

Justus-Liebig-Universität Gießen
Fachbereich 07: Mathematik und Informatik, Physik, Geographie
Institut für Geographie

Outward FDI from China
Historical Development, Geographical Distribution and the
Obstacles to Subsidiary Business Success

Dissertation zur Erlangung des akademischen Grades
Doctor rerum naturalium (Dr.rer.nat.)

Vorgelegt von
Yuefang SI, M Sc.

Erstgutachter: Prof. Dr. Ingo Liefner

Zweitgutachter: Prof. Dr. Gang Zeng

Gießen, Juni 2013

Wissenschaftliche Betreuung: Prof. Dr. Ingo LIEFNER, Institut für Geographie
der Justus-Liebig-Universität Gießen

1. Gutachter: Prof. Dr. Ingo LIEFNER

2. Gutachter: Prof. Dr. Gang ZENG

Tag der Disputation: 06 August 2013

Table of Contents

Table of Contents	I
List of Tables.....	IV
List of Figures.....	V
Abbreviation.....	VI
Acknowledgements.....	VIII

Summary

Literature Review and Self-evaluation	1
1 Introduction: Research context.....	1
2 Theoretical perspectives	2
2.1 Mainstream theoretical research on FDI	2
2.2 Theories on emerging country FDI from other perspectives.....	3
3 Empirical studies review	6
3.1 General FDI from China.....	6
3.2 FDI from China to Germany	10
4 Own work and contribution.....	11
4.1 Research design and methodology: Field study	11
4.2 Outline and publication status of articles	12
4.3 Origin, policy suggestions and further research	15

Article 1

The Development of Outward FDI Regulation and the Internationalization of Chinese Firms ... 21
Si Y, 2014. Journal of Contemporary China, 23 (88).

1 Introduction	21
2 Theoretical review: Institutions and MNEs.....	22
3 The history of Chinese outward FDI.....	24
3.1 Brief history of Chinese outward FDI (1978- Present)	24
3.2 Phase 1 (1978-1991): Standardization of the approval procedure.....	25
3.3 Phase 2 (1992-1998): Tightening of the approval procedure	26
3.4 Phase 3 (1999-2005): From approval to supervision.....	27
3.5 Phase 4 (2006-Present): Supervision and providing service	27
4 Case study: Lenovo	30
4.1 Phase 1: The establishment of Lenovo Hong Kong	30
4.2 Phase 2: Listed in the Hong Kong Stock Exchange in 1994 and becoming a domestic brand	31

4.3 Phases 3 and 4: M&A and the path to becoming an international company	31
5 Conclusion and discussion	32

Article 2

Foreign Direct Investment with Chinese Characteristics: A Middle Path between Ownership-Location-Internalization Model and Linkage-Leverage-Learning Model

Si Y, Liefner I, Wang T, 2013. Chinese Geographical Science, doi: 10.1007/s11769-013-0603-z.

1 Introduction	37
2 Theoretical Framework	38
2.1 Ownership-Location-Internalization (OLI) Model.....	38
2.2 Linkage-Leverage-Learning (LLL) Model.....	39
2.3 Comparison between Ownership-Location-Internalization (OLI) Model and Linkage-Leverage-Learning (LLL) Model	40
3 Methods and Materials	41
3.1 Methods: Case studies and location quotient analysis.....	41
3.2 Materials: Personal observation and official database.....	41
4 Results	42
4.1 Spatial structure of a Chinese company: Sany	42
4.2 Similarities and differences between China' s outward FDI to developed and to developing economies	45
4.3 Diversified motivations of China' s outward FDI to developed and developing economies	49
5 Discussion	51
6 Conclusion.....	52

Article 3

Cognitive Distance and Obstacles to Subsidiary Business Success -The Experience of Chinese Companies in Germany

Manuscript accepted with major revision in Tijdschrift voor Economische en Sociale Geografie.

