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List of Abbreviations

AFSAs: Asset-type firm-specific advantages

APPs: Applications

BEV: Battery electric vehicle

BG: Born global company

BGs: Born global companies

BRIC: Brazil, Russia, India and China

CBMAs: Cross-border mergers and acquisitions

CEO: Chief Executive Officer

DMNEs: Developed market multinational enterprises

EMNEs: Emerging market multinational enterprises

EPs: European patents

EPO: European Patent Office

EV(s): Electric vehicle(s)

FCV(s): Fuel cell vehicle(s)

FDI(s): Foreign direct investment(s)

FSAs: Firm-specific advantages

IB: International Business

ICE(s): Internal combustion engine(s)

IPC: International patent classification

JV: Joint venture

LLL: Linkage-Leverage-Learning

M&As: Mergers and acquisitions

MNEs: Multinational enterprises

NEV(s): New energy vehicle(s)

NUTS-2: The second level of Nomenclature of Territorial Units for Statistics

OEM: Original equipment manufacturing

OFDI(s): Outward foreign direct investment(s)

OLI: Ownership, Location, and Internalization

OTA: Over-The-Air technology

PHEV(s): Plug-in hybrid electric vehicle(s)

POE(s): Private-owned enterprise(s)

R&D: Research and development

SOE(s): State-owned enterprise(s)

TFSAs: Transaction-type firm-specific advantages

US: United States of America

VIF: Variance inflation factor

WOS: Wholly owned subsidiary

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Abstract

This thesis studies the internationalization of emerging market multinational enterprises (EMNEs). Chapters 2, 3, 4, and 5 focus on the case of Chinese multinational enterprises (MNEs). Chapter 2 reviews extant literature about the internationalization of Chinese MNEs published from 1985 to 2021, proposes research frameworks, and finally provides suggestions for future research attention. Chapter 3 introduces four main international business theories and analyzes how the theories are developed in explaining the internationalization process of Chinese MNEs. The four theories are the OLI (Ownership, Location, and Internalization advantages) paradigm, the Uppsala model, the LLL (Linkage-Leverage-Learning) framework, and the Springboard perspective. Chapter 4 investigates the effect of post-cross-border mergers and acquisitions (CBMAs) of short and long terms on the innovation performance of Chinese MNEs. Using a sample of CBMAs between 1997 and 2017, empirical results show that CBMAs foster the innovation performance of Chinese MNEs in the short and long terms. The significant effects keep persistent when Chinese MNEs invest in targets from different industries or located in innovative countries. Moreover, comparing the innovation level of the host country and targets, the results suggest that Chinese MNEs are mainly interested in exploiting the benefits related to the innovative environment rather than in the specific knowledge of the target. Chapter 5 adopts a case-study approach to specifically explore the advantages and disadvantages of Chinese electric vehicle (EV) firms when they expand to European markets, and then suggests solutions to mitigate the disadvantages. Chinese EV firms' competitiveness over rivals in Europe comes from maintaining the advantages accumulated in the Chinese market and overcoming potential challenges encountered in Europe. Chapter 6 extends the scope of EMNEs by involving MNEs from different emerging countries. It compares the effect of inward European foreign direct investments (FDIs) from Brazil, Russia, India, and China (BRIC) on technological collaboration between Europe and individual BRIC countries and explores whether such impact varies with the innovation performance of European regions. The results are different across BRIC countries. Inward FDI from India and China is the most critical trigger to stimulate technological collaboration. Interestingly, India and Brazil are willing to collaborate with non-innovative European regions, but China is more interested in collaborating

with innovative European regions. However, Russia does not contribute to technological collaboration with Europe.

Chapter 1 Introduction

This thesis focuses on the study of the internationalization of emerging market multinational enterprises (EMNEs), with particular attention on the internationalization of Chinese multinational enterprises (MNEs). Outward foreign direct investment (OFDI) made by Chinese MNEs is the largest over the last years among all the emerging markets (UNCTAD, 2020). This phenomenon has drawn increasing attention from scholars in international business (IB) to study the international expansion of Chinese MNEs (Rui and Yip, 2008; Deng, 2009; Buckley, Yu, Liu, Munjal, and Tao, 2016). From the theoretical viewpoint, Chinese MNEs are a typical example of EMNEs, which provides a research context to help us understand the globalization process from emerging markets and test the applicability of IB theories regarding the international investments of EMNEs.

EMNEs are characterized by lacking superior firm-specific advantages to employ before internationalization (Child and Rodrigues, 2005; Zheng, Wei, Zhang, and Yang, 2016; Vukicevic, Fallon, and Ott, 2021). They aim to invest in several markets that are far from their home country and use aggressive entry modes, like acquiring foreign firms, to obtain strategic assets and boost their innovative capability (Luo and Tung, 2007). The situation challenges the traditional IB theories (i.e. the OLI paradigm and the Uppsala model) that suggest MNEs employ advantages in international investments and prefer to invest in countries that have lower psychic distances and accumulated knowledge about the local market (Johanson and Vahlne, 1977; Dunning, 1980; Guo, Zhang, Dodgson, Gann, and Cai, 2019). However, there are scarce studies analyzing whether the capabilities have been built up for EMNEs, such as Chinese MNEs, through internationalization expansion. In this regard, this thesis, therefore, aims to deepen our understanding of Chinese firms' globalization process and concentrate on the innovation effects on Chinese firms by conducting empirical analysis in some chapters.

This thesis includes 7 chapters. Chapter 1 is the introduction of the thesis. Chapter 2 is a systematic review of the internationalization of Chinese firms, and Chapter 3 introduces the main IB theories adopted in this research field. Chapters 4, 5, and 6 concentrate on the topic of the relationship between internationalization and innovation. Specifically, Chapter 4 conducts

empirical research on the relationship between CBMAs and the innovation performance of Chinese firms. Chapter 5 analyzes the case of Chinese electric vehicle (EV) firms that transfer from manufacturing low-quality traditional cars to producing high-quality EVs that will be launched in Europe. Chapter 6 incorporates more emerging markets (i.e. Brazil, Russia, India, and China) and explores the effect of inward European FDI from Brazil, Russia, India, and China (BRIC) on technological collaborations between European regions and BRIC. This study further distinguishes the innovative and non-innovative European regions. Chapter 7 concludes the thesis.

Chapter 2 systematically reviews the extant literature in the research field of the internationalization of Chinese MNEs. This review divides the existing academic work into six research perspectives: entry mode, degree of internationalization, determinants of location choices, driving forces of OFDI, post-internationalization process, and OFDI outcomes. I critically review extant studies, identify research gaps regarding each research aspect, and then suggest future research opportunities correspondingly. In terms of the research gaps, the innovation outcomes driven by the internationalization of EMNEs have been less explored in the existing research, which further strengthens my intention of addressing this issue in the thesis.

Chapter 3 introduces four critical international business theories that are employed to explain the international expansion of Chinese MNEs in the extant literature, which includes the OLI paradigm, the Uppsala model, the LLL framework, and the Springboard perspective. I discuss each of the theories in detail and provide insights on how these theoretical underpinnings are differently linked to other theoretical perspectives, to explain the internationalization process of Chinese MNEs. I suggest that traditional theories (i.e. the OLI paradigm and the Uppsala model) should be combined with the LLL framework and the Springboard perspective to better understand the nature of the internationalization process of Chinese firms. This is because many Chinese firms do not possess strategic assets to be exploited abroad, but they tend to acquire them through internationalization, and they are interested in investing in foreign countries that are distant from China. It suggests the international expansion of some Chinese firms is more likely to follow the LLL and Springboard approaches than the OLI paradigm and Uppsala model.

Chapter 4 studies the influence of CBMAs on the post-deal innovation performance of EMNEs over time and further explores whether and how this effect is contingent on the different selections of the target industry, target firms, and host countries. By using the LLL framework and Springboard perspective of EMNEs as theoretical foundations, this study argues that post-CBMAs enhance innovation performance over time because Chinese firms are seeking the opportunity to acquire superior assets through CBMAs in order to increase their innovation capability. Moreover, it considers the role of the target industry, the innovation level of destination countries, and the innovation capability of target firms (innovative versus non-innovative target firms) in driving the different impacts of CBMAs on innovation outcomes. I found that CBMAs foster the innovation performance of Chinese firms in the short and long terms and generate more robust effects when Chinese firms invest in different industries or very innovative host countries. The positive results are valid in the case of both innovative and non-innovative target firms in the short and long terms. This study contributes to a further understanding of the important role played by CBMAs in affecting firms' innovation performance by considering a relatively long period and introducing diverse selections of CBMAs.

Chapter 5 explores and analyzes the advantages and disadvantages of Chinese EV firms when they invest in European markets. The electric vehicle industry in China is growing rapidly over the years and China has become one of the largest EV markets worldwide. Because of their success in the domestic market, many of these Chinese EV manufacturers are becoming confident in the quality of their products and considering selling them to foreign markets. Through collecting and analyzing the secondary and primary data, this chapter comprehensively analyzes the advantages of Chinese EV firms as well as the disadvantages that they might face in Europe and finally provides feasible solutions to mitigate such disadvantages. This explorative work also helps to improve the competitive advantages of Chinese EV firms and upgrade the entire EV industry in China by overcoming the potential disadvantages faced in foreign markets.

Chapter 6 investigates the influence of inward European FDIs from BRIC countries on technological collaboration between European regions and each BRIC country. Their FDI investments in Europe bring reciprocal opportunities for emerging countries and European

regions to enhance technological development. However, the collaboration between emerging countries and European regions promoted by FDIs has been still underexplored. It is clear that EMNEs intend to improve their innovative capabilities by connecting, learning, and leveraging advanced resources of foreign players through FDIs (Mathews, 2006; Luo and Tung, 2007), but we do not know whether firms from all emerging economies behave in the same way. In this regard, this study compares the consequence of EMNEs' FDIs on collaborative patents with European regions. It provides empirical evidence of how China could perform differently from other emerging countries. Additionally, this study examines how the innovation performance of European regions affects this relationship. It supposes that the goal of seeking strategic assets might make innovative European regions more attractive.

This study uses a panel regression modeling with the region and time-fixed effects to test the association between greenfield FDIs and technological collaborations and compare this relation across BRIC countries. Empirical results indicate that the inward European FDIs from India and China improve technological collaborations. India increases the technological collaborations with European players when localizing in non-innovative European regions. By contrast, FDIs from China to Europe help for increasing collaborations when going to innovative European regions. The effect of inward FDIs from Brazil on technological collaborations with European regions is only significant when FDIs are related to non-innovative European regions. However, inward FDI from Russia does not foster cooperative outcomes when going to both innovative and non-innovative European regions. Finally, I suggest European policymakers should be open-minded to the FDIs from emerging countries in general, and particularly to those from India and China, the countries contributing to more technological collaborations. Also, the policymakers have to formulate diverse strategies for different innovation degrees of European regions to increase the collaborative outputs.

To answer the research questions of each chapter, different methodologies are adopted. In Chapter 2, a systematic review method is employed to study the extant literature. Chapter 4 and Chapter 6 implement econometric models: negative binomial panel model at the firm level and linear panel model with region and time-fixed effects at the regional level, respectively. Last, Chapter 5 is an analytical case-study paper that collects data and information about Chinese EV firms from different sources, including secondary data from diverse sources (e.g. industry

reports, annual reports, and several databases) and primary data by conducting 10 interviews with 6 different Chinese EV firms.

This thesis contributes to the literature in various directions. First, the literature review surveys prior studies on the internationalization of Chinese MNEs and supplements the work of Deng (2012) and Alon, Anderson, Munim, and Ho (2018) by considering more recent papers and integrating the research perspectives. Then, the literature review and IB theories explored in the first two chapters highlight the role of innovation performance related to the international expansion of Chinese firms is less studied in prior research. Therefore, this thesis goes deeper to analyze how the post-CBMAs affect Chinese firms' innovation capability (Chapter 4) and whether the Chinese EV firms are competitive in Europe even though they have grasped innovative technologies in the EV industry (Chapter 5).

Specifically, Chapter 4 contributes to prior studies on the impact of internationalization on the innovation performance of EMNEs by addressing the conflicting results of CBMAs on the innovation performance of Chinese firms and distinguishing CBMAs' choices made by Chinese acquirers. It also provides practical implications for managers and Chinese governments. It emphasizes that Chinese firms' managers should consider acquiring the target firm from a different industry or located in innovative host countries to increase the firm's innovation performance. Moreover, Chinese governments should continue to support local firms to expand abroad. Chapter 5 analyzes the advantages and disadvantages of Chinese EV firms when they expand into European markets, which is not explored in the previous studies. It also contributes to the literature on the challenges of internationalization by using a case study of a new industry. The findings could help managers recognize the disadvantages and deal with them through proposed solutions.

Also, the thesis extends the Chinese MNEs to EMNEs from other emerging markets. It studies the European collaborative patents with BRIC countries and suggests greenfield FDI as the driving factor in explaining the technological cooperation with European players in Chapter 6. This study provides the original results of technological collaborations between Europe and emerging markets and emphasizes the role of greenfield FDIs in affecting these technological collaborations. It suggests that under some circumstances, the FDIs from emerging countries to Europe could be a strategy for EMNEs to collaborate with local players to co-invent new

technologies and learn from them.

Second, this thesis contributes to IB theories by explaining the need to analyze the internationalization of EMNEs from a developing point of view. Specifically, most EMNEs lack ownership advantages and use international expansion as a springboard to obtain advanced knowledge, leverage it, learn it, and then overcome their disadvantages, and compete with global players (Luo and Tung, 2007). This process is in line with the LLL framework and the Springboard perspective (Mathews, 2006; Luo and Tung, 2007). However, this argument is not necessarily true for firms in all emerging markets, with the empirical evidence from Chapter 6. Furthermore, in a new industry (i.e. EV industry), Chinese firms have taken the first advantages and already garnered superior technologies and skills in producing high-quality EVs. Therefore, such firms are more likely to follow the OLI paradigm because they could exploit their competitive resources in foreign markets.

Third, this thesis adopts a dynamic perspective to complement prior studies on the internationalization of Chinese firms. Chapter 4 analyzes different selections of the CBMAs from a changing time aspect. Chapter 5 focuses on the transition from producing traditional cars to EV makers which embodies the evolution process of Chinese firms from passive internationalization as suppliers or contractors, to being a presence in the global marketplaces of the automotive industry. Chapter 6 considers another type of internationalization, namely, greenfield FDIs, and has allowed us to realize the different effects of FDI from China with that of from Brazil, Russia, and India to Europe.

Furthermore, Chapters 4 and 6 analyze innovation-related data and attempt to contribute to studies on innovation capability literature. Chapter 4 uses firms' patents granted data collected from the Orbit database, exploring how post-CBMAs impact the innovation capability of Chinese firms over time. From the current literature, it is not clear whether CBMAs increase firm innovation performance at different times and whether different types of CBMAs lead to the heterogenous innovation performance of Chinese firms. This paper creates a panel dataset that covers 29 years' patent family data of each acquiring firm conducted CBMAs globally. I use the large sample size of firm-level data to analyze Chinese firms' CBMAs and their innovation performance.

Chapter 6 detects how the regional co-patenting activities in Europe are driven by the FDI

investments from Brazil, Russia, India, and China. It originally combines the OECD RegPat database with the fDi Markets database to build datasets of European regional collaborative patents and FDIs from BRIC countries to these European regions. This article extends prior studies on FDI and innovation by investigating the collaborative innovation performance affected by FDI and considering the collaborations between Europe and emerging markets. This study implies that building subsidiaries through greenfield FDIs can be considered as a vehicle and anchor for establishing such global links, stimulating knowledge exchange for players from investing and invested countries, and increasing opportunities for co-creating new technologies.

Chapter 2 Systematic Literature Review on Internationalization of Chinese Multinational Enterprises

2.1 Introduction

A multinational enterprise, also named a multinational firm or a multinational corporation, is a corporation that conducts business activities in more than two countries and undertakes foreign direct investment (FDI) (Lazarus, 2001; Grosse, 2004). It consists of a headquarter located in the home country and several established subsidiaries in foreign countries (Lazarus, 2001). Chinese multinational enterprises (MNEs) are headquartered in Mainland China and establish several branches or subsidiaries in other foreign markets through outward foreign direct investment (OFDI). Many Chinese multinationals, such as Haier Group, TCL Company, Lenovo, and Huawei Technology Corporation, have embarked on the internationalization processes and compete with global rivals in the world arena. For decades, Chinese MNEs and their internationalization strategy have attracted many scholars to analyze them and a series of expansion activities (Deng, 2007; Li, Guo, and Xu, 2017; Han, 2021).

Internationalization is the outward movement of a firm's operations, including licensing, international alliances, and conducting FDI activities in foreign countries (Welch and Luostarinen, 1993). One significant way during the internationalization of MNEs is driven by OFDI. Total OFDI transactions from Chinese MNEs have increased constantly over the last decade and reached 117,120 million dollars in 2019, which is more than ten times larger in 2005 (UNCTAD, 2020). The rapid growth of internationalization of Chinese firms has been attracting the attention of international business (IB) scholars (Deng, 2007; Luo and Wang, 2012; De Beule, Somers, and Zhang, 2018).

Many studies concentrate on exploring the motivations, driving factors of OFDI, and the effect of internationalization on the financial performance of Chinese firms (Klossek, Linke, and Nippa, 2012; Liu, Buck, and Shu, 2005, Sun, Peng, Lee, and Tan, 2015; Huang, Xie, Li, and Reddy, 2017; Chen, Zhan, Tong, and Kumar, 2020). However, there are conflicting results, such as the effect of the Chinese government's support (Gaur, Ma, and Ding, 2018; Bai, Chen,

and Xu, 2021) and inward internationalization (Wang, Hong, Kafouros, and Boateng, 2012; Du, Xu, Voss, and Wang, 2021) on the extent of OFDI. The effect of OFDI on Chinese firms' financial performances has received inconclusive findings (Xiao, Jeong, Moon, Chung, and Chung, 2013; Cui and Xu, 2019). Moreover, some other research investigates why Chinese firms acquire advanced assets abroad, how Chinese firms complement through internationalization, and how the business is integrated after the internationalization strategy (Ai and Tan, 2018, 2020; Schaefer, 2020).

Despite the fast-developing studies on the internationalization of Chinese MNEs, the literature on this topic is fragmented and lacks a complete picture of the previous literature. As extensive studies on the kind of research subject occur, it is essential to conduct a survey on what we have learned in this research field and identify directions for future studies. Deng (2012) includes literature published between 1991 and 2010, focusing on the antecedents, processes, and outcomes of the internationalization of Chinese firms. However, much new research in this research area has emerged and provided new findings, so it is necessary to review existing articles that are not included in previous literature reviews. I supplement the previous literature review studies (Deng, 2012; Alon, Anderson, Munim, and Ho, 2018) by incorporating more recent results and proposing the research themes. Thus, I collect 191 academic papers published in high-quality journals from 1985 to 2021, to review and then provide theoretical insights on the research topic of the internationalization of Chinese MNEs.

The following research questions are addressed in this review paper:

(1) What do we currently know about the internationalization of Chinese MNEs?
(2) How the research topic could be directed in the future to deepen our understanding of the internationalization of Chinese MNEs?

This literature review complements the review paper published earlier in exploring the internationalization of Chinese MNEs (Deng, 2012; Alon et al., 2018). This review presents new insights by completely reviewing the relevant literature published in more journals, covering more years, and proposing a research framework based on the research topics that have already been addressed in the previous studies. For this purpose, I conduct a systematic literature review of academic studies published since 1985 in various top journals to advance our understanding of this research field.

The contributions of this review are as follows. First, I provide a more comprehensive and novel overview of the research on the internationalization process of Chinese MNEs, a significant field in studying the globalization of emerging market multinational enterprises (EMNEs). Then, I integrate key findings of the internationalization of Chinese MNEs within a holistic research framework covering different research themes. I discuss and analyze each research theme and identify knowledge gaps accordingly. Also, this paper provides future directions to scholars and implications for managers in terms of the internationalization strategy of Chinese MNEs.

The paper is organized as follows. Section 2.2 explains the method of where and how I select the literature on the internationalization of Chinese MNEs and shows the results of selected papers. Next, it discusses and analyzes the six research perspectives: entry mode, degree of internationalization, determinants of location choices, driving forces of OFDI, post-internationalization process, and OFDI outcome in Section 2.3. It provides the directions for future research in Section 2.4 and finally concludes the paper with implications and limitations in Section 2.5.

2.2 Review process and results

To understand the contents of extant studies on the internationalization of Chinese multinational enterprises, I conducted a systematic review based on the articles published between 1985 to 2021 on this research field. I will introduce how I search, select, code, and classify the papers, and finally present the review results at the end of this section.

2.2.1 Paper search and selection

To search and select literature,[1] I searched the online database and consulted the reference list of articles to collect comprehensive related literature, to determine all the items about the internationalization of Chinese multinationals from 1985 to 2021 from the leading academic journals of IB and management. Following Surdu and Mellahi (2016), I consider academic

[1] The selection database is different from preview review papers (Deng, 2012; Alon et al., 2018). This study covers more recent studies, leading journals, and identified keywords. This study does not just limit to the most cited papers.

papers published in the following journals: Academy of Management Journal (AMJ), Academy of Management Review (AMR), International Business Review (IBR), Journal of Management Studies (JMS), Journal of International Business Studies (JIBS), Journal of International Management (JIM), Journal of World Business (JWB), Management Science (MS), Management International Review (MIR), Organization Science (OS), Organization Studies (OSS), and Strategic Management Journal (SMJ). Additionally, I considered the Asia Pacific Journal of Management (APJM), according to Quer, Claver, and Rienda (2007), because this journal has involved several papers on Chinese firms' international businesses. In so doing, I aim to capture complete and extensive studies of the internationalization of Chinese MNEs published in high-quality journals.

The information source used to determine the research eligible for this review is the Web of Science. I identified relevant English-language articles published in this database. In this literature collection, book chapters, conference papers, periodicals, teaching cases and working papers are not included in our review, because this kind of research usually goes through a less strict peer review process, but only focuses on periodical literature (Deng, 2012; Alon et al., 2018). I typed the combined items in the search column:

TS= ((OFDI OR outward foreign direct investment* OR outward FDI* OR ODI* OR outbound FDI* OR internationalization* OR globalization* OR cross-border mergers and acquisition* OR CBMA* OR catch up) AND (China OR Chinese enterprise* OR Chinese company* OR Chinese firm* OR Chinese multinational firm* OR Chinese multinational corporation* OR emerging market multinational enterprise* OR emerging econom* OR emerging market* OR MNE latecomer*))*

Next, I selected the research that meets the main criteria by checking the articles' abstracts and introductions: the origin of MNEs (in Mainland China), and the focus on Chinese firms' internationalization. I excluded the studies related to "exporting firms", and "exporters" because they neither do not have subsidiaries abroad nor conduct OFDI. At the end of identification, my database consisted of 191 articles for final review.

2.2.2 Coding and classifying articles

In this stage, I extracted the following information in Excel and conduct the coding process (Surdu and Mellahi, 2016): general information (i.e. article title, authors, publication year, and journal name), theoretical perspectives, research methods, research contexts, variables in regression models (if available), and main findings.

Next, I categorized the sampled papers according to the specific research topic. Basically, I have found the papers focus on a few key research themes: entry mode, degree of internationalization, location choice, OFDI impacting factors, post-internationalization process, and OFDI outcomes. For instance, papers assigned to "entry mode" are those regarding entry mode selections or their outcomes. Papers are considered "OFDI outcomes" when performance-related issues are addressed, such as the financial performance or innovation performance of parent firms or foreign subsidiaries.

2.2.3 Review results

This section presents the following results: the number of papers per five or six years between 1985 and 2021 (which shows the trend of published papers in numbers), the number of types of studies (either an empirical article or a conceptual paper) by each journal, and research methodologies adopted in the selected papers.

2.2.3.1 Number of published papers over the period from 1985 to 2021

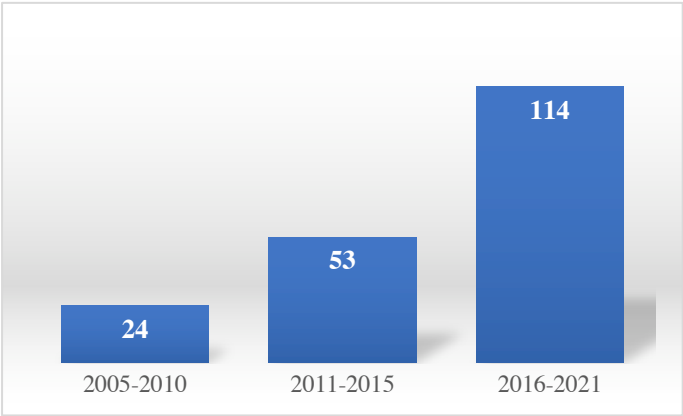

Figure 2.1: Number of papers published between 1985 and 2021

The growing pattern of internationalization for Chinese multinationals' research between 1985 and 2021, and the timely distribution, shows three time periods (2005-2010, 2011-2015, 2016-2021) in the publication trend (see Figure 2.1). Taking the year 2005 is the starting year is because the first paper on the internationalization of Chinese MNEs is published by Liu, Buck, and Shu (2005) in the selected literature. According to Figure 2.1, the overall trend is upward, but the number of papers increases sequentially per five or six years. In the early years, from 2005 to 2010, publications were scarce. The number of publications increases considerably from 2011 onwards. Articles are published mostly over the period from 2016 to 2021. The number of papers (2016-2021) increased by nearly five times than that in the early years (2005-2010). The overall increasing trend of published papers responds to the stronger interest in studying the internationalization of Chinese MNEs over time.

2.2.3.2 Numbers of studies: distribution by journal

The selected 191 articles are published in 10 journals. Table 2.1 shows the number of types of articles published in each journal. The internationalization of Chinese MNEs appears to be a topic frequently published in the following Journals: IBR (55 articles), JWB (39 articles), and JIBS (26 articles). Adopting content analysis, I coded 191 articles according to the research methods used, either empirical or conceptual. Conceptual papers extend, refine theories, or provide research comments and are conducted without any empirical analysis, while empirical papers build hypotheses, describe research methodology, explain the data sources, and conduct surveys or interviews. As shown in Table 2.1, most articles applied an empirical perspective published in several different journals. Most of the literature on the internationalization of Chinese MNEs is published in IB journals.

Journal	*Empirical Articles (amount)*	*Conceptual Articles (amount)*	*Total Articles/Journal (amount)*
IBR	55		55
JWB	36	3	39
JIBS	23	3	26

APJM	22	3	25
MIR	18	2	20
JIM	16		16
SMJ	5		5
JMS	2		2
OS	2		2
AMJ	1		1
Total (Type of) Papers	180	11	191

Table 2.1: Selected articles in each journal (with the name of the journal, type of studies, number of articles per journal and number of types of studies)

2.2.3.3 Research methodology

Table 2.2 summarizes research methodologies in reviewed studies, including research methods (qualitative, quantitative, or mixed analysis) and data sources. Most studies (94 studies) use quantitative analysis, and 32 studies adopt qualitative methodology in this research field. Moreover, 31 studies have employed mixed methods to address the research questions. Data are most obtained from secondary databases, followed by surveys. In the quantitative analysis, data are gathered from interviews.

Research method	**Survey**	**Secondary databases**	**Survey and secondary databases**	**Interview**	**Mixed sources (combination of secondary databases, survey, interview, etc.)**
Quantitative analysis	16	94	7		
Qualitative analysis				32	
Mixed analysis					31

Table 2.2: Research methodologies of selected literature

2.3 Research perspectives

In this section, I analyzed the selected papers on the internationalization of Chinese MNEs critically. I categorized the selected empirical studies into six groups according to their research perspectives: entry mode, degree of internationalization, determinants of OFDI location choice, driving forces of OFDI, post-internationalization process, and OFDI outcomes. Table 2.3 summarizes the research perspectives and related key studies.

2.3.1 Entry mode

Previous research regarding entry mode decisions focuses on the following two research strands: (1) the motivations and outcomes of acquisitions; (2) entry mode selections and outcomes.

(1) The motivations and outcomes of acquisitions

Extensive literature has concentrated on explaining the motivations and outcomes of a single type of FDI entry mode, that is, cross-border mergers and acquisitions (CBMAs). However, other kinds of OFDI entry modes (e.g. greenfield FDI) and non-OFDI entry modes (e.g. international alliances) are largely ignored in the prior studies. CBMA is considered a preferred entry mode by many Chinese MNEs (Luo and Tung, 2007). The adoption of CBMAs is motivated by seeking and acquiring strategic assets (Deng, 2007; Rui and Yip, 2008; Cui and Jiang, 2009; Deng, 2009; Zheng et al., 2016; Vukicevic, Fallon, and Ott, 2021), overcoming institutional constraints in China (Rui and Yip, 2008; Deng, 2009), supporting from the Chinese government (Deng, 2009; Buckley et al., 2018), and catching up with global leading firms (Choi, Cui, Li, and Tian, 2020).

Among these motivations, seeking strategic assets is the main motive to enter foreign markets through CBMAs for Chinese firms and thus received considerable attention from IB scholars (Rui and Yip, 2008; Klossek et al., 2012; Zheng et al., 2016; Tao et al., 2017). However, Chinese firms could also acquire strategic assets through other modes, such as international alliances and international partnerships, but it is underexplored.

It is clear that Chinese firms desire to acquire technology, brands, marketing, and managerial expertise to compensate for their competitive disadvantages (Zheng et al., 2016). Through CBMAs, they could access valuable knowledge and resources from foreign firms unrestrictedly and quickly (Child and Rodrigues, 2005). Then, by combining the acquired strategic assets with low-cost advantages in China, Chinese firms can build their competitive advantages to compete with global rivals (Luo and Tung, 2007; Rui and Yip, 2008; Zheng et al., 2016; Tao et al., 2017). Nonetheless, Chinese MNEs can select other types of entry modes to achieve such goals. For instance, through collaborations or international alliances with foreign firms, Chinese firms can acquire technological knowledge from foreign markets, which contributes to producing higher-quality products (Duysters, Jacob, Lemmens, and Yu, 2009). Future research may further explore whether other entry modes could help Chinese MNEs gain competitive advantages.

Extensive studies detect the outcomes of CBMAs completed by Chinese MNEs. The focus is mainly on the firm returns measured by cumulative abnormal returns and the likelihood of completing acquisition deals (Zhang, Zhou, and Ebbers, 2011; Zhang, Young, Tan, and Sun, 2018; Zhang, Lyles, and Wu, 2020). However, other dimensions of outcomes (e.g. innovations, return on equity) are less studied (Anderson, Sutherland, and Severe, 2015).

I found the outcomes can be influenced by several different factors at the firm, industry, or country levels. For the firm-level aspect, many studies consider the role of state ownership, but the impact of state ownership on acquisitions' consequences has received conflicting results. Chinese firms with state ownership are less likely to be complete or result in lower firm performance through CBMAs (Zhang, Zhou, and Ebbers, 2011; Li, Liu, Yuan, and Yu, 2017; Tao et al., 2017; Li, Li, and Wang, 2019). The low return is due to the host country's constraints of acquiring strategic resources for Chinese firms with political connections and the conflicting objectives between government and investing firms (Chen and Young, 2010; Greve and Zhang, 2017; Tao et al., 2017). Nevertheless, some studies find positive results of state ownership in acquisitions. Du and Boateng (2015) and Cui and Xu (2019) argued state-owned enterprises (SOEs) have high-profit growth because they are more likely to access to resources and support from the government, and face fewer financial constraints compared to privately owned enterprises (POEs). These government-related advantages lead to increased firm value (Du and

Boateng, 2015; Tu, Zheng, Li, and Lin, 2021). It implies that the positive image of the government relates to allowing SOEs to access and utilize the resources that facilitate OFDI.

Some scholars have considered other firm-level impacting factors in the light of the CBMAs' outcomes, such as limited to slack resources of acquirers, types of targets or acquiring firms (e.g. SOEs or POEs), and equity shares (Zhang et al., 2011; Zhang and He, 2014; Li, Li, and Wang, 2019; Zhang, Lyles, and Wu, 2020). Industry-level factors are limited to distinguishing the types of industry: high-tech, sensitive, or good-performing industries (Zhang et al., 2011; Zhang and He, 2014).

Country-level factors relate to the institutional environment in the home country or host country. Many studies explore how the institutions in host countries affect CBMAs' outcomes, but how the home country performs is largely ignored (Zhang et al., 2018). The institutional environment in host countries is reflected in political risks, governance quality and effectiveness (e.g. quality of the laws, regulations, administrative procedures, and policies formally sanctioned by the government) (Tao et al., 2017), cultural distance (Du and Boateng, 2015), and legitimacy (Zhang, Young, Tan, and Sun, 2018). Zhang, Zhou, and Ebbers (2011) claimed restrictions on acquisitions by laws and regulations in host countries decrease the acquisition deals by Chinese MNEs. The purchase is more likely to be completed in countries with good institutions (Zhang et al., 2011). Similarly, Tao et al. (2017) found Chinese MNEs that purchasing a target firm with a low level of political risk, but a high quality of governance gains high returns. Zhang et al. (2018) emphasize the external legitimacy of both home and host countries is important to the success of CBMAs.

Cultural distance has been identified as a notable factor affecting acquisitions but results in diverging findings (Tao et al., 2017). Tu et al. (2021) found cultural distance helps for strengthening the positive relationship between government ownership and the long-term performance of Chinese firms after acquisitions. However, Du and Boateng (2015) suggest that cultural difference is not beneficial to firm values and should be reduced by hiring managers who are Western-educated and have a deep understanding of the informal institutions in Western countries. Li, Li, and Wang (2016) argued cultural differences will decrease firm value, but this negative effect could be mitigated when acquirers have experience in acquisitions and are large in firm size.

(2) Entry mode selections and outcomes

Another research stream analyzes the determinants of the selection choice in FDI entry mode. From the current literature, the entry mode decision is based on the selection either between greenfield investment and acquisitions or between wholly owned subsidiaries and joint ventures. Greenfield FDI means establishing a foreign subsidiary from scratch by the Chinese firm, and acquisition refers to acquiring an established firm in foreign markets. A greenfield investment can thus be a wholly owned subsidiary (WOS) with whole ownership or a joint venture (JV) that shares ownership with other joint partners (Shen and Puig, 2018). The acquisition can also be a JV by purchasing part of the equity of a target firm or a WOS by acquiring the full equity of a target firm (Chung, Xiao, Lee, and Kang, 2016).

The Chinese firms' entry mode choices between greenfield FDI or acquisition are attributed to factors at firm and country levels. Several firm-level factors, such as market-seeking motivations, financial capabilities, and international experience of firms, are related to the choice of greenfield FDI. For instance, Chinese firms adopt greenfield FDI to expand markets (Klossek et al., 2012) and acquisitions to acquire strategic assets (Meyer, Ding, Li, and Zhang, 2014). International experience provides knowledge about foreign markets, which helps for reducing liabilities of foreignness when building a subsidiary abroad (Klossek et al., 2012; Shen and Puig, 2018).

In terms of country-level factors, there are no definite conclusions to suggest the choice of greenfield FDI. For example, with greater institutional development (e.g. the reduction of regulatory uncertainty) in China, Chinese firms tend to invest abroad through greenfield FDI to identify and exploit more profitable opportunities (Li, Xia, Shapiro, and Lin, 2018). Alon, Elia, and Li (2020) distinguished host countries into rule-based and relation-based countries based on the governance environment and argued that greenfield FDI will be preferred in relation-based ones. Meyer, Ding, Li, and Zhang (2014) suggest that when the host country has more technological resources or stronger shareholder protection, state-owned Chinese firms are less likely to choose the acquisition.

Another part of research in entry mode choices is based on the determinants of the selection between WOS and JV. Shen and Puig (2018) suggest WOS is considered if at least 95% of its

shares were owned by one Chinese investor, regardless of whether it is a greenfield firm or an acquired firm. A firm is a JV if it has more than one investor, and a JV can be formed through greenfield investment or acquisitions. Thus, the selection between WOS and JV is about the proportion of shares held by Chinese firms, which is called the ownership decision.

The determinants of choice between WOS and JV can also be classified into firm and country-level factors. Considering the research on firm-level factors, Chinese firms with large sizes are likely to choose WOS because they can commit more resources to foreign markets (Cui and Jiang, 2009). Xie (2017) concluded that younger and older Chinese firms prefer JV, and moderate-age firms are more likely to choose WOS.

Some studies consider country-level factors or integrate firm-level and country-level factors to detect the determinants (Meyer et al., 2014; Cui and Jiang, 2009, 2010). Meyer et al. (2014) found that lower equity controls are chosen by SOEs when the host country has rich knowledge and a strong rule of law and shareholder protection. Cui and Jiang (2009) claimed that Chinese firms prefer the WOS mode when the firms encounter an intensive industry competition in a host country and when they have the need to get foreign strategic assets completely and quickly (Cui and Jiang, 2010). Chinese firms will employ WOS to protect valuable assets from leaking (Cui and Jiang, 2010). JVs will be chosen if the Chinese firms operate in a high-growth market at the time of entry (Cui and Jiang, 2010), or if the host country has concentrated firms in the related industries as acquirers (Shen and Puig, 2018). These firms aim to establish first or early-mover advantages and mitigate barriers in cultures and government regulations by cooperating with partners in host countries.

Moreover, some studies take factors of both home and host countries into account. For instance, Chinese firms may choose WOS if there is financial support from the Chinese government, but when facing home and host country regulatory restrictions on OFDI, they are more inclined to select JV over WOS to share risks and pressures with other players (Cui and Jiang, 2012; Chung, Xiao, Lee, and Kang, 2016). Lu, Li, Wu, and Huang (2018) have argued that Chinese MNEs adopt the JV mode if there are high political hazards in African countries. This result is weakened when the firms have accumulated experience in host countries and when the Chinese government increases foreign aid to African countries.

Regarding post-entry outcomes, such as post-entry performance, the related papers are quite scant in the leading journals. Also, divergent results are found. Holtbrügge and Berning (2018) examined the performance of WOS and JV, as well as acquisitions and greenfield investments. They found these all the entry modes are associated with positive firm performance. Liu and Zou (2008) detected the performance of greenfield and acquisition FDI and found both of them contribute to superior firm performance. However, Elia, Kafouros, and Buckley (2020) argued that Chinese EMNEs improve their innovation performance when their foreign subsidiaries are built through CBMAs, instead of greenfield FDI.

2.3.2 Degree of internationalization

The degree of internationalization represents the extent to which a firm is involved in business in foreign markets or the extent to its international expansion (Sun, Peng, Lee, and Tan, 2015; Du and Zhou, 2019). Previous studies have been identified into two research angles: determinants of the degree of internationalization and the effect of the degree of internationalization on firm performance.

(1) Determinants of the degree of internationalization

The degree of internationalization of Chinese firms does not limit to OFDI because it is also evaluated by the foreign sales of firms. It can be affected by several determinants at the home country level and firm level. Few studies emphasize the significance of institutional environment or location in the home country (Ma, Ding, and Yuan, 2016; Xiao, Lew, and Park, 2020). Sun et al. (2015) explored the effect of home-country factors (i.e. institutional open access) on the degree of internationalization. They concluded institutional open access and financial market openness increase the degree of internationalization of Chinese MNEs. Institutional free access is refining formal rules that provide firms with the right to internationalize. Financial market openness may provide Chinese MNEs access to capital necessary to undertake overseas expansion investments.

