects. Model 5 is a full model by including all the variables.

Our Hypothesis 1 suggested that firms with stronger absorptive capacity are more likely to conduct foreign acquisitions. It is supported with the empirical result in Models 2 and 5, where higher R&D ratio brings significant positive association into the numbers of foreign acquisitions by Chinese firms. ($\beta=0.049$, $p<0.01$; $\beta=0.045$, $p<0.05$). Thus, Hypothesis 1 is supported.

Hypothesis 2 posited that firms' likelihood of conducting acquisitions abroad is negatively associated with their access to received home-government innovation-related funding. In Models 2 and 5, firms' received innovation-related funds have a negative and statistically significant impact on firms' number of foreign acquisitions ($\beta=-0.149$, $p<0.05$; $\beta=-0.412$, $p<0.01$). This suggests that firms received less innovation-related funds from their home government are more likely to conduct acquisitions abroad. Therefore, the result confirmed our Hypothesis 2.

The results for the moderation effects of regional innovation performance on firms' absorptive capacity and received innovation-related funds are presented in Models 3-5. Our Hypothesis 3 postulated that stronger regional innovation performance will strengthen the positive effect of absorptive capacity on the number of foreign acquisitions conducted by Chinese firms. However, the coefficients of their interaction terms are positive but statistically insignificant in Models 3 and 5, which do not support Hypothesis 3.

For Hypothesis 4, we posited that stronger regional innovation performance will reduce the negative association between Chinese firms' access to home-government innovation-related funds and their number of foreign acquisitions. The interaction terms of firms' received innovation-related funds and regional innovation performance show positive and statistically significant signs in Model 4 ($\beta=0.032$, $p<0.05$) and Model 5 ($\beta=0.030$, $p<0.05$). This suggests that if a firm is from a region with stronger innovation performance, it would experience less negative impact of innovation-related funds on their decision of foreign acquisitions. Hence, our Hypothesis 4 is supported.

For the control variables, state ownership shows a negative and statistically significant sign in Models 1 – 5 ($p<0.01$). Moreover, firm size, firm age, and countries along China's BRI route are positive and statistically significant at $p<0.01$. Additionally, firms in high-tech sectors are negatively related to the decisions of conducting acquisitions abroad, but only reached 10% level of statistical significance in Models 2 – 4.

Table 2 Results of negative binomial regression analysis

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Control Variables</i>					
State ownership	-0.011*** (0.003)	-0.009*** (0.003)	-0.010*** (0.003)	-0.010*** (0.003)	-0.010*** (0.003)
Foreign ownership	-0.000 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)
Firm size	0.148*** (0.048)	0.163*** (0.049)	0.160*** (0.050)	0.160*** (0.050)	0.159*** (0.050)
Firm age	0.039*** (0.008)	0.040*** (0.008)	0.041*** (0.008)	0.041*** (0.008)	0.041*** (0.009)
Industry	-0.105 (0.091)	-0.162* (0.095)	-0.171* (0.098)	-0.156* (0.095)	-0.160 (0.097)
BRI countries	1.457*** (0.098)	1.442*** (0.103)	1.444*** (0.103)	1.434*** (0.104)	1.435*** (0.104)
<i>Independent Variables</i>					
Absorptive capacity		0.049*** (0.010)	0.036** (0.017)	0.050*** (0.010)	0.045** (0.018)
Received innovation-related funds		-0.149** (0.071)	-0.149** (0.072)	-0.423*** (0.143)	-0.412*** (0.144)
<i>Moderator</i>					
Regional innovation performance (RIP)		0.002 (0.009)	-0.009 (0.013)	-0.011 (0.010)	-0.014 (0.013)
<i>Interactions</i>					
Absorptive capacity*RIP			0.002 (0.002)		0.001 (0.002)
Received innovation-related funds*RIP				0.032** (0.014)	0.030** (0.015)
Constant	-1.404** (0.561)	-1.666*** (0.640)	-1.574** (0.669)	-1.529** (0.703)	-1.500** (0.747)
Observations	1,253	1,253	1,253	1,253	1,253
Log Likelihood	-979.6	-970.4	-969.9	-967.6	-967.5
Wald chi-square	321.3	305.8	307.1	314.8	317.3