1 Introduction	55
2 Theoretical background: Learning, unlearning and cognitive distance.....	57
2.1 Liability of foreignness (LOF), psychic distance and cognitive distance	57
2.2 Liability of outsider (LOO) and local embeddedness.....	57
2.3 Resources-based view (RBV): New Argonauts	58
3 Literature Review	59
4 Research, method and data	60

4.1 Research area.....	60
4.2 Company population in the study region.....	61
4.3 Data collection: understanding Chinese foreign subsidiaries.....	62
4.4 Sample characters.....	62
5 Results	63
5.1 The external cognitive distance stemming from liability of foreignness (LOF)	64
5.2 The negative effects of embeddedness: the emergence of internal cognitive distance	64
5.3 Characteristics of the enterprises' resources: different positions of subsidiaries in the cognitive distance structure	65
5.4 The lack of new Argonauts.....	66
6 Conclusion and discussion	67
 Article 4	
Emerging Cognitive Distance within and between Firms: Conceptual Remarks and an Application to Chinese Foreign Direct Investment in Germany	72
<i>Manuscript accepted with major revision in Eurasian Geography and Economy.</i>	
1 Introduction: FDI and cognitive distance	72
2 Overview: Outward FDI from China	73
3 Theoretical review: Knowledge, cognitive distance and transnational companies (TNCs)	75
3.1 What is cognitive distance and where does it come from?.....	75
3.2 The interaction between learning and cognitive distance.....	76
3.3 Absorptive and communicative capabilities.....	77
4 Methods and data.....	78
5 Empirical observations	79
5.1 What causes cognitive distance?	79
5.2 Why carry out FDI in Germany? A stepping stone with two faces.....	80
5.3 Dynamics: The increasing importance of cognitive distance between headquarters and subsidiary.....	82
5.4 The ability is important: the capability of subsidiaries and the delocalization of headquarters.....	83
6 Discussion and conclusion	84
 Appendix 1 Discussion Guide for Expert Interview	89
Appendix 2 Discussion Guide for Company Interview.....	94
Erklärung.....	104

List of Tables

Summary

Table 1 The main contents of the IDP path and the OLI model.....	2
Table 2 The comparison between the OLI model and the Uppsala model	3
Table 3 New perspectives of developing country MNEs research.....	4
Table 4 Books about Chinese outward FDI and Chinese MNEs	7
Table 5 Data source comparison between IB, EG literature and my dissertation	13
Table 6 Overview of individual papers and own contribution	13

Article 1

Table 1 Examples of the co-evolution between regulation and FDI development.....	29
--	----

Article 2

Table 1 Differences between original and modified OLI models	38
Table 2 Comparison between OLI and LLL frameworks	40
Table 3 Geographical distribution of China's FDI flows from 2005 to 2010	47
Table 4 Industrial LQ index in EU, USA, Russia and ASEAN	48
Table 5 Important pull factors of host countries	50
Table 6 Suitable application of modified OLI and LLL frameworks.....	51

Article 3

Table 1 Relevant concepts and their core arguments	59
Table 2 Characteristics of companies and experts interviewed.....	63

Article 4

Table 1 The geographical and industrial evolution of Chinese firms in Germany.....	75
--	----

List of Figures

Article 1

Figure 1 The comparison between the IDP model and Chinese inward and outward FDI	25
Figure 2 Historical developments of Chinese FDI and regulations.....	29

Article 2

Figure 1 Spatial distribution of Sany branches.....	44
Figure 2 Sany's strategic approach to foreign investment	45
Figure 3 Growth of Chinese outward FDI from 1979 to 2010	46
Figure 4 Functional composition of Chinese overseas branches in 2009.....	49
Figure 5 Motivation structure of China's FDI to developed and developing economies	50

Article 3

Figure 1 Chinese investment in Germany	60
Figure 2 The cognitive distances between parent firms, subsidiaries and local customers.....	65
Figure 3 The background of manager groups' influence on cognitive distance structure.....	66
Figure 4 The subsidiary ownership's influence on cognitive distance structure.....	66