Additionally, a regional governor who is experienced in guaranteeing institutional openness increases the international expansion of the Chinese MNEs. Xiao, Lew, and Park (2020) suggest that Chinese service firms located in coastal regions (where they develop fast) could have a higher degree of internationalization level, compared to those in inland or rural regions in China. Wang, Hong, Kafouros, and Boateng (2012) suggest that state-owned Chinese firms are likely to increase their degree of internationalization. This degree is stronger for firms with high levels of export experience but a low extent of inward internationalization (Gaur, Ma, and Ding, 2018). However, the factors referring to the home country to what extent impact the internationalization's degree are not examined. Also, the institutional context of host countries is underexplored.

As for the firm-level factors, extant studies lie in analyzing the impact of connections with governments and business partners, and firm-specific capabilities on the degree of internationalization. These studies only consider the relation with external players in the home country, and the linkages with foreign partners are not investigated. Du and Zhou (2019) conclude that good relations with business partners may guarantee the trustful conditions for repeated interactions, thereby facilitating MNEs to access, transfer, absorb and utilize achieved resources to invent new products and to transfer these products across borders. The ability to link with the Chinese government promotes the international expansion of Chinese firms because the firms can obtain several resources in terms of bank loans, technologies, overseas talent, getting government approval for OFDI from governments. However, Bai, Chen, and He (2019) concluded the negative effect of the Chinese government on the degree of international expansion of service MNEs, and this effect is stronger for content-oriented service sectors. Tang (2019) also found the negative effect of state ownership on expansion speed.

Moreover, very few sorts of firm capabilities (e.g. marketing capability, international experience) are discussed in the research (Bai, Johanson, and Martín, 2017; Li, Guo, and De Sisto, 2021). Bai, Chen, and He (2019) mentioned marketing capability is the ability of the firm to use knowledge and resources to satisfy the customers' needs. They found a positive effect on the relationship between political connections and internationalization in content-oriented service sectors. Strong marketing capabilities could help service firms to transfer the resources obtained from the Chinese government to commercial products to satisfy customers' needs.

(2) The effect of the degree of internationalization on firm performance

There are few papers studying the effect of the degree of internationalization on performance. Yuan, Pangarkar, and Wu (2016) examined this effect in the immediate and long term and concluded the effect changes over time. Since the benefits of internalizing assets in developing countries gradually decrease, there is a limit to the extent to which Chinese firms can benefit from other developing countries. Although expansion into developed countries leads to high costs in the short term and thus does not lead to immediate performance benefits, such development can provide a foundation for capability enhancement and performance improvement over time (Yuan, Pangarkar, and Wu, 2016).

Chen and Tan (2012) considered how this relationship changes with locations, that is, within Asia and Greater China Region (i.e. Mainland China, Taiwan, Hong Kong, and Macau), respectively. Expanding into the Greater China region leads to higher firm performance because they share similar cultures and historical origins with China.

Moreover, the increased profitability through internationalization is greater for firms affiliated with central governments than for those affiliated with local governments (Xiao, Jeong, Moon, Chung, and Chung, 2013). The MNEs with the government can enjoy support from the state and access resources, knowledge, and information about foreign markets that are provided by the government. The advantages from the government increase the firm performance (Xiao et al., 2013).

Current studies examine how the effect change with time, location, and government strength. Further studies may be along with the trace to conduct more analysis and investigate how the impact change with expansions into different regions or countries with heterogenous innovation performance or economic development, and with similar or different institutional contexts between home and host countries.

2.3.3 Determinants of OFDI location choices

The majority of location choice studies are set in exploring the OFDI (includes both greenfield FDI and CBMA) to locations at a worldwide range. Only a few papers capture the specific country/region as the location choice of Chinese firms: such as East and Southeast Asia

by Kang and Jiang (2012) and the US by Wu and Chen (2014). According to the relevant literature, the determinants to explain the location choice of Chinese MNEs can be divided into three levels: firm-, home country-, and host country- levels.

Most studies pay attention to the determinants of host countries, and few studies are detecting how the institutional environment in China impacts the OFDI's location. Wu and Chen (2014) suggest the better-developed institutional environment in the home country promotes Chinese MNEs' expansion into the US markets. In contrast, the rapid change of institutional environment in the home country reduces the trend of increase into US markets because they are often unable to do so due to the lack of resources and confidence in expanding abroad. Shapiro, Vecino, and Li (2018) claimed China provides development loans to host countries. In so doing, China could develop commercial and diplomatic relationships with host countries, which in turn helps Chinese firms' access to local natural resources (Shapiro, Vecino, and Li, 2018)

For firm-level factors, extant studies concentrate on the government ownership and intents of global expansion by Chinese MNEs. Chinese MNEs with government connections can be preferential in accessing valuable resources, bank loans, and expedited permits to expand overseas (Wu and Chen, 2014). Thus, firms with state ownership can forge their competitiveness and build their confidence in investing in the US (Wu and Chen, 2014). To be more explicit, Li, Meyer, Zhang, and Ding (2018) examined the different effects of SOE and POEs on location facilitations. SOEs, subject to their relationships with the government, are more closely tied to the government than private firms, consistent with De Beule, Somers, and Zhang (2018). SOEs can use diplomatic resources from the government to advance international investments and facilitate location choices in the foreign market. Intense coercive pressures generated by being affiliated with high government levels could increase Chinese MNEs' willingness to invest in developed countries, where they can improve innovation capability and reduce competitive disadvantages (Wang, Hong, Kafouros, and Wright, 2012).

Concerning the determinants at the host country level, political risk is the most studied factor. Chinese investments are attracted to politically risky countries, which is confirmed by many studies (Buckley et al., 2007; Duanmu, 2012; Kolstad and Wiig, 2012; Ramasamy, Yeung, and Laforet, 2012; Quer, Claver, and Rienda, 2012; Yang, 2018). However, this argument is

different between ownership types of Chinese MNEs (i.e. SOEs and POEs). SOEs are less averse to countries with higher risks than POEs (Duanmu, 2012; Ramasamy et al., 2012; De Beule et al., 2018; Li, Meyer, Zhang, and Ding, 2018). SOEs are more risk averse because SOEs enjoy preferential treatment in obtaining bank loans and accessing the financial markets, whereas POEs face ongoing capital constraints (Morck, Yeung, and Zhao, 2008). The financial support and direction from the Chinese government under the "Go Global" policy influence the location choices made by Chinese MNEs (Buckley et al., 2007; Yang, 2018).

Additionally, Lu, Liu, Wright, and Filatotchev (2014) suggest that Chinese MNEs are likely to enter the countries with well-developed institutions, which reduces the importance of the previous international experience of Chinese MNEs. Some studies take other factors into account, such as diplomatic relations with host countries (Li, Meyer, Zhang, and Ding, 2018), and context similarities in host countries of different entry times (Li, Guo, and Xu, 2017; Yang, 2018).

It is worth noting that the host countries with rich natural resources, high market potentials, superior technologies and resources are most linked with the motives of resource-seeking, market-seeking, and strategic asset-seeking of firms in turn. Specifically, the natural resource-seeking motive is essential for Chinese MNEs. Ramasamy et al. (2012) assert that Chinese firms are indeed attracted to countries with large numbers of natural resources. A large proportion of China's OFDI is towards countries that are rich in natural resources, such as Africa, Central Asia, Australia, Russia, and Canada (Blomkvist and Drogendijk, 2013). China takes advantage of some host countries with poor institutions but extensive natural resources that are not attractive to most developed countries (Quer et al., 2012). Duanmu (2012) argued the natural resource-seeking motive is differentiated between SOEs and POEs. SOEs tend to be attracted to countries with rich natural resources, but this is not significant for POEs. It implies the natural resource-seeking FDI by large Chinese firms is only shown in SOEs.

To seek markets, Chinese firms are likely to invest in developing countries with cheap labor costs and large market sizes (Duanmu, 2012). For instance, Guo, Zhang, Dodgson, Gann, and Cai (2019) highlight the way Huawei increased market shares globally, suggesting Huawei utilizes its existing technology and cost advantages to expand in developing countries that have high market potential. The market potential can be reflected by the market demand (De Beule

et al., 2018) and GDP (Buckley et al., 2007; Ramasamy et al., 2012). Ramasamy et al. (2012) claimed that Chinese private firms are drawn to foreign countries with large market sizes. Buckley et al. (2007) found that Chinese OFDI is attracted to countries with large GDP.

Last, with the intent of acquiring strategic assets, Chinese firms are significantly investing in developed countries because superior assets often exist in developed countries (Guo et al., 2019). Chinese firms are motivated to improve their competitive disadvantage in technological skills and inventions. Thus, they are drawn to countries that show superiority in innovation capability (Ramasamy et al., 2012). De Beule et al. (2018) showed that POEs are more likely to engage in seeking strategic assets via OFDI, compared to SOEs. The difference between POEs and SOEs is driven by the industries in which they are operating, respectively.

Some studies also investigate the closeness of geography and culture but have received inconsistent findings. Chinese MNEs are more attracted to countries that are closer to home (Buckley et al., 2007; Ramasamy et al., 2012; Blomkvist and Drogendijk, 2013; Kang and Jiang, 2012; Quer et al., 2012). However, this result is contrasted with the findings of Deng (2009), De Beule et al. (2018), and Guo et al. (2019) as these studies conclude that Chinese MNEs are often investing in foreign countries which are far from China. It can be explained that many Chinese MNEs acquire strategic assets or resources and seek markets from distant countries.

Overall, the location choices are in line with OFDI motivations by Chinese MNEs. Chinese MNEs acquire strategic assets from developed countries, expand markets in countries with high market potentials and purchase natural resources abroad. The location may not be the MNEs' final destination of OFDI because the location could be changed over time based on the MNEs' internationalization strategy. Thus, addressing the influencing factors on changed sites will require more comprehensive explanations of location choices made by Chinese firms.

2.3.4 Driving forces of OFDI

The driving forces for OFDI are identified by firm-, home country-, and host country- levels. The drivers of OFDI at the firm level include motivations (willingness to invest abroad) and firm capabilities (e.g. international experience, the ability to go abroad, role of returnees, or acquire resources abroad) of Chinese firms (Luo, Zhao, Wang, and Xi, 2011; Cui, Li, Meyer,

and Li, 2015; Fu, Hou, and Sanfilippo, 2017). It is verified that seeking resources (especially natural resources), markets or strategic assets are indeed the motivations behind the growth of Chinese OFDI (Di Minin, Zhang, and Gammeltoft, 2012; Klossek et al., 2012; Ramasamy et al., 2012). Chinese firms are motivated to acquire strategic assets that they do not possess, to acquire large numbers of natural resources (Ramasamy et al., 2012), to search for more profitable markets in foreign countries with large market potentials (Buckley et al., 2007; Duanmu, 2012), to mitigate their competitive disadvantages.

Moreover, OFDI is largely driven by Chinese MNEs' capabilities and resources. On the one hand, the firms possessing the capabilities of technologies and production, international experience, and financial resources provide advantages when expanding abroad (Lu, Liu, and Wang, 2011; Tan and Sousa, 2019; Driffield, Du, and Song, 2021). For instance, the financial resources of a firm benefit the strategic asset-seeking intent of FDI (Cui, Meyer, and Hu, 2014). It is because OFDI requires financial slack to acquire strategic assets in foreign countries; financial slack implies the firms have sufficient capitals to internationalize. The experience of managers through inward internationalization has provided Chinese enterprises with valuable resources and capabilities that are useful for conducting OFDI (Deng, 2009; Luo, Zhao, Wang, and Xi, 2011).

The international experience provides knowledge of the foreign business environment (Cui, Li, Meyer, and Li, 2015; Li, Guo, and De Sisto, 2021) and operations in China which could be exploited in emerging economies (Buckley et al., 2007). On the other hand, lacking firms' capabilities forces firms to expand abroad, in order to acquire the required resources (Liang, Lu, and Wang, 2012). The inability to build a knowledge base domestically incentives Chinese MNEs to employ outward FDI to access and acquire valuable resources abroad and to create competitive advantages (Boisot and Meyer, 2008; Liang, Lu, and Wang, 2012).

The evidence shows that the government in the home country plays a significant role in the international expansion of Chinese firms. Government support may enable firms to overcome their resource constraints and succeed in expanding their operations abroad (Wang, Hong, Kafouros, and Boateng, 2012). SOEs are more closely related to Chinese governments than POEs and are prone to invest overseas with the support of Chinese governments (Wei, Clegg, and Ma, 2015; Fung, Qiao, Yau, and Zeng, 2020; Wu, Wood, and Khan, 2021; Yin, De Propris,

and Jabbour, 2021). POEs will increase the extent of OFDI by building relations with Chinese governments that provide valuable information and supports to them (Ge and Ding, 2008).

The different levels of government matter for the OFDI strategy. Wang et al. (2012b) find higher government levels could receive privileged information about foreign markets and financial support from the government (Wang et al., 2012b; Ramamurti, 2012; Wei, Clegg, and Ma, 2015; Zhou, 2018). The effects of government connections on OFDI are stronger for SOEs related to higher government levels (central SOEs) than for SOEs related to lower government levels (local SOEs) (Li, Xia, Shapiro, and Lin, 2018). Central SOEs invest more in developing countries, where receive financial loans or infrastructure from China and in turn have formed a good relationship with Chinese governments.

However, SOEs benefit from domestic protection in terms of reducing the negative impact of market and political threats, which makes SOEs less likely to invest abroad (Li et al., 2018b). By contrast, located in home regions with a strong market economy and limited government intervention, SOEs tend to be more responsive to market forces, including searching for overseas investment opportunities. Additionally, SOEs usually associate with an image of bureaucratic practice and inefficiency, and governments might not have aligned financial interests with firms (Bai, Chen, and Xu, 2021). This image combined with less transparent and reliable accounting information about SOEs makes the OFDI of SOEs challenging to be appreciated by foreign markets (Zhang, Zhou, and Ebbers, 2011; Cui and Jiang, 2012; Huang et al., 2017).

The partnerships with foreign firms in China or inward internationalization result in conflicting results. Specifically, Wang et al. (2012a) find when Chinese firms can acquire strategic resources by partnering with foreign firms that operate in China, they avoid expanding abroad as this tends to be more costly and risky. This finding contrasts with the result that Chinese firms embedded in the domestic market networks are more likely to expand overseas (Yiu, Lau, and Bruton, 2007; Du et al., 2021). Luo, Zhao, Wang, and Xi (2011) argued inward internationalization can accelerate a firm's international expansion, offering firms the knowledge to operate abroad, consistent with Liu, Buck, and Shu (2005).

However, Chen, Zhan, Tong, and Kumar (2020) concluded this positive effect of inward internationalization becomes less significant with time. Li, Yi, and Cui (2017) found inward

gains decrease the motives of OFDI, especially for firms that are low-risk oriented or for high-risk OFDI projects. Gao (2021) distinguished the destinations as more and less advanced host countries and suggested inward internationalization fosters EMNEs' OFDI in more advanced host countries, but it is weakened by the higher state ownership and industry competition. The inward internationalization does not promote OFDI in less advanced host countries, but this effect is significantly positive when relating to higher state ownership or weaker industry competition (Gao, 2021). These conflicting findings are required to be verified in future research.

Another important driver is the institutional context at home. First, the likelihood of international expansion will be higher when Chinese firms face more significant institutional constraints at home (e.g. lack of legal protection for intellectual property rights, poor enforcement of commercial laws, and public corruption and taxation, underdeveloped industries). The institutional constraints have received much empirical support from Luo and Tung (2007), Deng (2009), Luo et al. (2011), Cui, Meyer, and Hu (2014) and Wei, Clegg, and Ma (2015), and Shi, Sun, Yan, and Zhu (2017). The institutional constraint in China has a larger effect on POEs than on SOEs. Due to the overprotection of SOEs by the Chinese government and the unbalanced development of industries force POEs to expand abroad (Wei, Clegg, and Ma, 2015; De Beule, Somers, and Zhang, 2018). Second, the role of institutional networks (e.g. with business partners, and regulatory agencies) in the home country is studied and regarded as a channel to access to information about OFDI opportunities, foreign markets, and financial supports (Yiu, Lau, and Bruton, 2007).

The host-country drivers include psychic distance according to the related literature. Blomkvist and Drogendijk (2013) claimed that Chinese firms invest less in countries at a larger psychic and cultural distance from China. Specifically, the large differences in religion, culture and political systems between China and foreign markets hinder international investments by Chinese firms. These differences between countries create obstacles to operating business. Therefore, Chinese firms prefer to invest in countries with similar cultures, social norms and values, and political systems (Blomkvist and Drogendijk, 2013). By contrast, Yildiz and Fey (2016) suggest that psychic distance is not perceived by Chinese firms because they intend to

enlarge organizational commitment to Swedish firms and implement Swedish firms' organizational practices.

There are only few papers (Lu, Liu, and Wang, 2011; Luo, Zhao, Wang, and Xi, 2011) that mention the OFDI is affected by the industry-level factor. In this paper, the industry-level factors interact with firm-level factors. Lu, Liu, and Wang (2011) concluded that the competition of technology-intensive industries in the home country forces Chinese firms to conduct strategic asset-seeking FDI to acquire advanced technology and internationally recognized brands. Moreover, firms from this industry are desired to learn through OFDI. In this regard, this paper includes the firm-level factor: the absorptive capability. The absorptive capability of the firm is a necessary precondition for organizational learning and shows the ability to absorb, transfer, and utilize the acquired technologies (Cohen and Levinthal, 1990).

A singular dimension may be insufficient to understand the OFDI's driving forces of Chinese firms. Integrating factors from different levels would be to provide a complete picture in studying the internationalization strategies of Chinese firms. For instance, Lu, Liu, and Wang (2011) integrate the industry, firm, and institutional perspectives. Qiao, Lv, and Zeng (2020) integrate R&D intensity and regional institutional environment.

2.3.5 Post-internationalization process

Current studies focus on discussing a few sorts of activities during the post-internationalization process stage: knowledge transfer, catch-up, and global integration between Chinese parent firms, and foreign subsidiaries.

For knowledge transfer, IB scholars intend to understand the types of transferred knowledge and influencing factors that facilitate knowledge transfer from host countries to home countries. Ai and Tan (2018) found that Chinese firms stress the transfer of explicit over tacit knowledge in the post-acquisition integration because of the complementarity in explicit knowledge. Ai and Tan (2020) summarized the factors including domestic market, home-country institutional support, home-market profit, motivation-oriented resource complementarities, and the acquirers' attractiveness. For instance, they suggest the greater the home-market advantage, the more likely Chinese firms tend to consider the post-acquisition

reverse capability transfer.

Liu and Meyer (2020) proposed human resource practices (e.g. training, workshop, and team collaborations) in strengthening the effectiveness of knowledge transfer, supplementing the existing literature by including the micro foundation aspect. In addition, Zhou, Fey, and Yildiz (2020) contend the extent of knowledge inflow from abroad is related to acquired and acquiring firms. The extent is contingent on the capabilities of knowledge acquisition, knowledge assimilation, and knowledge exploitation of Chinese firms, and such capabilities are positively affected by the adoption of internal communication mechanisms, training programs, and performance appraisal systems of acquired players, respectively.

Few studies explore the process of how Chinese MNEs catch up with global leaders in innovation performance through internationalization. Schaefer (2020) provided a successful strategy in doing so by using the case of Huawei. She claimed that to build competitive advantages and catch up, Huawei hires experienced and knowledgeable offshore experts in the global industry networks to obtain innovative input directly and conducts international R&D investments to gain legitimacy and further improve the firm reputation.

Another notable point is about the global integration of Chinese MNEs in foreign countries. Fan, Zhu, and Nyland (2012) have grouped 22 factors that affect global integration into 3 dimensions (i.e. environmental, industrial, and organizational dimensions), by studying the cases of Chinese MNEs in Australia. For instance, manufacturing scale, competitors' actions, human resources, and employment are significant factors for attention in the integration process. Wei and Nguyen (2017) have found the success of operations for foreign subsidiaries is largely dependent upon their initiatives to build competitive advantages through obtaining country-specific advantages in host countries and satisfying local customers' needs, but state ownership of parent firms makes their foreign subsidiaries unwilling to do so. The significance of customers in host countries is also mentioned by Degbey and Pelto (2021) and they suggest it is necessary to maintain customer relations and keep obtaining information from them after acquisition.

2.3.6 OFDI outcomes

First, previous research on the impact of OFDI on firm outcomes massively concentrates on the firm financial performance and productivity of parent firms (Zhao, Liu, and Zhao, 2010; Li, Liu, Yuan, and Yu, 2017; Cui and Xu, 2019; Tang, Gu, Xie, and Wu, 2020), rather than innovation performance of parent firms and foreign subsidiaries' performances (Chang, Chung, and Moon, 2013; Han, 2021).

Secondly, this research stream has reached inconclusive findings. Cui and Xu (2019) suggest OFDI increases firm financial performance of Chinese firms, but Xiao, Lew, and Park (2019) have found there is a U-shaped relationship between internationalization and the financial performance of Chinese service MNEs. Xiao, Jeong, Moon, Chung, and Chung (2013) state it has a nonlinear S-shaped relationship, and this relation is moderated by the governance structure and control levels of Chinese governments.

A number of studies also consider impacting factors when analyzing the financial performance of parent firms from different perspectives. The first perspective is related to factors at the firm level, such as the motivation of firms (e.g. market-oriented Chinese MNEs) (Dai and Liu, 2009; He and Wei, 2011), diversity of OFDI portfolio (Huang, Xie, and Wu, 2021) and so forth. For instance, Ren, Eisingerich, and Tsai (2015) suggest marketing and R&D capability strengthen the positive role of internationalization in innovation performance. The positive effect of FDI on profit growth is greater for state-owned firms than for private firms (Cui and Xu, 2019). It is because the government has a financial incentive to provide SOEs with privileged support for accessing resources. Also, the positive effect of FDI on profit growth is stronger for firms with a high level of adjustment to the external environment. Firms with enough flexibility in adjustment respond to OFDI decisions quickly, which allows for high autonomy in undertaking OFDI.

Several conflicting results are found when discussing the absorptive capacity of firms. Li, Liu, Yuan, and Yu (2017) contend private Chinese firms' potential absorptive capacity impacts OFDI performance. Strong absorptive capability leads to higher firm performance. However, Wu and Voss (2015) state that absorptive capacity is not always significant for firm performance for experienced firms. The impact of absorptive capacity on international

performance is stronger only when the Chinese MNE is at its early stage of internationalization. Early internationalized firms often have limited knowledge about foreign markets, so they acquire foreign knowledge, learn the knowledge, and utilize it to pursue further international expansion and improve performance. Another aspect is related to the industry characteristics. Pangarkar and Wu (2012) suggest higher globalization of an industry leads to higher performance of firms in that industry.

The last group of impacting factors is the host and home countries' features. Xie and Li (2017) and Cui and Xu (2019) found the positive effect of firm performance is stronger when they target advanced countries. Interestingly, Yuan, Pangarkar, and Wu (2016) have found investing in developed countries has a negative impact in the medium term but improves with time by learning from actors in developed countries. Kim, Wu, Schuler, and Hoskisson (2020) claimed the faster speed of expanding into intra-regional host countries will increase financial performance.

Guanxi-related social networks mediate the effect of outward internationalization orientation on firm performance (Zhou, Wu, and Luo, 2007).

Again, the role of government in understanding OFDI performance is also considered extensively in the current studies. Wang, Kafouros, Yi, Hong, and Ganotakis (2020) investigated how the connection with the home-country government impacts the firm performance of Chinese MNEs. Home-country government support includes financial and non-financial support policies. Financial support from the government could include low-interest loans from state-owned banks, for instance (Cardoza and Fornes, 2011; Han, Liu, Xia, and Gao, 2018), and non-financial support policy (e.g. information support, the streamlining of administrative processes and increasing diplomatic protection) (Han et al., 2018). Nevertheless, some scholars suggest home-country government's support (e.g. access to financial resources) may not be directly translated into firms' competitive advantage (Buckley et al., 2018). Li, Liu, Yuan, and Yu (2017) found that Chinese firms without state ownership receive more productivity premiums generated by OFDI.

Moreover, too much dependency on the government may let Chinese firms have fewer incentives to go abroad. Tang (2019) verified the local governments in coastal regions of China seldom intervene in allocating resources and provide favorable resources to firms. In such areas,

SOEs turn to markets for resources and develop competitive advantages through market mechanisms, including a fast-responsive way to FDI expansion. However, SOE slows down its speed of FDI expansion, and this is because they are closely connected to governments and often face bureaucratic procedures and inefficient governance for OFDI decisions. It implies slow responses to foreign market changes, which, in turn, hinder FDI expansion speed (Tang, 2019).

Furthermore, the innovation performance of both parent firms and foreign subsidiaries has received much less attention, and the driving factors influencing the innovation performance of parent firms are considered from limited aspects. Li, Strange, Ning, and Sutherland (2016) argued OFDI can foster innovation performance in the home market. Elia, Kafouros, and Buckley (2020) suggest Chinese firms improve their innovation performance when they choose CBMAs to enter a new market and invest in multiple culturally distant host countries in emerging economies. Wu, Wang, Hong, Piperopoulos, and Zhuo (2016) concluded institutional developments in the host country foster the innovation performance of Chinese investing firms and they examined whether the effect is dependent on state ownership and the absorptive capacity of Chinese firms.

In terms of subsidiaries of Chinese MNEs, they can improve their innovation capabilities by integrating knowledge and resources from host countries (Liu, Gao, Lu, and Lioliou, 2016). For instance, subsidiaries can get feedback on products/services from customers in foreign countries and learn how to satisfy customers' needs. The subsidiaries will enhance organizational learning from developed countries that have more valuable resources (Luo and Tung, 2007). Thus, the positive effect of OFDI on the innovation performance of subsidiaries will be stronger for OFDI in developed economies than for OFDI in emerging economies because developed countries that possess advanced assets have attracted Chinese MNEs to improve their competitive advantages (Piperopoulos et al., 2018; Cui and Xu, 2019).

Research perspective		**Key studies**
Entry mode	The motivations and outcomes of acquisitions	Rui and Yip, 2008; Zhang, Zhou, and Ebbers, 2011; Klossek, Linke, and Nippa, 2012; Zhang and He, 2014; Du and Boateng, 2015; Zheng et al., 2016; Li, Liu, Yuan, and Yu, 2017; Tao et al., 2017; Zhang, Young, Tan, and Sun, 2018; Zhang, Lyles, and

		Wu, 2020
	Entry mode selections and outcomes	Liu and Zou, 2008; Cui and Jiang, 2009, 2010; Meyer, Ding, Li, and Zhang, 2014; Chung, Xiao, Lee, and Kang, 2016; Li, Xia, Shapiro, and Lin, 2018; Holtbrügge and Berning, 2018; Shen and Puig, 2018; Alon, Elia, and Li, 2020; Elia, Kafouros, and Buckley, 2020
Degree of internationalization	Determinants of the degree of internationalization	Wang, Hong, Kafouros, and Boateng, 2012; Sun et al., 2015; Ma, Ding, and Yuan, 2016; Bai, Chen, and He, 2019; Du and Zhou, 2019; Xiao, Lew, and Park, 2020
	The effect of the degree of internationalization on firm performance	Chen and Tan, 2012; Xiao, Jeong, Moon, Chung, and Chung, 2013; Yuan, Pangarkar, and Wu, 2016
Determinants of OFDI location choices		Kang and Jiang, 2012; Ramasamy et al., 2012; Quer, Claver, and Rienda, 2012; Blomkvist and Drogendijk, 2013; Lu, Liu, Wright, and Filatotchev, 2014; Wu and Chen, 2014; De Beule, Somers, and Zhang, 2018; Li, Meyer, Zhang, and Ding, 2018; Shapiro, Vecino, and Li, 2018; Guo et al., 2019
Driving forces of OFDI		Liu, Buck, and Shu, 2005; Buckley et al., 2007; Yiu, Lau, and Bruton, 2007; Lu, Liu, and Wang, 2011; Luo, Zhao, Wang, and Xi, 2011; Liang, Lu, and Wang, 2012; Duanmu, 2012; Cui, Meyer, and Hu, 2014; Cui, Li, Meyer, and Li, 2015; Wei, Clegg, and Ma, 2015; Fu, Hou, and Sanfilippo, 2017; Shi, Sun, Yan, and Zhu, 2017; Li, Xia, Shapiro, and Lin, 2018; Tan and Sousa, 2019; Chen, Zhan, Tong, and Kumar, 2020; Fung, Qiao, Yau, and Zeng, 2020; Driffield, Du, and Song, 2021; Li, Guo, and De Sisto, 2021; Wu, Wood, and Khan, 2021
Post-internationalization process		Fan, Zhu, and Nyland, 2012; Tan and Mathews, 2015; Wei and Nguyen, 2017; Ai and Tan, 2018, 2020; Liu and Meyer, 2020; Schaefer, 2020; Zhou, Fey, and Yildiz, 2020; Degbey and Pelto, 2021
OFDI outcomes		Dai and Liu, 2009; Zhao, Liu, and Zhao, 2010; Pangarkar and Wu, 2012; Chang, Chung, and Moon, 2013; Xiao, Jeong, Moon, Chung, and Chung, 2013; Ren, Eisingerich, and Tsai, 2015; Wu and Voss, 2015; Li, Strange, Ning, and Sutherland, 2016; Liu, Gao, Lu, and Lioliou, 2016; Wu, Wang, Hong, Piperopoulos, and Zhuo, 2016; Yuan, Pangarkar, and Wu, 2016; Li, Liu, Yuan, and Yu, 2017; Xie and Li, 2017; Cui and Xu, 2019; Kim, Wu, Schuler, and Hoskisson, 2020; Tang, Gu, Xie, and Wu, 2020; Wang, Kafouros, Yi, Hong, and Ganotakis, 2020; Huang, Xie, and Wu, 2021; Xiao, Lew, and Park, 2020; Han, 2021

Table 2.3: Research perspectives and key studies

2.4 Suggestions for future research opportunities

Regarding the entry mode studies, many papers explore the motivations and outcomes of the CBMAs, one of the OFDI entry modes. However, there are still some research gaps that need to fill in. First, Chinese MNEs are motivated to seek strategic assets in foreign markets through acquisitions (Klossek et al., 2012; Zheng et al., 2016; Tao et al., 2017), in order to reduce their competitive disadvantages (Rui and Yip, 2008; Tao et al., 2017). Nevertheless, whether the Chinese MNEs have achieved competitive advantages through CBMAs and why the target firms are willing to transfer strategic assets to Chinese MNEs are not studied extensively in the previous papers.

Secondly, several studies analyze how the firm-, industry-, and country-level factors affect the outcomes of CBMAs. The role of state ownership has mixed results on the Chinese firms' performances or the completion likelihood of acquisitions. It is necessary to mention that government connections also affect other aspects, such as firms' OFDI growth, degree, and location choice, and they result in different conclusions. Therefore, I call for more studies to address the conflicts and understand to what extent and through which ways Chinese firms are able to benefit from the government.

Moreover, many other impacting factors, such as characteristics of acquiring and target firms, industry, and institutional environment in the home country are largely ignored. In this regard, I suggest future studies could fill in the void by figuring out other factors (e.g. firms' features, individuals in firms) that might affect the CBMAs' outcomes. For instance, the potential research questions could be: how the firm performance is driven by the innovation capability, firm size, managers' visions, and locations of acquirers or targets? Which industry will lead to higher firm performance through CBMAs? How does the interaction of firm capability and country-level factors jointly affect the acquisition's completion?

Moreover, the entry modes' choice is limited to OFDI. CBMAs are significant to access advanced intangible assets in developed economies (Globerman and Shapiro, 2009), but other non-OFDI modes might also allow for obtaining strategic assets. The motivations and consequences of adopting non-OFDI entry strategies are neglected in the prior studies. Future research may perform an analysis of what the motivations of other entry modes are and whether

Chinese firms are able to benefit from these non-OFDI entries. It could also be interesting to compare firm performance occurred by diverse entry modes over time.

Another stream of research under the entry mode section figures out the determinants of FDI entry mode choices: either between greenfield investments and acquisitions or between WOS and JVs (the ownership decision mentioned above). Some studies integrate different levels (e.g. firm and country-level factors, home- and host country-level factors) to detect the determinants of mode choices (Cui and Jiang, 2009, 2010; Lu et al., 2018). However, these studies solely investigate the static entry mode of Chinese firms, but the firms may select several different entry modes over time. Future studies need to examine whether and how Chinese MNEs change entry modes over time in coping with the internationalization strategy.

The empirical evidence of the impact of home country and host country factors on the degree of internationalization is quite scant. For instance, the factors related to the institutional restrictions, institutional developments, and network resources in both host and home countries are not largely explored. I encourage future research to close this gap by exploring new factors related to the institutional environment in order to explain the degree of internationalization more completely. Additionally, few papers have focused on the effect of the degree of internationalization on performance. Therefore, the following questions could be considered in the future research: how does the effect of internationalization degrees on performance change with expansions into different countries (e.g. developing and developed countries), with the institutional environment (e.g. institutional quality) in home and host countries, or with networks (e.g. partnerships in foreign and domestic countries)?

The majority of location choice studies aim at exploring the OFDI of Chinese MNEs to various locations globally, but few papers have applied the research to the specific location. Most papers study the determinants of host countries and firms, but the home country-level factors are less explored. Concerning the determinants at the host country level, conflicting results on the impacts of political risks and cultural distances on location choices are existent in the current research, so it is necessary to conduct additional empirical analysis to address inconclusive results. Moreover, the location selected by Chinese MNEs through the first OFDI may not be the destination because the MNEs could use this location as a “springboard” to

expand into other target markets (Luo and Tung, 2007). It could be interesting to study whether and why the location might change when Chinese MNEs undertake new investments.

In terms of the FDI drivers by Chinese MNEs, the Chinese government has taken the fundamental function in explaining OFDI drivers of Chinese MNEs. In connections with the government, Chinese MNEs may be able to access to several benefits, such as privileged information about foreign countries (Wang et al., 2012a) and financial support (Ramamurti, 2012; Zhou, 2018; Wei, Clegg, and Ma, 2015). However, SOEs closely linked with Chinese governments are dependent on the government, which may decrease their willingness to invest abroad (Li et al., 2018b). The inconclusive findings on the impact of government connections on OFDI and their outcomes are found in the previous research. Other factors, inward internationalization, and psychic distance, also have divergent effects on OFDIs. Therefore, further studies may consider addressing the conflicts and providing more precise results. It is important to understand to what extent the governments' support, inward internationalization or psychic distance with foreign markets could foster the OFDI development of Chinese firms.

In terms of the post-internationalization process, many studies have considered the factors to facilitate integration and knowledge transfer and emphasized the importance of foreign markets' integrations. I suggest that research on the post-internationalization process deserves further studies. For instance, future research may focus on the following questions: how the process of integration and knowledge transfer is implemented over time? What the main challenges are faced by Chinese MNEs? What kinds of knowledge are transferred from foreign subsidiaries to parent firms? Whether the integration process of CBMAs is different from greenfield FDIs? To respond to these questions, future research could consider employing in-depth interviews to understand the "how" questions.

Concerning the OFDI outcomes, prior studies provide much empirical evidence on the financial performance of Chinese MNEs. Very few studies analyze the impact of OFDI on the innovation performances of parent firms and subsidiaries. Also, little research is available on what happens to foreign operations' performance after OFDI in the short, intermediate, and long terms. Therefore, future research may consider answering the following research questions: what is the impact of OFDI on the innovation performance of parent firms and foreign subsidiaries over time? Whether and why does the innovation capability of firms change with

time after OFDI? Do state ownership, the institutional environment of home and host countries, or other factors affect innovation performance?

2.5 Conclusions

This literature review focuses on the internationalization of Chinese MNEs and reviews the 191 relevant papers published in the leading journals from 1985 to 2021. I first present the review process, types of publications, and research methodologies of the selected literature. Then, I introduce the six divided research perspectives: entry mode, degree of internationalization, determinants of location choices, driving forces of OFDI, post-internationalization process, and OFDI outcomes. By analyzing each research perspective, I show the knowledge of what has been studied in each research area so far, identify research gaps, and provide research directions for future studies. Even if there are extensive articles analyzing the internationalization of Chinese MNEs from different dimensions, there are still several many research questions that need to be addressed.

This review shows a comprehensive understanding of the internationalization process of Chinese MNEs by adding more papers published in recent years and suggesting future research opportunities from an individual research perspective. Moreover, this paper offers implications for business managers. For instance, I found that not all Chinese firms could increase their financial performances through internationalization strategy, which might be driven by various impacting factors, such as types of acquiring firms, and the institutional context of home and host countries. Therefore, I suggest business managers should carefully assess the factors that may affect different results of financial performance and adjust the strategies to reach the desired goals if necessary.

This review limits the literature to English-language articles published in leading journals. Articles published in other levels' journals or sources (e.g. conferences, newspapers, book chapters), and written in other languages are not considered in the selection. Even though I am confident in the comprehensive coverage of the research on the internationalization of Chinese MNEs, I suggest that IB scholars could involve more types of journals and articles to have a more complete overview of the internationalization of Chinese MNEs.

Chapter 3 Introduction to the Most Important International Business Theories

3.1 Introduction

There is a theoretical argument in international business (IB) literature regarding whether the theories focusing on firms from developed countries are sufficient to explain the internationalization of Chinese multinational enterprises (MNEs). The key issue in this debate lies in whether Chinese firms have possessed ownership advantages before investing abroad according to the OLI paradigm and follow sequential developments in the internationalization process referring to the Uppsala model (Johanson and Vahlne, 1977). Some scholars suggest that the OLI paradigm and Uppsala model can be used to explain the internationalization of emerging market multinational enterprises (EMNEs) (Erdener and Shapiro, 2005; Narula, 2012), but some other scholars maintain that new theories or extensions of traditional IB theories should be considered because the nature of internationalization of EMNEs is different from that of firms from developed markets (Mathews, 2002, 2006; Cuervo-Cazurra, 2012; Luo and Wang, 2012).

This chapter introduces four main IB theories that are adopted to explain the international expansion of Chinese MNEs in the extant literature, which includes the OLI paradigm, the Uppsala model, the LLL framework, and Springboard perspective. In the following sections, I will discuss each of the theories in detail and provide insights on how these theoretical underpinnings are differently linked to other theoretical perspectives, to explain the internationalization process of Chinese MNEs. This chapter ends with remarks in the light of comparing these four IB theories.

3.2 Dunning's Eclectic Paradigm (OLI paradigm)

The eclectic paradigm provides a comprehensive and generalized theoretical framework, which emerged in the literature of IB during the 1980s. The eclectic paradigm (Dunning, 1980)

combines the viewpoints based on the theory of resources, institutions, and transaction costs (Brouthers and Hennart, 2007). The OLI (Ownership-Location-Internalization paradigm) proposed by Dunning (1980) consists of three factors: ownership (O), location (L) and internalization advantage (I) (Dunning, 1988). Specifically, MNEs need to have three specific advantages: ownership advantage, location advantage, and internalization advantage. First, ownership advantage regards to the firms' specific advantages represented by the assets and capabilities of the company that other firms do not possess (Dunning, 1980). Dunning (1988) has distinguished the ownership advantage into ownership asset advantages (the ownership of firm-specific assets and capabilities), such as higher management ability, proprietary technology, and brand, and ownership transaction advantages of low production cost brought by economies of scale.