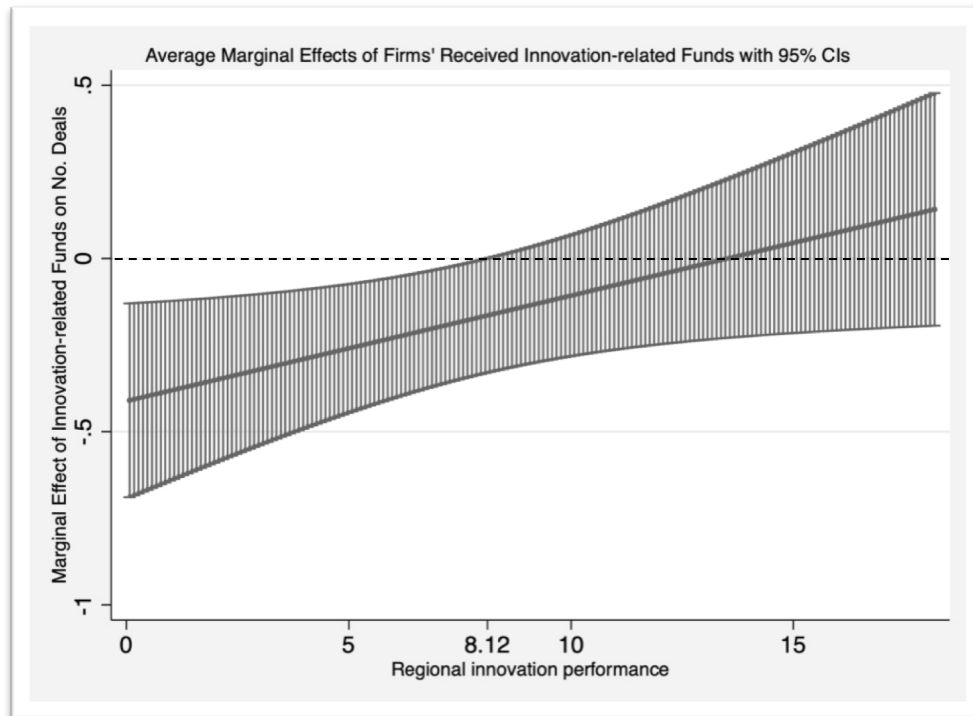
Standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01

4.3 Robustness Test

In addition to regression analysis, we conducted a number of tests to ensure the robustness of our results. First, we follow Brambor et al. (2006) to examine the marginal effects of the independent variable, Chinese firms' access to innovation-related funds, at different values of the moderating variable through plotting graphic display.

Figure 1 presents the marginal effect of Chinese firms' access to home-government innovation-related funds on the number of foreign acquisitions conducted by Chinese firms when regional innovation performance gets stronger. As shown in Figure 1, both the upper and lower bounds of the 95% confidence intervals were located on the same side of the zero-line when regional innovation performance was below 8.12%. The marginal effect between these two variables becomes insignificant when the regional innovation performance went above 8.12%. This suggests that stronger regional innovation performance reduces the negative association between firms' access to home-government innovation-related funds and their likelihood of conducting foreign acquisitions. Thus, it corroborate with the result of our regression analysis.

Figure 1 The moderation effect of regional innovation performance on the relationship between Chinese firms' foreign acquisitions and their received innovation-related funds



Second, we employed the regional dummy variable as the moderator to test the robustness of our results (i.e. 1 = Firms locate in China's coastal provinces; 0 = otherwise). As shown in Table 3, the results of the independent variables and interaction effects remain similar to our original regression.