Article 4

Figure 1 The historical comparison between FDI from China and FDI from China to Germany.....	74
Figure 2 Optimal cognitive distance model.....	77

Abbreviation

APFC	Asia Pacific Foundation of Canada
ASEAN	Association of Southeast Asian Nations
CCPIT	China Council for the Promotion of International Trade
CEA	Chinese Enterprises Association
CEO	Chief Executive Officer
CITIC	China International Trust and Investment Corporation
EDC	Economic Development Corporation
EG	Economic Geography
EU	European Union
FDI	Foreign Direct Investment
FRM	Frankfurt/Rhine/Main
GDP	Gross Domestic Product
HP	Hewlett-Packard Company
HQ	Headquarters
IB	International Business
IBM	International Business Machines corporation
IDP theory	Investment Development Path theory
IPO	Initial Public Offering
IT	Information Technology
LCC	Chinese-character Card
LCF	Latecomer Firm
LLL model	Linkage-Leverage-Learning model
LOF	Liability of Foreignness
LOO	Liability of Outsidership
LQ	Location Quotient
M&A	Merger and Acquisition
MINMETALS	China Metals and Minerals Import and Export Corporation
MNE	Multinational Enterprise
MOFCOM	Ministry of Commerce of the People's Republic of China
NBS	National Bureau of Statistics of the People's Republic of China
NDRC	National Development and Reform Commission

NRW	Northrhine-Westfalia
OECD	Organisation for Economic Co-operation and Development
OLI model	Ownership-Location-Internalization advantage model
PBC	People's Bank of China
PC	Personal Computer
PR	Public Relations
R&D	Research and Development
RBV	Resources-based View
SAFE	State Administration of Foreign Exchange of the People's Republic of China
SASAC	State-owned Asset Supervision and Administration Commission
SC	State Council of the People's Republic of China
SCCIOICE	Survey on Current Conditions and Intention of Outbound Investment by Chinese Enterprises
SOE	State-Owned Enterprise
SPC	the State Planning Commission
TNC	Transnational Company
UNCTAD	United Nations Conference on Trade and Development
USA	the United States of America
USD	United States dollar
WTO	the World Trade Organization

Acknowledgements

Time flies really fast. It feels like yesterday I arrived in Germany for the first time. For the last four years, I have studied for my doctor degree at the Department of Economic Geography at the Justus-Liebig-University Giessen. Meanwhile, I also enjoyed life abroad which was quite different from my experience in China before. Without the help and companionship of my colleagues and friends, my life in Giessen would not be so happy and fruitful.

First of all, I would like to express my gratitude to my supervisor Prof. Dr. Ingo Liefner. He helped me to choose a very good/ research topic. He worked with me side by side for publications. He taught me how to manage cooperation and communication with persons from different backgrounds. Most of all, he guaranteed a four-year period in which I could focus on my favorite work in my favorite way. This was a priceless experience in my life.

I owe an enormous debt of gratitude to my second supervisor Prof. Dr. Gang Zeng at East China Normal University, who also recommended me to come to Giessen initially. He showed me how to achieve the target by hard-working and how to handle the cross-cultural differences. He was also the supervisor of me and my husband for master degree. For me, he is a teacher, a friend and a guide for my research journey.

In addition I would like to thank Dr. Stefan Hennemann for being so brilliant, diligent and critical. He was always nice to show me how to work and how to live in Germany. I also want to say thank you to Prof. Dr. Tao Wang at Nanjing Normal University who encouraged me to finish my doctoral thesis and with whom we wrote a joint article. Moreover, I would add my sincerely thanks to Ms. Erika Bothur who treated me like a daughter.