Second, location advantage refers to the benefits of enterprises investing overseas and using local resources. Location advantage implies that the profit of exploiting these assets is higher than that of utilizing only domestic resources for the multinational firms when these firms are combing advantages of their internal knowledge with the ability to use local foreign resources (Dunning, 1980). The advantages of the host country will attract firms to invest locally, because of the advantages in the host country, such as the existence of unique natural resources (Ramasamy, Yeung, and Laforet, 2012; Buckley, Yu, Liu, Munjal, and Tao, 2016), low labor costs, the policy of attracting foreign investment (Buckley, Clegg, Cross, Liu, Voss, and Zheng, 2007), high productivity (Duanmu, 2012), personal relationships and social networks (Erdener and Shapiro, 2005), and enormous market potential (Buckley et al., 2007; Shao and Shang, 2016). Deng (2007) suggest that Chinese MNEs tend to invest in higher-income or advanced economies, due to their superior investment environment, high technology, and advanced management philosophies. Liu and Li (2002) found Haier has employed location advantage in the US by setting up plants locally and then avoiding tariffs and reducing transportation costs. Moreover, familiarities with culture are another source of location advantage for MNEs because knowing cultures in host countries allow MNEs to facilitate international expansion, which is confirmed by Buckley et al. (2007).

Lastly, internalization advantage means the advantages of integrating production within the firm, without recurring to selling or licensing its technology. In this case, some of the skills of

the parent company will be moved to the newly established company or subsidiaries in the host country, through a process of internal transferring of resources and technologies within the firm boundaries. The cost of internal transferring of these advantages will be lower than any transaction organized in the market (Williamson, 1975). The greater the perceived costs of transaction market failure, the more MNEs are likely to exploit their competitive advantages through international production rather than trade with foreign firms (Dunning, 1988). To sum up, MNEs may benefit from those three advantages, finding suitable markets abroad.

Dunning (1980) believes that these three advantages are interrelated and jointly determine the MNEs' international investments. There is to say that to compete globally, investing firms must have specific strengths that others do not have (Dunning, 1980). At the same time, the ownership advantage must offset the cost of establishing business activities overseas. Therefore, ownership advantage is a prerequisite for multinational companies to develop internationally. The more unique the advantages of ownership owned by firms, the higher the possibility of internalizing these advantages (Dunning, 1980). Moreover, transferring knowledge, technology, and resources, within enterprises, can avoid the leakage of crucial competencies, information, and knowledge, protecting the interests of the shareholders. This framework can explain MNEs in western developed countries, and it assumes that MNEs, in developed markets, have unique advantages to shift their production abroad, and enter new markets, promoting their growth.

The eclectic paradigm (Dunning, 2000) explains the motives of firms' international expansion: seeking natural resources, markets, efficiencies, and strategic assets. Efficiency-seeking motive refers to integrating operations in multiple foreign markets to effectively control and arrange investments. The MNEs aim to invest in foreign countries with large economies of scale and lost costs of production. There are few incentives for Chinese firms to seek efficiencies in foreign markets because China has sufficient supply of low-cost labor and lands, which allows Chinese firms to establish production bases and manufacture mass products with low costs within China (Deng, 2004). Strategic asset-seeking, market-seeking, and resource-seeking (especially natural resources) are the main motivations for undertaking internationalization expansion for Chinese MNEs (Deng, 2004; Di Minin, Zhang, and Gammeltoft, 2012; Blomkvist and Drogendijk, 2013; Buckley, Yu, Liu, Munjal, and Tao, 2016).

Thus, I focus on discussing these three motives for the internationalization of Chinese MNEs as follows.

Strategic asset-seeking motive: Chinese firms aim to obtain foreign assets and improve existing technological capabilities from countries or regions with superior strategic assets (Child and Rodrigues, 2005; Yakob, Nakamura, and Ström, 2018), which means "assets augmenting" (Dunning, 2006). Strategic assets are "the set of difficult to trade and imitate, scarce, appropriable and specialized resources and capabilities that bestow the firm's competitive advantage" (Amit and Schoemaker, 1993, p.36), such as reputation, tacit knowledge, R&D capability, brand name, knowledge and so forth (Teece, Pisano, and Shuen, 1997; Deng, 2007). Many Chinese firms lack several competitive advantages, but they seek to gain sustainable competitive advantage by increasing the acquisition of foreign strategic assets (Rugman and Li, 2007; Lu, Liu, and Wang, 2011; Di Minin, Zhang, and Gammeltoft, 2012; Klossek, Linke, and Nippa, 2012; Zheng, Wei, Zhang, and Yang, 2016; Vukicevic, Fallon, and Ott, 2021). Also, considering the relatively weak knowledge base of China, large Chinese firms cannot develop some strategic assets in China (Deng, 2009). Therefore, Chinese MNEs undertake international expansion for acquiring strategic assets to enhance their capabilities, and knowledge bases, gain competitiveness (Deng, 2007; Cui and Jiang, 2009; Chen and Young, 2010), and catch up with leading global firms (Buckley et al., 2007; Deng, 2009; Lu, Liu, and Wang, 2011; Ramasamy et al., 2012; Blomkvist and Drogendijk, 2013).

Resources-seeking motive: Chinese firms are motivated to acquire these resources for the supply of operations in China (Deng, 2004; Kolstad and Wiig, 2012; Ramasamy et al., 2012; Blomkvist and Drogendijk, 2013; Tan and Mathews, 2015). A possible explanation is that the per capita of available resources is very low, especially for the industries with enormous market demands for resources (e.g. iron ore, minerals, petroleum) in China (Deng, 2004). Buckley, Yu, Liu, Munjal, and Tao (2016) found the extent of FDI outflows depends on the amount of these resources in the host country. Blomkvist and Drogendijk (2013) have concluded extensive China's OFDI is towards countries with abundant natural resources such as Africa, Central Asia, Australia, Russia, and Canada. Although natural resource-seeking FDI may supply valuable natural resources, it does not guarantee that the utilization of these resources will improve the

firms' values (Cui, Meyer, and Hu, 2014). Kolstad and Wiig (2012) argue that Chinese outward FDI is attracted to countries with large natural resources and poor institutions. The explanation of Chinese investment flows to countries or regions with low-quality institutional environments is that Chinese firms take advantage of locations with weak institutions that are similar to their home country (Buckley et al., 2007).

Market-seeking motive: Dunning (1995) believes that the motivation of firms to invest abroad is their overcapacity, which obliges them to search for new markets in foreign countries. The large production overcapacity is concentrated in such industries as textiles, clothing, and electrical appliances (Deng, 2004). Thus, many Chinese firms are attracted to countries with large market sizes (Klossek, Linke, and Nippa, 2012). Moreover, the competitiveness of the host country's industry worked as an essential impacting factor to motivate them for seeking foreign markets. In particular, the search for new assets (capital and technology) and the desire to cover advanced market demand are the focus of the Chinese MNEs in developed countries (Cui, Meyer, and Hu, 2014). Also, Chinese MNEs are attracted to invest in developing countries that have similar institutions to China. Guo, Zhang, Dodgson, Gann, and Cai (2019) suggest Huawei's market-seeking in developing-country markets which are similar institutions to those in China, allows Huawei to utilize its domestic experience and replicate its domestic success in those countries. In so doing, Huawei can use its existing technology and cost advantages to capitalize on market potential in developing countries, which have low market entry barriers and cost-sensitive customers.

Dunning and Lundan (2008) incorporated the institutional factors into the OLI paradigm to explain the internationalization of MNEs and defined these factors as "institution advantage" (Dunning and Lundan, 2008). Institutions include formal rules (such as constitutions, laws, and regulations) and informal constraints (behavioral norms, practices, and social customs) (North, 1990). Firms are required to consider the rules, regulations, and standards when participating in business operations. In the literature on the internationalization strategy of Chinese firms, institutions take a significant role to affect firms' behaviors, supporting and facilitating Chinese firms to implement OFDI (Buckley et al., 2007; Rui and Yip, 2008). Tao, Liu, Gao, and Xia

(2017) concluded that Chinese MNEs acquiring firms from countries with a low level of political risk can gain high returns.

To be more specific, some institutions in the home country, such as the central and local Chinese governments, may encourage firms to expand abroad. The "Go Global" policy formulated by the Chinese government promotes the foreign direct investment of Chinese MNEs because the government regards the internationalization of Chinese companies as a critical factor to impel the economic growth of China (Child and Rodrigues, 2005; Luo, Xue, and Han, 2010; Wei, Clegg, and Ma, 2015; Gaur, Ma, and Ding, 2018; Cui and Xu, 2019; Tu, Zheng, Li, and Lin, 2021).

Chinese governments also provide export tax rebates, investment insurance and low-interest loans from state banks (Cai, 1999; Deng, 2007; Ramamurti and Hillemann, 2018), liberalize foreign exchange approval procedures to reduce bureaucracy as well as the inefficiency of permission for an ODFI investment (Du and Boateng, 2015), hold large foreign exchange reserves (Globerman and Shapiro, 2009), and set up a bilateral or multilateral framework to liberalize investment situations in the host markets (Luo, Xue, and Han, 2010). Luo, Xue, and Han (2010) add the role of Chinese governments in easing capital controls to OFDI, providing information and guidance on investment opportunities to Chinese MNEs, and reducing political and investment risks in host countries. Other institutions, like the China Development Bank and the Export-Import Bank of China, are committed to engaging in helping Chinese MNEs to invest overseas through financial support (Buckley, Clegg, Voss, Cross, Liu, and Zheng, 2018).

State-owned enterprises (SOEs) are received more support in overseas investments compared to private-owned enterprises (POEs) because SOEs with large shares from governments are more facilitated to access getting bank loans and other government support related to OFDI (Buckley et al., 2007; Wang, Hong, Kafouros, and Boateng, 2012; Wei, Clegg, and Ma, 2015; Buckley, Yu, Liu, Munjal, and Tao, 2016; Buckley et al., 2018). Blomkvist and Drogendijk (2013) suggest government support may enable firms to overcome their resource constraints and succeed in expanding their operations abroad. Also, SOEs are less likely to be influenced by political and economic risks at home, as the government intends to protect them from adverse policy changes or exposure to economic risks (e.g. the threat from competitors)

(Li et al., 2018b).

However, being excessively reliant on the governments, SOEs are less motivated to invest in foreign countries that have high market uncertainties. Another adverse effect of government on international expansion is that Chinese SOEs tend to pursue the goals of the Chinese government, instead of maximizing the wealth of shareholders, and this conflicting objective may be reflected in the negative returns of Chinese MNEs (Zhang, Zhou, and Ebbers, 2011; Bai, Chen, and Xu, 2021). Thus, it is necessary for Chinese firms to take advantage of utilizing benefits provided by governments to the appropriate extent, rather than solely being overdependent on the government.

Another institutional factor, that is the institutional constraints at home, such as limited property rights protection, regulatory uncertainty, and weak legal system, may impel the internationalization of Chinese firms. They may encourage Chinese firms to escape the restrictions or fragility of the institutional environment in their home country (Child and Rodriguez, 2005; Shi, Sun, Yan, and Zhu, 2017). The supportive finding in prior literature is that firms are encouraged to take risks overseas to escape domestic institutional barriers and seek survival opportunities in foreign countries, which can better match their strategic and commercial needs (Yamakawa, Khavul, Peng, and Deeds, 2013).

Except for the institutions in the home country, some literature has focused on discussing the impact of host-country institutional development on the internationalization of Chinese MNEs (Wu et al., 2016; Tao et al., 2017; Qiao, Lv, and Zeng, 2020). For instance, economic freedom reflects the quality of the host institution, which is related to the convenience of investing and doing business (Morck, Yeung, and Zhao, 2008). Zhang et al. (2011) found that investing in countries with higher economic freedom and openness leads to great success in overseas mergers and acquisitions for Chinese firms. Chinese firms are able to gain high returns when acquiring a firm from a country with a low level of political risk but high governance quality (Tao et al., 2017). By contrast, an institution with great uncertainties is not attractive to firms because operating in such an environment is a costly and frustrating process (Wu and Chen, 2014). Also, the restrictions on FDI by the host-country government hinder the OFDI of Chinese MNEs to that host market. For instance, the limits on Chinese FDI by the US government decrease the FDI from China to the US (Globerman and Shapiro, 2009).

Since the OLI paradigm is built to explain MNEs in western developed countries, its feasibility in explaining OFDI from China or other developing countries has been controversial. Chinese firms, like other firms in developing economies, lack strategic assets compared to the firms located in developed countries, which means lacking the ownership advantage of the OLI paradigm (Zhou and Wu, 2014; Luo, Xue, and Han, 2010).

Many scholars assert that Chinese MNEs invest overseas not to take advantage of existing competitive advantages, but to compensate for their competitive disadvantages (Child and Rodrigues, 2005; Boisot and Meyer, 2008; Cui and Jiang, 2009; Luo and Wang, 2012; Boateng, Du, Wang, Wang, and Ahammad, 2017) and upgrade the capability by obtaining strategic assets from foreign countries (Luo and Tung, 2007; Kang and Jiang, 2012; Zheng et al., 2016). Moreover, Rui and Yip (2008) and Deng (2009) have reported that EMNEs strategically adopt cross-border mergers and acquisitions (CBMAs) to achieve specific goals, such as acquiring strategic capabilities, offsetting their competitive weaknesses, and increasing firm value. This point is in contrast with the traditional OLI framework in explaining the MNEs in developed countries that exploit strategic assets to expand abroad.

Therefore, the OLI paradigm is insufficient to explain the internationalization of Chinese MNEs (MNEs latecomers) because it does not actively clarify how the Chinese MNEs overcome their specific firm disadvantages. OLI paradigm is necessary to be revised or integrated with other theoretical models. Luo and Tung (2007) propose the Springboard perspective regarding EMNEs and suggest that ENMEs have been using international expansion as a springboard to acquire valuable resources. This perspective contrasts the OLI paradigm, maintaining EMNEs do not have to start by exploiting existing strengths, but from a need for acquiring knowledge abroad in OFDI. This point was already mentioned in Dunning's 1980 paper, but never further developed. Dunning (1980) emphasized that the purpose of overseas expansion in the early stage of developed countries was to seek natural resources and cheap labor they lacked, while MNEs located in developing countries sought to acquire technology.

Chinese firms have obtained many transaction-based advantages that are present in various ways, such as knowledge of how to operate in an institutional environment like China, low labor costs and support from the Chinese government. When Chinese firms operate in host

countries with similar weak institutional conditions, they do not suffer much from working in an underdeveloped institutional environment like in China (Rugman and Li, 2007). For instance, Duanmu (2012) find SOEs have more experience with weak institutions in China, such as high level of direct state intervention, insecure property rights protection, and opaque corporate governance compared to their counterparts from developed economies. SOEs prefer to expand into economies with similar institutional environments to replicate the capabilities and exploit experience, supported by Guo et al. (2019). Buckley et al. (2016) also find the experience of operating at home with poor institutions gives Chinese MNEs a specific competitive advantage over western MNEs when operating in countries with high risks (Buckley et al., 2007; Quer et al., 2012).

In addition, the advantages of Chinese firms may be related to low-cost production base, cheap labor, and lower costs of raw materials, providing low-cost products, and a supportive relationship with the government (Cui and Jiang, 2009; Rui and Yip, 2008; Zheng et al., 2016). However, such advantages are derived from the home country, which is applied to most firms in China. For instance, Chinese MNEs can successfully compete with other firms so that they can utilize their low-cost resources (Rugman and Li, 2007).

However, the ownership advantages that Chinese firms are lacking are those superior resources in the light of asset-based advantages that are not possessed by other competitors, such as the capabilities and international experience accumulated by the firms in China and investing countries (Cardoza and Fornes, 2011; Guo et al., 2019), the vision and abilities of the top managers, the ability to control risks and to build relations in foreign countries (Erdener and Shapiro, 2005), advanced technological skills, and high-quality human resources (Di Minin, Zhang, and Gammeltoft, 2012). However, the OLI paradigm does not explain where these advantages of Chinese firms come from. Therefore, future research needs to investigate the sources of advanced asset-based advantages of Chinese firms and how Chinese firms build such advantages over time.

3.3 Uppsala model

The Uppsala model was proposed by scholars Johanson and Vahlne in 1977. The Uppsala

model (or the internationalization process model) is built on the basis of empirical observations by studying the internationalization process of Swedish firms. It assumes the most important obstacles to the internationalization of Swedish firms are a lack of knowledge and resources about foreign countries. Thus, firms take incremental steps (i.e. order of establishment chains) to overcome these obstacles, that is, starting from exporting activities, being an agent in a foreign country, establishing sales subsidiaries and finally building manufacturing subsidiaries in the host country (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977). In so doing, firms are able to increase their knowledge of foreign markets with time. As the market knowledge in the host country increase, more resources would be invested by investing firms (Johanson and Vahlne, 1977, 2009).

The location of entry steps depends on the psychic distance between the home and host countries. Psychic distance occurs when the language and cultural differences, levels of education, business practices, political systems, and economic development of the host country are hugely different from the home country (Johanson and Vahlne, 1977). Firms begin to invest in countries that are psychically close to their home country, and then, along with accumulated international experience, they would gradually expand into countries that are psychically distant (Johanson and Wiedersheim-Paul 1975; Johanson and Vahlne, 1977). It is supported by Buckley, Cross, Tan, Liu, and Voss (2008) and Blomkvist and Drogendijk (2013), claiming that expansions are more likely into countries with less cultural distance, which results in increased firm performances of Chinese acquirers (Chen and Tan, 2012; Du and Boateng, 2015).

However, these findings are contradicting the Springboard perspective (Luo and Tung, 2007, 2018). Piperopoulos et al. (2018) found that Chinese firms intend to expand into distant developed countries, to acquire knowledge and improve innovation capability. Li (2007) also suggests these some Chinese MNEs initialized their major FDI projects in the US or Europe to acquire international experience, despite the greater cultural distances (Liu and Li, 2002). These findings challenge the arguments of entry order and learning in the Uppsala model (Johanson and Vahlne 1977). The larger psychic distance between home and host countries for the investing firms impedes knowledge transfer, learning and communications (Li, Li, and Wang, 2016), but it is not applied to many Chinese firms.

Some scholars aim to find there are additional reasons that decrease the significance of psychic distance and have claimed that Chinese firms can mitigate the psychic distance through prior experience with foreign firms (Klossek, Linke, and Nippa, 2012; Cui, Li, and Li, 2013). International experience can help Chinese MNEs to overcome the barriers of foreign countries generated by psychic distance and mitigate the uncertainties of foreign operations (Klossek, Linke, and Nippa, 2012; Cui, Li and Li, 2013). It is because these international experiences have led Chinese MNEs to accumulate relevant knowledge and experience through working with foreign firms (Cui and Jiang, 2009; Zheng et al., 2016). Cui, Li, and Li (2013) found that the experience with foreign firms helps Chinese MNEs understand economics, social norms, and institutions of foreign markets, which mitigates their liabilities of foreignness when expanding abroad. The psychic distance may be partially reduced by the process of inward FDI (Luo and Tung, 2007), but this theoretical view is underexplored empirically.

Additionally, the orders in the establishment chains have resulted in conflicting findings in the case of Chinese firms. Li (2007) concluded the expansions of Haier, Lenovo, and TCL are not based on the steps of the establishment chain when entering foreign markets (Johanson and Vahlne, 1977). Haier invests in advanced economies at the early time of its process of international expansion (Liu and Li, 2002). However, Huawei has chosen incremental steps in the catch-up process, responding to opportunities in foreign markets, as the company increased its technological capability (Guo et al., 2019). This way of Huawei's internationalization complies with the gradual steps of international expansion in the Uppsala model (Johanson and Vahlne, 1977). Lyles, Li, and Yan (2014) reveal that half of the firms in their sample entered the foreign markets with a large commitment while the other part followed the Uppsala model of step-by-step investment.

The Uppsala model of internationalization processes consists of four stages. Shortly, in the original Uppsala model, the experiential knowledge and market commitment of current resources affect both commitment decisions and the way current decisions are performed (see Figure 3.1). The commitment decisions and current activities, in turn, change market knowledge and commitments. The model distinguishes between the state and change variables. Additionally, it has been revised over the decades. Johanson and Mattsson (1987) and Johanson

and Vahlne (1990) involve the network relationships of the business environment in the Uppsala model. Finally, the revised new model was built in 2009 (Johanson and Vahlne, 2009).

The original model (Johanson and Vahlne, 1997) emphasize a firm's activity in the foreign market, while in the revised model of 2009, the concepts of relationships and networks are introduced (see Figure 3.1 and 3.2). Johanson and Vahlne (2009) argue that the primary liability of an internationalizing firm is not related to foreignness, but to the networks' outsidership. They suggest the liability of network outsidership occurs when the firms being external to the network cannot access some knowledge of players within the network. The insider of the network is necessary for successful internationalization (Johanson and Vahlne, 2009) as the network allows network insiders to gain access to the resources they need (Shen and Puig, 2018). For instance, Chinese firms could access to the information and knowledge about the host market from the network of investors established in Germany (Shen and Puig, 2018). This network also helps Chinese MNEs to overcome the liability of foreignness and the liability of outsidership in foreign markets (Shen and Puig, 2018).

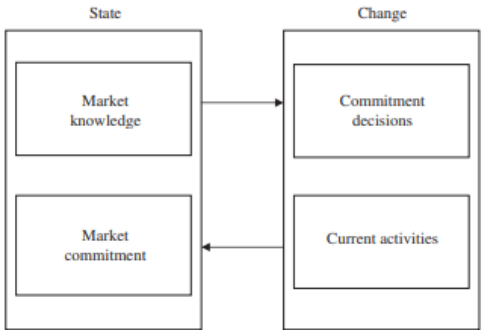

Figure 3.1: The Original Uppsala Model (Johanson and Vahlne, 1977)

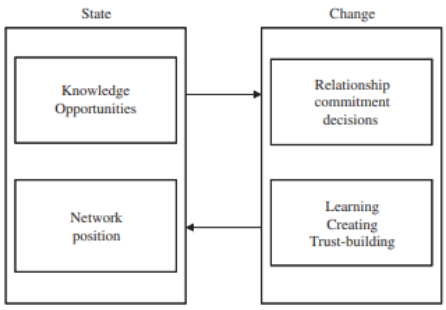

Figure 3.2: The Revised Uppsala Model (Johanson and Vahlne, 2009)

The Uppsala model involves two aspects, which are the state aspect and the change aspect. *State aspect:* The state aspects include the resources allocated to those markets (market commitment) and the knowledge about foreign markets known by firms (market knowledge). Johanson and Vahlne (1977, p.27) assumed market commitment is composed of "the number of resources committed and the degree of commitment to the foreign markets". Resources located in a market can be considered a commitment to that market. The amount of resources committed indicates the investment size in the market; the degree of commitment is related to the number of specialized resources in the market. The more difficult it is to find alternatives for the resources and the more specialized these resources are required for the market, the higher the degree of commitment is (Johanson and Vahlne, 1977). In the new model from 2009, "network position" has been added to the "market commitment" of the model in 1977. Johanson and Vahlne (2009) assume that the internationalization process is related to a network involving relevant network partners inside. Firms could change resource commitments and seize opportunities within the network of foreign markets.

Market-specific knowledge is critical to affecting commitment decisions and is gained through firms' experience in the market. The more knowledgeable a foreign market is, the stronger the commitment of the resources to the market from MNEs. It is particularly true for experiential knowledge. Experiential knowledge is gathered by a specific firm about the knowledge in the specific foreign market and cannot be transferred to other firms. In the revised model of 2009, the authors have added "recognition of opportunities" to the "market knowledge" perspective. The firm can recognize opportunities after gaining knowledge from the network (Johanson and Vahlne, 2009). Specifically, experiential market knowledge generates business opportunities and becomes a driving force in the internationalization process (Johanson and Vahlne, 2009). Other essential dimensions of experience include needs, capabilities, strategies, and networks of directly or indirectly related firms. It also expands the knowledge scope in the model of 2009: from one specific foreign market to the networks related to firms.

Change aspect: Market knowledge and market commitment are assumed to affect both commitment decisions and the way current activities are performed that in turn, changes the level of knowledge about foreign markets and the level of market commitment. The change

parts involve the decisions about the resource commitments and the current activities in these markets. In the original model, the change aspects assume that decisions are made in response to perceived opportunities in the market (Johanson and Vahlne, 1977). These opportunities can be recognized based on the firms' experience. Johanson and Vahlne (2009) included "relationship" to clarify that market commitment is also related to relationships or relations that emerged within the network.

Current activities are also a source of knowledge. Experience knowledge can be acquired through a long learning process in connection with current business activities. It contributes to firms' knowledge, and this knowledge influences the next level of resource commitment and triggers other learning opportunities (Johanson and Vahlne 2009). Johanson and Vahlne (2009) have changed the original label of "current activities" to "learning, creating, and trust-building" to identify the outcome of current activities. Current activities in the model of 1977 indicate that regular daily activities play an essential role and lead to increased knowledge, trust, and commitment. The original model does not explicitly include any affective or emotional dimensions in relationships, even if it could be argued that they are implicitly present in the knowledge aspect (Johanson and Vahlne, 2009).

The original model identifies the learning and resource commitments between a firm and a new market, but it occurs within networks according to the version of 2009 by Johanson and Vahlne (Hertenstein, Sutherl, and Anderson, 2017). The knowledge determines the firm's ability to perceive opportunities on which commitment decisions are taken. Also, firms should learn to create or strengthen relationships in order to recognize opportunities, reduce uncertainty, and increase learning (Johanson and Vahlne, 2009). In this regard, the uncertainty stems from network outsidership in the revised model proposed in 2009, rather than market uncertainty in the original model of 1977.

Some criticism of the Uppsala model has been shown in the previous literature. I will also discuss the target location choice and entry sequences mentioned before. First of all, the analysis by Buckley et al. (2008) of the geographic distribution of Chinese OFDI suggests that geographic and psychic distance were not important determinants of Chinese investment projects in the 1990s. It shows the original Uppsala model cannot sufficiently explain Chinese

OFDI, failing to illustrate the phenomenon of Chinese firms that internationalize aggressively (Luo and Tung, 2007). The Uppsala model is thus complemented by other perspectives to explain the situation of Chinese firms' expansion. For instance, the business information of distant partners can be gathered by EMNEs if these EMNEs have established network relationships with partners in remote countries (Hertenstein, Sutherl, and Anderson, 2017). Liu, Xiao, and Huang (2008) suggest that improved international communication and transportation can minimize the psychic distance and skip stages of firm internationalization, which mitigates the significance of psychic distance in the Uppsala model.

Second, Lyles et al. (2014) are in contrast with the Uppsala model because Chinese firms jump into foreign direct investment by adopting high-commitment modes for initial international entry. The lack of market knowledge is also not a limitation for hindering the pace of internationalization of EMNEs, because they accumulate experiential knowledge of foreign markets through inward FDI (Wang, Luo, Lu, Sun, and Maksimov, 2014; Luo and Tung, 2018). Thus, Chinese firms are able to build some knowledge about foreign markets and use it to acquire strategic assets directly to overcome competitive disadvantages by OFDI (Deng, 2007).

Moreover, the Uppsala model does not consider institutional factors which are important in analyzing the international process of Chinese MNEs. Thus, some studies try to combine institutional elements with the Uppsala model to explain the internationalization of Chinese MNEs. For instance, Holtbrügge and Berning (2018) integrate the ability of home country institutions to support learning processes and conclude home government can support firms in acquiring foreign market knowledge and exploiting this knowledge. Also, Lu, Liu, Wright, and Filatotchev (2014) have found government support can facilitate Chinese MNEs' internationalization by providing knowledge about foreign countries, which makes it less critical for Chinese MNEs to accumulate international experience. Lu et al. (2014b) further suggest home government support and host country institutions' quality can replace the need for the prior international experience of Chinese firms investing in developing countries and developed countries, respectively.

Additionally, the empirical results and theoretical reasoning in many of these studies question the application of the Uppsala model in explaining born global firms (Knight and Cavusgil, 2004) and international new ventures (McDougall, Shane, and Oviatt, 1994). The

born global company (BG) is an organization that seeks to sell products in the international market from the foundation (McDougall et al., 1994). Trudgen and Freeman (2014) argue born global companies (BGs) have early, rapid, and extensive involvements in multiple foreign markets (Madsen, 2013). Knight and Cavusgil (2004) see BGs as small, technology-oriented companies operating in international markets since foundation. BGs do not follow a progressive internationalization process but start exporting to foreign markets from their inception. It is contradictory with the models based on gradual stages, saying that firms start exporting after they have generated enough sales in their internal market.

The entries into foreign markets by BGs are also not related to psychic distance (Madsen and Servais, 1997). This discussion implies that the views of the Uppsala model cannot explain the international development of BGs. For instance, McDougall et al. (1994) concluded that the Uppsala model fails to provide an appropriate explanation of why such firms operate in international markets rather than only in their home markets. The occurrences of BGs attract many scholars to identify the motivations of BGs.

Furthermore, it does not explain how the firms could embed into the networks. According to the LLL framework and Springboard perspective, Chinese firms acquire knowledge through OFDI methods and linking with foreign players. In so doing, firms could tap into the knowledge of acquired firms and other local players in host countries, leverage it, and learn from local firms. It is highlighted that learning is also meaningful in the Uppsala model, LLL framework and Springboard perspective, which enables firms to develop knowledge bases and capabilities, and helps firms identify profitable opportunities abroad (Ge and Wang, 2013; Yuan, Pangarkar, and Wu, 2016).

3.4 Linkage-Leverage-Learning (LLL) framework

Quite in contrast to Dunning (1980), a recent new theorization on multinational corporations based on emerging economies has argued that EMNEs invest overseas not to take advantage of existing competitive advantages, but to overcome competitive disadvantages through Linkages-Leverage-Learning (LLL framework) (Matthew, 2006). Based on the experience of MNEs located in latecomers and newcomers' countries (Mathews names them

"dragon multinationals"), Mathews (2006) elaborated his LLL framework. "Dragon multinationals" come from the Asia-Pacific region, and they do not have ownership advantages like western MNEs located in developed countries. However, they supplement their scarce resources by cooperating with other MNEs based outside their home country, absorbing from them new skills and new knowledge. The internationalization of EMNEs is based on the ability to link and leverage resources in organizational learning (Cardoza and Fornes, 2011). Thus, the international expansion of these MNEs is driven by activities of linkage, leverage, and learning:

Linkage: The critical starting point for latecomers and newcomers is that they focus less on their firm-specific advantages, but on the benefits obtained from the external environment. Linkage identifies EMNEs' ability to identify and build external networks inside and outside the home country (Zheng et al., 2016), to access foreign market information and reduce uncertainty. The source of linkages could from different players, such as consumers, distributors, government, and competitors (Ge and Wang, 2013; Du and Zhou, 2019; Luo and Wang, 2012; Zhang, Ma, Wang, Li, and Huo, 2016; Wu and Ang, 2020). For example, many Chinese firms have developed cooperative relations with the government. In doing so, Chinese firms could benefit from national regulations (Zhang et al., 2016), access to privileged information about foreign markets (Wang et al., 2012a; Piperopoulos et al., 2018), and bank loans (Wu and Chen, 2014).

Du and Zhou (2019) adopt the LLL framework to explore how Guanxi with the government and with business partners in the home country impacts the international expansion of Chinese firms. Linking capability is referred to as the activities of accessing external resources in domestic markets with government and business partners in this study. Du and Zhou (2019) further found that Chinese firms need to acquire resources possessed by the government like bank loans before entering the global market, and these resources are in the hands of the government, in accordance with Cardoza and Fornes (2011). Interestingly, the different level of Chinese governments is likely to provide different resources. Compared to the local government, the central government could provide more valuable diplomatic resources to the firms that are closely related to the central government (Li, Xia, Shapiro, and Lin, 2018).

Furthermore, the advantages of connecting with host countries also cannot be ignored,

since local connections with governments, suppliers, and customers, are equally important, and provide local knowledge, and useful perspectives on market trends (Lu, Liu, Wright, and Filatotchev, 2014).

Leverage: EMNEs will continue to explore new ways to absorb new competencies from existing external partners. The concepts of linkage and leverage are concerning that multinational companies gain advantages by acquiring superior resources, technologies, and knowledge to make up the resource constraints. Leveraging capability requires frequent interactions with external business partners to integrate resources to create new products and cope with customer needs (Du and Zhou, 2019). Good relations with partners may guarantee trustful conditions for repeated interactions, thereby facilitating MNEs to access, transfer, absorb and utilize achieved resources to invent novel products for the international market (Du and Zhou, 2019).

Learning: repeated contacts and leverage processes can explain why EMNEs are able to activate a process of continuous learning that implies the ability to perform their operations more effectively (organizational learning). Xiao, Jeong, Moon, Chung, and Chung (2013) suggest internationalization can overcome its initial disadvantages through learning from other firms and accumulation of international knowledge and experience (Cardoza and Fornes, 2011). Such knowledge helps to identify other investing opportunities globally (Cardoza and Fornes, 2011). The LLL framework argues that the EMNEs access resources through linkage with external firms, then leverage the received resources, and improve the efficiency of internationalization through repeated application of linkage and leverage processes. Through linkage with partners from the developed markets and leverage of their partners' resources, EMNEs learn and accumulate related experience and thus have prepared well for internationalization (Zhong, Peng, and Liu, 2013).

Several studies have used the concepts of the LLL model to explain the internationalization of Chinese firms. Du and Zhou (2019) defined the ability to connect as the ability to approach potential resource holders abroad, while leverage means the ability to cope with a dynamic

environment. Moreover, leverage requires repeated interactions between home countries and external partners, and good relations with partners can provide a stable environment for communication (Du and Zhou, 2019). Through cooperation with business partners, enterprises can obtain, absorb, and utilize, valuable resources, thus improving their competitive advantages. In line with Du and Zhou (2019). Establishing connections with partners in developed countries (Zhong, Peng, and Liu, 2013) is beneficial to Chinese firms, which increases the possibility of acquiring and using the resources of embedded networks in host countries (Mathews, 2006).

Tan and Matthews (2015) used the case of Chinese wind turbine manufacturers to explain the phenomenon of Chinese firms' accelerating internationalization. They argued that manufacturers established various types of partnerships with companies in developed countries to acquire technical knowledge and skilled human capital; then, they seized the market opportunity and used their foreign partners to improve their ability to leverage. Last, they learned from experts and acquired knowledge of new products suitable for their home market. This process can be repeated over time and become more productive through organizational learning.

Ge and Ding (2008) adopt the LLL framework to explain the catch-up strategies of the Galanz enterprise. Galanz could tap into modern production facilities, advanced technologies, technical assistance, and training through linkages with foreign MNEs (Ge and Ding, 2008). Galanz has also maintained good relationships with Chinese governments which provide cheap land for Galanz's production base and facilitate to get valuable resources locally. Therefore, foreign firms benefit from the low production costs in China.

However, the LLL model does not explain the reasons why industry leaders, or firms with strategic resources in host countries, are willing to cooperate with a foreign partner and provide valuable knowledge and assets to EMNEs. For EMNEs, the ability to establish cooperative relations with other organizations on a global scale, such as industry leaders, is essential for their business development. However, the industry leaders or other potential partners with strategic assets might concern that sharing resources may be risky because it may cause knowledge leakages for them and further damage their competitive advantages.

Furthermore, the distinctions among linkage, leverage, and learning are not clear in the LLL model (Li, 2007). Li (2007) cannot distinguish leverage from linkage because they are the

ways to fulfill the goal of learning in the end. In other words, learning is the result of repeated steps of linkage and leverage. Additionally, I argue the ability to link with foreign partners and leverage resources per se also incorporate learning activities. It seems the repeated learning in the LLL model changes over time. Further studies may differentiate the learning activities with the linkage and leverage of resources, and new stages of learning.

A controversial issue that deserves attention is whether the LLL approach has put at risk the dominant position of the OLI paradigm. MNEs in developed countries have some unique and critical resources and capabilities and use them to enter overseas markets (Dunning, 2006). However, nowadays, we are witness to the expansion of many MNEs that come from emerging countries. Dunning (2006) believes that as far as China is concerned, these advantages may include the ability to raise funds for the acquisition of foreign companies and the favorable conditions of China's domestic market. Even though such advantages can be employed during the internationalization process, they are not the same ones that are acquired from foreign countries by EMNEs. Therefore, in accordance with Dunning (2006), I suggest that Matthew's LLL framework complements and increases the richness of the OLI framework, rather than replacing it.

The motivation of seeking advanced knowledge instead of employing it represents an important factor in explaining the behaviors of MNEs in an emerging market, and it seems LLL framework deviates from the traditional OLI paradigm (Dunning, 2000, 2006; Narula, 2006). LLL framework emphasizes the importance of connecting with other organizations or individuals and learning from them progressively. This view is not very new. It is also reflected in one article published by Dunning (1998). He believes that firms need to cooperate with competitors, suppliers, and the government. Therefore, from the point of view of linkage relations, the OLI and the LLL also overlap with each other.

Similar to Li (2007), I believe that the OLI and the LLL models are complementary, and thus, they should be integrated to provide a complete explanation for the international expansions of Chinese firms. Except for the ownership advantages from the OLI paradigm, additional advantages for Chinese firms come from linking, leveraging, and learning resources acquired abroad. On the one hand, the abilities to connect with other partners across countries, absorb, utilize the acquired resources, and continuously learning are firms' advantages per se

because the capabilities are different across firms and difficult to be intimated and transferred to other organizations. On the other hand, the international experience accumulated by learning through linkage with foreign partners complements the knowledge base of Chinese firms (Zhong, Peng, and Liu, 2013).

In terms of the strategic asset-seeking motive, Chinese MNEs expand abroad to acquire strategic assets in order to compensate for their ownership disadvantages. This point complies not only with the importance of building ownership advantages in the OLI paradigm but also with the "asset-exploration" motive for OFDI (Dunning, 2006). Even though ownership disadvantage occurs for Chinese MNEs at the initial stage of OFDI, the accumulated ownership advantages are required for them at the later stage (Li, 2007).

Last, the LLL framework needs to combine with institution concepts to explain the internationalization strategy of Chinese MNEs. The institutional factors are incorporated into the OLI paradigm. For instance, firms with strong support from the government are preferential to access information about foreign markets and reduce uncertainty in the expansion (Cardoza and Fornes, 2011). Combining with international experience gained from linkages with foreign partners, firms possessing government support are more likely to invest abroad (Cardoza and Fornes, 2011; Lu, Liu, Wright, and Filatotchev, 2014; Yin, De Propris, and Jabbour, 2021).

3.5 Springboard perspective

Luo and Tung (2007) put forward a Springboard perspective to describe the internationalization of EMNEs. These firms use overseas expansion as a springboard to acquire some strategic assets from multinational companies based in foreign countries. The "springboard" identifies the behaviors of EMNEs acquiring strategic assets they need from developed countries through international investments (Luo and Tung, 2007). Luo and Tung (2007) state several motivations for springboard activities by EMNEs, and these motivations are firm-oriented or institution-oriented.

Regarding firm-oriented motivations, EMNEs have large gaps in technological knowledge and skills compared with developed market multinational enterprises (DMNEs). Thus, many EMNEs use outward internationalization as a springboard to access and obtain strategic assets

from DMNEs and then compensate for their competitive disadvantages (Luo and Tung, 2007; Liang, Lu, and Wang, 2012). Additionally, some foreign companies become dominant in China. Many Chinese firms find themselves disadvantageous to compete with global players in China, thus expanding into foreign markets to seek business opportunities.

Also, EMNEs intend to acquire strategic assets and expand consumers in vital foreign markets through international expansion to overcome their latecomer disadvantages in the global market. Specifically, Chinese firms invest in developed countries characterized by advanced technologies and developed institutions that support innovation and development (Ramasamy et al., 2012). Acquiring advanced technologies and resources from developed markets, EMNEs combine them with their mass production capabilities to provide low-cost products in other markets that have a high demand for low-cost products (Luo and Tung, 2007). Furthermore, many international competitors have invested in China, increasing the competition intensity in China. The best defensive strategy for Chinese MNEs (e.g. Haier) is to be present in its competitors' home markets (Liu and Li, 2002). EMNEs invest in their global competitors' homes or backyards in search of market share and competitive foothold (Luo and Tung, 2007; Li, 2007).