Table 3 Robustness test

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Control Variables</i>					
State ownership	-0.011*** (0.003)	-0.009*** (0.003)	-0.009*** (0.003)	-0.010*** (0.003)	-0.010*** (0.003)
Foreign ownership	-0.000 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)
Firm size	0.148*** (0.048)	0.163*** (0.049)	0.161*** (0.049)	0.167*** (0.049)	0.166*** (0.049)
Firm age	0.039*** (0.008)	0.040*** (0.008)	0.041*** (0.008)	0.042*** (0.008)	0.042*** (0.008)
Industry	-0.105 (0.091)	-0.167* (0.096)	-0.177* (0.098)	-0.162* (0.095)	-0.163* (0.095)
BRI countries	1.457*** (0.098)	1.441*** (0.102)	1.440*** (0.102)	1.446*** (0.102)	1.446*** (0.102)
<i>Independent Variables</i>					
Absorptive capacity		0.049*** (0.010)	0.042*** (0.014)	0.052*** (0.010)	0.052*** (0.014)
Received innovation-related funds		-0.147** (0.072)	-0.147** (0.072)	-0.421** (0.166)	-0.419** (0.168)
<i>Moderator</i>					
Regional dummy		0.052 (0.112)	-0.033 (0.161)	-0.117 (0.134)	-0.123 (0.165)
<i>Interactions</i>					
Absorptive capacity*Regional dummy			0.016 (0.019)		0.001 (0.018)
Received innovation-related funds*Regional dummy				0.421** (0.178)	0.417** (0.182)
Constant	-1.404** (0.561)	-1.677*** (0.639)	-1.629** (0.639)	-1.615** (0.673)	-1.612** (0.668)
Observations	1,253	1,253	1,253	1,253	1,253
Log likelihood	-979.6	-970.3	-970.0	-966.9	-966.9
Wald Chi-square	321.3	310.0	310.4	321.0	321.1

Standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01

5. DISCUSSION

5.1 Main Findings and Contributions

This study investigates the impact of firm-level resource factors on EMMNEs' foreign acquisition decisions. Moreover, we examined the extent to which such effects are contingent upon home-country regional innovation performance. Looking at the absorptive capacity and received home-government innovation-related funds of Chinese listed firms, we have obtained a number of interesting findings.

First, our results show that strong absorptive capacity encourages Chinese companies to engage in acquisitions abroad. This corroborates the argument that EMMNEs must possess some unique strengths and weaknesses before and during their internationalizations (Luo & Tung, 2018). An underlying assumption of previous research built upon the RBV was about EMMNEs' innovative deficiency in prompting them to acquire heterogeneous resources abroad (Zhu & Zhu, 2016). Using the CBV, we highlight that EMMNEs with ordinary resources may pursue a different trajectory of innovation, hence internationalization from their established Western counterparts. The compositional strategy of innovation adopted by EMMNEs increase their likelihood of acquiring ordinary resources from the global strategic factor market that are compatible with their existing competencies.

Second, we found that Chinese firms received less home-government innovation funds are more likely to engage in acquisitions abroad. This may contrast with the generic proposition about the positive associations between Chinese companies' foreign acquisitions and their received home-government funding support (Hoskisson et al., 2013). Accessing government innovation-related funds tend to subject to the approvals at various levels of the government in China. It may considerably limit the scale and types of innovation-related activities that firms wish to engage with. Moreover, the various requirements in receiving Chinese government innovation-related funds to conduct in-house R&D activities and the availability

of technological resources in the global market may expose firms to a “make” or “buy” decision. Their strategic objective of upgrading domestic technological bases and minimizing the risks of failure from innovation-related activities may prompt Chinese firms to rely on foreign acquisitions to purchase readily available knowledge and technologies.

Third, we examine the role of home-country regional innovation performance and its interaction with firm-level factors in shaping Chinese companies’ decisions to conduct acquisitions abroad. Our result indicates that firms locating in regions characterized by greater commercial success in selling new products tend to afford the opportunity of composing such locational advantage with their existing capabilities.