I also feel grateful to my dear colleagues and friends, who helped me a lot no matter with business or in a private life. Dr. Christian Brömer, Dr. Stefan Ohm and young, clever, hard-working and nice Dr. Dominik Schmid introduced me into the German research and life styles. Dr. Arman Peighambari worked close with me in the darkest period of my PhD study. We discussed extensively about the research topics and the empirical studies. The time with him in the conference ‘China goes global’ in Harvard was really enjoyable. Another thanks goes to Alev Mercan, who was thoughtful, capable and kind-hearted enough to get me rid of the miserable and complicated paperwork in the final period of my PhD study. She has barely slept to help me preparing the final defense. The mortarboard that she made together with Sabine Jessberger and Dr. Anne Schindler is the favorite gift I got in Germany. Michael Rehberg is always brilliant and enlightening. I wish I could have spent more time with all of them.

The time I spent with friends will be unforgettable for me. The ‘wine tasting’ with Prof. Dr. Juerg Luterbacher, Elena, Elena, Andrea, Andrea, Anne, Johannes and Xiangping was always lovely. I could not imagine how approachable a professor can be before knowing Juerg, how vigorous and responsible a person can be before knowing Elena and how

uncomplicated and smart a girl can be before knowing Anne. The international atmosphere in this group attracted me. The ‘lady’s night’ with Ana and Ina was nice too. No matter watching films, cooking or just chatting, we always forgot the time. Of course, I want to thank my Chinese friends, such as Mulan, Qinling, Xiaohuan, Fengli, Sishu and Wen. Sorry for not mentioning everyone by names. We took trips together. We played games together. We celebrated festivals together. They have been my family in Giessen.

Furthermore, I want to thank Mr. Norbert Noisser from the State of Hessen, Ms. Polly Yu from Frankfurt Economic Development GmbH, Mr. He from China Telecom and other interviewees. Sorry for not mentioning everyone by names. Thanks to their kindness and openness, I could finish my field study successfully.

Last but not least, I want to express my great love and respect to my parents and my husband Shaopeng. They have always been supporting me with selfless love to pursue my dreams. The years without me have really not been easy for them. They have never complaint instead they have tried to do their best to help me and to support me. I am really lucky to have them all. Finally I would like to express my gratitude to my parents in law and my sister in law for their kindness and understanding.

Now my time in Germany has reached the end and I will go back to China again. I wish that all my colleagues, friends and family members can make their dreams come true.

Yuefang SI
August 2013
Giessen, Germany

Summary: Literature Review and Self-evaluation

1 Introduction: Research context

China has new corporate champions. These multinationals, firms like Haier, Huawei and Mindray, have entered developed markets like Europe and the United States of America (USA). [...] It's clear that a new breed of Chinese company is emerging that is able to compete on the world stage.

---British Broadcasting Corporation, 28 February 2012

China is now very strange for many Europeans: It triggers the fear that Chinese companies will buy up German ones. [...] What is harmless for individual companies is threatening the German economy. The real dangers such as industrial espionage and the gradual loss of competitiveness - these are real dangers for a country that sees its strength in the superior quality of its research and development. The transfer of knowledge, coupled with acquisitions, can accelerate the loss of these advantages.

---Financial Times Germany, 15 June 2011

The stories about ‘Chinese outward foreign direct investment (FDI)’ or ‘Chinese multinational enterprises (MNEs)’ have recently made front-page news in the major global newspapers. This new, fast-growing and substantial FDI, especially the trend to developed economies, has raised many doubts in the public mind as mentioned above: why do the Chinese firms come to our country, since “made in China” means cheap products and low quality? Are they coming here to take the technology back to China which may cause many employees to lose their jobs here? These doubts are partly due to the limited knowledge about the Chinese outward FDI, and partly because it is a Chinese phenomenon. Compared with developed country MNEs, Chinese firms have some distinct characteristics:

- They are regarded as latecomer firms (LCFs), which are late entrants to industries, not purposely but due to historical need. They do not possess ownership advantages initially, for example they lack technology and global market access (Mathews, 2002);
- Their investment overseas is increasingly driven by asset augmentation, namely technology, management and brand. (Dunning *et al.*, 2008);
- Their investment is highly influenced by the home government which orchestrates a catch-up strategy (Fan, 2011).