Referring to the institution-oriented factors, EMNEs aim to escape trade barriers (e.g. quota restrictions, and anti-dumping penalties) by entering a host country (Deng, 2004; Luo and Tung, 2007). Some Chinese firms are motivated by avoiding trade barriers and building their manufacturing facilities and operations in the US, Germany, and Latin America (Deng, 2004, 2007; Luo and Tung, 2007). Firms can also invest in a country that is well-treated by the local government first and then from there springboard to a more advanced country (Luo and Tung, 2007).

Furthermore, EMNEs use international expansion as a springboard to overcome domestic institutional constraints (Luo and Tung, 2007; Ge and Ding, 2008; Rui and Yip, 2008). The institutional constraints, such as lack of legal protection for property rights, underdeveloped factor market, and public corruption at home, are other factors to erode the competitiveness of the EMNEs and propel them to invest overseas (Child and Rodrigues, 2005; Li, 2007; Luo and Tung, 2007; Boisot and Meyer, 2008; Deng, 2009; Luo and Wang, 2012; Wei, Clegg, and Ma, 2015). Especially, EMNEs expand to developed countries where institutional constraints are

low (Luo and Wang, 2012). However, Wu and Chen (2014) claim institutional instability in the home country reduces the trend of expansion into the US market because they lack resources and confidence in the international expansion process. Hence, the issue of whether institutional restrictions improve OFDI should be examined and studied further.

Lastly, the internationalization of EMNEs is also supported by governments in their home countries (Li, 2007; Luo and Tung, 2007). Overseas acquisition of strategic assets for Chinese firms is encouraged by the local government that provides favorable rules, and ad hoc policies, such as tax incentives, and financial assistance (Liu and Li, 2002; Buckley et al., 2007; Deng, 2009; Buckley et al., 2016; Boateng et al., 2017). Nevertheless, compared to SOEs, many POEs have received less support from the Chinese government (Morck et al., 2008; Li, Meyer, Zhang, and Ding, 2018; Li, Xia, Shapiro, and Lin, 2018).

Springboard behaviors of EMNEs are also encouraged by the willingness of global players to share or sell strategic resources, and corporate entrepreneurship which aims to enter key foreign markets (Luo and Tung, 2007; Morck et al., 2008). The willingness of DMNEs to sell valuable resources to EMNEs is driven by satisfying the financial exigency needs, improving competence-portfolio fit, exploiting resources more productively, and resolving financial troubles (Child and Rodrigues, 2005; Luo and Tung, 2007). Entrepreneurial leadership is also a significant driving force behind springboard activities. Deng (2009) presents the likelihood or intensity of acquiring strategic assets in international expansion will be higher when the entrepreneur has a high "Go Global" orientation (Luo and Wang, 2012).

According to the Springboard perspective, EMNEs' global expansions are integrated with business activities at home (Luo and Tung, 2007; Ramamurti and Hillemann, 2018). On the one hand, Chinese firms that intend to invest abroad need to build strong resource bases in their home market (e.g. low labor costs, sales, and reputations). Therefore, Chinese firms can utilize home resources to explore opportunities in foreign countries (Liu and Li, 2002; Luo and Tung, 2007; Guo et al., 2019). Li (2007) concludes Haier, Lenovo, and TCL are market leaders at home before undertaking outward investments. The home country can take the role of being a manufacturing site for their international businesses (Luo and Tung, 2007). The low labor costs in home countries can compensate for the high production costs in European countries (Zheng et al., 2016).

On the other hand, Chinese MNEs transfer the acquired resources in foreign countries to China (Li, Strange, Ning, and Sutherland., 2016a), increasing their capabilities and improving innovations of parent firms. This is because the domestic market is the basis for the survival of Chinese enterprises (Luo and Tung, 2007). In other words, EMNEs take advantage of the substantial local market but also face fierce competition domestically. Therefore, these companies will bring back the acquired knowledge to their home country, developing more innovative products and services to ensure their competitive position in domestic market (Li, Strange, Ning, and Sutherland, 2016).

Springboard behaviors also link inward internationalization to the OFDI for EMNEs (Luo and Tung, 2007). Alliances and joint ventures in the home country may help EMNEs to learn advanced technologies, skills of management and marketing, and strategic assets from partners and accumulate experience in working with foreign partners (Luo, Zhao, Wang, and Xi, 2011; Wang, Hong, Kafouros, and Boateng, 2012). Moreover, when emerging market enterprises compete successfully against foreign MNEs in their home markets, they "develop capabilities, experience and confidence that enable them to compete against the same MNEs abroad" (Luo and Tung, p. 489).

Inward international allows equipping Chinese firms with knowledge and information that is useful to expand in foreign markets, which in turn mitigates the liability of foreignness of EMNEs (Liu, Buck, and Shu, 2005; Luo and Tung, 2007; Deng, 2009; Luo and Wang, 2012). Through such inward internationalization efforts, local firms can access more opportunities to acquire advanced technologies, resources, and management skills (Xiao et al., 2013). However, these findings contrast with Blomkvist and Drogendijk (2013). They argue when Chinese firms can acquire strategic resources from foreign partners in China, they are less likely to invest abroad because it is costly, risky and requires committing more resources to the foreign markets. Lyles et al. (2014) contended firms' international experience through interaction with foreign firms in their home market did not contribute to global learning nor OFDI performance.

Springboard perspective has further made several improvements to provide a better understanding of the internationalization of EMNEs. On the basis of emphasizing the importance of acquiring knowledge abroad, the connections with home markets and experience from inward internationalization, Luo and Tung (2018) introduce an upward spiral concept to

deepen understanding of the relationship between springboard and post-springboard activities. It includes five stages. At stage 1, EMNEs have to build some fundamental capabilities and international experience through inward internationalization. The established knowledge and skills enable EMNEs to acquire strategic assets through OFDI (Stage 2).

Next, EMNEs transfer obtained valuable resources to their home countries or used these resources to compensate for their competitive disadvantage (Stage 3). EMNEs fortify their home knowledge base by exploiting acquired resources, experimenting at home markets, and further improving their capabilities (Stage 4). In the last stage, EMNEs use their updated capabilities at home to invest abroad again (Stage 5). They seek a larger economy of a global scale associated with mass production and technologies that are extensively suitable, appropriable, and transferable to a wide range of foreign markets and mass consumers. EMNEs will also continue to improve their capabilities even after Stage 5 (Luo and Tung, 2018). Di Minin et al. (2012) confirmed the stages of springboard for Chinese firms. Specifically, Chinese firms first explore advanced technologies abroad. Then, they transfer the knowledge back home and integrate them with domestic R&D activities to enhance their R&D capabilities in China. Finally, the new R&D capabilities are exploited to develop new products that serve domestic and external markets.

When choosing entry modes and regions, EMNEs usually do not adopt sequential and evolutionary processes to overcome the costs of foreignness (Johansen and Vahlne, 1977), which is a key concept in the Uppsala model. On the contrary, EMNEs may jump to catch up with existing foreign enterprises by choosing high-risk investment (i.e. acquisition or greenfield investment) to enter foreign markets (Deng, 2007; Luo and Tung, 2007; Rui and Yip, 2008; Cui and Jiang, 2009; Deng, 2009). In doing so, Chinese firms are able to access resources from foreign target firms quickly and improve their competitive advantages (Deng, 2009; Zheng et al., 2016). However, focusing on acquiring knowledge through these fast entry modes will not guarantee the real achievement of competitive advantages. The critical issue here is to absorb and deeply understand the skills and expertise and then transform the known resources into commercial ends.

When investing abroad, companies generally invest first in countries that are psychologically proximate to their own, where the selling conditions are similar (Johanson and

Vahlne, 1977). However, EMNEs are preferring to invest in developed countries that are far away from their national market. Buckley et al. (2008) have confirmed this new perspective arguing that geographical and psychological distance is not a significant determinant of Chinese investment in new projects in the 1990s. Many Chinese firms invest outward in developed countries to acquire advanced technologies and managerial skills (Zhao, Liu, and Zhao, 2010; Li, Liu, Yuan, and Yu, 2017).

EMNEs face several challenges in springboard activities. First, the corporate governance of EMNEs is weak due to "the underdeveloped stock markets, low accountability, and lack of transparency stemming from their ties with their host government" (Luo and Tung, 2007, p. 494). These weaknesses destroy the organizational reputation and negatively influence linkages between global stakeholders and EMNEs. EMNEs are thus necessary to improve firm transparency by assigning top executives on the board and supervisory of parent firms and promote financial accountability by working with reputational international accounting firms (Luo and Tung, 2007).

A second challenge pertains to post-acquisition difficulties, such as "building effective working relationships with host country stakeholders, organizing globally dispersed complex activities, and integrating home and host country operations" (Luo and Tung, 2007, p.494). To overcome these challenges, before internationalizing, EMNEs have to create "a particular office or task force responsible for post-springboard integration and coordination, train managers to make decisions consistent with the parent firms' global interests and establish information flow and reporting systems to streamline intra-corporate sharing and support" (Luo and Tung, 2007, p. 495). Moreover, some EMNEs also suffer from a "lacked experience and capabilities in planning, executing, and managing foreign investments, so they encounter conflicts in several aspects, such as managerial philosophies, corporate culture, and managerial procedures with foreign target firms" (Luo and Tung, 2007, p.495). EMNEs perceive their deficit in international experience, low familiarity with business norms and practices in host countries, and overcoming cultural differences (Luo and Tung, 2018). Not all EMNEs which follow the springboard activity would be successful because such activity depends on firm-specific capabilities in organizing and managing international investments.

Overall, EMNEs regard internationalization as a well-designed and long-term strategy,

aiming at building their competitiveness in the global market. This international expansion not only provides opportunities for technological improvement (hard skills), but also helps firms to develop a global vision, and new perspectives requiring some soft skills useful to participate in international competition (Luo and Tung, 2018).

However, some issues are not discussed from the Springboard perspective. This view explains the reasons why these companies seek international expansion, but it does not explain how this process is organized by companies that do not conduct any inward internationalization in their home countries. Additionally, previous studies ignored the reaction of host countries and local firms, and their propensity to sell technologies and capabilities to foreign firms. The reason why the host country and local firms are willing to sell strategic capital deserves in-depth analysis. Last, it is clear that EMNEs may acquire advanced knowledge through OFDI, but it is not obvious whether this knowledge could contribute to increasing the competitiveness of EMNEs.

3.6 Concluding remarks

Traditional IB theories (i.e. OLI paradigm and Uppsala model) should be integrated with theories focusing on EMNEs (i.e. LLL framework and Springboard perspective) to analyze the internationalization of Chinese firms. This is because the OLI paradigm does not actively clarify how the Chinese firms overcome their specific enterprise disadvantages and the Uppsala model is not able to explain the fast entry mode of Chinese firms at the initial stage of internationalization.

Compared with the OLI paradigm and LLL framework, the Springboard perspective shares some differences and similarities with them. Different from them, the Springboard perspective implies that EMNEs will adopt the entry mode of high risk and high commitment to enter overseas markets. Also, it emphasizes that these enterprises should pay attention to the integration of domestic and foreign resources, expansion, and competition in both domestic and foreign markets. The aim of acquiring strategic assets to overcome competitive disadvantages is more stressed and evident than OLI and LLL models (Luo and Tung, 2018). Moreover, the Springboard model emphasizes cooperation with foreign enterprises in home and host countries.

However, LLL frameworks allows EMNEs to contact the external environment, including the cooperative relationships between people and organizations domestically and globally.

The Springboard perspective and LLL framework have been consistent in a few points. Both theoretical models are intended to solve the problem of how EMNEs become more competitive through overseas expansion and argue that owning traditional strategic assets is not a prerequisite for internationalization (Mathews, 2006; Luo and Tung, 2018). The two highlight the significance of learning from external partners, which is not shown in the OLI paradigm (Mathews, 2006). Learning can compensate for the ownership disadvantages by bringing new knowledge into the current knowledge stock.

Similar to the OLI paradigm, both the Springboard perspective and the LLL framework recognize the importance of firms' ownership advantages through seeking strategic assets abroad. This ownership advantage is not only reflected in the resources reserved by firms before overseas investment, but also in the strategic resources obtained during overseas expansion. As far as OFDI's advantages are mentioned in the OLI paradigm, EMNEs still have some ownership advantages before internationalizing. When an EMNE takes the springboard activity, it is not true that the EMNE does not possess any advantages. Instead, EMNEs could obtain them through inward internationalization (Luo and Tung, 2007; Lu, Liu, and Wang, 2011).

However, the advantages of the OLI paradigm, LLL framework, and Springboard perspective come from different sources. The source of the OLI paradigm is based on the transaction advantages in specific emerging countries, such as China's ability to raise capital for overseas acquisitions, lower labor and production costs, and so forth. In contrast, the LLL framework stresses the connections with people and organizations in the home or host countries. Then, the Springboard perspective comes from the market information, technology and know-how brought by foreign firms by establishing joint ventures and alliances in emerging markets. At the same time, the ability of springboard firms to identify and acquire knowledge overseas is also the unique ability of companies (Luo and Tung, 2018). Springboard behaviors will augment and create more ownership advantages for EMNEs over time (Luo and Wang, 2012; Luo and Tung, 2018). Once integrating the acquired foreign assets with local capabilities at the parent firm, EMNEs obtain more ownership advantages and exploit them to expand abroad again (Ramamurti, 2012).

It is worthwhile to notice that the LLL framework, Springboard perspective, and Uppsala model have all acknowledged the importance of knowledge acquisition from external sources. Knowledge acquisition is an important strategic intent of Chinese MNEs (Buckley et al. 2007; Luo and Tung, 2007). However, the means of acquiring knowledge are diverse among these three models. Under the LLL framework and Uppsala model, Chinese MNEs can learn advanced knowledge by establishing networks with external partners in domestic and host countries, but the Uppsala model does not concern the role of individuals to acquire international knowledge (Forsgren, 2002). Springboard perspective suggests firms are able to access to knowledge through inward FDI, and foreign partners in host countries, and discusses the entry mode choices to fulfill the goal of acquiring strategic assets in foreign countries through internationalization.

Lastly, the OLI paradigm and Springboard perspective highlight the impact of institutional factors on the international expansion of EMNEs, which is not considered in the Uppsala model and LLL framework. To sum up, I argue the single IB theory is not sufficient to understand the international expansion process of Chinese MNEs. I suggest IB scholars are necessary to combine these four main IB theories to have a more complete understanding of the internationalization process of EMNEs, such as Chinese MNEs, identify the similarities, and more importantly, understand their differences across IB theories.

Chapter 4 The Innovation Performance of Chinese Firms Through Cross-border Mergers and Acquisitions

4.1 Introduction

Emerging markets multinational enterprises (EMNEs) are lagging behind global leading firms in knowledge bases, so they are motivated to search for new technologies and resources to overcome competitive disadvantages through internationalization (Luo and Tung, 2007; Chittoor, Aulakh, and Ray, 2015; Cheng and Yang, 2017). Cross-border mergers and acquisitions (CBMAs) have become a significant vehicle for driving EMNEs' international activities, allowing them to access, learn, and assimilate advanced knowledge that will be used for improving their innovation capability. However, even though the deals of CBMAs have been constantly increased among EMNEs over decades, firms face great uncertainties about whether the acquired knowledge has finally been transferred into innovative outputs and to what extent the innovation level will be persistent after completing CBMAs, along with the huge costs and high risks of international investment. It is necessary to figure out the impact of the internationalization choice on the innovation outcomes of EMNEs.

Previous research on the effect of CBMAs on EMNEs' innovation performance remains in its infancy and has reached conflicting results. First, many studies have not distinguished the types of internationalization (i.e. considering outward foreign direct investments as a whole) (Fu, Hou, and Liu, 2018; Piperopoulos, Wu, and Wang, 2018). Second, prior research that focuses on the innovation effect of CBMAs has provided contradictory evidence, including either a positive relationship (Anderson, Sutherland, and Severe, 2015; Fu et al., 2018; Ai and Tan, 2020) or no relationship (Edamura, Haneda, Inui, Tan, and Todo, 2014). The reasons for different results might be attributed to the different types of firms, shares of CBMAs or investment destinations.[2] Among them, few empirical studies have explored the influence of CBMAs on the post-deal innovation performance of EMNEs change over time, with few

[2] In this study, I incorporate the CBMA deals that occurred in public and private firms, all percentage of shares and global destination countries. However, most of the extant studies only consider a few countries, such as the USA and European regions (Anderson et al., 2015; Amendolagine, Giuliani, Martinelli, and Rabellotti, 2018).

exceptions (Anderson et al., 2015).

Moreover, current research does not consider the relationship by distinguishing types of CBMAs based on the selections of the target industry, host countries, and target firms. The lack of attention to such differences is a significant omission from the theoretical point of view because diverse sources of knowledge acquired might be different in types of CBMAs, and this further leads to different innovation performances of EMNEs. Therefore, I argue that additional research is required in order to address the conflicting findings on the relationship between different types of CBMAs and the innovation performance of EMNEs.

In this regard, I will explore whether and how the association between post-CBMAs and innovation performance is affected by different types of CBMAs. Specifically, I will investigate the types of acquisition (intra-industry versus cross-industry CBMAs), the innovation level of destination countries (innovative versus non-innovative host countries), and the type of target firms (innovative versus non-innovative target firms). Anchored on the Linkage-Leverage-Learning (LLL) framework and Springboard perspective, I will examine the impact of post-CBMAs on the innovation performance of EMNEs in the short and long terms between 1997 and 2017.

I selected Chinese firms in the context of a wide path of internationalization also supported by the government. First, with the "Go global" policy and the Belt and Road Initiative (BRI) proposed by the Chinese government in the recent decades, a flux of Chinese firms is entering the wave of the internationalization process (Deng, 2009), representing EMNEs. Second, Chinese firms intend to catch up with lead firms by increasing their competitive advantages through internationalization. They are ambitious to make a transition from low-cost products to highly value-added products.

This study contributes to the literature in several ways. It extends the literature on the influence of internationalization on the innovation performance of EMNEs by examining a relatively long period and introducing diverse typologies of CBMAs. In addition, it provides empirical evidence verifying the applicability of EMNE-based international business theories, by using panel data at firm levels. I argue that CBMA serves as a vehicle that fosters the innovation performance of Chinese firms. However, CBMA generates more robust effects for Chinese firms investing in foreign targets of different industries and in host countries embedded

with high innovation levels.

The rest of the paper is organized as follows. Section 4.2 reviews the most relevant literature, from which I generate some hypotheses. Section 4.3 describes my research method, including data sources, sample selections, and regression settings. Section 4.4 presents the empirical results. Section 4.5 discusses the findings, presents the limitations, and suggests some directions for future research.

4.2 Theoretical framework and hypotheses development

4.2.1 Linkage-Leverage-Learning (LLL) framework and Springboard perspective

Previous literature suggests that multinational enterprises will employ their ownership advantages (e.g. superior assets and capabilities) in foreign-invested locations to compete with local firms (Dunning, 1988). However, EMNEs do not follow this argument because they do not possess such ownership advantages when they begin their internationalization (Deng, 2009). In explaining the internationalization pattern of EMNEs, two theoretical perspectives—LLL framework and the Springboard perspective—have recently emerged. Both the LLL model and Springboard perspective start from the view that EMNEs will acquire strategic assets (e.g. advanced technologies, reputational brands, managerial skills) during their phase of internationalization. In fact, they lack ownership advantages in internationalization, even though the two frameworks stress different ways of acquiring such assets.

The Linkage-Leverage-Learning (LLL) framework, proposed by Mathews in 2006, suggests that EMNEs acquire such strategic assets through linking with external networks outside the firm to access necessary resources, and then leveraging them in a phase of continuous learning (Mathews, 2006). Knowledge obtained comes from the activities of accessing, learning, and employing external resources through cooperating with external partners, such as business partners, government, or competitors (Ge and Ding, 2008; Ge and Wang, 2013; Du and Zhou, 2019). In this context, Luo and Tung (2007) stress the significant role of adopting fast but high-risk entry mode (e.g. CBMAs) into foreign countries to acquire necessary valuable assets and catch up with global lead firms.

Springboard perspective stresses only the importance of being engaged with knowledge of each firm (i.e. through fast investment), but does not focus on how to access and assimilate the knowledge, which is suggested in the LLL framework. In general, both Springboard and LLL perspectives emphasize the knowledge acquisition and learning from external partners in the global expansion process of their internationalization.

Several studies concentrate on the linkages with government, business partners and other organizations embedded in host countries and foreign partners in home countries such as joint venture firms in China ((Wang, Luo, Lu, Sun, and Maksimov, 2014; Bai, Chen and He, 2019). However, it is unclear whether this acquired knowledge could boost the EMNEs' innovation capability.

4.2.2 Post-CBMAs' innovation performance

Extant studies have argued that EMNEs are motivated to overcome their ownership disadvantages through CBMAs (Luo and Tung, 2007). The EMNEs adopt CBMAs as a direct way to quickly enter into foreign markets (Deng, 2012), and gain to access to new resources (Luo and Tung, 2007; Chang, Chung, and Moon, 2013; Yakob, Nakamura and Ström, 2018). It is also emphasized that EMNEs transfer the acquired resources to their home country, boosting parent firms' innovation capabilities (Di Minin et al., 2012; Elia, Kafouros, and Buckley, 2020). Thus, I suggest that the technological capabilities acquired from foreign countries will be constantly developed, transferred, and integrated with the existing knowledge of parent firms, allowing EMNEs to upgrade their innovation capability, and to develop novel products over time (Luo and Tung, 2007, 2018; Buckley, Elia, and Kafouros, 2014).

This will take time to learn from foreign firms and will require continuous communication and interactions with them (Tan and Mathews, 2015; Ray, Ray and Kumar, 2017). Therefore, I propose the first hypothesis as follows:

Hypothesis 1 (H1): Post-CBMAs are positively related to innovation performance in the short- and long- terms.

4.2.3 The selection of industry

The acquired firms could be regarded as the EMNEs' competitors, suppliers or customers of EMNEs. In this regard, I classify CBMAs into two types: intra-industry CBMAs (where the acquired and acquiring firms operate in the same industry) and cross-industry CBMAs (those that are in different industries). Therefore, acquiring firms in emerging markets could establish linkages with their competitors in intra-industry CBMAs. The competitors may like to be linked with EMNEs for outsourcing operations to emerging markets (Kedia, Gaffney, and Clampit, 2012). Also, EMNEs may tap into and learn the knowledge necessary for producing similar products (Barkema and Schijven, 2008; Zhang, Wang, Li, Chen, and Wang, 2018). Although the acquiring and acquired firms with a homogenous knowledge base might facilitate learning, acquired firms are likely to protect their advantages and are not willing to share knowledge with other firms. Moreover, the knowledge similarity implies the overlap of R&D operations between acquirers and targets, which decreases the intent of resource recombination (Colombo and Rabbiosi, 2014). I suggest that the acquired knowledge from competitors will not enhance the EMNEs' innovation capability for long. The knowledge acquired from competitors might not be sufficient to do so.

By contrast, the situation would be different in the cross-industry context. Here EMNEs can leverage and learn complementary knowledge. Thus, operating in different industries (e.g. upstream suppliers, distributors and downstream partners) may be beneficial. The cross-sectoral knowledge is useful to foster the technological capability of the acquirers (Caloghirou, Kastelli, and Tsakanikas, 2004). For instance, suppliers and clients may offer useful suggestions, such as new material to apply to products, customers' needs and expectations from the products (Melton and Hartline, 2010; Kumaraswamy, Mudambi, Saranga, and Tripathy, 2012; Ellis, Henke, and Kull, 2012; Heirati and Siahtiri, 2019). In general, EMNEs can obtain new ideas for their product improvement (Kumaraswamy et al., 2012). This will compensate for the disadvantages of being placed in host countries, deriving from the lack of knowledge about local environments, market demands and social and business conditions (Eriksson, Johanson, Majkgård, and Sharma, 1997; Elg, Ghauri and Tarnovskaya, 2008). Accordingly, I propose the second hypothesis:

Hypothesis 2 (H2): The positive association between innovation performances and post-CBMAs becomes significant solely in the context of cross-industry CBMAs, over the short- and long- terms.

4.2.4 Selections of host countries and target firms referring to innovation levels

To increase their innovation capability, EMNEs need to be placed in knowledge-rich contexts. Thus, they may be attracted to places with a superior and intensive knowledge base (Ramasamy, Yeung and Laforet, 2012; Vukicevic, Fallon, and Ott, 2021).

We know that host countries differ in the number of universities and research institutions, government policies, working environment for encouraging innovation activities and well-developed rules and regulations for protecting intellectual properties (Wu, Wang, Hong, Piperopoulos, and Zhuo, 2016; Piperopoulos, Wu, and Wang, 2018).

Investing in innovative host countries is important for EMNEs because they may establish linkages with firms based in the local scientific park, with R&D organizations, or with more experienced individual researchers (Tan and Matthews, 2012; Crescenzi, Pietrobelli, and Rabellotti, 2013; Guo, Zhang, Dodgson, Gann, and Cai, 2019). In so doing, EMNEs could continuously explore valuable knowledge and acquire new capabilities from foreign partners (Mathews, 2006; Deng, 2009). Thus, I propose the following hypothesis:

Hypothesis 3 (H3): The relationship between innovation performances and CBMAs is significant and positive for target firms in innovative countries in the short and long terms.

Similarly, acquiring innovative or non-innovative target firms could influence differently the EMNEs' post-acquisition innovation performance. First, I can hypothesize that acquirers prefer to target firms with patenting (Ali-Yrkkö, Hyytinen, and Pajarinen, 2005) because they possess valid knowledge that can be regarded as a source of gathering resources for acquirers. I suppose that the innovative counterparts may have accumulated more superior knowledge than EMNEs can absorb.

Second, acquiring an innovative target firm allows EMNEs to access external networks such as the linkages with their suppliers, distributors, industry leaders, and universities in host countries (Yamin and Kurt, 2018). Combining different or new sources of knowledge from these several diverse channels contributes to the knowledge combination and creation of innovative outputs (Narula, 2014; Tortoriello, 2015).

Based on the arguments above, I expect that the effects of post-CBMAs on innovation performance should be more pronounced in innovative target firms when compared to the non-innovative counterparts. Thus, the last hypothesis is proposed as follows:

Hypothesis 4 (H4): The relationship between innovation performances and CBMAs is significant and positive for innovative target firms in the short and long terms.

4.3 Research methodology

4.3.1 Data sources and sample selection

I collected data on CBMAs conducted by Chinese MNEs from the Zephyr database,[3] which meet the following criteria. First, the CBMAs are completed between 1997[4] and 2017. Second, the acquirers are Chinese MNEs headquartered in Mainland China. If the acquisition is realized by a foreign subsidiary of a Chinese MNE headquartered in Mainland China, it is also taken into account. Differently, if the acquirers are fully or half funded by firms located beyond Mainland China, they are excluded because they are foreign owned. Second, targets are firms headquartered beyond Mainland China. Targets that are foreign subsidiaries of other Chinese firms are excluded. The addresses of the headquarters of acquirers and targets are further controlled by checking the company's official websites and other sources like Bloomberg. The CBMAs with missing information about acquirers or targets are excluded. In addition, acquirers and targets are also restricted to the form of companies, so acquisitions by individuals are excluded. Finally, only completed CBMAs are included in the sample. As a

[3] Sample firms' data of CBMAs are further verified from the M&As section in the Orbis database, presenting similar information as in the Zephyr database.

[4] The initial year 1997 is chosen because it is the earliest time for recording CBMA.

result, 1,405 Chinese firms have met these criteria.[5] They represent the whole universe of Chinese firms that conducted CBMAs.

The financial data of sampled Chinese acquiring companies were collected using the Orbis database. The data were drawn from the period of 1993 to 2021. Data from Zephyr and Orbis were matched by using the BvD ID Number of Chinese acquiring companies. Patent family data were drawn from the Orbit Intelligence database by searching for the company name of each sampled Chinese acquiring firm (I doubled checked with each acquirer's current name, local names, and also previous ones in order to make sure the firms could be found in Orbit). Only patents where the acquirer is the current assignee were considered. The patent family year is defined based on the earliest date of patents included in the family. As a result, I got a combined dataset of 1,252 firms by merging the financial and patent information of companies completing a CBMA.

Lastly, in order to formulate a panel dataset, I kept the active acquirer firms dealing with only one acquisition made over the 1997-2017 (to avoid the duplicate problem of matching the acquirer firm and their acquisition years in the panel dataset). The panel data varies from 1993 to 2021 (years for economic and patent data). In the end, my final unbalanced panel dataset retrieved a sample of 918 Chinese firms.[6]

4.3.2 Variable measurement

4.3.2.1 Dependent variable

In this study, I measured the innovation performance of sampled Chinese acquiring companies by using the yearly number of patents granted (Grant) to each firm. Despite some limitations (e.g. innovation cannot be only measured by patents), patents are likely one of the most used and suitable measures to explore the technological capabilities of a firm and in turn

[5] The data of patent family and financials are collected from 1993 to 2021.To compare innovation performances pre- and post-acquisition, I need to have at least 4 years of information from before and after every CBMA. Therefore, for testing the hypotheses at different time periods—after 1 year, 2 years, 3 years, and 4 years of CBMAs—I end our M&As in year 2017 based on the availability of our data.

[6] I excluded 334 Chinese acquiring firms that have made more than one CBMA deal in my dataset.

its innovation outputs (Ma and Lee, 2008). A patent reflects not only a firm's technical ability to produce novel solutions but also its success in combining existing technologies to develop new ones (Wu, Ma, and Liu, 2019).

4.3.2.2 Independent variables

The purpose of the current research is to study the effect of CBMAs on the innovation performance of acquirers in a different length period (from 1 year to 4 years) after the acquisition. In this direction, I adopted an innovative approach by exploiting a longitudinal panel data methodology and I create a dummy variable (Post-CBMAs) that measures the time periods in order to compare the post-CBMAs yearly innovation performance of the acquiring companies with respect to both the years before the acquisition and the years after the considered period. In so doing, this panel dummy variable assumes value 0 in the year before the acquisition (including the acquisition year), value 1 in the years after the acquisition (it can vary from 1 year to 4 years after the CBMAs), and again 0 after this period (when the effect of acquisition is expected to dissipate). For instance, considering an acquisition completed in 2000, the variable is 0 from 1993 to 2000, 1 from 2001 to 2004 (if a 4-year period post-CBMAs is explored), and 0 from 2005 to 2017.

In order to examine H2, I performed subsample regressions to study the different impacts of post-CBMAs on innovation performance between intra-industry CBMAs and cross-industry CBMAs. Therefore, I split the sampled firms into Chinese firms conducting intra-industry CBMAs and cross-industry CBMAs. This classification is based on the information of the BvD sector at the first level provided by Orbis.[7] Thus, a dummy variable is created: 1 is denoted for intra-industry CBMAs if the acquirer and target are operating in the same sector or 0 for cross-industry CBMAs if they belong to a different BvD sector.

To test H3, I split the sample into two groups based on the median level of the innovation score of the host countries (that is, investing in innovative or non-innovative host countries) and further conducted subsample regressions. Specifically, the innovation score is manually

[7] BvD sector is considered because it has a few missing values in the Orbis database.

collected from the Global Innovation Index (2004-2018).[8] Then, I computed the innovation score of host countries (which is the average between 2004 and 2018) and classified them as innovative and non-innovative host countries, based on the median value (i.e. 37). If the host country has an innovation score equal to or above 37, then it is deemed as being an innovative host country. If the host country has scored below 37, then it is deemed as being a non-innovative host country.

As for examining H3, I classified the sample into two groups according to the median value of granted patents. I gathered the granted patent data from the Orbis Intellectual Property database. Then, I calculated the average number of patents granted by target firms (from 2013 until the target has been acquired),[9] and the median value is 1. The year 2013 is the start year for measuring the granted patent data owned by target firms because of the data availability in the Orbis Intellectual Property database. Therefore, the sample was divided into two subsamples: the group equal to and above the median is called the innovative targets, and another group below the median value (i.e. zero patent) is named the non-innovative targets.

4.3.2.3 Control variables

I have included several control variables that could also explain the innovation performance of CBMAs. Patent granted (PG) is the natural logarithm transformation of previously granted patents of acquirers because the accumulated knowledge and skills for producing patent outputs in the prior years can apply to the patent inventions in the following years. The second control variable is the return on total assets (ROA). It is an indicator displaying the profitability of the firm, suggesting that a firm with large profits has a greater ability to acquire foreign companies with the support of substantive capital. I also control for firm size (Size), which is measured as the natural logarithm transformation of a firm's total assets. The large-sized firms may have more abilities to provide human capital, financial costs,

[8] It is published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO) co-publishers, and their Knowledge Partners.

[9] It is the sum number of patents granted divided by the difference in years between 2013 and the completion year of CBMAs. Please also note that I consider the registered date of target firms if it occurs after 2013. In this case, the difference in years will be between the registered data of target firms and the complete year of CBMAs. Otherwise, the difference is calculated by the completion year of CBMAs minus 2013.

and other resources in the CBMA process, thereby helping to improve innovation performance. Last, the liquidity ratio (Liquidity) is considered as a control. The lower the ratio, the more substantive financial resources that could be available for undertaking CBMAs. The logarithmic transformation is applied to some of the variables (i.e. PG in the previous periods and Size) in order to linearize the variables and adjust for their skewness. Table 4.1 summarizes the definitions and sources of the dependent variable, independent variable, and control variables.

	Variable	**Definition**	**Source**
Dependent variable	Grant	Yearly number of patents granted	Orbit Intelligence
Independent variable	Post-CBMAs	Value 0 in the year before the acquisition, value 1 in the years after the acquisition, and again 0 after this period	Zephyr
Control variables	PG	Logged value of previously granted patents	Orbis
	ROA	Return on total assets	
	Size	Logged value of total assets	
	Liquidity	Liquidity ratio	

Table 4.1: Definitions and sources of variables

4.3.3 Model specification

The panel model estimated by the negative binomial model with firm fixed effects is implemented in order to test the effect of post-CBMAs on the innovative performance of Chinese acquirers. The negative binomial model is adopted because it is the model employed when the dependent variable is a count number (the number of patents granted in this paper) (Deng and Yang, 2015; Dikova, Panibratov, Veselova, and Ermolaeva, 2016). Additionally, it takes time for Chinese acquirers to access, assimilate and utilize the acquired knowledge at the post-CBMAs stage. In other words, any input for innovations will not be achieved in the same year as the CBMAs are completed. Thus, a two-year lag of the control variables is introduced, which allows better exploration of the relationship between CBMAs and innovation capabilities. The use of lagged value of independent variables is to mitigate any endogeneity problem (Tang, Gu, Xie, and Wu, 2020).

4.4 Regression results

4.4.1 Descriptive statistics and correlation matrix

	min	q1	median	q3	max	mean	sd
Grant	0	0	0	0	16,050	17.823	277.335
PG	0	0	0	0	9.684	0.528	1.262
Size	0	11.519	12.790	14.291	21.204	12.816	2.637
ROA	-100	0.804	3.821	7.794	86.700	3.357	12.396
Liquidity	0.001	0.730	1.139	1.959	94.941	1.986	3.599

Table 4.2: Descriptive statistics

	Grant	PG	Size	ROA	Liquidity
Grant	1	0.350	0.220	0	-0.030

PG	0.350	1	0.470	0.040	-0.090
Size	0.220	0.470	1	0.040	-0.190
ROA	0	0.040	0.040	1	0.040
Liquidity	-0.030	-0.090	-0.190	0.040	1

Table 4.3: Correlation matrix

Table 4.2 and Table 4.3 show the descriptive statistics and correlation matrix of control variables, respectively. From the Table 4.3, we can see that there are no highly correlated variables.

4.4.2 Main results

Table 4.4 reports the models used to examine H1. H1 predicts that the Chinese firms that undertake CBMAs will increase their innovation performance over the post-CBMAs period.[10] As shown in the four models in Table 4.4, they are introduced by respectively considering the results after one year (Model 1), after two years (Model 2), after three years (Model 3) and after four years of CBMAs (Model 4). Models 1 and 2 address the effects within a short time, and Models 3 and 4 for a long time. As I hypothesized, the coefficient of post-M&A is positive and statistically significant in all models (p-value < 0.5 in Model 1 and p-value < 0.001 in Models 2 – 4), suggesting that CBMAs tend to have a positive impact on firms' innovative performance in the short and long terms. Therefore, Hypothesis 1 is fully supported.

For testing H2, H3 and H4, I performed the regression analysis for each sub-group mentioned before respectively. Using Models 1 – 8 in Table 4.5, I test Hypothesis 2, which predicts that the positive relationship between post-M&As and innovation performance will persist when Chinese firms invest in different industries (i.e. cross-industry CBMAs). The coefficient of post-M&As in the subsample of intra-industry CBMAs is not statistically significant in Models 1 – 4 when Chinese firms invest in the same industries (i.e. intra-industry

[10] The results remain the same when CBMAs are completed in other different years. The other considered periods include (in years): 2005-2017, 2007-2017, and 2010-2017.

CBMAs). However, I found that the coefficient of post-M&As in the subgroup of cross-industry CBMAs is positive and statistically significant in the short and long run (p-value< 0.001 in Models 6 – 8), even if it shows insignificance at a very short time of the post-CBMAs period (i.e. after 1 year of CBMAs in Model 5). Therefore, H2 is largely supported, implying that Chinese firms investing in target firms from different industries have better performance.

Then, I examined H3, which predicts that the positive relationship of post-CBMAs and innovation performance will be persist when firms investing in innovative target countries. I report the results of two subgroups in Table 4.6. As expected, I found that the coefficient of CBMAs into highly innovative host countries is positive and significant (p-value < 0.5 in Model 1; p-value < 0.001 in Models 2 – 4). The coefficient of CBMAs into non-innovative host countries shows a significant effect following the very short time after CBMAs but becomes insignificant over the time and even becomes negative after the long periods of CBMAs (see Models 5 – 8). Hence, H3 is strongly supported. Lastly, I test H4 by comparing the effects between subsamples of innovative and non-innovative targets. The results of investing in different innovation levels of target firms partially confirm my predictions, as shown in Table 4.7. The coefficients of undertaking investments in innovative and non-innovative targets are all positive and significant after 2, 3, and 4 years of post-CBMAs.

The six control variables show different connections with innovation performance and a similar trend on it in all of the models. The coefficients of Size are positive and significantly related to innovation performance in the short and long terms (p-value < 0.001 in all models), suggesting that large-sized firms are more likely to foster innovation performance. Liquidity receives mixed results but mostly is not significant across models, which is not a driving factor in increasing innovation capabilities. The ROA is negatively significant to innovation performances over time, implying that the profitability of firms is not served as a basis for obtaining financial resources/capital to undertake CBMAs. The PG is positively related to the firm innovation performance over all of the post-CBMAs period (p-value < 0.001 in all models), implying the knowledge and experience accumulated in the invention process at the previous stage will be applied to the following periods for improving innovation capacities.