In addition, we did not find support for the promotional effect of home-country regional innovation performance in boosting Chinese firms’ absorptive capacity. This non-significant result may indicate that Chinese firms have not developed the capability to absorb and capitalize on the positive externalities generated by home-country regional locations to boost their resource bases when engaging acquisitions abroad.

Our research may contribute to the literature on EMMNEs’ foreign acquisitions in a number of ways. First, instead of assuming the resource heterogeneity of the targeted firms, we look at EMMNEs’ innovation strategies in driving their foreign acquisition decisions. We provide that the adoption of the compositional logic of innovation prompts these new players to acquire whatever resources are available from the global strategic factor market. This may depart from research builds upon the RBV that assumes EMMNEs’ deficiency in innovative resources drives them to conduct acquisitions in overseas markets. We suggest that EMMNEs may pursue a compositional strategy of innovation by acquiring and organizing resources from various sources. Thus, we complement extant research by providing a different underlying assumption in explaining EMMNEs’ foreign acquisition decisions. Moreover, the

compositional logic of innovation in shaping Chinese firms' foreign acquisition decisions tend to be rooted in the Chinese cultural tradition that emphasizes the harmonious arrangements of multiple traits to achieve synergy and conquer weakness.

Second, we move beyond the generic propositions that suggest either the possession or the lack of competitive advantages drive EMMNEs to engage in foreign acquisitions by looking at what these strengths and weaknesses are. We add to research on EMMNEs by identifying two specific firm-level resource factors, Chinese firms' absorptive capacity and their received home-government innovation-related funds in driving them to conduct acquisitions abroad.

Third, we highlight the contingent effect of home-country regional innovation performance in changing the strength of association between firms' received home-government innovation funds and their likelihood of engaging in foreign acquisitions. Thus, we highlight the joint effect of locational factors and firm-level attributes on EMMNEs' international expansions.

5.2 Implications

This study may provide important implications for practitioners. First, our results indicate that stronger absorptive capacity encourage Chinese firms to conduct foreign acquisitions. Thus, managers at these companies should foster their in-house competencies such as R&D that may help them to effectively identify and acquire useful technologies and knowledge from the global market. Second, firms received less innovation-related funds from their home government tend to use foreign acquisition as an alternative channel to access knowledge. Hence, they should carefully search and evaluate the kind of resources that may be tapped from targeted companies abroad. Third, stronger regional innovation performance may alleviate the negative relationship between firms' access to innovation-related funds and their foreign acquisition decisions. This implies that firms should take advantage of their geographical proximity with home-region collaborators, especially the regional clustering

effect, to facilitate their innovation activities at home and opportunity of acquiring new knowledge through acquisitions abroad.

5.3 Limitations

This study has a number of limitations which provide opportunities for future research. First, we focused on Chinese firms' foreign acquisitions. It is important for future research to look at acquisitions by firms from other emerging markets to test the generalizability of our findings. Second, listed firms in China are required to disclose their innovation-related incomes and expenditures at a relatively late stage. Thus, our sample firms and their annual reports generally stated the amount of innovation-related fund received from the government. Future research may develop finer-grained measurement to capture funding sources by distinguishing between central and local governments. Third, we investigated firm-level factors that can impact on Chinese companies' foreign acquisition decisions. Future research may examine host-country factors in shaping EM firms' likelihood of conducting acquisitions abroad.

6. CONCLUSION

This study fills the knowledge on Chinese firms' consideration of non-idiosyncratic resource towards their internationalization. We adopt the CBV to address the firm-level compositional resources in shaping Chinese firms' decision to conduct acquisitions abroad. Testing the longitudinal data collected from Chinese listed firms over the period of 2011-2017, the results shows that Chinese firms' absorptive capacity and the amount of innovation-related funds received from their home government may substantially influence their likelihood of conducting acquisitions abroad. Additionally, the negative association between the amount of innovation-related funds received by firms and their decisions of foreign acquisitions may contingent upon home-country regional innovation performance. Our study provides new

insights about the role of firm-level compositional resources in explaining Chinese firms' decision to engage in acquisitions abroad.

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