Chinese outward FDI challenges the classic internationalization theories, which are based on the observation of traditional FDI from developed economies that are historically, economically and institutionally different from China (Liefner and Zeng, 2008). It is questionable whether these theories are applicable to Chinese outward FDI. The empirical studies on FDI from China can benefit the further development of these theories.

Despite the significant theoretical and empirical meanings of Chinese outward FDI, the related research remains at the initial stage. Therefore, this dissertation is concerned with two major issues: the general image of Chinese outward FDI, i.e. historical development and geographical distribution, and the motivation and difficulties of Chinese firms in developed economies. Germany is taken as an example.

This summary part is organized as follows: the discussion will begin with the mainstream theories from the international business (IB) field on FDI and new perspectives enlightening the study on FDI from China. I will then summarize the empirical studies on Chinese outward FDI and the stream to Germany. The last section provides a conclusion, including a summary of the methodology and data, the main theoretical and empirical findings and the potential further research.

2 Theoretical perspectives

Most research on FDI has been conducted in the IB field. The three prevailing IB theories, namely the Ownership-Location-Internalization advantage model (OLI model), the Investment Development Path (IDP) theory and the Uppsala Internationalization process model (Uppsala model for short) cannot fully explain the internationalization of Chinese firms. It has been argued that other business, social or economic geography (EG) perspectives can be integrated into the FDI research to create new models (United Nations Conference on Trade and Development (UNCTAD), 2007). Each new perspective corresponds to the new characteristics of FDI from China mentioned previously. In this section, I will briefly introduce the three IB models and then the new perspectives and their contribution to FDI research. The detailed information about each theory please refers to the theoretical parts in the articles 1 to 4.

2.1 Mainstream theoretical research on FDI

The OLI model and the IDP theory: The mainstream FDI theories, which were developed in the 1980s based on the experiences of MNEs from developed countries (Dunning, 1988; 1993), are comprised of two related parts: the OLI model and the IDP theory. The OLI model focuses on the MNEs' behavior with the assumption that firms will internationalize on the basis of a definable competitive advantage, such as superior proprietary resources or managerial capabilities concerning know-how, reputation, the value chain and marketing, that allows them to secure enough return to cover the additional costs and risks associated with operating abroad. This also means that internationalization is motivated by a firm's wish to exploit its existing ownership advantages. Therefore, it focuses on the overseas possibilities for asset-exploitation (Dunning and Narula, 1996). The IDP theory relates the outward and inward FDI position of a country to a country's level and structure of economic development. According to the IDP, outward FDI is expected to be undertaken only when a country has reached a certain minimum level of development, at which time ownership advantages may have evolved among firms in that country. The outward FDI pattern will therefore reflect the evolving nature of ownership advantages of domestic firms as well as changes in the advantages of the home economy vis-à-vis potential host economies. Table 1 lists the main points of the OLI model, the IDP theory and their linkages.

Table 1 The main contents of the IDP path and the OLI model

IDP	FDI position	FDI types	OLI advantage
Stage I (GNP pc:<\$2000)	Modest IDI & limited outward FDI	<ul style="list-style-type: none"> • Asset exploiting <ul style="list-style-type: none"> – Natural resource seeking – Market seeking – Efficiency seeking 	<ul style="list-style-type: none"> • Ownership Initially mainly country-specific; later becoming more firm-specific
Stage II (GNP pc:\$2000-\$3500)	Outward FDI beginning in lower technology sectors	<ul style="list-style-type: none"> – Efficiency seeking 	<ul style="list-style-type: none"> • Location Access & use of local resources, capabilities, institutions & markets
Stage III (GNP pc:\$3500-\$8000)	Intra-industry FDI increases	<ul style="list-style-type: none"> • Asset augmenting <ul style="list-style-type: none"> – Created asset & competence seeking 	<ul style="list-style-type: none"> • Internationalization Utilization of ownership & location through internalization
Stage IV (GNP pc:>\$8000)	FDI in higher technology sectors & outward FDI rising faster than IDI		
Stage V	Balanced NOI		