Table 4.4: Baseline models for testing H1

	Model 1	**Model 2**	**Model 3**	**Model 4**
(Intercept)	-3.71***	-3.66***	-3.61***	-3.57***
	(0.17)	(0.17)	(0.17)	(0.18)
Post-CBMAs	0.08*	0.12***	0.15***	0.15***
	(0.04)	(0.03)	(0.03)	(0.03)
lag(PG, 2)	0.58***	0.57***	0.57***	0.57***
	(0.01)	(0.01)	(0.01)	(0.01)
lag(Size, 2)	0.17***	0.16***	0.16***	0.16***
	(0.01)	(0.01)	(0.01)	(0.01)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.01	0.01	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-10799.05	-10793.49	-10786.91	-10783.86
AIC	21610.10	21598.97	21585.83	21579.72
Observations	5099	5099	5099	5099

	Model 1	Model 2	Model 3	Model 4

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 4.5: The models for testing H2

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-3.38***	-3.37***	-3.36***	-3.39***	-3.95***	-3.86***	-3.74***	-3.65***
	(0.26)	(0.26)	(0.26)	(0.26)	(0.24)	(0.24)	(0.24)	(0.24)
Post-CBMAs	0.08	0.08	0.06	0.01	0.09	0.14***	0.20***	0.25***
	(0.06)	(0.05)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.03)
lag(PG, 2)	0.61***	0.61***	0.61***	0.61***	0.55***	0.54***	0.54***	0.55***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
lag(Size, 2)	0.15***	0.14***	0.14***	0.15***	0.18***	0.18***	0.17***	0.16***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	-0.02	-0.02	-0.02	-0.02	0.02*	0.02*	0.02*	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Log Likelihood	-4636.42	-4635.68	-4636.05	-4637.04	-6151.29	-6146.46	-6137.64	-6128.01
AIC	9284.83	9283.37	9284.10	9286.09	12314.59	12304.93	12287.28	12268.02
Observations	2094	2094	2094	2094	2995	2995	2995	2995

Notes: $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; Models 1 to 4 show the results after 1, 2, 3 and 4 years of intra-industry CBMAs; Models 5 to 8 show the results after 1, 2, 3 and 4 years of cross-industry CBMAs.

Table 4.6: The models for testing H3

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-3.59***	-3.55***	-3.50***	-3.45***	-4.84***	-4.65***	-4.65***	-4.82***
	(0.20)	(0.20)	(0.20)	(0.20)	(0.54)	(0.54)	(0.54)	(0.56)
Post-CBMAs	0.10*	0.14***	0.16***	0.20***	0.25**	0.16	0.15	-0.02
	(0.05)	(0.03)	(0.03)	(0.03)	(0.09)	(0.08)	(0.08)	(0.06)
lag(PG, 2)	0.54***	0.54***	0.54***	0.54***	0.60***	0.58***	0.58***	0.61***
	(0.01)	(0.01)	(0.01)	(0.02)	(0.04)	(0.04)	(0.04)	(0.04)
lag(Size, 2)	0.17***	0.16***	0.16***	0.16***	0.24***	0.23***	0.23***	0.24***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.04)	(0.04)	(0.04)	(0.04)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***	-0.01	-0.01*	-0.01*	-0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
lag(Liquidity, 2)	-0.00	-0.00	-0.00	-0.00	0.02	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Log Likelihood	-8378.27	-8372.91	-8366.92	-8358.60	-1244.47	-1245.89	-1245.97	-1247.76
AIC	16768.54	16757.82	16745.84	16729.20	2500.93	2503.77	2503.95	2507.52
Observations	3787	3787	3787	3787	548	548	548	548

Notes: ***p < 0.001; **p < 0.01; *p < 0.05; Models (1) to (4) show the results after 1, 2, 3 and 4 years of CBMAs in innovative host countries; Models (5) to (8) show the results after 1, 2, 3 and 4 years of CBMAs in non-innovative host countries.

Table 4.7: The models for testing H4

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-4.90***	-4.54***	-4.33***	-4.25***	-4.44***	-4.31***	-4.23***	-4.10***
	(0.38)	(0.39)	(0.39)	(0.40)	(0.31)	(0.31)	(0.31)	(0.31)
Post-CBMAs	0.07	0.24***	0.30***	0.31***	0.21***	0.22***	0.26***	0.32***
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
lag(PG, 2)	0.47***	0.47***	0.46***	0.46***	0.51***	0.50***	0.49***	0.48***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
lag(Size, 2)	0.30***	0.27***	0.26***	0.25***	0.24***	0.24***	0.23***	0.22***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
lag(ROA, 2)	-0.01**	-0.01*	-0.01	-0.01	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.03	0.03	0.02	0.02	-0.00	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-2354.33	-2346.63	-2341.27	-2340.55	-3760.13	-3756.72	-3752.10	-3743.80
AIC	4720.65	4705.25	4694.53	4693.11	7532.25	7525.44	7516.19	7499.60
Observations	957	957	957	957	1955	1955	1955	1955

Notes: ***p < 0.001; **p < 0.01; *p < 0.05; Models (1) to (4) show the results after 1, 2, 3 and 4 years of CBMAs in innovative target firms; Models (5) to (8) show the results after 1, 2, 3 and 4 years of CBMAs in non-innovative target firms.

4.4.3 Robustness checks

I further conducted a set of robustness checks to the results. First, I classified two groups of host countries (i.e. developed and developing host countries) and retested H3. I found that the effect on post-CBMAs is significant and positive for investment in developed countries but

insignificant in developing countries. The rationale for this classification is that developed countries are characterized by more advanced technologies and knowledge than developing countries. Thus, I substituted developed host countries for innovative host countries and developing counterparts for non-innovative host countries. This is because EMNEs might acquire strategy assets from developed countries but acquire natural resources or explore new markets in developing countries. I obtained consistent results with H3.

Then, I examined whether the results hold when not considering the targets located in Bermuda, the Cayman Islands, and the British Virgin Islands[11] (Shao and Shang, 2016). The results again remain consistent. The target firms in these countries were included in the sample because I confirmed they are headquartered outside Mainland China by checking and double-checking with external sources. In addition, I added a control variable, R&D expenses of acquirers (measured as R&D expenses divided by operating revenue),[12] and obtained similar results. I also excluded acquirers that are financial firms[13] that might not focus on applying for and obtaining consistent findings. Overall, all the results in these additional checks corroborated the robustness of my empirical outcomes.

4.4.4 Supplementary analysis

Finally, I classified the acquired shares by Chinese firms into two groups. If the percentage of shares is equal to and above 50%, it is deemed as being majority shares; if it is less than 50%, it is minority shares. I found that holding majority shares fosters more innovation performance of Chinese acquirers in the long term than do minority shares. A possible explanation is that Chinese acquirers might be focusing on integrating the activities of the acquired firm.

[11] Target firms in Bermuda, the Cayman Islands, and the British Virgin Islands are considered in the whole sample because I verify the locations of their headquarters through different sources to make certain that they were not headquartered in Mainland China. This avoids the round-tripping issue (Wang, Hong, Kafouros, and Boateng, 2012).

[12] This control variable is excluded in the previous models because of its large portion of missing values in sampled firms, which will decrease the observations.

[13] The firms from the "Banking, Insurance & Financial Services" BvD sector are excluded.

4.5 Discussion and conclusions

Exploring the issue of Chinese firms, this study has empirically confirmed the role of CBMAs in increasing innovation performance in the short and long terms. However, such a positive effect is also dependent on the types of industry that Chinese acquirers invested in and in the type of county. The timing element is also important. Complementary industries only have an effect after 2 years. We confirm that the Springboard perspective and LLL framework could be applied to explain the international business of Chinese firms.

Although CBMAs of EMNEs have attracted large attentions from international business (IB) scholars, we still know little about their effects on innovation performance; in particular, we know little regarding the different stages of post-internationalization and diverse conditions of this impact. This study has uncovered that CBMAs act as a facilitator that increases the innovation performance of Chinese firms. Considering the arguments of whether FDI contributes to the innovation capability of EMNEs, the findings suggest that CBMA is an essential vehicle for firms in emerging economies to overcome their competitive disadvantages, obtain strategic assets and catch up with leaders in developed countries (Mathews, 2006; Luo and Tung, 2007).

I also determine that such a positive effect of CBMA on the innovation performance of Chinese firms varies with the selections of target firms' industries, the innovation level of host countries and the innovation capability of target firms over time. Specifically, takeovers of target firms that are in the same industry as acquirers would attenuate the improvement of innovation performance for Chinese firms over time, whereas investing in target firms from different industries would result in benefits received from CBMAs over time. This finding unveils that acquiring a firm operating in a diverse field would be an opportunity for Chinese firms to acquire heterogenous knowledge, combine this knowledge and convert it into innovative output. Looking at the innovation levels of host countries and target firms, I have further found that invested foreign targets located in innovative places would help to increase the innovation outputs of Chinese firms as compared to those acquisitions located in non-innovative areas.

4.5.1 Theoretical implications

This study provides empirical evidence for the research on the relationship between internationalization and firm innovation performance and represents one of the few attempts to study this relationship from a dynamic view for EMNEs. Through using firm-level panel data of Chinese multinational enterprises that completed CBMAs from 1997 to 2017, I found that post-CBMAs have a positive relationship with innovation performance over time, both in the short and long terms, within different industries, and in relation to the level of innovation of the various countries.

The result provides additional support to previous studies (Anderson et al., 2015; Ai and Tan, 2020), and provides evidence to the LLL framework and Springboard perspective. Chinese firms do not possess strategic assets to compete with global rivals, so they intend to employ CBMA as a way to obtain the required resources (Mathews, 2006; Luo and Tung, 2007). Through constant linking with and learning from acquired firms, Chinese firms are able to transfer knowledge, augment their capabilities and build competitive advantages (Child and Rodrigues, 2005; Mathews, 2006; Kolstad and Wiig, 2012).

Furthermore, this study identifies whether and how the positive relationship between post-CBMAs and innovation performance is contingent on investment decisions. Specifically, this study moves a step forward to consider the relation through different dimensions of CBMAs in terms of industry, and innovation levels of target countries. Interestingly, the level of innovation of the target ends up being unimportant. This challenges the traditional view that Chinese firms desire to acquire innovative firms that could have superior knowledge (Yakob et al., 2018).

The findings suggest that only cross-industry CBMAs increase firm innovation performance during the post stage of CBMAs. All of these trends are valid after 2 years of CBMAs. It implies the strategic intent of exploring and acquiring heterogenous knowledge from partners in the different stages of value chains for product innovation. The insignificant effect related to 1 year of CBMAs might be interpreted as the need for time to develop and absorb innovation (Luo and Tung, 2007). Also, I have found that targeting innovative countries foster the innovation capacity of acquiring firms (Ramasamy et al., 2012), but this result is not consistent with Amendolagine et al. (2018). In contrast, Chinese firms investing in non-

innovative host countries are insignificantly and even negatively affected in the long run. Furthermore, the selection of target firms with different levels of innovations does not appear relevant and able to influence innovation performance.

The scarce influence of innovative acquisition after 1 year of CBMAs when investing in innovative target firms may depend on Chinese firms' weak absorptive capability (Wu and Voss, 2015). Absorptive capability means the ability to recognize new knowledge, assimilate it and apply it, and it depends on the prior existence of related knowledge (Cohen and Levinthal, 1990).

Based on the findings, I also found that the control variable large size for acquirers is important because it seems to facilitate good innovation performance. Acquirers with large capitals, when conducting CBMAs, possess ownership advantage, as first theorized by Dunning (1980,1988).

4.5.2 Practical implications

The findings contribute to important practical implications for the internationalization of Chinese firms. Thus, the internationalization strategy could eventually allow firms to overcome their initial disadvantages through accessing to and learning from global players and augmenting technological capabilities.

Moreover, the study indicates that investing in industries that are different from Chinese acquirers helps to improve firm innovation performance during the post-CBMAs. Thus, managers could consider entering into different complementary industries to fulfill the innovation objective of internationalizing Chinese firms. Additionally, Managers may consider the countries' innovative level more than the level of innovation of the target firm. The effect of host countries is more robust than the degree of innovation of the target firms.

Indeed, managers should focus more on exploring the environment of host countries characterized by a high level of innovations, advanced level of technologies, research activities, and other benefits that, in turn, could provide opportunities for Chinese firms to obtain new knowledge and enhance their learning from acquired firms. Managers of these internationalizing firms, therefore, need to benefit from various linkages with players in host

countries.

This study also provides implications for the Chinese government. I argue that Chinese firms can improve their competitive advantage and increase their innovation capability over time through the efforts of CBMA strategies. Therefore, the Chinese government should continually support and encourage domestic firms to explore overseas markets. The support of the Chinese governments may be considered a key factor for the internationalization of Chinese firms (Buckley et al., 2018).

4.5.3 Limitations and future research suggestions

My work contains some limitations. First, this study is only taking the Chinese MNEs into account, so the results might not be generalizable to explain the influence that internationalization has on the innovation capability of firms in other emerging countries. This limitation provides a research opportunity for further studies to investigate whether my findings could be verified in firms from other emerging economies.

Second, I only measure the innovation performance as the number of patents granted, due to the constraints of data. However, the innovation measurement is not solely evaluated with the patents. There might be other indicators that measure innovation, such as the percentage of new products' sales, the innovative process, or services during the operations, which can be collected by questionnaires from the firms' managers, employees, and even customers. Thus, future research could complement the measurements of innovations to gain a more complete perspective of the internationalization-innovation performance relationship. Last, various categories of internationalization (e.g. international strategic alliances) might have different effects on the innovation performance implications of firms' internationalization process. Therefore, except for CBMAs, I suggest that future research could include other types of internationalization in the analysis and compare the differences in the relationship between internationalization and innovation firm performance.

Appendix A

A.4 Robustness checks

Table A.4.1: The first robustness check—developed host countries and developing ones (retest H3)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
(Intercept)	-3.69***	-3.66***	-3.61***	-3.59***	-3.93***	-3.92***	-3.89***	-3.95***
	(0.21)	(0.21)	(0.21)	(0.22)	(0.42)	(0.43)	(0.43)	(0.43)
Post-CBMAs	0.16***	0.16***	0.19***	0.21***	-0.08	0.07	0.07	-0.01
	(0.05)	(0.04)	(0.03)	(0.03)	(0.10)	(0.08)	(0.07)	(0.05)
lag(PG, 2)	0.53***	0.53***	0.53***	0.53***	0.61***	0.60***	0.60***	0.60***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
lag(Size, 2)	0.17***	0.17***	0.17***	0.17***	0.18***	0.18***	0.18***	0.19***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***	-0.01**	-0.01**	-0.01**	-0.01**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.00	0.00	0.00	0.00	-0.00	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Log Likelihood	-7575.56	-7570.64	-7564.34	-7557.00	-1910.81	-1910.76	-1910.64	-1911.12

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
AIC	15163.11	15153.28	15140.67	15126.01	3833.61	3833.53	3833.29	3834.24
Observations	3264	3264	3264	3264	1027	1027	1027	1027

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Models (1) to (4) show the results after 1, 2, 3 and 4 years of CBMAs in developed countries; Models (5) to (8) show the results after 1, 2, 3 and 4 years of CBMAs in developing countries.

Table A.4.2: The second robustness check—excluding targets located in Bermuda, the Cayman Islands, and the British Virgin Islands (testing H1-H4)

H1:

	Model 1	Model 2	Model 3	Model 4[14]
(Intercept)	-3.80***	-3.75***	-3.71***	-3.66***
	(0.19)	(0.19)	(0.19)	(0.19)
Post-CBMAs	0.11**	0.15***	0.16***	0.17***
	(0.04)	(0.03)	(0.03)	(0.03)
lag(PG, 2)	0.55***	0.54***	0.54***	0.54***
	(0.01)	(0.01)	(0.01)	(0.01)
lag(Size, 2)	0.18***	0.18***	0.17***	0.17***
	(0.01)	(0.01)	(0.01)	(0.01)

[14] The indications of the models are the same as those in previous models (explained in 3.4.2).

	Model 1	Model 2	Model 3	Model 4[14]
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.00	0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-9931.22	-9924.35	-9918.36	-9914.88
AIC	19874.44	19860.69	19848.72	19841.76
Observations	4478	4478	4478	4478

***p < 0.001; **p < 0.01; *p < 0.05

H2:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-3.35***	-3.34***	-3.33***	-3.35***	-4.22***	-4.14***	-4.05***	-3.95***
	(0.26)	(0.26)	(0.26)	(0.26)	(0.27)	(0.27)	(0.27)	(0.27)
Post-CBMAs	0.09	0.09	0.06	0.02	0.13*	0.19***	0.23***	0.28***
	(0.06)	(0.05)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.04)
lag(PG, 2)	0.60***	0.60***	0.60***	0.60***	0.50***	0.50***	0.49***	0.50***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
lag(Size, 2)	0.15***	0.14***	0.14***	0.15***	0.22***	0.21***	0.20***	0.19***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	-0.02	-0.02	-0.02	-0.02	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-4453.11	-4452.56	-4452.97	-4453.90	-5465.03	-5458.20	-5449.55	-5439.94
AIC	8918.23	8917.12	8917.93	8919.80	10942.07	10928.41	10911.11	10891.88
Observations	1985	1985	1985	1985	2491	2491	2491	2491

***p < 0.001; **p < 0.01; *p < 0.05

H3:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-3.65***	-3.61***	-3.56***	-3.51***	-4.92***	-4.73***	-4.73***	-4.90***
	(0.20)	(0.20)	(0.20)	(0.20)	(0.54)	(0.54)	(0.54)	(0.56)
Post-CBMAs	0.09	0.14***	0.16***	0.19***	0.25**	0.15	0.14	-0.02
	(0.05)	(0.03)	(0.03)	(0.03)	(0.09)	(0.08)	(0.08)	(0.06)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
lag(PG, 2)	0.54***	0.54***	0.54***	0.54***	0.59***	0.58***	0.58***	0.60***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.04)	(0.04)	(0.04)	(0.04)
lag(Size, 2)	0.17***	0.17***	0.16***	0.16***	0.25***	0.24***	0.24***	0.24***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.04)	(0.04)	(0.04)	(0.04)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***	-0.01	-0.01*	-0.01*	-0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
lag(Liquidity, 2)	-0.00	-0.00	-0.00	-0.00	0.02	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Log Likelihood	-8647.06	-8641.18	-8635.16	-8627.18	-1271.18	-1272.67	-1272.77	-1274.49
AIC	17306.11	17294.36	17282.32	17266.37	2554.35	2557.34	2557.53	2560.97
Observations	3893	3893	3893	3893	557	557	557	557

***p < 0.001; **p < 0.01; *p < 0.05

H4:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-5.01***	-4.63***	-4.47***	-4.39***	-4.56***	-4.39***	-4.31***	-4.18***
	(0.38)	(0.39)	(0.39)	(0.40)	(0.34)	(0.33)	(0.33)	(0.33)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Post-CBMAs	0.04	0.21***	0.26***	0.27***	0.26***	0.24***	0.27***	0.34***
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)
lag(PG, 2)	0.44***	0.44***	0.43***	0.43***	0.49***	0.47***	0.46***	0.45***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
lag(Size, 2)	0.32***	0.29***	0.28***	0.27***	0.26***	0.25***	0.24***	0.24***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
lag(ROA, 2)	-0.01***	-0.01**	-0.01**	-0.01**	-0.01***	-0.01***	-0.01**	-0.01**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.02	0.02	0.02	0.02	-0.01	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-2438.24	-2431.86	-2428.35	-2427.72	-3417.62	-3415.14	-3410.81	-3403.02
AIC	4888.47	4875.72	4868.71	4867.43	6847.24	6842.28	6833.61	6818.03
Observations	956	956	956	956	1735	1735	1735	1735

***p < 0.001; **p < 0.01; *p < 0.05

Table A.4.3: The third robustness check—also controlling research and development expenses of Chinese acquirers (testing H1-H4)

H1:

	Model 1	**Model 2**	**Model 3**	**Model 4**
(Intercept)	-3.92***	-3.87***	-3.81***	-3.77***
	(0.19)	(0.19)	(0.19)	(0.19)
Post-CBMAs	0.06	0.10**	0.14***	0.17***
	(0.04)	(0.03)	(0.03)	(0.03)
lag(PG, 2)	0.57***	0.57***	0.56***	0.56***
	(0.01)	(0.01)	(0.01)	(0.01)
lag(Size, 2)	0.18***	0.17***	0.17***	0.17***
	(0.02)	(0.02)	(0.02)	(0.02)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
lag(R&D expenses, 2)	0.03***	0.03***	0.03***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)

	Model 1	Model 2	Model 3	Model 4
Log Likelihood	-9407.20	-9403.27	-9397.33	-9389.13
AIC	18828.41	18820.54	18808.66	18792.27
Observations	4050	4050	4050	4050

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

H2:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-3.69***	-3.68***	-3.68***	-3.68***	-4.08***	-3.99***	-3.87***	-3.77***
	(0.28)	(0.28)	(0.28)	(0.28)	(0.26)	(0.26)	(0.26)	(0.26)
Post-CBMAs	0.09	0.07	0.05	0.06	0.04	0.12**	0.19***	0.25***
	(0.07)	(0.05)	(0.04)	(0.04)	(0.06)	(0.04)	(0.04)	(0.04)
lag(PG, 2)	0.61***	0.61***	0.61***	0.61***	0.53***	0.53***	0.53***	0.53***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
lag(Size, 2)	0.16***	0.16***	0.16***	0.16***	0.19***	0.18***	0.17***	0.17***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
lag(ROA, 2)	-0.01	-0.01	-0.01	-0.01	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
lag(Liquidity, 2)	-0.03*	-0.03*	-0.03*	-0.03*	0.02	0.02	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
lag(R&D expenses, 2)	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-4131.16	-4130.98	-4131.43	-4131.09	-5263.39	-5259.84	-5251.80	-5242.18
AIC	8276.31	8275.96	8276.86	8276.19	10540.78	10533.69	10517.61	10498.37
Observations	1659	1659	1659	1659	2391	2391	2391	2391

***p < 0.001; **p < 0.01; *p < 0.05

H3:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-3.91***	-3.87***	-3.82***	-3.76***	-4.95***	-4.83***	-4.83***	-4.84***
	(0.22)	(0.22)	(0.22)	(0.22)	(0.58)	(0.59)	(0.59)	(0.59)
Post-CBMAs	0.08	0.13***	0.17***	0.21***	0.16	0.09	0.08	0.08
	(0.05)	(0.04)	(0.03)	(0.03)	(0.10)	(0.09)	(0.08)	(0.08)
lag(PG, 2)	0.53***	0.53***	0.53***	0.53***	0.57***	0.56***	0.56***	0.56***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.05)	(0.05)	(0.05)	(0.05)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
lag(Size, 2)	0.19***	0.18***	0.18***	0.17***	0.24***	0.23***	0.23***	0.23***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.05)	(0.05)	(0.05)	(0.05)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
lag(Liquidity, 2)	-0.01	-0.01	-0.01	-0.01	0.02	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
lag(R&D expenses, 2)	0.03***	0.03***	0.03***	0.03***	0.07**	0.07***	0.07***	0.07***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.02)	(0.02)	(0.02)
Log Likelihood	-7228.83	-7224.32	-7217.85	-7208.23	-1097.64	-1098.23	-1098.31	-1098.29
AIC	14471.66	14462.64	14449.70	14430.46	2209.27	2210.45	2210.62	2210.59
Observations	2955	2955	2955	2955	440	440	440	440

***p < 0.001; **p < 0.01; *p < 0.05

H4:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-5.26***	-4.94***	-4.72***	-4.62***	-4.65***	-4.54***	-4.45***	-4.31***

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
	(0.40)	(0.41)	(0.41)	(0.41)	(0.34)	(0.34)	(0.34)	(0.34)
Post-CBMAs	0.08	0.22***	0.29***	0.30***	0.18**	0.18***	0.22***	0.30***
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)
lag(PG, 2)	0.43***	0.43***	0.42***	0.42***	0.50***	0.48***	0.48***	0.46***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.03)	(0.03)
lag(Size, 2)	0.34***	0.31***	0.30***	0.29***	0.26***	0.25***	0.24***	0.24***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
lag(ROA, 2)	-0.01*	-0.00	-0.00	-0.00	-0.01**	-0.01**	-0.01*	-0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.00	0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
lag(R&D expenses, 2)	0.03***	0.03**	0.03**	0.03**	0.02***	0.02***	0.02***	0.02***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Log Likelihood	-2216.71	-2209.97	-2204.01	-2203.69	-3348.44	-3346.00	-3342.42	-3335.38
AIC	4447.42	4433.93	4422.02	4421.38	6710.89	6705.99	6698.84	6684.75
Observations	855	855	855	855	1591	1591	1591	1591

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table A.4.4: The fourth robustness check—excluding acquirers which are financial firms (testing H1-H4)

H1:

	Model 1	Model 2	Model 3	Model 4
(Intercept)	-3.72***	-3.67***	-3.61***	-3.57***
	(0.17)	(0.17)	(0.17)	(0.18)
Post-CBMAs	0.08	0.12***	0.15***	0.15***
	(0.04)	(0.03)	(0.03)	(0.03)
lag(PG, 2)	0.58***	0.57***	0.57***	0.57***
	(0.01)	(0.01)	(0.01)	(0.01)
lag(Size, 2)	0.17***	0.16***	0.16***	0.16***
	(0.01)	(0.01)	(0.01)	(0.01)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.01	0.01	0.00	0.01

	Model 1	Model 2	Model 3	Model 4
	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-10753.90	-10748.41	-10741.64	-10738.59
AIC	21519.81	21508.82	21495.28	21489.18
Observations	4967	4967	4967	4967

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

H2:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-3.38***	-3.37***	-3.36***	-3.39***	-3.95***	-3.87***	-3.75***	-3.66***
	(0.26)	(0.26)	(0.26)	(0.26)	(0.24)	(0.24)	(0.24)	(0.24)
Post-CBMAs	0.08	0.08	0.06	0.01	0.08	0.14***	0.20***	0.24***
	(0.06)	(0.05)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.03)
lag(PG, 2)	0.61***	0.61***	0.61***	0.61***	0.55***	0.54***	0.54***	0.55***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
lag(Size, 2)	0.15***	0.14***	0.14***	0.15***	0.18***	0.18***	0.17***	0.16***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	-0.02	-0.02	-0.02	-0.02	0.02*	0.02*	0.02*	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-4636.42	-4635.68	-4636.05	-4637.04	-6106.11	-6101.39	-6092.35	-6082.74
AIC	9284.83	9283.37	9284.10	9286.09	12224.22	12214.78	12196.71	12177.47
Observations	2093	2093	2093	2093	2864	2864	2864	2864

***p < 0.001; **p < 0.01; *p < 0.05

H3:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-3.60***	-3.56***	-3.51***	-3.47***	-4.80***	-4.61***	-4.61***	-4.79***
	(0.20)	(0.20)	(0.20)	(0.20)	(0.55)	(0.54)	(0.54)	(0.56)
Post-CBMAs	0.09*	0.13***	0.16***	0.20***	0.25**	0.16	0.15	-0.02
	(0.05)	(0.03)	(0.03)	(0.03)	(0.09)	(0.08)	(0.08)	(0.06)
lag(PG, 2)	0.54***	0.54***	0.54***	0.54***	0.60***	0.58***	0.58***	0.61***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.04)	(0.04)	(0.04)	(0.04)
lag(Size, 2)	0.17***	0.16***	0.16***	0.16***	0.24***	0.23***	0.22***	0.23***

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	(0.02)	(0.02)	(0.02)	(0.02)	(0.04)	(0.04)	(0.04)	(0.04)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***	-0.01	-0.01*	-0.01*	-0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
lag(Liquidity, 2)	-0.00	-0.00	-0.00	-0.00	0.02	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Log Likelihood	-8337.03	-8331.74	-8325.54	-8317.25	-1240.46	-1241.90	-1241.98	-1243.74
AIC	16686.06	16675.49	16663.08	16646.50	2492.93	2495.80	2495.96	2499.48
Observations	3700	3700	3700	3700	518	518	518	518

***p < 0.001; **p < 0.01; *p < 0.05

H4:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-4.98***	-4.62***	-4.40***	-4.31***	-4.45***	-4.32***	-4.24***	-4.11***
	(0.38)	(0.39)	(0.39)	(0.40)	(0.31)	(0.31)	(0.31)	(0.31)
Post-CBMAs	0.06	0.23***	0.30***	0.31***	0.21***	0.22***	0.25***	0.32***
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)
lag(PG, 2)	0.47***	0.47***	0.46***	0.46***	0.51***	0.49***	0.49***	0.47***

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
lag(Size, 2)	0.31***	0.28***	0.26***	0.26***	0.24***	0.24***	0.23***	0.22***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
lag(ROA, 2)	-0.01**	-0.01*	-0.01	-0.01	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.03	0.03	0.02	0.02	-0.00	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-2337.10	-2329.66	-2323.73	-2323.06	-3735.03	-3731.55	-3726.94	-3718.69
AIC	4686.20	4671.32	4659.45	4658.11	7482.05	7475.10	7465.89	7449.39
Observations	933	933	933	933	1872	1872	1872	1872

***p < 0.001; **p < 0.01; *p < 0.05

Table A.4.5: Supplementary analysis—distinguishing number of shares (testing H1)

H1: in the case of Shares >=50%

	Model 1	Model 2	Model 3	Model 4
(Intercept)	-3.98***	-3.97***	-3.92***	-3.91***
	(0.22)	(0.22)	(0.22)	(0.22)

	Model 1	Model 2	Model 3	Model 4
Post-CBMAs	0.03	0.04	0.10**	0.08*
	(0.05)	(0.04)	(0.03)	(0.03)
lag(PG, 2)	0.58***	0.58***	0.58***	0.58***
	(0.02)	(0.02)	(0.02)	(0.02)
lag(Size, 2)	0.19***	0.19***	0.18***	0.18***
	(0.02)	(0.02)	(0.02)	(0.02)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Log Likelihood	-6502.14	-6501.71	-6497.94	-6499.09
AIC	13016.28	13015.42	13007.87	13010.18
obs	3055	3055	3055	3055

***p < 0.001; **p < 0.01; *p < 0.05

H1: in the case of Shares <50%

	Model 1	**Model 2**	**Model 3**	**Model 4**
(Intercept)	-3.28***	-3.15***	-3.12***	-3.04***
	(0.32)	(0.32)	(0.32)	(0.32)
Post-CBMAs	0.15*	0.22***	0.20***	0.26***
	(0.07)	(0.06)	(0.05)	(0.05)
lag(PG, 2)	0.57***	0.57***	0.57***	0.57***
	(0.02)	(0.02)	(0.02)	(0.02)
lag(Size, 2)	0.13***	0.12***	0.12***	0.11***
	(0.02)	(0.02)	(0.02)	(0.02)
lag(ROA, 2)	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
lag(Liquidity, 2)	0.01	0.01	0.01	0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Log Likelihood	-3543.29	-3537.80	-3537.64	-3531.28
AIC	7098.57	7087.59	7087.27	7074.56
obs	1749	1749	1749	1749

	Model 1	Model 2	Model 3	Model 4

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Chapter 5 Entering European Countries: Advantages and Difficulties for Chinese Electric Vehicle Firms

5.1 Introduction

A dramatic shift in manufacturing electric cars is currently taking place around the world, mainly in China where the electric vehicle industry is growing faster than those in western countries. Many of these Chinese automobile manufacturers conduct higher value-added activities and desire to internationalize and offer their innovative electric vehicles (EVs) in the global market.

Chinese auto manufacturers are far behind global leading automobile firms in terms of technologies and skills in producing internal combustion engines (ICEs) and stay at a lower stage of the industrial value chain for long time. However, the turning point of Chinese auto firms seems to arise nowadays since they take the lead to enter a new industry, the EV industry, and grasped this "window of opportunity" to catch up with global auto leaders (Wang, Chen, Wang, Ning, and Vanhaverbeke, 2014). Many Chinese EV firms, such as SAIC, BYD, Great Wall Motors, and NIO, already possess superior knowledge and skills of EVs than the traditional leaders in the automotive industry (Wang and Kimble, 2013).

The catch-up goal is closely related to the support of Chinese governments that encourage Chinese automotive firms to improve their innovation capability and surpass global players by first entering the EV industry. Several EV companies (e.g. Xpeng, Li Auto) were established following the favorable policies of Chinese governments over the last years and have grown to one of the best-selling brands in the domestic market nowadays. Additionally, the aim of catching up is driven by the motivation of internationalization by Chinese auto firms. They aim to achieve a historic leap from importing foreign cars to exporting technological-advanced EV brands abroad. Since 2020, many Chinese EV firms have been expanding overseas markets by exporting EVs, especially passenger EVs (the type of EVs considered in the paper). Europe is their main target market, due to the attractions in terms of the large market size (the second world largest EV market around the world), goals of replacing ICEs with EVs in the long term,

increasing needs for EVs, and large purchasing powers.

The upgraded knowledge and resources accumulated in producing EVs are regarded as the ownership advantage for Chinese EV firms, which is the prerequisite to going abroad (Dunning, 1980). However, Chinese EV firms are accounting for quite low market shares in European markets nowadays. For instance, BYD, one of the Chinese EV leaders, only delivered 1,500 units of passenger EVs to Norway in 2021. The small scale of expansion might be driven by the unforeseeable challenges that will be faced by Chinese firms. In this regard, the current situation of Chinese EV firms in Europe arises my interest to investigate whether the ownership advantages of Chinese EV firms are sufficient to be successful in the European market and compete with local rivals, and what disadvantages they will encounter.

Prior studies have concentrated on discussing the advantages or successful mechanisms of the internationalization process of Chinese firms (Liu and Li, 2002; Tan and Mathews, 2015; Ai and Tan, 2018), concluding that the success is dependent on the ownership of superior advantages over foreign rivals (ownership advantages) (Dunning, 1980). However, it tends to pay less attention to figuring out the driving factors that might impede the success of international investments by Chinese firms in foreign countries.

This paper is an analytical study of nature. It aims to draw on the theoretical concepts of firm-specific advantages (FSAs) from the OLI paradigm as the benchmark to figure out what sort of advantages are for Chinese EV firms, and what competitive advantages they are lacking (i.e. disadvantages) when investing in European markets. It contributes to the IB studies by providing a comprehensive analysis of the advantages and disadvantages of Chinese EV firms in Europe and develops a testable theoretical model for future empirical research. It also contributes to the study of the early internationalization of emerging market firms in a new industry. I conclude that the Chinese EV firms' competitiveness in Europe is attributed to employing advantages possessed in China and gaining advantages in Europe by overcoming potential obstacles in local markets. Moreover, this paper provides practical implications for business managers and policymakers in the EV industry.

The structure of the paper is stated as follows. I first discuss the research context of Chinese EV firms in Europe in Section 5.2. Section 5.3 explains the research methodology. Section 5.4 shows and discusses the findings, including the advantages and disadvantages of Chinese EV

firms in Europe. Section 5.5 provides the solutions to mitigate such disadvantages when Chinese EV firms expand into European markets. Finally, Section 4.6 concludes the paper.

5.2 Research context: Chinese electric vehicle firms entering Europe

New energy vehicle (NEV) has been considered an effective tool to mitigate oil energy shortage and environmental pollution around the world (Ma and Fan, 2020). It includes several different auto types, such as battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), fuel cell vehicles (FCVs), which aim to completely not use or partially use fossil fuel resources. The focus of this paper is EVs, involving BEVs and PHEVs.

As shown in Figure 5.1, the majority sales of in China are dominated by domestic EV firms. To some extent, it reflects their significant participation in this new industry, and brand recognition by domestic consumers. The first stage of success in their home country could be a significant driver for them to invest abroad with confidence. According to Statista,[15] BYD owns the highest market share in the Chinese market, with a share of 17.5% in 2021, followed by Wuling HongGuang with 12.9%. Tesla, as the only foreign EV firm, is the third-largest seller, reaching 9.4% of total sales. Tesla has achieved a large number of sales worldwide (see Figure 5.3), but it takes only a small portion of sales in the Chinese market.

The emergence of Chinese EV firms is closely related to the support of the Chinese government. For instance, the "Mid- to long-term Development Plan for the Automotive Industry" issued by the Chinese government in 2017 encourages auto firms to use EVs and autonomous vehicles as breakthrough points to expand overseas markets and fulfill technological upgrading in the EV industry. In response to this plan, many EV firms are investing in Europe, Asia, and South America. However, in terms of the EV market in Europe, I found the top-selling companies are from local firms, which are also lead firms in the traditional automobile industry (see Figure 5.2). The phenomenon directs us to further explore the situation of Chinese EV firms in Europe.

Europe is becoming increasingly attractive for Chinese EV firms over the last years, a place

[15] Retrieved from https://www.statista.com/outlook/mmo/electric-vehicles/china#unit-sales

that subsidizes EV buyers and has well-built charging infrastructures, especially in Nordic countries, Germany, the UK, the Netherlands which are attractive for Chinese EV manufacturers. However, there is a void of academic research on the Chinese EV firms that have invested in Europe. Therefore, I aim to study the situation of Chinese EV firms operating in Europe to understand their advantages and disadvantages at their initial stage of internationalization.

I suggest the internationalization process of Chinese EV firms follows the OLI paradigm because I argue that they have gradually accumulated technological capabilities that are sufficient to be exploited to go abroad. Different from the Springboard perspective and Linkage-Leverage-Learning (LLL) framework which stress firms from emerging markets acquire firm-specific advantages (FSAs) or ownership advantages through internationalization, the OLI paradigm regards FSAs as the precondition to expanding into foreign markets (Dunning, 1980; Mathews, 2006; Luo and Tung, 2007).

FSAs refer to "knowledge bundles that can take the form of intangible assets, learning capabilities, and even privileged relationships with outside actors" (Rugman and Verbeke, 2003, p.127; Dunning, 1980). Investing firms transfer existing FSAs to other countries in the international expansion and use them to compete with firms in host countries (Dunning, 1980). FSAs are classified into two categories, namely asset-type FSAs (AFSAs) and transaction-type FSAs (TFSAs), based on the associated activities that firms engaged in. AFSAs are linked with the activities of developing (mostly saying innovative and superior) technological capabilities (e.g. patents, innovative products, brand names, managerial expertise) and the knowledge of using new technologies (Verbeke, 2009; Narula, 2014). Differently, TFSAs relate to minimizing transaction costs and coordinating firm activities in different locations efficiently (Dunning, 1988). They emphasize the importance of obtaining advantages through linking players, institutions, or networks external to the firm.

In particular, institutional-based FSAs are considered as a sub-type of TFSAs (Narula, 2014), since the institutional factors could affect the efficiency of market transactions among firms. For example, state-owned enterprises (SOEs) are more supportive when expanding abroad because SOEs that are linked to the Chinese government are more likely to access to government support, resources, and information about internationalization (Buckley, Clegg,

Voss, Cross, Liu, and Zheng, 2018). AFSAs and TFSAs are critical and complementary to each other (Lee, Narula, and Hillemann, 2021), and thus, firms need to possess them simultaneously for gaining competitive advantages.

Although Chinese EV firms are competitive in the domestic market and are ready to compete in the global arena, it is largely unknown whether Chinese EV firms could keep their advantages when entering new markets. For instance, the liabilities of foreignness or foreign market unfamiliarity may create obstacles for firms in conducting their businesses in new countries (Petersen and Pedersen, 2002). The questions of great interest that will be addressed in this paper are stated as follows:

What are the advantages of Chinese EV firms when they invest in Europe? What are the disadvantages they might face in Europe?