Note: GNP is short for gross national product, IDI for inward direct investment, NOI for net outward FDI

Source: adapted from Dunning et al., 2008

The Uppsala model: This is another prominent FDI theory. According to this model, the most important obstacle to internationalization is lack of knowledge, which can be reduced through incremental decision-making and experiential learning about the foreign markets and operations (Johanson and Vahlne, 1977). Therefore, firms would subsequently formalize their overseas operations in individual countries in the order of the establishment chain - no regular export activities, export via independent representatives, sales subsidiary and production/manufacturing. Firms have the choice tendency as well: first geographically and culturally close countries, and then more distant countries after gaining overseas experience. The Uppsala model is quite different from the OLI model (Table 2). Firstly, it is developed based on the empirical observation of enterprises from Sweden, which has comparatively small domestic markets, while the OLI model is based on MNE practices from the USA. Secondly, it is a behavioral model of gradual internationalization rooted in the knowledge-based view. It studies the whole process of internationalization, while the OLI model pays more attention to the spectacular overseas investment of mature MNEs (Johanson and Wiedersheim-Paul, 1975). Hence, the Uppsala model has advantages in analyzing the earlier internationalization period of MNEs involving knowledge learning and experimental learning.

Table 2 The comparison between the OLI model and the Uppsala model

	OLI model	Uppsala model
Theoretical approach	Neo-classic perspective	Behavior, dynamic and evolutionary perspective
Time period	The operations of the firms during later years when they have already become large and international	The whole process including the period of becoming and being and MNE
Assumption	A firm internationalizes on the basis of absolute competitive advantage despite obstacles of foreignness	The most important obstacles to internationalization are lack of knowledge and resources. These obstacles are reduced through incremental decision-making and learning about the foreign markets and operations.
Location choices	Ethnocentric/polycentric	Geocentric/regiocentric
Empirical foundation	Large enterprises, from the USA in particular	Small and medium-size enterprises, from small domestic markets such as Sweden
Representative scholars	Dunning	Johanson, Vahle and Wiedersheim-Paul

Source: Own draft

2.2 Theories on emerging country FDI from other perspectives

Besides IB theories, the theories from other fields also contribute to the research on developing country MNEs. Here, I will briefly introduce four theories, the importance of which has been accepted: institutions theory, the linkage-leverage-learning (LLL) model, network theory and the proximities study (Table 3).

Table 3 New perspectives of developing country MNEs research

Themes	Institutions theory	LLL model	Network theory	Proximities
Main disciplines	Social science	Strategic management	Social science and organization studies	Knowledge management and geography
Representative scholars	<ul style="list-style-type: none"> • Li and Peng (2008); Peng <i>et al.</i> (2008) • Cantwell <i>et al.</i> (2010); Dunning and Lundan (2008) • Voss <i>et al.</i> (2009); Buckley <i>et al.</i> (2008) 	<ul style="list-style-type: none"> • Bartlett and Ghoshal (2000) • Mathews (2002, 2006) 	<ul style="list-style-type: none"> • Rugman and Verke (2007) • Coviello and Munro (1997); Coviello (2006) 	<ul style="list-style-type: none"> • Nooteboom (2000, 2007) • Hess (2004) • Boschma (2005) • Huber (2012)
Analytical Focus	<ul style="list-style-type: none"> • Integrating institutions into IB theories • Policy influences on FDI • Institutional environment and MNE behavior 	<ul style="list-style-type: none"> • Catch-up process and active knowledge acquisition • Linkage between developed country MNEs and developing country LCFs 	<ul style="list-style-type: none"> • Network positions and internationalization • Liability of outsidership (LOO) 	<ul style="list-style-type: none"> • Cognitive proximity • Organizational proximity • Social proximity • Institutional proximity
Corresponding characters of Chinese FDI	<ul style="list-style-type: none"> • Highly influenced by the home government 	<ul style="list-style-type: none"> • LCFs • Driven by technique seeking. • Investment in developed economies 	<ul style="list-style-type: none"> • Highly integrated into global value chains • Linkage with foreign customers and buyers before investment 	<ul style="list-style-type: none"> • Geographically scattered • A large portion of FDI flows into developed economies

Source: Own draft

Institutional theory: The broader new institutionalism movement has been prominent throughout the social sciences in the last three decades pioneered by economists (North, 1990) and sociologists (Scott, 2001). It is viewed as one of the top three most insightful theories when probing into emerging economies and the third pillar of studying FDI from developing and emerging economies (Peng *et al.*, 2008). The institutional theory has commented that these economies, especially China, are typically characterized by an active governmental involvement in business, both through ownership and through regulation (Zeng and Bathelt, 2011). The political and sociological support is important for Chinese firms to acquire assets that enable them to compete in the world market. To be specific, the institutional research focuses on three aspects: establishing the theoretical framework which integrates the institutional perspective into the existing IB models (Dunning and Lundan 2008; and references therein); analyzing policy and government influences on FDI development on the macro level (Voss *et al.*, 2009; and reference therein); and the effects of the institutional environment on the foreign investment strategies of developing country MNEs (Child and Tsai, 2005; and reference therein).

LLL model: Catching-up theories were derived from the study of late industrializing countries such as Germany and Austria in Europe during the 19th century, and were subsequently used to explain the phenomenon marked by LCFs from Japan and subsequently from East Asian newly industrialized countries (Bartlett and Ghoshal, 2000). Among the catching-up theories, the LLL model utilizes the case of LCFs from the Asia-Pacific region breaking into knowledge-intensive industries to illustrate the dynamics of the LCFs' catching-up process. Against the background of globalization, it argues that LCFs should not be too concerned about generating new knowledge, but rather about integrating themselves into existing value chains - constructed either by MNEs or by advanced firms from developed countries looking to globalize their value chains of production, logistics and research and development (R&D) – in order to adapt existing capabilities as fast as possible for their catch-up endeavors. Linkage, leverage and learning are the three steps for knowledge acquisition and catching up (Mathews, 2000). This model is later applied to the explanation of the LCFs' internationalization. It argues that LCFs attach the highest importance to ensuring that national firms become global players through an emphasis on outward FDI as well as on inward FDI. While inward FDI can be used to promote linkages within the domestic economy, outward FDI is a way of building linkages with the global economy. Accordingly, outward FDI is undertaken by LCFs to facilitate technological access due to the fact that they are constrained by assimilation capabilities and policy distortion in their home countries (Mathews, 2007).

Network theory: A number of studies have demonstrated the role of networks in the internationalization of firms. Coviello and Munro (1997) conducted empirical studies of the internationalization of small software firms. They found that network relationships have an impact on foreign market selection as well as on the mode of entry in the context of ongoing network processes. Martin *et al.* (1998) stated that the inter-organizational relationships of suppliers, especially those with buyers, affected their pattern of international expansion. Moreover, Coviello (2006) developed a model of "how international new venture networks evolve" during the early phase of internationalization. Overall, the network theory states that internationalization occurs due to the need for the firm to establish and develop positions in relation to counterparts in foreign networks through business and social networks other than through internalization. Before entering a foreign market where they have no relevant network, a firm suffers from the LOO. With the help of the local network after entering the foreign market, the developing country MNEs can obtain more know-how, knowledge and information to serve long-term economic objectives (Johanson and Mattsson, 1988; Liefner and Hennemann, 2011). This theory not only studies the location specificity, but also pays attention to relational positions in a network. The importance of business networks has been highly acknowledged by the IB theories (Rugman and Verke, 2007) and integrated into

the new update of the OLI model and the Uppsala model (Dunning and Lundan, 2008; Johanson and Vahlne, 2009).