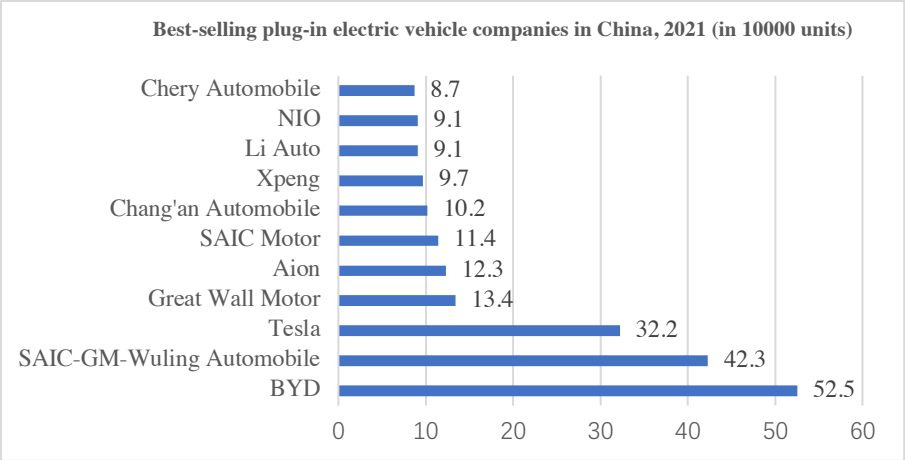

Figure 5.1: Best-selling plug-in electric vehicle companies in China, 2021 (in 10000 units)

Source: China Association of Automobile Manufactures

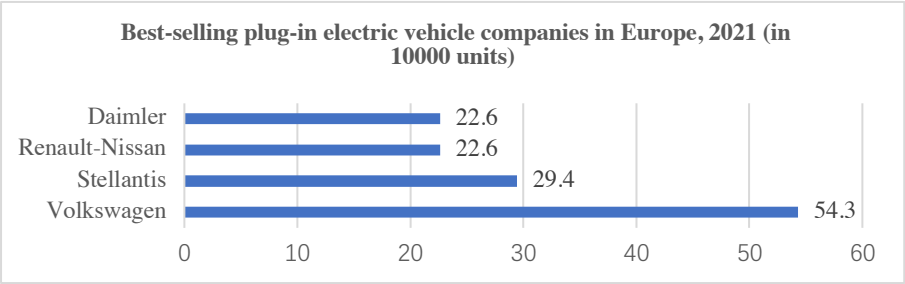

Figure 5.2: Best-selling plug-in electric vehicle companies in Europe, 2021 (in 10000 units)

Source: EV sales; Statista 2022

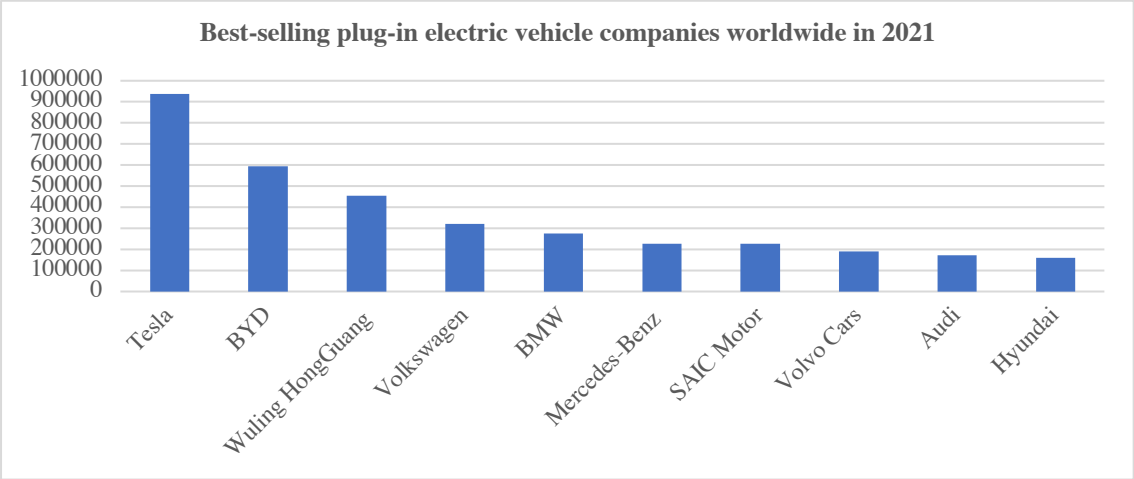

Figure 5.3: Best-selling plug-in electric vehicle companies worldwide in 2021

Source: EV sales; Statista 2022

5.3 Research methodology

5.3.1 Research design

This analytical paper is based on the data collected from both secondary and primary sources. The data and information from secondary sources are the focus of the study. The primary data collected through interviews are used to confirm secondary data and provide us with more supplementary information.

5.3.2 Data collection and coding

To address the research questions, I collected secondary data from different sources, such as annual reports, magazines, companies' websites, industry reports, MarkLines, Zephyr, as well as primary data referring to the semi-structured interviews from six Chinese EV firms. The semi-structured interviews, with open-ended, exploratory questions were employed which give respondents the freedom to share their insights on the research topic (Gao and Liu, 2012). In so doing, I am allowed to obtain more information from interviewees. The interviewees consisted of managers/directors or engineers from foreign subsidiaries of Chinese EV firms in

Italy, Germany, Finland, and China. Interviewing managers/directors or engineers from different countries and companies provide relatively trustworthy and comprehensive information for addressing the research questions proposed in this study.

Ten interviews were conducted at six Chinese EV firms. The locations of the firms, the number of interviews for each firm, and the roles of the interviewees are shown in Table 5.1. The six firms are involved in exporting and FDI activities in Europe. The length of the interviews lasted ranged from 30 to 90 minutes. All the interviews were recorded and taken notes. The interviewees were asked to describe the motivations of Chinese EV firms entering Europe, their competitive advantages, shortcomings, obstacles, and required knowledge during the internationalization process. 6 of 10 interviews shown in Table 5.1 were conducted in Mandarin, transcripts were recorded in this language and then translated into English. All the analysis is based on English transcripts.

Chinese EV firms	**Location**	**Number of interviews**	**Roles of the interviewees**
Firm 1	China	2	General managers
Firm 2	China, Finland	2	Engineers
Firm 3	China, Germany	2	Customer service manager; Project manager
Firm 4	Germany	1	Strategic planning manager
Firm 5	Italy	2	Chief Executive Officer
Firm 6	Italy	1	Chief of Marketing

Table 5.1: Overview of the interview data

Then, I put all the English transcripts from the interviews and other secondary data together. I first took a detailed analysis of the secondary data based on the research questions presented in this study (i.e. what are the advantages and disadvantages of Chinese EV firms in Europe). Then, I checked it through the interview data to ensure the reliability of secondary data. This analysis was conducted for each of the sampled firms. Furthermore, I made a cross-case analysis (Eisenhardt, 1989) by comparing different EV firms and figuring out their similarities in the aspects of advantages and disadvantages.

5.4 Findings

In this section, I report the findings of advantages and disadvantages during the internationalization process of Chinese EV firms in Europe as follows.

5.4.1 Advantages of Chinese EV firms in Europe

5.4.1.1 Innovative technologies in EVs

The innovative technology can be evaluated by the number of patents registered by each firm (Wu, Ma, and Liu, 2019). I decided to collect patent data of five Chinese EV firms[16] (i.e. Great Wall motors, SAIC, NIO, Xpeng, and BYD), and compare that with some main competitors in Europe (i.e. Tesla, Hyundai, Volkswagen, Audi, and BMW). This comparison allows us to understand the differences in innovation capability in EVs between leading firms located in Europe and China. The patent data were drawn from the Orbit Intelligence database (Orbit). Orbit provides information on patent families based on the locations authorized so that I could know where the patents are registered and protected. For instance, the patent can be recognized by a single country, European Patent Office (EPO), or World Intellectual Property Organization.

I focus on the effective patents that are granted or pending to be granted by European Patent Office[17] in the EV field by selecting relevant International Patent Classification (IPC) codes, the standard classification system published by World Intellectual Property Organization. The IPC codes regarding the EV industry are B60L, B60M, B60K 1/00, B60W 10/00, B60W 20/00, and B60K 6/00.

Main IPC codes	Numbers of EPs (Chinese firms)	Numbers of EPs (Competitors in Europe)
H01M-010	26	31

[16] These firms are selected because they are essential players who have started operations in Europe.

[17] The patents protected and recognized by European Patent Office, which will enable Chinese firms to utilize them in Europe.

B60L-053, B60L-058	25	31;10
B60K-006	22	12
B60W-010	21	27
B60W-020	15	11
B60L-050	8	12
B60L-015, B60K-001	7	5;12
B60W-030, B60L-003	6	4;10
H02J-007	5	15
G01R-031, B60L-007	4	5;3
B60L-011, B60K-011, F16H-003, B60K-017, H01M-050, B60H-001	3	8; 2; 1; 0; 2; 5
B66F-007, B60W-040, F16H-037, B60S-005, B60R-016, H01M-002, B60L-001	2	0; 0; 0; 0; 10; 4; 6
G07F-015, F16H-061, G06Q-050, A63B-021, B60W-050, B60T-013, B23P-019, B60L-055, B60K-026, B29C-048, B60S	1	0; 1; 0; 0; 7; 0; 0; 1; 0; 0; 0

Table 5.2: Distribution of EPs of selected EV firms in China and Europe based on IPC codes

The technological layout (see Table 5.2) of the top IPC codes for Chinese EV firms shows that European Patents (EPs) concentrate on the key components of EVs: (1)battery: H01M-010 (secondary cells), B60L-053 (methods of charging batteries and equipment), B60L-058 (methods or circuit arrangements for monitoring or controlling batteries or fuel cells); (2) propulsion and control systems: B60K-006 (propulsion systems), B60W-010 (for propulsion of purely electrically-propelled vehicles), B60W-020 (control systems specially adapted for hybrid vehicles), and B60L-050 (electric propulsion with power). Furthermore, Chinese EV firms have obvious advantages in terms of the number of patents in B60L-058, B60K-006, and B60W-020 over their competitors in Europe. EPs in H01M-010, B60L-053, and B60W-010 do not show large differences. It implies that Chinese EV firms have gained innovative technologies through in-house R&D in the major fields of the EV industry and confirms the

perception that Chinese EVs are at the same level as European leading firms and even stay at a higher level in specific technological areas (Cheng and Tong, 2017).

I received additional supporting views from interviewees of Firm 1 and Firm 6 who said:

The core technologies of EVs are electronic control, electric drive motors, and batteries, which are completely different from traditional cars. Originating from the country's medium and long-term strategy, China has been investing in the performances of EVs and batteries for many years. The electrification has put Chinese firms into an advantage of in this technology because they use batteries and electric vehicles for a while.

In particular, battery technology is a significant advantage for Chinese EV firms that have since long brought in their technology and concepts of the new developments. Chinese EV firms have formed a cooperative relationship with battery suppliers to co-improve the quality of batteries. The interviewee of a Firm 1 explained that:

Although there are manufacturers of batteries, such as CATL, Panasonic, and LG Chem, which are relatively well-known at present, most Chinese companies will not completely purchase batteries from foreign suppliers and also, they will add their own technologies to the battery. For example, the insulation, relevant materials, or temperature control management of batteries are well developed by the company. However, EV firms from western countries, like Tesla, directly purchase and use batteries from large suppliers. The technology of batteries developed by suppliers is relatively inferior to the technology developed by Chinese automobile firms.

Through applying for these patents, Chinese firms are continuously launching innovative products, which aim to solve the concerns of customers that negatively affect the acceptance of EVs (e.g. battery safety, concern about low mileage problems, and long charging time) (Wicki, Brückmann, Quoss, and Bernauer, 2022). For instance, the “blade batteries” invented by BYD itself address these problems, being more competitive in safety and driving range than other batteries available in the current market and produced by competitors.

Additionally, comparing the IPC codes between the two groups of firms, Chinese EV firms have also grasped several technological skills in manufacturing that are not possessed by those competitors in Europe, such as B29C-048 for extrusion moulding, B60K-017 and B60K-026

for the arrangement of devices in EVs, B66F-007, B60S, B60S-005 for lifting vehicles, F16H-037 for combining mechanical gearings. I suppose that the superiority sort of manufacturing advances is depending on the fact that Chinese firms have reached the stage of mass production (this will also be discussed in 5.4.1.5).

5.4.1.2 Fast development of software

The goal of furnishing EVs with intelligent software is another characteristic that distinguishes the traditional automotive industry from the new one. An interviewee from Firm 3 commented that:

> *This change is about digitalization and low carbonization in car manufacturing, which has not been seen in the automotive industry for a century. The emergence of Tesla in China lets Chinese auto firms observe the opportunity in EV manufacturing. With a large number of local battery manufacturers and strong knowledge bases in the software industry, Chinese automobile firms have put the traditional auto industry on the edge of a revolution.*

Chinese IT services, internet, electronics, and telecommunication companies, such as Tencent, Huawei, and Alibaba, have grown rapidly in the technologies of big data, computing platforms, creating data centers and user groups. They become competitive globally. They have driven the fast development of China's entire software industry chain and drawn attention at the country level. Chinese governments encourage talent training programs in colleges and universities and support the development of cutting-edge technologies in this industry through several favorable policies and plans (e.g. Five-Year Plan).

The accumulated knowledge in the software industry provides a solid foundation for the development of the Chinese automotive industry. Chinese auto firms have reached cooperation with local leading tech players to realize the digitization of EVs. Also, Chinese firms hire employees coming from the Internet or telecommunication firms. Chinese auto firms are dedicated to developing smart EVs by applying such key technologies from the recruited employees.

An interviewee from Firm 2 added that:

> *In many Chinese EV companies, some employees are experts in the software industry. This*

successfully interprets the new direction of software-defined EVs' development. It also gave birth to Chinese companies applying some technological concepts, such as autonomous driving, AI technology, and image recognition technology, to car manufacturing.

At the phase of research and development, they integrate user research and big data application scenarios to advance the intelligent functions of EVs and further better suit consumers' usage habits and preferences.

An interviewee from Firm 3 also argued:

The intelligent software installed on the car, such as technology for connectivity, huge screen, entertainment, immersive voice control system, and lights in the cars bring users a great experience during driving.

The era of EVs has been in the trend of becoming an electronic consumer product, using more software in the car. However, car intelligence concepts are not the focus of traditional car manufacturers. The equipped intelligence technologies in EV models differentiate them from competitors in European markets. As supported by an interviewee from Firm 1:

The software will be an integral part of the car in the future, but traditional auto firms in Europe with the idea of just changing traditional cars to electric vehicles are not working in this direction.

Another important factor for Chinese EV firms is their ability to continuously update the software, which is similar to the function of application updates in mobile phones. This capability ensures the iteration of functions and EV product updates.

An interviewee from Firm 1 gave an example of OTA upgrading technology:

Remote online OTA upgrade is the focus of the future development of EVs. The full name of OTA is Over-The-Air technology, which can be understood as a remote wireless upgrade technology. It aims to realize remote management of software through the interface of mobile communication.

The ability to execute software upgrades is becoming critical to gain competitiveness, both in China and globally. However, for European cars, the establishment of the software industrial chain came later than in Chinese companies. The time for launching intelligent products lags behind the pace of market development.

According to an interviewee from Firm 3:

Chinese companies released the second generation of products or platforms, but at this time European companies have already lagged behind Chinese companies.

5.4.1.3 Providing customer-centric services

Compared to traditional carmakers in Europe, Chinese EV firms take a leading role in providing superior user experience and interaction with customers. For instance, interviewees from Firm 2 and Firm 3 both argued:

Chinese auto companies are at the forefront of the world in terms of user interaction (user-centric) in building user communities in the Internet era.

This is driven by the use-centric business philosophy rooted in Chinese EV firms. Some investors in Chinese EV firms are telecommunication companies, such as Baidu and Huawei, so the business concept of automakers in China may be affected by the ideas brought in by the telecommunication companies. For instance, they focus on improving user experience by providing a range of services through mobile applications (APPs). Each Chinese EV firm has launched its APP, a mobile software that allows users to share experiences about EV models among users and to communicate directly with the CEO or other managers. The APP also has provided digital services about EVs, such as car owner's reports (e.g. electricity consumption and travel records), real-time vehicle conditions, and sharing the itinerary with friends. Users are also allowed to reserve repair and maintenance services through the APP.

I receive the additional explanations from an interviewee of Firm 3:

The APPs are like social platforms where customers could exchange for points, inquire about sales issues, and technical questions by sending messages directly to the APPs. Except for that, for instance, NIO created a niohouse, a full-featured user experience center. It is not just a place to sell cars, but a venue like a club. I can come here to relax and chat. This a social app that builds a user community. Traditional manufacturers in Europe are far away from users.

5.4.1.4 Substantial financial power

Chinese EV manufacturers have strong capital to execute related business activities both in China and foreign countries. One of the financial sources is from collecting capital from stock markets. Following the large market demand and preferential policies for the EV industry, several start-ups were founded over the last few years (such as NIO, Li Auto, and Xpeng). They were successfully listed in the foreign stock exchange (e.g. NIO listed in New York Stock Exchange), after harvesting capital from several rounds of financing.

Another financing source is from the Chinese government. The Chinese government supports the production and development of EVs and upgrades automotive industry since 2010. For instance, "Decision on Accelerating the Cultivation and Development of Strategic Emerging Industries (10/2010)" published by the State Council proposes that the new energy vehicle industry has been upgraded to a strategic emerging industry. "Mid- to long- term Development Plan for the Automotive Industry (04/2017)" by the Ministry of Industry and Information Technology as well as Ministry of Science and Technology proposes using EVs and autonomous vehicles as breakthrough points to enter overseas markets and enhance industrial upgrading. To do so, the Chinese governments promote the industry growth by decreasing the electricity expenses, subsidizing electric car manufacturers, helping for building charging facilities, and so forth. In sum, Chinese EV firms could cooperate with the local governments to gain capital support.

5.4.1.5 The shift toward mass production

The strategies of automakers in Europe for producing EVs started later than for Chinese EV firms. It took time for European traditional automakers to completely produce EVs. However, Chinese EV firms take the first-mover advantage in the EV industry and have already gained experience in manufacturing EVs at a large scale.

According to the MarkLine database, the production capability of Chinese EV firms is higher than that of lead auto firms in Europe in 2021. Great Wall Motor produced 1,265,269 units in China from 6 assembly places located in the north and east of China, BYD with 737,502

units through its 8 assembly lines, and NIO, a newly established EV company even manufactured 92,921 electric vehicles. The mass production in China provides firms with sufficient finished EVs that are ready to be exported abroad. However, Volkswagen has produced 1,734,973 in 23 European countries,[18] with EVs only accounting for 20% of the total outputs. This is the same case for other players in Europe. EVs only took 10% of the units produced (781,612) in Audi. One reason for the small portion of EVs is that most of the automakers in Europe are still focusing on producing ICE cars. They are slightly involved in EV production. An interviewee from Firm 4 added:

> *Building EVs is pretty new in Europe. For BWM, STELLANTIS, if they invest billions in those technologies, they have manufacturing plants for those technologies. However, it takes time to change to a completely electric car. This also has social impact in Europe because many workers are still working in ICE manufacturing. They cannot switch in one day to an electric car.*

Moreover, compared to auto leaders in Europe, Chinese EV firms are now leading in the quality and quantity of platforms that are specially built for producing EVs. An interviewee from Firm 1 described that:

> *A platform is similar to a production line. Building a car from a platform will be very expensive. Chinese companies are currently making every effort to build pure electric platforms to produce EVs. However, the platforms of European traditional firms in Europe are mainly built to produce ICE, and the tendency is to change the production lines of ICE to produce EVs. It is different from finished vehicles built on pure electric platforms.*

In addition, the stronger production capacity of Chinese firms is driven by the formed industrial cluster in China and its efficient process of researching, purchasing, and manufacturing. Many Chinese EV firms have been founded within a cluster in several connected provinces (especially in the east and south of China) which involve many suppliers, R&D centers, assembly plants, and firm headquarters. For instance, SAIC headquartered and conducted R&D activities in Shanghai, and has suppliers of batteries, engines and traction motors in Anhui, Jiangsu, and Zhejiang (the three connected provinces that are also very close

[18] 23 European countries include Germany, Portugal, Austria, France, UK, Sweden, Spain, Belgium, Finland, Italy, Netherlands, Russia, Hungary, Ukraine, Poland, Romania, Uzbekistan, Czech Republic, Slovenia, Belarus, Slovakia, Serbia, and Turkey.

to Shanghai), which also assemble EV models are assembled. In this way, SAIC could fulfill phases of integrating research, purchasing, and manufacturing in regional EV clusters, which allows to save transportation costs. The capability of integrating raw materials from different locations and mass production is crucial in the automotive industry (Sturgeon, Memedovic, Van Biesebroeck, and Gereffi, 2009).

5.4.1.6 Closeness to suppliers

As mentioned in the part 5.4.1.5, the large amount of produced EVs is facilitated by the advantage of the closeness to the most important suppliers, from whom to acquire raw materials and negotiate the purchasing prices. In doing so, Chinese EV firms could obtain competitive prices from them, reducing manufacturing costs.

I analyzed the distribution characteristics of suppliers who provide key components of EVs, that is, drivetrain systems/motors, traction motors, battery management systems, and lithium-ion batteries. The data were collected from MarkLines. I found that many of the suppliers in producing the core components of EVs are Chinese firms. The ratio of Chinese battery enterprises over global battery suppliers is much higher in the field of battery management systems and lithium-ion batteries, which is 172 Chinese suppliers over 232 global suppliers and 415 Chinese suppliers over 551 global suppliers, respectively. Some of them have even become global battery suppliers. Contemporary Amperex Technology Co., Ltd (CATL) and BYD, were among the top 5 suppliers in the world in 2021, holding 42% of the market shares. Indeed, CATL is continually supplying Chinese EVs (e.g. NIO, SAIC, Great Wall Motors) and several firms in Europe, such as BMW, Volkswagen, and Hyundai, through Li battery manufacturing sites in Erfurt, Germany.

For many other components, the majority of supply companies are also from China. For instance, among 324 suppliers of traction motors, 240 of them are Chinese firms. They are mostly preferred by Chinese EV makers. For instance, Great Wall Motor and Chery purchase traction motors from Shanghai Automotive Edrive, BYD from FinDreams Powertrain, and FAW from Zhuzhou CRRC Times Electric. China has formed a relatively complete industrial supply chain domestically, and it is dominant in controlling raw materials in the global value

chain of the EV industry.

Such closeness to suppliers allows Chinese EV firms to acquire materials from domestic suppliers, lowering the total costs. However, for European firms, the entire industrial chain has been built to produce traditional cars, such as engines and gearboxes, and is bound to the relevant suppliers. The interviewee from Firm 4 discussed that:

> *The raw materials are quite cheap because most of them are coming from China. The supply chains of Chinese EV companies are currently very complete in the domestic market. European companies are late in making efforts on EVs, so the cost of R&D and value chain integration is higher, resulting in higher production costs. For European firms, their business about procurement, R&D, and talent in EVs has to start from zero.*

Furthermore, I found that some of the suppliers are the subsidiaries of Chinese EV firms through the establishment of parent firms (e.g. BYD semiconductor which is founded by BYD), domestic acquisitions or joint ventures. The related information was drawn from the Zephyr database. For instance, in 2016, together with Qinghai Salt Lake Industry and Shenzhen Zhuoyucheng Investment, BYD jointly invested to explore Qinghai Salt Lake resources, used for developing lithium batteries. In doing so, BYD holds the reserves of rare earth metals for battery production (Narins, 2017). Other examples can be seen in the acquisition of Beijing Chusudu Technology by SAIC to access the autonomous driving solutions, and Hebei Tongguang Semiconductor was acquired by Great Wall Motor to develop silicon carbide. In so doing, Chinese EV firms would hold ownership of suppliers, which facilitates them to access and control raw materials.

5.4.1.7 Qualified product portfolios

Several Chinese models have reached the car standards existing in Europe and better driving performance compared with lead firms in Europe, under similar levels of the sold price. The interviewees from Firm 4 and Firm 6 confirmed the quality of Chinese EV brands is guaranteed, specifically:

> *In China, there is an improved quality of electric cars. Most of the products are matching the European quality in terms of customers' expectations, materials, assembly quality, and*

so on. They reach 90% of EU product quality in car products. For instance, the safety standards get very similar to European ones in China. So many Chinese car firms are ready to fulfill the car regulations when they come to Europe.

However, car manufacturers in Europe are struggling to reach the full electrification domain, fulfill the regulations and be competitive in product quality. An interviewee from Firm 2 told that:

EVs have just started in Europe, and local firms are still learning and following the existing EV companies. So, their product strength is relatively weak, such as battery life, product upgrade capability, etc.

Chinese automakers have relatively lower costs of producing EVs, because of the lower costs from purchasing to manufacturing (e.g. lower costs of labor and plants than in Europe). Consequently, low costs in manufacturing allow Chinese EV firms to expand product lines without many concerns about the injected capital. They are providing a relatively rich product portfolio. For instance, except for BEVs, Chinese EV firms also actively launch PHEVs, another type of vehicle worked on satisfying customers' needs for long range.

Relatively speaking, European cars produce fewer sorts of EVs. For instance, Volkswagen only has 3 EV models called Golf, ID.3 and ID.4. Audi currently has e-tron GT, Q4 e-tron, Q8 e-tron and e-tron. The inferior diversity of EVs is related to their undetermined corporate positioning goals. European firms and their suppliers are still relying on producing ICE models (even nowadays), which will cause firm losses if transferring production lines and suppliers in ICEs to those in EVs. In sum, from the product quality point of view, combined with innovative technology, and high-quality and diversified electric vehicles, Chinese EV firms are competitive in European markets.

5.4.1.8 Awareness of building charging infrastructures

In terms of improving infrastructure capability, like charging technologies there is a divide between Chinese leading firms and their European competitors. One of the main concerns to purchase EVs in Europe is the number of charging stations. For instance, China established several fast-charging stations or battery-swapping stations. However, traditional carmakers in

Europe do not have enough awareness and motivation of increasing charging quality. The interviewee from Firm 3 said:

Many Chinese companies give top priority to solving mileage anxiety, such as building charging piles and replacing power stations.

Some Chinese EV models can be charged for five minutes to drive 200 kilometers through ultra-fast charging piles.

Swapping power stations is an advanced technology for Chinese EV firms and has reached the world's leading level. The idea of this technology is to set up battery-swapping facilities at service stations and switch the drained batteries with fully charged ones in a few minutes. Nowadays Chinese EV firms are actively deploying infrastructure construction in Europe, by applying such technology developed in China. The interviewee from Firm 3 described that:

Chinese companies use self-developed high-efficiency power modules to greatly improve the charging and discharging efficiency of batteries in swap stations. It is faster than charging. Fast charging takes up to 30 minutes. In swapping power stations, the staff will just pull out the chassis battery and replace it with a new modular battery within 5 minutes.

5.4.2 Disadvantages faced by Chinese EV firms in Europe

5.4.2.1 The inability of transferring several patents to Europe

The first disadvantage for Chinese EV firms in internationalization arises from the fact that several technologies in China cannot be transferred completely to European countries. In fact, Chinese car manufacturers have not registered their patents in an international context. An interviewee from Firm 1 noted:

Electric motors' technical barriers are very low, so technological advantage can be easily covered. Unlike ICE, the engine has a high barrier and consists of many parts, and it is difficult to be imitated.

To evaluate the firms' technological level in China, I collected the number of Chinese patents from the Orbit database. I used the same IPC codes for the EV industry and selected Chinese firms as presented in Section 5.4.1.1. Table 5.3 shows the respective number of patents

authorized in Europe and China. I noticed the difference was quite large for each selected Chinese EV firm and the majority of patents registered in China were not transferred directly to Europe. This might be related to the different rules and standards for application existing between European countries and China.

Furthermore, I analyzed the distribution of Chinese patents to figure out what kind of patents are mostly not converted in Europe, based on the IPC codes. From the results emerging from the reading of Table 5.4, Chinese patents are widely distributed in some technologies of the EV industry (see the explanations in section 5.4.1.1), such as B60L-053, B60L-058, and H01M-010. I emphasize the importance of overcoming such shortcomings and protecting the existing patents under different legal systems to avoid the loss of ownership of the inventions in other locations.

Company name	Number of patents in Europe (EPs)	Number of patents in China (CNs)
SAIC	12	363
Great Wall Motor	17	450
NIO	124	563
Xpeng	4	61
BYD	182	1700

Table 5.3: Difference in the number of patents in Europe and China

Main IPC codes	Number of Chinese patents
B60L-053	57
B60L-058	37
H01M-010	30
B60L-050	12
B60W-010	11
B60K-001	10
H02J-007	9
B60L-003	9

B60L-015	9
B60H-001	8
B60W-020	6

Table 5.4: Distributions of Chinese patents

5.4.2.2 Lack of brand awareness

Another disadvantage regards to the lack of global brand awareness among European customers. Chinese EV firms have to build their reputation from scratch in Europe. According to JATO, the top 25 best-selling traditional car brands in Europe in 2021 were Volkswagen, Peugeot, Dacia, Renault, Toyota, Hyundai, Stellantis, etc. The same brands were producing EVs cars. Thus, customers willing to purchase EVs cars could choose the same companies with which they were familiar or well-known to them (Chi, Yeh and Yang, 2009).

It is difficult to convince conservative European customers to buy new Chinese EV firms. An interviewee from Firm 5 proposed the following statement:

> *Consumers in Europe are quite conservative. For instance, German customers make distinction between everything that is made in Germany and imported products. Historical market shares of made-in-Germany cars reach around a stable 70%per year. Thus, in this country foreign manufacturers have to win the resistance from the consumers.*

"Made in China" products are generally characterized by cheap and low-quality: there is a negative image among European customers (Wang and Gao, 2010). Traditional Chinese automobiles were never successfully sold. This has created a negative expectation also for Chinese electric cars. European customers have the perception that firms in Europe are providing better products.

5.4.2.3 Lack of knowledge about European markets

Chinese EV manufacturers lack knowledge of the European markets. Customer knowledge includes the demographic characteristics of preferences, needs, and expectations of EVs

(Helveston, Liu, Feit, Fuchs, Klampfl, and Michalek, 2015; Lieven, 2015; Huang and Qian, 2018). To collect more information, Chinese firms would have to rebuild data centers in the targeted European. As the interviewee from Firm 5 added:

It is challenging to gather customers' data since European is the place that mostly protects the privacy of consumers around the world.

Limited knowledge about premium markets The first dimension to be considered is the limited knowledge about premium markets. In the European automotive market, except for the mainstream product of in the auto industry (e.g. Reno, FIAT with enough safety and basic quality) and luxury products (e.g. Ferrari, Lamborghini), there is the premium segment which is not present in the Chinese market and that is ignored by Chinese automakers to a large extent. There are quite a few EV firms, such as Li Auto and NIO, that are starting to learn how to open premium markets in China, replicating this business model in Europe. As an interviewee from Firm 4 explained:

The premium market is a very high profitability market. The premium volume in Europe is very relevant for whatever products. It is very profitable also in the auto market.

An interviewee from Firm 4 provided additional insights into this point:

The main story about China is only made by mainstream products and luxury products (status, brands, and show-off products). In Europe, we do have something in-between, which is called premium products. For premium brands, such as Audi, and BMW Europe, China does not exist. They are just the best of the possible technologies within the mainstream combined all together to offer a premium product.

Lack of understanding of customers' preferences A second dimension relies on the lack of understanding of customers' preferences. Chinese customers are different from European ones in the automotive industry because they have different habits of buying and driving a car. The key differences mainly come from the preferences for products' size and acceptance of digitalization.

Large EVs are preferred by Chinese customers but smaller cars are in line with the needs of European customers for daily life. China's land area is large, and this condition allows users to drive large cars. However, European cities are generally smaller than Chinese ones, and

parking large EVs is not practical. Two interviewees from Firm 3 and Firm 4 noted:

The vehicles they got in China are much bigger than the ones we used to drive in Europe. In China, finding people driving 5-meter car is normal, because it shows their social status and their richness. In Europe, almost nobody is driving a 5-meter car. We have crowded cities like Roma, Madrid, and Munich and you cannot really drive with a 5-meter car.

Ignoring the dimension of smaller cars is a cultural feature. A huge culture change is necessary for Chinese EV producers if they want to conquer European customers. An interviewee from Firm 4 argued:

In the Chinese culture, small cars are cheap and not well made, medium cars are better, and big cars are well made. Chinese markets provide super small or huge SUVs, but they are lacking something in between. Chinese firms lack the knowledge on how to produce those kinds of vehicles.

As discussed by an interviewee working in Firm 4:

In the compact car, you still have to be cost-wise, and, from the technological point of view, you have to offer the same safety, comfort, and performance as big cars. It is much more complicated because you have less space. Compact cars require huge investments to offer the same high quality as large cars.

Moreover, Chinese customers are pleased with EVs equipped with big screens, artificial intelligence, and voice assistants, but European customers might just need a vehicle to satisfy their daily work. As mentioned by an interviewee from Firm 5:

EVs cars are more expensive than traditional cars. In Europe, people that can afford the expensive EVs are those of the generation of 50s to 60s. But they are less digital. In contrast, the Chinese target group is young people or the middle class, which is huge in China, and they are familiar with intelligent technologies.

Lack of knowledge of the European driving style The last dimension relates to the lack of knowledge about the European driving style. The driving system in China is very different from European countries. Such differences are not known by Chinese EV firms. They are implying the design and manufacturing of a completely new product. The interviewee from Firm 4 gave a specific example:

China has a top speed limit, which is 120 km/h. Most of them are driving on country roads, or in the city, but the roads are very huge. They never go above 120 km/h. In Europe, for instance, in Italy, France, and Germany, we are used to driving at a higher speed. This means that the suspension setups, the braking setups, the handling, and everything which relates to car comfort, noise and so on, are different.

Taking together, based on the findings discussed above, I suggest that launching the same product they have in China directly to Europe will put Chinese EV firms in a disadvantageous position.

5.4.2.4 Less flexibility in products and unattractive price

The products of Chinese EV firms are only influenced by large domestic market demand and needs, and they export the same products abroad. The interviewee from Firm 5 added that:

Chinese firms create a local mentality.

To avoid making this mistake, Chinese firms have to become more flexible and faster to accustomed to local needs.

One way to convince customers is to offer products at lower prices. The low-cost strategy of Chinese EV firms is implemented in the Chinese market, but it is not applicable in the European ones. Actually, Chinese EV firms do not enter the market based on attractive prices but on the total quality of EV models. For instance, Aiways' selling price is around 51,000 euros in European destinations, such as France, Germany, and Denmark, which is higher than their competitors in Europe. Some of the firms also have a high level of selling prices in China, so when they export abroad, they try to replicate the same behaviors in Europe. The interviewee from Firm 5 added about the German market:

Germany is by far the biggest market for Chinese firms. Germans are conservative, they want to buy made in Germany products. Made in Germany brands were able to keep 70% of total market shares over the years.

5.4.2.5 Lack of design knowledge

Compared to Chinese carmakers, the ways that European firms are making designs are absolutely better.

An interviewee from Firm 5 stated that:

The hardware components are not well developed by Chinese firms, such as braking systems, and car body. The integration of components is not well done.

A well-designed car is crucial for customers, as argued by interviewees from Firm 2 and Firm 6:

The quality of the car body, seats, tires, and other things that have nothing to do with the core. Technologies of EVs are often the points that consumers mainly look at because they are more visible. However, Chinese firms are still producing an inferior product.

Currently there are only very few companies that have set up design studios overseas to acquire related knowledge (e.g. NIO in Germany and SAIC in the UK).

5.4.2.6 Lack of international managerial expertise

Most Chinese EV firms lack international managerial knowledge about opening new operations in foreign countries, in particular in the case of newly emergent firms (e.g. Li Auto) that are at their early stage of internationalization and do not have any relevant experience in investing in Europe.

Looking at the Zephyr database, I discovered that some Chinese EV firms have experienced international takeovers or joint ventures. For instance, SAIC acquired a Korean company, SsangYong Motor in 2006; Great Wall Motor invested in German hydrogen filling stations developer, H2 Mobility Deutschland GmbH & Co KG. Nevertheless, the skills of managing acquired firms or joint ventures might be different from the way of coordinating foreign subsidiaries, factories, or R&D centers,

5.4.2.7 Lack of European manufacturing sites

The productions of Chinese EV makers are mainly based in China. For example, BYD has its vehicle production lines in various regions within China: northern China (Beijing), central China (Shaanxi), and southern China (Hunan). The plant lines located across different regions in China aim to guarantee the supply to the domestic demand. This strategy is applied to produce EV coaches, buses, or trunks in foreign countries by some Chinese EV firms. SAIC has built production bases in some Asian countries, BYD in India, USA, Brazil, France, and Great Wall Motors in Thailand, Malaysia, and Brazil. Nevertheless, foreign manufacturing plants were regarding only traditional technologies. None of those production lines are dedicated to passenger EVs.

In contrast, Tesla has built an assembly place in Germany (called Tesla Gigafactory Berlin-Brandenburg) and the Netherlands (called Tesla Motors, Tilburg Assembly plants) to produce and supply local markets. According to the interviewee from Firm 5:

> *If EVs cars are manufactured in Shanghai, it could take 3 months to get the car by shipping in Europe, but if it is produced in Europe, it only takes a few weeks.*

Manufacturing might not be necessary for most Chinese firms at the initial stage of internationalization because they just started their business in Europe with few units demanded by European customers; however, this is relevant from a long-term point of view. The interviewee of Firm 5 noted that:

> *In the auto industry investment return might take 12 years, which is the average life cycle of every auto platform. When RMB devaluates, they will lose competitive advantages in Europe.*

However, it is a big challenge for them to open factories in Europe. Setting up a new plant is costly and risky. Also, the higher costs of labor, land and manufacturing may cause additional costs for Chinese EV firms in Europe.

5.4.2.8 Building selling and after-sales services from scratch

In Europe, EV cars could be sold through retailers, and dealers, both online and offline,

and a few brands also support purchases from official websites directly, like Tesla. The ways of selling and distributing are almost the same in China. However, Chinese EV firms still face disadvantages when selling products in Europe. First, Chinese newcomers have to create a dealership network from zero. Second, even if some Chinese EV firms start to collaborate with local dealers, it does not mean that their sales would be successful. As mentioned by an interviewee from Firm 2:

Dealers are selling multi brands, and they care less about the survival of brands.

The interviewee of Firm 5 gave an example:

For instance, some Chinese firms imitate the Tesla model, which could be difficult for them. It is because they understate the acquisition costs of customers to establish their brands, such as investing locally, advertising, and getting knowledge of local markets.

Furthermore, Chinese EV firms also face disadvantages in providing after-sales services. First, they do not set up after-sales centers directly in Europe. Even though EVs are thought easier to repair than ICEs, the after-sales service points are still important for customers to contact sellers and provide certain warranties for maintenance and customer satisfaction (Shokouhyar, Shokoohyar, and Safari, 2020). Tesla has offices for after-sales and maintenance services located intensively in Europe; Hyundai Motor manages thousands of aftersales points that support the brand in Europe. Last, Chinese EV firms could not provide European customers with the type of intensive networks for charging that have been created by their rivals in Europe. The development of infrastructure closely depends on the linkages with local partners. For instance, Volkswagen collaborates with Tesco and Podpoint, a supermarket and a charging company). These examples are not imitated by Chinese EV firms.

At the moment, in general, Chinese EV firms lack local selling networks, after-sales services, and adequate infrastructure. However, BYD and NIO started to connect their distributors in Norway (as for supporting marketing, sales, and after-sales services), and build strategic partnerships with local charging companies.

5.4.2.9 Relationship with host countries

Chinese EV firms might face the restrictions established by the government of the host

country on local operations. For example, in the past, Chinese government restrictions on western auto firms (e.g. Volkswagen) force them to form a joint venture with local firms in China to produce cars in China. The construction of the Tesla Gigafactory in Germany took three years to be finally approved by the German government. Other concerns, such as potential trade barriers, tariffs, or additional taxes, could impact the development of Chinese EV firms. Hence, the disadvantage comes from the challenges of how to connect and establish relationships with governments in host countries.

Additionally, Chinese EV firms might lack knowledge of institutions in host countries, such as language, legal systems, local practices, rules, or standards of EV quality (North, 1990; Collinson and Narula, 2014). This may create difficulties, such as legitimacy challenges, regulatory requirements, and certifications for Chinese EV firms when operating abroad. When they enter European countries, they lack related resources because the institutions are different between China and European countries. It requires time for Chinese EV firms to get to know host countries and accumulate knowledge of how to operate in the institutional environment where they locate. It is disadvantageous for them as lead firms in Europe are already familiar with the knowledge of local institutions that might take long time to learn.

5.5 Some proposals for mitigating Chinese disadvantages

In this section, I will provide several solutions to alleviate the different types of disadvantages that might be potentially faced by Chinese EV firms in Europe. I briefly summarize each disadvantage described in Section 5.4.2 and propose the corresponding solutions.

First, for the inability to transfer patents: Chinese EV firms need to have a better understanding of existing patents that are granted in China but not in Europe and know which patents are required to be approved in Europe with priority. Then, Chinese firms need to increase the grant rate of these patents, especially those regarding the essential technologies in the EV industry. Before applying for European patents, firms could study the European standards and rules for legalizing patents received abroad.

For lacking brand awareness, Chinese firms could improve the product exposition to local

customers through both online and offline channels, such as presenting products in EV exhibitions, shopping malls or online streaming, and advertising on social media platforms (Opreana and Vinerean, 2015). In this way, firms could establish brand recognition.

Additionally, brand awareness may be developed for firms with low-cost EVs in less-developed regions. To decide on the specifically focused segment, Chinese EV firms should understand the features of the market segments they targeted for (e.g. potential customer groups in terms of occupation, income, and age). They had to conduct more market research about customers' preferences. Chinese firms can co-sell their products with a local firm that owns a high brand reputation among the clients. Also, paying attention to word-of-mouth among customers could be considered an additional way of promoting products (Chevalier and Mayzlin, 2006).

Moreover, Chinese firms should make specific investments in the European market to obtain intangible assets (e.g. customers' driving habits, knowledge of opening premium markets, and designing skills). For instance, Chinese automakers could consider adjusting the width of the car for the European market.

In terms of unattractive pricing, the low-cost strategy of Chinese EV firms could be adopted to compete against lead traditional automakers in Europe. This way could be necessary for their initial phase of entering the new markets in Europe. Referring to a successful story of a Chinese firm, Xiaomi first enters the European markets by employing a low-price strategy (Wei and Long, 2021). In this regard, Chinese EV firms could be more advantageous if they provide customers with well-performed products but sell at lower prices than main competitors in the local market.

In the cases of lack of international experience, Chinese firms might be able to use the experience of other successful Chinese firms, in terms of operation, management, and how coordination between the headquarters and foreign subsidiaries is organized. Another way to overcome this obstacle is to hire managers and employees who have worked in the host countries, as Huawei did so (Schaefer, 2020). Individuals with such working experience could help firms better understand the environment of host countries.

For the lack of manufacturing bases, Chinese EV firms could internationalize through exporting in the initial years of internationalization. In doing so, EVs are exported to host

countries directly once finished in China, and therefore, firms are still owning the advantages of low costs in manufacturing. However, with accumulating the knowledge and resources of host countries, Chinese EV firms could consider investing in local production bases through joint ventures (e.g. Fiat's strategy in Turkey) or acquiring OEM (original equipment manufacturing) plants locally to better satisfy market demands (Athreye, Tuncay-Celikel, and Ujjual, 2014).

The shortcoming of selling and after-sales services in Europe can be mitigated by developing relevant resources in Europe, such as selling through online streaming platforms, which could be accessible to most customers (Wongkitrungrueng, Dehouche, and Assarut, 2020), and linking with trustful local distributors, retailers and charging companies in most European countries. There are several ways in which firms get connected to external players. Specifically, Chinese EV makers could establish partnerships or strategic alliances with other companies (Todeva and Knoke, 2005). This strategy is also appropriate for infrastructure development: forming a strategic partnership with a European-based charging solutions provider to develop charging construction jointly. Another way is to acquire a domestic dealer website or a distributor. Aftersales service office could be quickly built even if EV firms do not have a local factory. Firms can transfer spare parts of EVs to the local distributor or their own service office.

Last, the different types of obstacles to the relationship with host countries could be addressed through the following ways. Chinese EV firms should consider making investments in countries that have closer relationships and are willing to collaborate with China (Zhang, 2018). Also, the disadvantage of lacking resources in the new institutional environment could be solved by involving individuals who are familiar with the local institutional context.

Another way of overcoming this issue is that managers learn institutional knowledge (Javernick-Will and Scott, 2010), which might help them understand and familiarize themselves with local rules and standards in the European countries over time. For instance, managers might learn from individuals (e.g. personnel from another Chinese firm's subsidiary) who understand the local rules and can tell the differences between the host country and China.

In sum, even if Chinese EV firms which address these disadvantages in their expansion into Europe, it still cannot guarantee they will obtain competitive advantages over rivals in Europe

and compete against them successfully.

5.6 Conclusions

Although Chinese EV firms obtain advanced technologies in several fields of EVs, like the superior level of battery, motors, and intelligence technologies, they still face challenges in internationalizing and competing with lead automotive firms in Europe. Drawing on the concept of ownership advantage of the OLI paradigm, I analyze the sources of advantages and disadvantages when expanding into the European market, which contributes to the literature on the internationalization of Chinese EV firms entering Europe. I finally provide some ideas to overcome these disadvantages and foster Chinese EV firms' development in Europe.

In terms of advantages, they come from innovative technologies in EVs, fast development of software, providing customer-centric services, substantial financial power, mass production capabilities, closeness to suppliers, qualified product portfolios, and awareness of building charging infrastructures.

The sources of disadvantages in internationalization include the inability of transferring several patents to Europe, lack of brand awareness, lack of knowledge about European markets, less flexibility in products and unattractive prices, lack of design knowledge, lack of international managerial expertise, lack of local manufacturing sites, lack of selling and after-sales services, and lack of relationships with host countries. Then, I provide the solutions to overcome these disadvantages to foster their internationalization process in Europe.

Recognizing the sources of disadvantages in the international expansion to Europe will help managers of Chinese EV firms solve these shortcomings and obtain competitiveness in European markets. The separation of disadvantages in internationalization into different types according to their sources helps managers deal with them by employing different solutions. Moreover, reducing the disadvantages encountered by Chinese EV firms in Europe will not only be beneficial at the firm level but also contribute to upgrading the Chinese EV industry at the industrial level. Managers of Chinese EVs should regard European countries not as inaccessible markets, but as places that could help Chinese firms to increase their competitiveness as global EV manufacturers.

This paper will contribute to the concept of FSAs from the OLI paradigm, emphasizing the competitive advantages of Chinese EV firms come from advantages accumulated in China and the ability to overcome obstacles faced in European markets. Resources that the firm lacks in a new environment need to be considered in the growth of firms, highlighting the fact that some advantageous resources are related to the context in host countries. Additionally, it contributes to the literature on the internationalization of Chinese firms by analyzing the sources of advantages and disadvantages. It also contributes to the innovation literature of EMNEs by showing that Chinese EV firms, as one of the first entrants in the EV industry, have already been transferred from low-valued-added traditional carmakers to EV leaders with superior technologies. Moreover, it complements the literature on the challenges of internationalization by studying a new industry and explaining deeply the causes.

This paper studies the advantages and disadvantages of Chinese EV firms in Europe based on current operations in Europe and collects relevant data over the last few years when Chinese EV firms start to enter European markets. However, the findings of this paper might change along with time, because Chinese EV firms may overcome some of the disadvantages or lose competitiveness in several technologies or capabilities in the next following years, facing the rapid development of leading automotive firms in Europe.

Chapter 6 Inward European FDIs from BRIC Countries and Technological Collaborations

6.1 Introduction

Over the last decade, European countries have increased the number of technological collaborations with emerging countries, reinforcing the relationships and the impact of knowledge sharing between Europe and emerging economies. BRIC countries have organized both greenfield foreign direct investments (FDIs) and a strategy to initiate technological cooperation with organizations based in European countries. Greenfield FDIs could be regarded as a bridge that connects firms between home and host countries, stimulating knowledge transfer among them and further increasing collaborations through mutual interactions (Meyer, Mudambi, and Narula, 2011).

Many multinational enterprises (MNEs) from BRIC countries are investing aggressively abroad through FDI strategy, in order to access and obtain strategic assets that they do not possess in their domestic markets, following the so-called Springboard perspective (Luo and Tung, 2007; Deng, 2009). Specifically, they are likely to build linkages with external players abroad, embed in the local networks from whom they leverage local resources and continuously learn from local players (Mathews, 2006). These activities can be summarized in the Linkage-Leverage-Learning (LLL) framework (Mathews, 2002, 2006). In this regard, I maintain that collaboration with foreign countries could be a potential solution for multinational enterprises in emerging markets (EMNEs) to overcome their competitive disadvantages and obtain the strength which enables them to compete in the global market.

In particular, multinational firms from BRIC countries are interested in investing in Europe and this large number of investments is continuously increasing over the years. However, we still have limited knowledge about whether the FDIs from BRIC countries to European regions increase technological collaborations. Additionally, though all BRIC are considered as emerging economies, BRIC members are heterogeneous in histories of internationalization, national development, and motivations, which might impact the motivation of FDIs to enter

Europe. Comparative studies among BRIC countries have received limited attention so far. Thus, I decided to distinguish each BRIC country analyzing in particular Brazil, Russia, India, and China. Furthermore, I figured out the different innovation levels of European regions that have received FDIs from other countries because different innovation levels may exert their diverse level of attraction.

This study draws on research about different strategies of internationalization developed by firms belonging to emerging countries (Ren, Eisingerich, and Tsai, 2015; Li, Strange, Ning, and Sutherland, 2016; Wu, Wang, Hong, Piperopoulos, and Zhuo, 2016). Most studies concentrate on the knowledge spillovers or innovation improvement of either sourcing countries or destination ones (García, Jin, and Salomon, 2013; Liu, Lu, and Choi, 2014), rather than studying the role of collaborations activated with local firms after entering Europe. An important element is also to focus on collaborative innovations (co-parenting activity between foreign firms and local regional firms). In contrast, this study aims to detect the effects of inward European FDIs from BRIC on technological collaborations activated by co-patenting. It investigates how innovative and non-innovative European regions affect the frequency of technological collaborations (related to co-patenting).

Considering BRIC countries, I found different behaviors. The positive effect of inward FDIs from BRIC countries on technological collaboration is only confirmed for India and China. FDIs from Russia do not contribute to technological collaboration between European regions and Russia. Moreover, the significant impact of inward from India comes from investing in non-innovative European regions. However, the significance of inward FDIs from China is particularly driven by investments into innovative European regions. FDIs from Brazil foster collaboration among firms based in non-innovative European regions.

This study extends the literature on the influence of FDI from emerging countries on innovation outcomes by looking at collaborations with Europe. It compares different emerging markets and considers different innovation degrees of European regions, using regional panel datasets. Moreover, it examines the IB theories focusing on EMNEs' internationalization. This study also shows the relevant implications for European region policies which desire to support international collaborations.

The paper is structured as follows. Section 6.2 presents the theoretical framework of this

study, and further establishes the research hypotheses. Section 6.3 explains the research methodology. Section 6.4 shows the regression results. Finally, Section 6.5 discusses the findings, and states the limitations of this work, providing clues for future research avenues.

6.2 Theoretical framework and hypothesis development

6.2.1 Technological collaborations through greenfield FDIs

The main argument under this section is that the growing internationalization process might be able to promote knowledge sharing between firms from developed and emerging countries and, in turn, foster technological collaborations between them.

Building subsidiaries through greenfield FDIs can be considered as a vehicle and anchor for establishing such global links and stimulating knowledge exchange among players from Europe and emerging countries. In this way, the foreign subsidiaries, by incorporating the home country knowledge from their parent firms, make that knowledge more easily and spatially accessible to firms in the host countries (Liu, Chaminade, and Asheim, 2013; Iammarino, 2018).

Meanwhile, once the subsidiaries are settled, they are simultaneously embedded in the networks of the host country firms, which provide access to local knowledge and information (Lee, 2006; Asakawa, Park, Song, and Kim, 2018; Turkina and Van Assche, 2018). Investing firms are allowed to collect that information and knowledge, such as customers' needs, competitors' competencies, suppliers' availability in host countries, etc. The embedded network also helps firms to transfer, learn, and absorb heterogeneous knowledge from each other (Reagans and Zuckerman, 2001; Balt, Malmberg, and Maskell, 2004). This reciprocal learning requires mutual communication, which may also increase collaboration opportunities between local and foreign players. In sum, I maintain that the FDI strategy of BRIC firms can create the conditions to gain foreign knowledge and potentially develop new relationships (Luo and Wang, 2012; Hertenstein, Sutherland, and Anderson, 2017).

6.2.2 Linkages-Leverage-Learning (LLL) framework and Springboard perspective

The recent new theorization on multinational enterprises based on emerging economies has

argued that EMNEs may invest overseas not to exploit existing competitive advantages, but to overcome their competitive disadvantages according to the Linkages-Leverage-Learning framework (Mathew, 2006). From this perspective, the internationalization of EMNEs is based on the ability to identify and build external networks inside and outside the home country by establishing linkages with new partners (Luo and Wang, 2012; Zheng, Wei, Zhang, and Yang, 2016). Throughout networking with external players, EMNEs can access, leverage, and learn superior knowledge and competencies through frequent interactions and collaboration (Mathews, 2006, 2017; Ray, Ray, and Kumar, 2017). In this direction, the inward FDIs from emerging markets to Europe can boost the repetitiveness of contacts and enable EMNEs to perform their organizational learning more effectively (Thite, Wilkinson, Budhwar, and Mathews, 2016).

Similarly, Luo and Tung (2007, 2018) believe that EMNEs have been using international expansion as a springboard to obtain strategic resources and knowledge from abroad, able to increase their competitiveness, both in their domestic market and global market. Their "springboard" behaviors (Luo and Tung, 2007; Niosi and Tschang, 2009) are usually characterized by the fast entry strategy in the foreign markets through FDIs and the aim to gather some critical assets abroad. One effective way to access and obtain strategic assets for EMNEs might be learning from foreign firms after the FDI process has been organized. The connection to foreign firms is able to stimulate imitative and asset acquisition strategies by EMNEs to foster technological and organizational learning and drive the local development of advanced technologies (Liu and Wang, 2003; Li, Prashantham, Zhou, and Zhou, 2021).

Therefore, the LLL framework and Springboard perspective suggest that EMNEs might obtain several advantages by investing and establishing partnerships in foreign countries such as European regions (Satta, Parola, and Persico, 2014; Tiwari, Sen, and Shaik, 2016; Chadee, Sharma, and Roxas, 2017). The strategic purpose of the EMNEs' internationalization process drawing on the acquisition of superior knowledge from host countries is also expected to foster the EMNEs' desire to establish technological collaborations with locally embedded companies.

6.2.3 Inward greenfield FDIs from BRIC countries and technological collaborations: Comparison across BRIC countries

Through greenfield FDIs, firms from BRIC can establish new relationships with local players (e.g. suppliers, distributors, customers, and governments) in host countries. Additionally, in line with LLL approach and Springboard perspective, EMNEs are more willing to acquire superior knowledge and learn from foreign players to overcome their competitive disadvantages (Mathews, 2006; Luo and Tung, 2007; Kedia, Gaffney, and Clampit, 2012; Piperopoulos, Wu, and Wang, 2018). This is confirmed by the asset-seeking motivation of MNEs in Brazil, Russia, India, and China (Andreff, 2015).

This section focuses on discussing the differences in inward European FDI strategies considering the country of origin.

The extent to which firms in European regions can be willing to collaborate with firms from emerging countries producing common innovations (technological co-inventions) might depend on the principal internationalization motives, the innovative strengths, or resource endowments (Liang, Lu, and Wang, 2012).

For instance, Brazilian MNEs have been more active to conduct FDIs for seeking markets when targeting European countries (UNCTAD, 2007). Brazilian MNEs base their predominant internationalization strategy on services, manufacturing, construction, and food, beverage & tobacco sectors that are driven by market-oriented motivations (Campanario, Stal, and da Silva, 2012). Nearly all declared that the main motive of internationalization was not technological asset seeking (Kumar and Asheulova, 2011; Esteves and Feldmann, 2016).

Brazil and Russia are two important exporters of natural resources (Ulrich, Hollensen, and Boyd, 2014). Russian outward FDIs are mainly concentrated on resource and market activities-oriented investments (Holtbrügge and Kreppel, 2012). The main sectors involved in FDIs to Europe are oil, gas, metal, and manufacturing sectors, as well as related larger shares of service (Liuhto and Majuri, 2014). Natural resources (such as oil and gas) are the dominant sector in the Russian economy and the shares of high-tech sectors are marginal with respect to Russian economy (Vahtra, 2010; Domínguez-Jiménez and Poitiers, 2020). Russian MNEs tend to

employ the advantages of these resources to explore new markets abroad.

Chinese and Indian MNEs adopted a more similar pattern in internationalization (Scalera, Mukherjee, and Piscitello, 2020) being mainly motivated by seeking strategic assets and innovation capability and catching up with global lead firms (Luo and Tung, 2007; Deng, 2009; Piscitello, Rabellotti, and Scalera, 2015; Saranga, Schotter, and Mudambi, 2019). Chinese and Indian MNEs have set a high number of R&D units in foreign countries, and many of them are in the United States and Europe (De Beule and Nieuwstraat, 2007), to improve their knowledge. Moreover, they have developed quite fast their innovative capability over the last decade, increasing the number of patent applications over years, the level of investments in research and development, the number of research institutions and science parks, increasing the share of well-educated labor forces (Manning, Massini, and Lewin, 2008; Asakawa and Som, 2008; Fan, 2011). In so doing, India and China have accumulated in general their technological knowledge.

The collaborations with Indian and Chinese MNEs could help European regions to access new knowledge (through the availability of talents, and new knowledge deriving from foreign innovative research institutions (He, Khan, and Shenkar, 2018). By contrast, Brazil has shown lower innovative capability and fewer concerns in relevant investments regarding the development of innovation (Reynolds, Schneider, and Zylberberg, 2019), compared to India and China (Fleury, Fleury, and Borini, 2013). This is visible, for instance, in the lower average number of R&D researchers per million people, and in the lower number of patents received at the international level, as indicated by the World Bank database (see more information in Table B.6.2 of Appendix B). Therefore, I suggest that Brazilian and Russian MNEs might not have formed a strong network for innovation in Europe, compared to Indian and Chinese MNEs. Accordingly, I suppose that:

Hypothesis 1 (H1): Inward greenfield FDIs from (a) Brazil and (b) Russia are less likely to foster technological collaborations; inward greenfield FDIs from (c) India and (d) China directed to European regions foster technological collaborations.

6.2.4 The role of innovation performance of European regions

The frequency of inward FDIs from emerging countries on regional technological collaborations might be conditioned by the different innovation performances of European regions. According to Szopik-Depczyńskaa, Cheba, Bąkb, Kędzierska-Szczepaniakc, Szczepaniakd, and Ioppolo (2020), I distinguish the innovative European regions from the non-innovative regions.

EMNEs are more attracted to invest in innovative European regions because these areas have local advantages for firms to access larger flows of knowledge. Therefore, in innovative regions, firms from BRIC countries can access advanced knowledge through learning and collaborating with European players (Ray, Ray, and Kumar, 2017; Piperopoulos et al., 2018). The motive of tapping into more innovative assets is more evident in the internationalization strategies of Indian and Chinese firms. Indian and Chinese firms appear to be more aggressive to establish connections and acquire advanced knowledge through FDIs in Europe.

India and China are largely supported by public policies to undertake FDIs to access and obtain advanced technologies in developed regions involving knowledge-intensive firms (Deng, 2009; Piscitello et al., 2015). The most innovative European regions are more attractive to them because they possess highly skilled human capital and technological expertise that may stimulate Indian and Chinese firms to work with and learn from them.

In contrast, Brazil and Russia have close relations with less developed European regions: Brazil with regions belonging to Portugal or Spain and Russia with other Eastern European regions that belonged in the past to the Soviet republic. They are generally less innovative. This implies a lower psychic distance (Johanson and Vahlne, 1977). They show similarities in languages, cultures, and histories. Sharing a common language implies mutual understanding and a lack of friction in (Guellec and de la Potterie, 2001; Henn, 2012). Also, historical links based on colonialism, race, intergovernmental organizations, or past formal agreements facilitate cooperation among foreign firms and firms belonging to host countries (Crane, Peterson, and Oliker, 2005; Galán and González-Benito, 2006; Makino and Tsang, 2011; Montobbio and Sterzi, 2013).

Based on these arguments, the following hypotheses are proposed:

Hypothesis 2 (H2): Inward greenfield FDIs from (a) Brazil and (b) Russia to innovative European regions could increase technological collaborations; Inward greenfield FDIs from (c) India and (d) China to innovative European regions are more likely to increase technological collaborations when European regions are innovative regions.

Hypothesis 3 (H3): Inward greenfield FDIs from (a) Brazil and (b) Russia to non-innovative European regions could also help for technological collaborations.

6.3 Research methodology

6.3.1 Data sources and sample selection

In this study, the data were collected from three different sources. First, technologically collaborative patent data (registered in European Patent Office) between European regions and BRIC countries from 1990 to 2017 were drawn from the OECD RegPat database (release version February 2021) regarding China, Russia, India, and Brazil. Then, inward European greenfield FDIs information with BRIC countries from 2003 to 2016 were collected from the fDi Markets database. Furthermore, some information about European regions was gathered from the Statistical Office of the European Union (Eurostat) as control variables. Finally, the three datasets were merged based on the the second level of Nomenclature of Territorial Units for Statistics (NUTS-2) classification of European regions. Four separate final unbalanced and lagged panel datasets were built for each BRIC country and 286 European regions. For such four datasets, greenfield FDI data and control variables vary from 2003 to 2014, technological collaboration data were collected with a lag of 3 years and they vary from 2006 to 2017. The regions involving zero technological collaborations and zero greenfield FDI inflows or outflows were all included in the analysis to avoid selection biases.

6.3.2 Variable measurement

6.3.2.1 Dependent variables

In order to detect the existence of technological collaboration, the indicator of collaborative patents is used. This measures the most intensive case of technological collaboration, once the collaboration between the European and the foreign firm takes legal common ownership of a patent. Patent data are employed here because they are an appropriate proxy to evaluate the existence of collaboration activities that have given rise to certified innovation (De Noni, Ganzaroli, and Orsi, 2017). Therefore, this study includes four dependent variables, that is, collaborative patents between Europe and Brazil (Copat with Brazil), collaborative patents between Europe and Russia (Copat with Russia), collaborative patents between Europe and India (Copat with India), and collaborative patents between Europe and China (Copat with China). For instance, collaborative patents with Brazil are selected if at least one applicant of the patent is from a European region and also at least one applicant is from Brazil. Then, the fraction of the collaborative patents is calculated, which divides the effort in the collaborative patent and assigns it proportionally to the European regions where the applicant locates. The information on applicants' locations is traceable in the OECD RegPat database.

6.3.2.2 Independent variables

In this paper, the number of inward greenfield FDI projects for the BRIC country selected (China, Russia, India and Brazil) is distinguished. Therefore, the paper involves four exploring variables to test the hypothesis, including FDI from Brazil, FDI from Russia, FDI from India, and FDI from China. For example, FDI from Brazil indicates the number of greenfield FDIs from Brazil to European regions, being aggregated for European region and year.

To test H2 and H3, the sample is split into two groups (innovative European regions and non-innovative ones) to perform further subsample regressions, according to the evaluation provided by Regional Innovation Scoreboard 2010.[19] The innovative European regions are

[19] The Regional Innovation Scoreboard is a benchmark for identifying the innovation levels of European regions, and the version published in 2010 is selected for our study because 2010 is in the middle period of our dependent variables.

grouped if they correspond to “Leader” or “Stronger”, while the non-innovative European regions are identified if the evaluation is termed as “Moderate” or “Modest”.

6.3.2.3 Control variables

Several control variables that might also have influenced the level of technological collaborations between European regions firms and BRIC countries firms are considered. First, it includes technological intensity (TECH.INT), measured as the total number of patents per employee. Then, human capital (HUM.CAP) is introduced, calculated by the percentage of people aged 25-64 who have successfully completed tertiary studies. It represents the number of workers who are well-educated and may have the ability to conduct innovation activities. Then, the intensity of global technological collaborations with extra-European countries (GLO.COLL) is introduced and computed as the number of collaborative patents involving extra-European inventors. This variable represents the capability of the region to be connected with distant potential partners in the global market.

Another control variable, the share of manufacturing employees (MAN.EMP) is considered since it suggests that the new creations of products are related to the manufacturing field. Finally, in order to control for a more general effect of FDIs on technological collaboration with our four BRIC countries, the intensity of total inward FDIs into European regions deriving from other countries, excluding the BRIC countries examined, is examined and considered. This control variable is named total inward FDIs except for BRIC (IFDI without BRIC). Table 6.1 summarizes the definitions and sources of the variables.

	Variable	**Definition**	**Source**
Dependent variables	Copat with Brazil	Collaborative patents between Europe and Brazil	OECD RegPat
	Copat with Russia	Collaborative patents between Europe and Russia	

	Copat with India	Collaborative patents between Europe and India	
	Copat with China	Collaborative patents between Europe and China	
Independent variables	FDI from Brazil	Number of greenfield FDIs from Brazil to European regions	fDi Markets
	FDI from Russia	Number of greenfield FDIs from Russia to European regions	
	FDI from India	Number of greenfield FDIs from India to European regions	
	FDI from China	Number of greenfield FDIs from China to European regions	
Control variables	TECH.INT	Logged value of the total number of patents per employee	Eurostat
	HUM.CAP	Logged value of the percentage of people aged 25-64 who have successfully completed tertiary studies	
	GLO.COLL	Logged value of the number of collaborative patents involving extra-European inventors	
	MAN.EMP	Logged value of the share of	

		manufacturing employees	
	IFDI without BRIC	Logged value of the total inward FDIs except for BRIC	fDi Markets

Table 6.1: Definitions and sources of variables

6.3.3 Model specification

The OLS panel model with the region and time-fixed effects is employed to test the relationship of greenfield FDIs and technological collaborations, implementing the regression analysis to evaluate the behavior of the selected BRIC countries. The lagged dependent variables (i.e. a lag of three periods) are used in the models considering the following reasons. First, greenfield FDI requires time to establish a subsidiary from scratch in foreign countries. Thus, the newly established subsidiary might not enter soon in a relationship with the new environment, being immediately able to collaborate with local players. Second, the adoption of lagged dependent variables is useful to solve partially the endogeneity problem in the models. Furthermore, a logarithmic transformation is applied to all the variables to linearize them and reduce the skewness.

6.4 Regression results

6.4.1 Descriptive statistics and correlation matrix

	min	q1	median	q3	max	mean	sd
Copat with Brazil	0	0	0	0	4.500	0.017	0.156
Copat with Russia	0	0	0	0	4	0.019	0.149
Copat with India	0	0	0	0	3.250	0.018	0.137
Copat with China	0	0	0	0	8.167	0.065	0.364

TECH.INT	0	0.019	0.084	0.208	1.172	0.151	0.189
HUM.CAP	1.960	2.986	3.285	3.493	4.224	3.228	0.369
GLO.COLL	0	0	0	0.773	4.688	0.527	0.807
MAN.EMP	0.022	0.107	0.144	0.194	0.329	0.151	0.060
IFDI without BRIC	0	0.693	1.946	2.708	5.971	1.833	1.269
FDI from Brazil	0	0	0	0	1.609	0.022	0.137
FDI from Russia	0	0	0	0	2.079	0.066	0.240
FDI from India	0	0	0	0	2.890	0.099	0.309
FDI from China	0	0	0	0	3.434	0.131	0.380

Table 6.2: Descriptive statistics

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Copat with Brazil	1	0.070	0.360	0.190	0.190	0.060	0.250	0.040	0.100	0.090	0.030	0.070	0.160
2 Copat with Russia	0.070	1	0.030	0.070	0.120	0.070	0.190	-0.030	0.090	0.030	0.140	0.030	0.120
3 Copat with India	0.360	0.030	1	0.190	0.170	0.120	0.300	-0.070	0.150	0.160	0.100	0.160	0.210
4 Copat with China	0.190	0.070	0.190	1	0.290	0.150	0.420	-0.080	0.200	0.260	0.210	0.200	0.300
5 TECH.INT	0.190	0.120	0.170	0.290	1	0.360	0.650	-0.020	0.200	0.120	0.190	0.240	0.300
6 HUM.CAP	0.060	0.070	0.120	0.150	0.360	1	0.390	-0.430	0.250	0.130	0.140	0.260	0.210
7 GLO.COLL	0.250	0.190	0.300	0.420	0.650	0.390	1	-0.200	0.440	0.240	0.230	0.350	0.440
8 MAN.EMP	0.040	-0.030	-0.070	-0.080	-0.020	-0.430	-0.200	1	0.080	-0.110	-0.050	-0.150	-0.110
9 IFDI without BRIC	0.100	0.090	0.150	0.200	0.200	0.250	0.440	0.080	1	0.230	0.330	0.380	0.400
10 FDI from Brazil	0.090	0.030	0.160	0.260	0.120	0.130	0.240	-0.110	0.230	1	0.140	0.210	0.250
11 FDI from Russia	0.030	0.140	0.100	0.210	0.190	0.140	0.230	-0.050	0.330	0.140	1	0.260	0.300
12 FDI from India	0.070	0.030	0.160	0.200	0.240	0.260	0.350	-0.150	0.380	0.210	0.260	1	0.400
13 FDI from China	0.160	0.120	0.210	0.300	0.300	0.210	0.440	-0.110	0.400	0.250	0.300	0.400	1

Table 6.3: Correlation matrix

Table 6.2 and 6.3 shows the descriptive statistics and the correlation matrix of all variables in the analysis, separately. I found some pairs of variables that show a high correlation (e.g. TECH.INT and GLO.COLL), so I checked the variance inflation factor (VIF). None of the VIF results are larger than 10 in the models, so multicollinearity is not an issue in the regression analysis. In addition, the correlation matrix shows different features of correlation between technological collaboration and inward greenfield FDIs across BRIC countries. For instance, FDI from Brazil ($r = 0.09$) is more related to technological collaboration than FDI from Russia ($r = 0.03$). In Section 6.4.3, I will present the more precise results by conducting a regression analysis that introduces region and year-fixed effects, as well as the control variables discussed previously.

6.4.2 Description of inward FDI from BRIC countries to European regions

Table 6.4 lists the most important investing industry sectors for each of the BRIC countries considered. FDIs from Brazil reflect the large investments by Brazilian firms in service-related sectors (e.g. software & IT services, financial services, and business services) and manufacturing activities, such as textiles, food & tobacco, and metals. The main investors are Stefanini IT Solutions (software & IT services), BTG Pactual (financial services), Havaianas (shoes classified here as textiles), and Moy Park (food & tobacco). However, FDIs in technology-related activities (i.e. aerospace) are relatively low, accounting for 2.82 % of total inward stocks in Europe. Russian resource-based enterprises in the coal, oil, and gas are one of the most active sectors related to FDI projects entering Europe. Also, many Russian enterprises that have internationalized their organization are firms operating in financial services, software & IT, transportation, and communications. Russian energy companies are leading players in their national market due to their abundant reserves of natural resources, and they have tried to enter foreign markets and become global suppliers in this sector. Important investors are Gazprom (coal, oil, and gas), Lukoil (coal, oil, and gas), Snoras (financial services), Sberbank (financial services), Kaspersky Lab (software & IT), Russian Railways (transportation) and Mobile TeleSystems (communications).

A large proportion of India's FDI into Europe is in manufacturing (especially

pharmaceuticals, metals, and automotive components), followed by services, including software & IT services, business, and financial services. Representative Indian companies with a considerably large share of FDI investments in Europe include Infosys Technologies (software & IT services), Wipro (software & IT services), Corus (metals), Firstsource (business service), Jaguar Land Rover (automotive components), and Glenmark Pharmaceuticals (pharmaceuticals).

In terms of Chinese FDI projects entering Europe, I observed substantial investments in manufacturing, especially, in electronics-related industries (e.g. electronic components, consumer electronics) and industrial equipment (e.g. industrial machinery, equipment & tools, and automotive components). Examples of Chinese firms with large FDI investments in Europe include Haier and Hisense in consumer electronics, Huawei Technologies and ZTE in communications, and Suntech Power Holdings in electronic components. Furthermore, there has been a difference between the number of FDI investments in innovative European regions and non-innovative European regions across the BRIC countries considered. All BRIC countries have a great interest in investing in innovative European regions, and the industry activities (see Table 6.6) are relatively similar within European regions. BRIC countries seem to cover a wide range of industrial activities in both innovative and non-innovative European regions.

Ranking	Brazil	Russia	India	China
1	Software & IT services (15.25%)	Financial Services (16.85%)	Software & IT services (29.10%)	Communications (12.46%)
2	Financial Services (11.86%)	Coal, Oil and Natural Gas (15.96%)	Business Services (14.50%)	Electronic Components (11.78%)
3	Textiles (11.86%)	Software & IT services (11.38%)	Financial Services (8.72%)	Industrial Machinery, Equipment & Tools (10.49%)
4	Food & Tobacco (10.73%)	Transportation (7.92%)	Pharmaceuticals (6.83%)	Financial Services (6.91%)
5	Metals (8.47%)	Communications (7.81%)	Metals (6.20%)	Business Services (5.62%)
6	Business Services (6.78%)	Metals (5.58%)	Automotive Components (4.52%)	Software & IT services (5.48%)
7	Chemicals (5.08%)	Food & Tobacco (4.02%)	Industrial Machinery,	Automotive Components (

			Equipment & Tools (3.26%)	4.40%)
8	Consumer Products (3.95%)	Business Services (3.46%)	Automotive OEM (2.94%)	Consumer Electronics (3.99%)
9	Aerospace (2.82%)	Textiles (2.57%)	Transportation (2.63%)	Consumer Products (3.93%)
10	Rubber (2.26%)	Chemicals (2.57%)	Communications (1.89%)	Textiles (3.59%)

Table 6.4: Distribution of industry sector for inward European FDI from BRIC countries

BRIC countries	**Inward FDI (top-ranking industry sector)**	
	Innovative European regions	**Non-Innovative European regions**
Brazil	-Financial Services (16.22%) -Software & IT services (16.22%) -Business Services (10.81%) -Metals (7.21%) -Textiles (6.31%) -Consumer Products (5.41%) -Food & Tobacco (5.41%) -Chemicals (4.5%) -Aerospace (2.7%) -Electronic Components (2.70%) -Industrial Machinery, Equipment & Tools (2.7%) -Rubber (2.7%)	-Food & Tobacco (23.26%) -Textiles (20.93%) -Metals (13.95%) -Software & IT services (11.63%)
Total FDI projects	111	43
Russia	-Financial Services (18.61%) -Software & IT services (16.09%) -Transportation (11.36%) -Coal, Oil and Natural Gas (10.73%) -Business Services (6.62%) -Communications (5.05%) -Metals (4.73%)	-Financial Services (16.46%) -Coal, Oil and Natural Gas (14.02%) -Software & IT services (13.41%) -Metals (8.54%) -Transportation (6.1%) -Chemicals (5.49%) -Communications (3.66%) -Food & Tobacco (3.05%) -Plastics (3.05%) -Warehousing & Storage (3.05%)
Total FDI projects	317	164
India	-Software & IT services (30.86%) -Business Services (14.56%) -Financial Services (10.04%) -Metals (6.84%) -Pharmaceuticals (5.97%)	-Software & IT services (27.87%) -Business Services (20.49%) -Automotive Components (10.66%) -Metals (7.38%) -Pharmaceuticals (7.38%)

	-Automotive Components (3.35%) -Automotive OEM (3.2%) -Industrial Machinery, Equipment & Tools (3.06%)	-Plastics (4.92%) -Transportation (4.1%) -Chemicals (3.28%)
Total FDI projects	687	122
China	-Industrial Machinery, Equipment & Tools (12.45%) -Electronic Components (12.36%) -Communications (9.72%) -Financial Services (7.36%) -Software & IT services (6.79%) -Business Services (5.85%) -Consumer Products (4.62%) -Consumer Electronics (3.68%) -Automotive Components (3.68%)	-Communications (16.59%) -Electronic Components (12.66%) -Automotive Components (10.48%) -Industrial Machinery, Equipment & Tools (6.99%) -Consumer Electronics (5.68%) -Financial Services (5.68%) -Chemicals (4.8%) -Alternative / Renewable energy (4.37%) -Business Services (4.37%) -Textiles (3.49%)
Total FDI projects	1060	229

Table 6.5: Distribution of inward European FDI from BRIC countries in the industry sector (based on the innovation performance of European regions)

BRIC countries	**Inward FDI (main industry activity)**	
	Innovative European regions	**Non-Innovative European regions**
Brazil	-Business Services (26.13%) -Sales, Marketing & Support (21.62%) -Headquarters (6.31%) -Manufacturing (14.41%) -Retail (8.11%) -Logistics, Distribution & Transportation (5.41%) -Research & Development (2.7%)	-Manufacturing (41.86%) -Retail (18.60%) -Sales, Marketing & Support (16.28%) -Technical Support Center (6.98%) -Logistics, Distribution & Transportation (4.65%) -Recycling (4.65%)
Total FDI projects	111	43
Russia	-Sales, Marketing & Support (36.59%) -Business Services (27.13%) -Logistics, Distribution & Transportation (10.41%) -Manufacturing (7.89%) -Headquarters (7.26%) -Design, Development & Testing (4.1%) -Construction (1.58%) -Research & Development (1.26%) -Retail (1.26%)	-Manufacturing (27.44%) -Business Services (23.17%) -Sales, Marketing & Support (20.12%) -Logistics, Distribution & Transportation (11.59%) -Retail (6.1%) -Design, Development & Testing (4.27%) -Electricity (3.66%) -Construction (1.83%)
Total FDI projects	317	164
India	-Sales, Marketing & Support (27.51%) -Business Services	-Manufacturing (27.05%) -Sales, Marketing & Support (18.85%)

	(26.64%) -Manufacturing (13.25%) -Design, Development & Testing (9.32%) -Headquarters (9.17%) -Customer Contact Center (4.66%) -Logistics, Distribution & Transportation (3.06%) -Research & Development (1.89%)	-Customer Contact Center (13.11%) -Design, Development & Testing (9.84%) -Shared Services Center (6.56%) -Technical Support Center (6.56%) -Business Services (4.92%) -Headquarters (4.92%) -Logistics, Distribution & Transportation (4.10%) -Retail (1.64%)
Total FDI projects	687	122
China	-Sales, Marketing & Support (48.02%) -Headquarters (13.96%) -Business Services (11.89%) -Design, Development & Testing (6.51%) -Manufacturing (6.32%) -Logistics, Distribution & Transportation (3.87%) -Research & Development (2.74%)	-Manufacturing (37.55%) -Sales, Marketing & Support (20.96%) -Business Services (9.17%) -Design, Development & Testing (6.99%) -Logistics, Distribution & Transportation (4.8%) -Electricity (4.37%) -Headquarters (3.49%) -Retail (3.49%) -Research & Development (2.18%)
Total FDI projects	1060	229

Table 6.6: Distribution of main industry activities of inward European FDI from BRIC (based on the innovation performance of European regions)

Ranking	Innovative European regions				Non-innovative European regions			
	BRAZIL	**RUSSIA**	**INDIA**	**CHINA**	**BRAZIL**	**RUSSIA**	**INDIA**	**CHINA**
1	UKI1	UKI1	UKI1	DEA1	ES30	LT00	UKN0	ITC4
2	FR10	FI1B	DE71	DE71	UKN0	LV00	ES51	ES51
3	PT17	EE00	UKG3	UKI1	ES51	BG34	ITC4	HU10
4	CH01	DE21	FR10	FR10	FR30	BG41	RO32	RO32
5	DEA2	FR10	DE21	DEA2	ES52	RO32	ES30	PL12
6	ES21	CH01	NL32	DE21	PT16	PL12	CZ08	ES30
7	AT13	DEA2	BE21	DK01	ES42	RO31	HU10	EL30
8	BE21	DE71	DEA1	NL32	PT18	ES51	PL63	ITI4
9	NL32	DE30	UKM3	NL33	RO12	CZ02	PL21	LT00
10	BE10	DEA1	NL33	DE11	ES13	PL51	PL43	RO12

11	DE12	AT13	DE92	DE50	HU10	RO41	BG41	FR24
12	DE71	CZ01	UKD3	DE30	ITH3	ES30	PL11	HU31
13	DEE0	CY00	DK01	UKG3	ITH5	ITI4	LT00	BG32
14	IE02	DE92	DE11	UKD3	ITI4	BG32	PL12	PL22
15	LU00	NL33	UKJ1	BE10	NO07	SK01	PL51	CZ04
16	NL33	FI1C	UKM2	NL41	RO32	SK04	ITI4	ES41
17	AT34	SE11	FI1B	UKJ1	SK04	BG33	ES52	HU21
18	BE23	IE02	IE02	IE02	BG31	EL43	CZ06	CZ02
19	BE24	DE11	UKG1	DE12	BG32	HR04	SK02	CZ05
20	BE33	CH04	UKL2	FR71	BG33	ITF4	RO12	ES61

Table 6.7: Ranking of European regions: inward FDI from BRIC (by innovation degree of European regions)

6.4.3 Analysis results

Table 6.8 presents the results of the exam of H1. Models (1) to (4) explore the effect of inward European FDIs from Brazil, Russia, India, and China, on the regional technological collaborations. From Model (1), I observed that the coefficient of inward European FDIs from Brazil (FDI from Brazil) is negative and significant ($p < 0.05$), so H1 (a) is rejected. Model (2) indicates European FDIs from Russia (FDI from Russia). They do not have a significant influence on technological collaboration; thus H1(b)is rejected. Model (3) shows the coefficient of European FDIs from India (FDI from India). It is positive and significant. Therefore, I received support for H1(c). Finally, reading the result for Model (4), arriving at the conclusion that the coefficient of FDIs from China to Europe is positive and strongly significant ($p < 0.001$), which provides support for H1(d).

Table 6.9 and Table 6.10 show the results for innovative and non-innovative European regions respectively. Models (1) to (4) in Table 6.9 present the respective impact of FDIs from Brazil, Russia, India, and China on innovative European regions. FDI from Brazil in innovative regions has a negative and significant impact on technological collaboration ($p < 0.01$), which

rejects H2(a). By contrast, when selecting non-innovative European regions (Table 6.10), the results are the opposite. In this case, FDI from Brazil becomes positive, being significant ($p < 0.05$). Thus, H3(a) receives support.

Looking at the results for Russia, we can see that the coefficients of FDI from Russia are both insignificant when investing in innovative and non-innovative European regions, rejecting H2(b) and H3(b). Surprisingly, the results emerging in Model (3) depicted in Table 6.9, show that the coefficient of FDI from India is insignificant. It becomes positive and significant when non-innovative European regions are involved, from Model (3) shown in Table 6.10. This rejects H2(c). Last, combining the results of Model 4 in Table 6.9 and Table 6.10, we can see that FDI from China has a positive and significant effect on technological collaborations with innovative European regions, supporting H2(d). FDIs from non-innovative European regions to China seem not to increase technological collaborations between the firms.

Considering the control variables, some variables are negative and significant regarding the issue of technological collaborations. Such variables include knowledge intensity (TECH.INT) and human capital (HUM.CAP). These control variables indicate that such regions do not have a high propensity to collaborate with emerging countries for co-developing new products or services. In addition, the coefficient of IFDI without BRIC is positive and significant in some models, which implies that the technological collaboration activities might also be driven by FDI inflows deriving from other countries (IFDI without BRIC).

Table 6.8: Models for testing H1

	(1)	(2)	(3)	(4)
Constant	-0.006	-0.054	-0.005	0.791**
	(0.103)	(0.122)	(0.117)	(0.284)
FDI from Brazil	-0.044*			
	(0.018)			
FDI from Russia		0.006		
		(0.013)		

FDI from India			0.023*	
			(0.010)	
FDI from China				0.107***
				(0.021)
TECH.INT	-0.013	-0.010	0.028	-0.800***
	(0.070)	(0.083)	(0.079)	(0.193)
HUM.CAP	-0.014	-0.016	0.019	-0.308***
	(0.032)	(0.038)	(0.036)	(0.088)
GLO.COLL	0.017**	-0.002	0.012	0.042*
	(0.006)	(0.008)	(0.007)	(0.018)
MAN.EMP	0.174	0.564	-0.317	0.675
	(0.304)	(0.360)	(0.343)	(0.838)
IFDI without BRIC	0.014**	0.008	0.009	0.012
	(0.004)	(0.005)	(0.005)	(0.012)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	3,250	3,250	3,250	3,250
R^2	0.551	0.183	0.261	0.398
Adjusted R^2	0.506	0.102	0.188	0.339
F Statistic (df = 294; 2955)	12.342***	2.254***	3.555***	6.657***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

Models (1) to (4) show the results of inward European FDIs on technological collaborations with Brazil, Russia, India, and China, respectively.

Table 6.9: Models referred to innovative European regions

	(1)	(2)	(3)	(4)

Constant	-0.177	-0.078	0.038	0.796
	(0.217)	(0.222)	(0.249)	(0.592)
FDI from Brazil	-0.082**			
	(0.030)			
FDI from Russia		0.004		
		(0.018)		
FDI from India			0.025	
			(0.016)	
FDI from China				0.128***
				(0.032)
TECH.INT	-0.013	-0.044	0.036	-0.769**
	(0.099)	(0.101)	(0.113)	(0.270)
HUM.CAP	0.026	0.005	0.035	-0.358*
	(0.062)	(0.063)	(0.071)	(0.169)
GLO.COLL	0.020*	-0.009	0.016	0.070**
	(0.010)	(0.010)	(0.011)	(0.027)
MAN.EMP	0.541	0.384	-0.853	1.371
	(0.678)	(0.694)	(0.780)	(1.857)
IFDI without BRIC	0.021**	0.013	0.016	0.006
	(0.008)	(0.008)	(0.009)	(0.021)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	1,770	1,770	1,770	1,770
R^2	0.562	0.211	0.256	0.398
Adjusted R^2	0.516	0.129	0.179	0.336
F Statistic (df = 166; 1603)	12.384***	2.577***	3.317***	6.389***

Notes: *p<0.05; **p<0.01; ***p<0.001

Models (1) to (4) show the results of inward European FDIs on technological collaborations with Brazil, Russia, India, and China, respectively.

Table 6.10: Models referring to non-innovative European regions

	(1)	(2)	(3)	(4)
Constant	-0.015	-0.033	0.027	0.102
	(0.051)	(0.156)	(0.036)	(0.158)
FDI from Brazil	0.022*			
	(0.010)			
FDI from Russia		0.010		
		(0.018)		
FDI from India			0.012**	
			(0.004)	
FDI from China				0.019
				(0.014)
TECH.INT	0.090	0.223	0.021	-1.189***
	(0.070)	(0.212)	(0.049)	(0.216)
HUM.CAP	0.002	-0.054	-0.008	-0.036
	(0.016)	(0.047)	(0.011)	(0.048)
GLO.COLL	0.007	0.023	0.001	-0.042***
	(0.004)	(0.012)	(0.003)	(0.013)
MAN.EMP	0.032	0.821*	-0.028	-0.013
	(0.122)	(0.369)	(0.085)	(0.377)
IFDI without BRIC	-0.0001	-0.0005	0.001	0.001

	(0.002)	(0.007)	(0.002)	(0.007)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	1,456	1,456	1,456	1,456
R^2	0.146	0.110	0.194	0.281
Adjusted R^2	0.053	0.014	0.107	0.204
F Statistic (df = 142; 1313)	1.576***	1.147	2.225***	3.618***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

Models (1) to (4) show the results of inward European FDIs on technological collaborations with Brazil, Russia, India, and China, respectively.

6.4.4 Robustness checks

I performed a set of robustness checks. First, a dynamic model was adopted to verify the findings. Specifically, the dependent variables lagged to 3 different periods were used, and consistent results across all models in this study were found. This result suggests that the previous technological collaborations might have a continuous effect on the current collaborations (e.g. affecting the selection of collaborative partners). Second, because establishing collaborative relationships may take longer time, the dependent variables based on a 4-year lag period were introduced. The results are persistent in most cases except for the one that regards FDI from Brazil. This implies FDI from Brazil may lose significance when investing in non-innovative European regions, in the long term. However, the result of FDI from Brazil to innovative European regions is consistent with the main findings.

6.5 Discussion and conclusions

This study aims to understand the current situation of technological collaborations between

European regions and BRIC countries through FDIs. The distributions of European FDI inflows from Brazil, Russia, India, and China and the related technological collaborations with European regions are shown in Table B.6.1 in the Appendix. It is shown that the number of technological collaborations is mostly positively related to number of FDI projects across BRIC countries and China has the largest value. It provides a preliminary result of how the technological collaborations between Europe and each BRIC country are driven by the inward European FDIs from Brazil, Russia, India, and China from 2003 to 2016. Furthermore, I explore the features of such FDIs and present additional findings in the next subsection

6.5.1 Theoretical and practical implications

From the regression results, I found four distinctive pieces of evidence about the role of FDIs as a driver of technological collaborations with emerging countries. Firstly, the positive impact of inward European FDIs is confirmed only for India and China. Indian and Chinese MNEs invest in overseas activity and perhaps they are more likely to establish linkages with local partners in European regions to access complementary strategic resources, competencies, and knowledge through greenfield FDIs. This result confirms the Springboard perspective and LLL framework could be used to explain the internationalization phenomenon of Indian and Chinese MNEs, which are willing to access to superior technologies and learn from foreign partners through internationalization (Luo and Wang, 2012; Tan and Mathews, 2015; Chadee, Sharma, and Roxas, 2017).

However, these two theoretical approaches are not applicable to discuss the international expansion of MNEs from Brazil and Russia since European FDIs from Brazil and Russia follow a different pattern. In the case of inward FDIs from Brazil, the result is negative. The number of FDIs from Brazil is low. It confirms the marketing-oriented FDIs to Europe. I conclude that they are mainly directed to open new markets es in Europe.

Inward FDIs from Russia are not very much related to technological collaborations between European regions and Russia. I figured out that the relevant industrial sectors regarding FDIs from Russia to European regions are related to financial services, software & IT services, food & tobacco, and the selling of raw materials like coal, oil, natural gas, metals, textiles, and

chemicals (see Table 6.5). It seems that the motivations of Russian firms to invest in Europe through greenfield FDIs is to open new markets, to promote banking, software service, and energies, rather than seek collaborative opportunities to increase the technological development together with European partners.

However, Inward FDIs from Brazil become significant when FDIs are directed to non-innovative European regions (especially for those regions that have historical links with Brazil). The top destination of Brazilian investments goes to regions in southern European countries, such as Portugal and Spain (see Table 6.7). It implies that cultural links might increase the willingness for mutual technological collaborations (Makino and Tsang, 2011).

Inward FDIs from China increase technological collaborations in Europe if firms choose to invest in innovative European regions. This result confirms the view that Chinese firms like to establish partnerships in European developed regions for maximizing their knowledge absorption (Ge and Wang, 2013; Lyles, Li, and Yan, 2014; Piperopoulos et al., 2018). From the Table 6.6, I notice Chinese investors have completed 1,060 FDI projects in innovative European regions, compared to only 229 settled in non-innovative regions. Most inward FDI projects about research and development activities (i.e. design, development & testing, research & development) are related to innovative regions. Chinese MNEs' foreign R&D laboratories may transfer valuable knowledge and generate knowledge spillovers to host countries (Papanastassiou, Pearce, and Zanfei, 2020). I suggest that Chinese firms are using their subsidiaries abroad to transmit their knowledge, to absorb new knowledge derived from high-tech foreign firms, and further increase their opportunities for cooperation (Castellani and Zanfei, 2004; Hurtado-Torres, Arágon-Correa, and Ortiz-de-Mandojana, 2018).

In contrast, technological collaborations are significant when Indian firms choose to localize in non-innovative European regions. One possible explanation for this result could be that the knowledge capability of non-innovative European regions is similar to that of India, which facilitates mutual communication, understanding, and collaboration. Another possible explanation is that non-innovative European regions might be attracted by the technological competencies accumulated by Indian firms, which could be utilized for their co-inventions.

The results also extend the literature on the effect of FDI on innovation. Rather than focusing on the case of a single emerging country, this study compares the FDIs from different

BRIC members to Europe and investigates how they affect technological collaborations with European regions. Different from extant literature on FDI and innovation, this study argues that inward European FDIs from some emerging countries could help the fostering of technological collaborations. It shows that EMNEs are investing abroad to acquire strategic assets to overcome their competitive disadvantages through learning with global players.

This study has practical implications for policymakers in European regions. Firstly, the one-size-fit-size-all FDI strategy might be misleading. European regions show a different pattern of collaborations with emerging countries. I suggest European policymakers should be open to encouraging the FDI's entry from emerging countries in general, and particularly, largely support those from India and China, which appear as countries able to promote technological cooperation with European partners. Secondly, policymakers must launch combinative strategies to maximize the outcomes of technological collaborations, drawing on the different innovative performances of European regions with specific BRIC members (e.g. promoting the FDIs from Brazil to non-innovative European regions).

6.5.2 Limitations and future research opportunities

This study suffers from some limitations that should be addressed in the future research. First, I only compare a few main emerging economies in this study, but the emerging countries are not just limited to Brazil, India, Russia, and China. It would be able to verify the generalizability of my findings if future research involves other emerging countries. Second, I study the effect of inward FDIs on technological collaborations at the regional level. A more detailed analysis at the level of firms could provide a more in-depth result. Finally, in the next few years, an updated panel will allow researchers to further confirm or refute these findings. The recent global pandemic, as well as Russia's recent invasion of Ukraine, have been leading to a drop in inward European FDIs from emerging countries and, in turn, will have an impact on a slowdown in technological collaborations.

Appendix B

Table B.6.1: Number of inward European FDI projects from BRIC and technological collaborations

	INWARD FDI PROJECTS (TO EUROPE)	NUMBER OF TECHNOLOGICAL COLLABORATIONS
BRAZIL	177	93
RUSSIA	896	133
INDIA	952	120
CHINA	1477	286

Table B.6.2: Innovation indicators across BRIC countries

	Average researchers in R&D (per million people)	Patent applications, residents	Average research and development expenditure (% of GDP)
Brazil	580	139756	1.12%
Russia	2982	716053	1.09%
India	162*	220185	0.74%
China	903	11292956	1.50%

*Note: there are many missing values in years from 2000 to 2020, and only 7 years are recorded.

Table B.6.3: The first robustness check—dynamic models (testing H1-H3)

H1:

	(1)	(2)	(3)	(4)
Constant	-0.028	-0.040	-0.0002	0.619*
	(0.096)	(0.120)	(0.115)	(0.269)
lead(Copat with Brazil, (lag.time - 1))	0.025			
	(0.020)			

lead(Copat with Brazil, (lag.time - 2))	0.372***			
	(0.018)			
lead(Copat with Brazil, (lag.time - 3))	-0.022			
	(0.021)			
lead(Copat with Russia, (lag.time - 1))		0.104***		
		(0.018)		
lead(Copat with Russia, (lag.time - 2))		-0.088***		
		(0.018)		
lead(Copat with Russia, (lag.time - 3))		-0.098***		
		(0.016)		
lead(Copat with India, (lag.time - 1))			0.047*	
			(0.019)	
lead(Copat with India, (lag.time - 2))			0.142***	
			(0.018)	
lead(Copat with India, (lag.time - 3))			-0.081***	
			(0.020)	
lead(Copat with China, (lag.time - 1))				0.361***
				(0.020)
lead(Copat with China, (lag.time - 2))				-0.006
				(0.024)
lead(Copat with China, (lag.time - 3))				0.051
				(0.027)
TECH.INT	0.022	-0.028	0.057	-0.574**
	(0.066)	(0.082)	(0.079)	(0.183)
HUM.CAP	-0.005	-0.020	0.014	-0.225**
	(0.030)	(0.037)	(0.036)	(0.083)

GLO.COLL	0.010	0.006	0.011	0.023
	(0.006)	(0.008)	(0.007)	(0.017)
MAN.EMP	0.163	0.565	-0.295	0.297
	(0.283)	(0.354)	(0.339)	(0.792)
IFDI without BRIC	0.008*	0.008	0.008	0.008
	(0.004)	(0.005)	(0.005)	(0.011)
FDI from Brazil	-0.043*			
	(0.017)			
FDI from Russia		0.012		
		(0.013)		
FDI from India			0.025*	
			(0.010)	
FDI from China				0.068***
				(0.020)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	3,250	3,250	3,250	3,250
R^2	0.610	0.209	0.280	0.464
Adjusted R^2	0.571	0.130	0.208	0.410
F Statistic (df = 297; 2952)	15.565***	2.634***	3.872***	8.596***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

H2:

	(1)	(2)	(3)	(4)
Constant	-0.156	-0.028	0.064	0.755

	(0.200)	(0.215)	(0.246)	(0.561)
lead(Copat with Brazil, (lag.time - 1))	0.030			
	(0.027)			
lead(Copat with Brazil, (lag.time - 2))	0.397***			
	(0.024)			
lead(Copat with Brazil, (lag.time - 3))	-0.021			
	(0.028)			
lead(Copat with Russia, (lag.time - 1))		0.193***		
		(0.025)		
lead(Copat with Russia, (lag.time - 2))		-0.107***		
		(0.024)		
lead(Copat with Russia, (lag.time - 3))		-0.089***		
		(0.021)		
lead(Copat with India, (lag.time - 1))			0.043	
			(0.026)	
lead(Copat with India, (lag.time - 2))			0.145***	
			(0.025)	
lead(Copat with India, (lag.time - 3))			-0.079**	
			(0.028)	
lead(Copat with China, (lag.time - 1))				0.360***
				(0.027)
lead(Copat with China, (lag.time - 2))				-0.007
				(0.033)
lead(Copat with China, (lag.time - 3))				0.050
				(0.037)
TECH.INT	0.027	-0.058	0.069	-0.563*

	(0.091)	(0.098)	(0.112)	(0.256)
HUM.CAP	0.025	-0.012	0.024	-0.285
	(0.057)	(0.061)	(0.070)	(0.160)
GLO.COLL	0.008	-0.001	0.015	0.046
	(0.009)	(0.010)	(0.011)	(0.026)
MAN.EMP	0.419	0.388	-0.854	0.445
	(0.627)	(0.674)	(0.771)	(1.760)
IFDI without BRIC	0.013	0.013	0.014	0.004
	(0.007)	(0.008)	(0.009)	(0.020)
FDI from Brazil	-0.085**			
	(0.028)			
FDI from Russia		0.014		
		(0.018)		
FDI from India			0.029	
			(0.016)	
FDI from China				0.079**
				(0.030)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	1,770	1,770	1,770	1,770
R^2	0.627	0.257	0.275	0.462
Adjusted R^2	0.588	0.179	0.199	0.405
F Statistic (df = 169; 1600)	15.931***	3.277***	3.593***	8.125***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

H3:

	(1)	(2)	(3)	(4)
Constant	-0.001	-0.044	0.029	0.089
	(0.050)	(0.154)	(0.034)	(0.149)
lead(Copat with Brazil, (lag.time - 1))	-0.170***			
	(0.027)			
lead(Copat with Brazil, (lag.time - 2))	-0.173***			
	(0.027)			
lead(Copat with Brazil, (lag.time - 3))	-0.170***			
	(0.027)			
lead(Copat with Russia, (lag.time - 1))		-0.109***		
		(0.027)		
lead(Copat with Russia, (lag.time - 2))		-0.100***		
		(0.027)		
lead(Copat with Russia, (lag.time - 3))		-0.118***		
		(0.028)		
lead(Copat with India, (lag.time - 1))			0.209***	
			(0.024)	
lead(Copat with India, (lag.time - 2))			-0.031	
			(0.025)	
lead(Copat with India, (lag.time - 3))			-0.146***	
			(0.026)	
lead(Copat with China, (lag.time - 1))				0.339***
				(0.026)
lead(Copat with China, (lag.time - 2))				-0.138***
				(0.035)
lead(Copat with China, (lag.time - 3))				-0.059

				(0.039)
TECH.INT	0.101	0.215	0.022	-0.840***
	(0.068)	(0.210)	(0.047)	(0.205)
HUM.CAP	0.0003	-0.052	-0.009	-0.030
	(0.015)	(0.047)	(0.010)	(0.045)
GLO.COLL	0.007	0.026*	-0.0003	-0.041***
	(0.004)	(0.012)	(0.003)	(0.012)
MAN.EMP	-0.019	0.837*	-0.026	-0.026
	(0.118)	(0.365)	(0.082)	(0.355)
IFDI without BRIC	0.001	-0.001	0.001	-0.001
	(0.002)	(0.006)	(0.001)	(0.006)
FDI from Brazil	0.017+			
	(0.009)			
FDI from Russia		0.007		
		(0.018)		
FDI from India			0.010**	
			(0.004)	
FDI from China				0.019
				(0.013)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	1,456	1,456	1,456	1,456
R^2	0.202	0.137	0.258	0.367
Adjusted R^2	0.114	0.041	0.176	0.297
F Statistic (df = 145; 1310)	2.294***	1.430**	3.147***	5.230***

Notes: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Table B.6.4: The second robustness check—lagged dependent variable (testing H1-H3)

(1) case I: lag.time=2

H1:

	(1)	(2)	(3)	(4)
Constant	-0.013	-0.058	-0.027	0.444
	(0.100)	(0.122)	(0.116)	(0.256)
FDI from Brazil	0.098***			
	(0.017)			
FDI from Russia		0.016		
		(0.013)		
FDI from India			0.014	
			(0.010)	
FDI from China				0.102***
				(0.019)
TECH.INT	-0.068	-0.104	-0.103	-0.612***
	(0.068)	(0.083)	(0.079)	(0.174)
HUM.CAP	-0.005	-0.0004	0.037	-0.212**
	(0.031)	(0.038)	(0.036)	(0.079)
GLO.COLL	0.030***	-0.002	0.028***	0.037*
	(0.006)	(0.008)	(0.007)	(0.016)
MAN.EMP	0.170	0.417	-0.377	0.994
	(0.294)	(0.360)	(0.341)	(0.756)
IFDI without BRIC	0.008*	0.009	0.009	0.008

	(0.004)	(0.005)	(0.005)	(0.011)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	3,250	3,250	3,250	3,250
R^2	0.561	0.192	0.263	0.388
Adjusted R^2	0.517	0.111	0.189	0.327
F Statistic (df = 294; 2955)	12.842***	2.385***	3.578***	6.361***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

H2:

	(1)	(2)	(3)	(4)
Constant	-0.184	-0.106	-0.108	0.070
	(0.209)	(0.222)	(0.246)	(0.529)
FDI from Brazil	0.146***			
	(0.029)			
FDI from Russia		0.018		
		(0.018)		
FDI from India			0.013	
			(0.016)	
FDI from China				0.131***
				(0.028)
TECH.INT	-0.073	-0.092	-0.115	-0.561*
	(0.095)	(0.101)	(0.112)	(0.241)
HUM.CAP	0.039	0.016	0.082	-0.182
	(0.060)	(0.063)	(0.070)	(0.151)

GLO.COLL	0.039***	0.001	0.034**	0.049*
	(0.010)	(0.010)	(0.011)	(0.024)
MAN.EMP	0.493	0.434	-0.649	2.563
	(0.655)	(0.696)	(0.771)	(1.658)
IFDI without BRIC	0.010	0.017*	0.013	0.002
	(0.007)	(0.008)	(0.009)	(0.019)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	1,770	1,770	1,770	1,770
R^2	0.574	0.222	0.259	0.392
Adjusted R^2	0.530	0.141	0.182	0.329
F Statistic (df = 166; 1603)	13.023***	2.748***	3.370***	6.237***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

H3:

	(1)	(2)	(3)	(4)
Constant	0.015	-0.065	0.016	-0.022
	(0.052)	(0.156)	(0.040)	(0.167)
FDI from Brazil	0.004			
	(0.010)			
FDI from Russia		0.011		
		(0.018)		
FDI from India			0.013**	
			(0.005)	
FDI from China				0.006

				(0.015)
TECH.INT	0.021	-0.131	-0.024	-1.255***
	(0.070)	(0.213)	(0.055)	(0.227)
HUM.CAP	0.001	-0.012	0.004	-0.008
	(0.016)	(0.047)	(0.012)	(0.051)
GLO.COLL	0.004	-0.015	0.010**	-0.001
	(0.004)	(0.012)	(0.003)	(0.013)
MAN.EMP	-0.086	0.429	-0.128	0.175
	(0.123)	(0.370)	(0.095)	(0.398)
IFDI without BRIC	-0.001	-0.002	0.002	0.004
	(0.002)	(0.007)	(0.002)	(0.007)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	1,456	1,456	1,456	1,456
R^2	0.140	0.106	0.180	0.234
Adjusted R^2	0.047	0.009	0.092	0.151
F Statistic (df = 142; 1313)	1.503***	1.092	2.033***	2.828***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

(2) Case II: lag.time=4

H1:

	(1)	(2)	(3)	(4)
Constant	-0.006	0.020	-0.057	0.646*
	(0.115)	(0.137)	(0.126)	(0.310)
FDI from Brazil	0.003			

	(0.020)			
FDI from Russia		-0.014		
		(0.014)		
FDI from India			0.026*	
			(0.011)	
FDI from China				0.183***
				(0.022)
TECH.INT	0.195*	0.055	0.115	-0.479*
	(0.076)	(0.091)	(0.084)	(0.206)
HUM.CAP	-0.030	-0.051	0.033	-0.265**
	(0.036)	(0.043)	(0.040)	(0.098)
GLO.COLL	0.023***	0.008	0.032***	0.017
	(0.007)	(0.008)	(0.008)	(0.019)
MAN.EMP	0.255	0.658	-0.268	0.298
	(0.326)	(0.390)	(0.358)	(0.882)
IFDI without BRIC	0.002	-0.002	0.007	0.032*
	(0.005)	(0.006)	(0.005)	(0.013)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	2,972	2,972	2,972	2,972
R^2	0.582	0.202	0.283	0.420
Adjusted R^2	0.537	0.116	0.205	0.357
F Statistic (df = 289; 2682)	12.912***	2.343***	3.657***	6.717***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

H2:

	(1)	(2)	(3)	(4)
Constant	-0.097	0.242	-0.073	0.318
	(0.250)	(0.257)	(0.279)	(0.670)
FDI from Brazil	0.009			
	(0.032)			
FDI from Russia		-0.014		
		(0.020)		
FDI from India			0.028	
			(0.016)	
FDI from China				0.231***
				(0.034)
TECH.INT	0.198	0.034	0.125	-0.429
	(0.107)	(0.110)	(0.119)	(0.287)
HUM.CAP	-0.010	-0.101	0.074	-0.260
	(0.075)	(0.077)	(0.084)	(0.201)
GLO.COLL	0.031**	-0.002	0.042***	0.025
	(0.011)	(0.011)	(0.012)	(0.028)
MAN.EMP	0.458	0.099	-0.813	1.982
	(0.731)	(0.752)	(0.817)	(1.964)
IFDI without BRIC	0.003	0.002	0.011	0.042
	(0.008)	(0.008)	(0.009)	(0.022)
Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	1,620	1,620	1,620	1,620
R^2	0.592	0.235	0.278	0.421
Adjusted R^2	0.546	0.148	0.196	0.355

F Statistic (df = 165; 1454)	12.797***	2.700***	3.387***	6.399***

Notes: *p<0.05; **p<0.01; ***p<0.001

H3:

	(1)	(2)	(3)	(4)
Constant	-0.077	-0.180	0.052	0.155
	(0.058)	(0.174)	(0.039)	(0.162)
FDI from Brazil	-0.020			
	(0.011)			
FDI from Russia		-0.009		
		(0.019)		
FDI from India			0.015***	
			(0.004)	
FDI from China				0.023
				(0.014)
TECH.INT	0.096	0.207	0.107*	-0.923***
	(0.080)	(0.240)	(0.053)	(0.223)
HUM.CAP	0.016	-0.018	-0.020	0.005
	(0.017)	(0.052)	(0.012)	(0.049)
GLO.COLL	-0.001	0.046***	0.004	-0.025
	(0.005)	(0.014)	(0.003)	(0.013)
MAN.EMP	0.166	1.112**	0.0004	-0.789*
	(0.135)	(0.405)	(0.090)	(0.378)
IFDI without BRIC	-0.004	-0.006	0.001	-0.001
	(0.002)	(0.007)	(0.002)	(0.007)

Regions FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	1,330	1,330	1,330	1,330
R^2	0.155	0.119	0.226	0.324
Adjusted R^2	0.058	0.017	0.137	0.246
F Statistic (df = 137; 1192)	1.601***	1.170	2.539***	4.168***
Notes:	*p<0.05; **p<0.01; ***p<0.001			

Chapter 7 Conclusions

The research topic of the EMNEs' internationalization strategy has received increasing attention. This thesis aims to enhance the understanding of the internationalization process of EMNEs and further explore the relationship between internationalization and innovation performance.

Specifically, I systematically review the extant studies on the internationalization of Chinese MNEs and emphasize the research perspectives by grouping selected literature. The research perspectives include entry mode, degree of internationalization, determinants of FDI location choices, driving factors of OFDI activities, post-internationalization process, and OFDI outcomes. Finally, I provide the agenda for future research to advance the knowledge of the internationalization of Chinese MNEs. I suggest that the innovation performance driven by overseas investments is necessary to be studied more deeply. Then, I discussed four theories in international business studies (the OLI paradigm, Uppsala Model, LLL framework, and Springboard perspective) employed in the prior literature and discuss how the theories are applied to explain the internationalization strategy of Chinese firms.

Moreover, I look at the relationship between internationalization and innovation with a focus on emerging firms and countries through three research papers. First, I investigate the innovation impact driven by OFDI, studying the effect of post-CBMAs on Chinese firms' innovation performance in the short and long terms. This study also detects how the target industry' selection, innovation level of host countries and innovation capability of target firms affect the result. The unbalanced panel dataset built between 1993 to 2021 finds that CBMAs effectively foster innovation performance over time. Through CBMAs, Chinese firms could access to advanced expertise and knowledge from foreign countries. In particular, acquiring target firms from a different industry or innovative host countries could help for obtaining more advanced technologies and resources, which contribute to the innovation capability of Chinese firms. The role of the innovation level of target firms is less significant because both innovative and non-innovative target firms contribute to innovation performance in this study. I suggest that Chinese firms could largely increase their innovation capability by acquiring

heterogeneous knowledge from the target firms in different industries or investing in innovative target countries that have superior knowledge and resources that could be accessed by Chinese firms.

Second, I use the case of Chinese electric vehicle (EV) firms' entering European markets to analyze their advantages and disadvantages during international investment in Europe. The competitive advantages of Chinese EV firms in Europe are built by exploiting FSAs that are accumulated in China (e.g. innovative technologies in EVs, the concept of building user-centric companies) and mitigating potential disadvantages (e.g. lack of customers' knowledge, dealership networks, manufacturing sites) in European markets through several ways, such as increasing the ability to transfer patents from China to Europe, making specific investments for the European market, referring to the international experience of successful Chinese firms, hiring managers and employees from host countries, investing in local production bases and selling channels, collaborating with local distributors, retailers and charging companies, and learning from other organizations or individuals to obtain institutional knowledge.

Specifically, the advantages involve innovative technologies in EVs, fast development of software, a focus on customer-centric services, substantial financial power, mass production capabilities, closeness to suppliers, qualified product portfolios, and awareness of building charging infrastructures. The disadvantages are the inability of transferring several patents to Europe, lacking brand awareness, European markets' knowledge, design knowledge, international managerial expertise, European manufacturing sites, selling, and after-sales services as well as relationships with host countries, and less flexibility in products and unattractive price.

The necessary strategy for Chinese EV firms is to focus on addressing the disadvantages in order to being more competitive in Europe than their rivals. The corresponding solutions to overcome the disadvantages are: increase the grant rate of these patents in Europe, improve the exposition of the products to local customers through both online and offline channels, provide low-cost EVs in less developed regions, co-label/co-sell its products with a local firm, make specific investments for the European market to obtain intangible assets, use the experience of other successful Chinese internationalized firms, hire managers and employees from host countries, jointly establish factories, acquire local OEMs, establish partnerships or alliances

with other local companies to provide service, choose host countries that are willing to collaborate with China, etc. This study intends to understand the early stage of internationalization of Chinese firms operating in a new industry and figure out the difficulties or challenges in international development, which have been ignored in previous studies.

Third, I explore the effect of inward European FDIs from BRIC countries to Europe on the technological collaborations between Europe and BRIC. Then, it compares the results among BRIC countries and different innovation performances of European regions (i.e. innovative and non-innovative European regions). India and China are the only two countries that contribute to technological collaboration. India and China are more willing to learn and communicate with European regions to boost their strategic assets through FDIs. The results further provide empirical support for the argument that several emerging markets employ FDI to link with foreign players, acquire strategic assets, and learn from them in host countries (Mathews, 2006; Luo and Tung, 2007). The insignificance effects in the case of Brazil and Russia are that both countries' MNEs are more likely to sell natural resources and open new markets in Europe through FDIs by analyzing their industry sectors and industry activities in Europe.

It is found that the innovation level of European regions is a determining factor of the relation between technological collaborations and FDIs from BRIC to Europe. This positive result is related to the investment in non-innovative European regions for India, and innovative European regions for China. In the case of India, I suggest that the innovation capability of non-innovative European regions is similar to that of India, which facilitates mutual communication and collaboration. Also, non-innovative European regions might be more attracted by the technological competencies of Indian firms, which could be utilized for their co-inventions. However, Chinese firms are willing to establish linkages with players in innovative European regions through greenfield FDIs.

Although FDIs from Brazil do not contribute to technological collaboration in general, the result becomes positive when FDIs go into non-innovative European regions. I suggest that those regions have historical links with Brazil, which might facilitate communications and interactions with European players and further enhance the collaborative chances. However, FDIs from Russia do not have any impact on technological collaborations, regardless of the innovation degree of European regions, confirming their intent of exploring markets to sell

products or services in Europe.

This thesis makes several contributions to the literature on the internationalization of Chinese firms. First, I review the literature, including extensive and more recent papers, identifying research gaps of individual research themes and research recommendations for future studies in Chapter 2. Then, I provide theoretical insights on how IB theories are applied in the previous literature in Chapter 3.

Second, Chapters 4 to 6 also contribute to the studies on the internationalization of emerging market firms and their innovation performance from diverse dimensions. Additionally, I consider a case analysis of Chinese EV firms that transferred from traditional automakers in Chapter 5. I provide insight to understand Chinese EV firms' early internationalization, and more importantly, identify the disadvantages that might impede the success of Chinese EV firms' investment in Europe, except for discussing their advantages. Chinese firms from a new industry (EV industry in this chapter) have possessed many superior technologies that allow being used when expanding overseas markets. This phenomenon complies with the OLI paradigm proposed by John Dunning (Dunning, 1980).

Moreover, the thesis incorporates different entry modes (i.e. CBMAs or greenfield FDIs), different research levels (i.e. at a firm or regional level), and diverse dimensions of patent data to measure innovation performance (i.e. firm granted patents or regional collaborative patents) in Chapters 4 and 6 to figure out the innovation effects of EMNEs through international expansion, which is not extensively considered in previous studies.

EMNEs, latecomers in global markets, are motivated to access and obtain strategic assets from abroad through internationalization. FDI is relevant in this intent and crucial for them to convert the acquired knowledge and resources into innovative outputs. The empirical findings of this thesis make the contribution to this case by suggesting the significant role of FDI in fostering innovative outcomes of EMNEs (Chapter 6) and Chinese MNEs in particular (Chapters 4 and 6). In this regard, I suggest that the LLL framework and the Springboard perspective enable to explain the motive of garnering advanced assets and learning from foreign players for many Chinese MNEs through the internationalization process. However, from the empirical evidence of Chapter 6, I found not MNEs from all emerging countries intend to learn and cooperate with foreign actors through OFDI, so I additionally argue that the LLL and

Springboard aspects might not be used to explain the internationalization of every EMNE.

Also, as discussed in each chapter, this thesis also provides implications to managers and policymakers who are intended to implement an internationalization strategy or formulate relevant policies in this context. For managers, this thesis provides theoretical guidance on how to choose types of CBMAs to improve innovation performance for Chinese firms in general, and how to overcome obstacles in Europe to promote their business abroad for EV firms in particular. Accordingly, I suggest the Chinese government should encourage and support FDIs by providing some favorable policies to Chinese firms. As for the policymakers in Europe, I suggest they should be open-minded to receiving FDIs from emerging countries in general, and especially largely supports FDIs from India and China.

However, this thesis has some limitations. First, for the literature review, my database involves the studies written in English published in high-quality journals following the previous studies, but it does not include academic work from other journals, languages, and sources (e.g. conferences, book chapters, newspapers). Second, in Chapter 4, the innovation performance of Chinese firms is measured as the number of patents granted to each firm. However, there are other benchmarks to evaluate the innovation performance at firm levels, such as innovative products and sales. Such additional indicators are not included in the study due to the limitation of data availability. Also, this study only considers the case of Chinese firms and CBMAs. This result might not be generalizable to explain the influence of internationalization on the innovation performance of firms in other emerging countries or other entry modes.

As for the study in Chapter 5, the internationalization process of Chinese EV firms investing in Europe is a quite new phenomenon. Many of them entered European markets in 2018. To the best of my knowledge, this is the first analytical paper that explores the advantages and disadvantages of Chinese EV firms in Europe. However, such findings are based on current situations and might change with time. More studies are required to explore and analyze Chinese EV firms' overseas investment in the next following years. In Chapter 6, the comparison is made among some examples of emerging countries, but the emerging countries are not just limited to BRIC members. Also, the study explores the relationship between inward European FDIs and technological collaborations at the regional level, rather than at the firm level, due to data constraints.

Finally, I provide several suggestions for future research according to the limitations of my thesis. For the literature review, future research could involve academic papers published in different sources and journals to cover a wider range of databases. As for the research on the effect of post-CBMAs on innovation performance, future research could collect more data that measures innovation performance from different channels. In addition, further studies could verify my findings by employing the case of other emerging economies as well as of other foreign entry modes. Furthermore, in terms of the study on Chinese EV firms in Europe, international investments conducted by Chinese EV firms begin to occur over the last few years. With more data available in the next few years, I suggest future research could extend to explore whether the advantages and disadvantages of Chinese EV firms change over time and figure out the reasons for such changes if exist. Additionally, it could be interesting to make a comparison between different periods.

Last, in terms of the research on the effect of inward European FDIs on technological collaborations, I call for future research to extend this study by collecting firm-level data. Therefore, we could have a more detailed understanding of which specific firms from BRIC countries drive technological collaborations with European players and how they collaborate with European actors. Furthermore, the recent global pandemic and Russia's invasion of Ukraine could impact the number of FDI projects from emerging countries to Europe, which might decrease the effect on technological collaborations. Therefore, future research could consider using an update panel to further confirm or refute these findings.

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