Proximities study: The importance of geographical proximity/ distance is one of the key issues in EG. Economic geographers have contributed to the literature by putting emphasis on the many advantages of being co-located. With the notion of ‘de-territorialisation of closeness’ (Bunnell and Coe, 2001), they have also pointed out that geographical proximity per se is neither a necessary nor a sufficient condition for learning to take place. Nevertheless, it facilitates interactive learning, most likely by strengthening the other dimensions of proximity, such as organizational, social, institutional and cognitive proximities (Boschma, 2005). In contrast to the arguments from the psychic distance analysis in the Uppsala model and the network theories, geographers claim that proximity may also have negative impacts due to the problem of lock-in and overembeddedness (Hess, 2004). Accordingly, not only too little, but also too much proximity may be detrimental to interactive learning and innovation. Among the proximities, cognitive proximity/distance has the strongest connection with interactive knowledge sharing and learning. Cognitive distance is defined as knowledge differences in the knowledge bodies of different actors in networks (Nooteboom, 2000). Nooteboom proposed an inverted U-shaped relationship between cognitive distance and learning. As the cognitive distance increases, so does the positive effect of resource heterogeneity. It thus yields opportunity for novel combinations of complementary resources. However, as the cognitive distance increases, the positive effect of resource homogeneity decreases, which hinders the mutual understanding and collaboration (Nooteboom *et al.*, 2007; Huber, 2012). The deeper and more thorough research of proximity/ distance in the fields of geography and knowledge sharing enables a better perspective to understand the geographical distribution of FDI from developing economies and the investments of developing country MNEs in developed countries, which involve active knowledge learning and are faced with many liabilities and obstacles caused by large cognitive distances.

The three IB theories and four perspectives from business, social, knowledge management and geographical fields are very useful to understand the FDI from China. The institutional theory, the LLL model, network theory and cognitive distance study are particularly inspiring to study the FDI from China to developed economies where the Chinese MNEs need to learn knowledge and are faced with all kinds of obstacles. They are the theoretical foundation of the following articles in this dissertation, where the specific reviews and comments about each theory are discussed.

3 Empirical studies review

3.1 General FDI from China

Similarly to theoretical research, most empirical studies on Chinese FDI have been carried out in the IB field. Therefore, I will summarize the main publications in this field and then introduce the empirical work done by EG scholars, which has high relevance for my research.

Inspired by the appeals for more empirical research on FDI from China to extend present theorizing concerning the FDI theories, two series of workshops have been held since 2008. One was in the USA. The workshop “China Goes Global” has been carried out every year, hosted by Harvard University. The other is in Europe, namely ‘Emerging Multinationals: Outward FDI from Emerging and Developing Economies’, held once every two years. The host is the Copenhagen Business School. In addition to these workshops and extensive discussion between scholars, several special issues have been published, for example Chinese Management Studies, Volume 3 Issue 1 (2009), Thunderbird International Business Review, Volume 54 Issue 2 (2012) and Journal of World Business, Volume 47 Issue 2 (2012). Several books have been published as well (Table 4).

Table 4 Books about Chinese outward FDI and Chinese MNEs

Editor(s)/ Author(s)	Book title	Type	Main contents
Yang (2005)	China's Offshore Investments: A Network Approach	Monograph	Patterns of China's outward FDI, the relevance of network relationships and technological configuration to FDI
Shen and Edwards (2006)	International Human Resource Management in Chinese Multinationals	Edited book	The evolution of human resource management in Chinese companies, recruitment and selection, rewards and compensation and employee relations
Rajan <i>et al.</i> (2008)	New Dimensions of Economic Globalization: Surge of Outward Foreign Direct Investment from Asia	Edited book	Intra-region FDI in Asia
Larcon (2008)	Chinese Multinationals	Edited book	Cooperate strategy, internationalization process and innovation
Ramamurti and Singh (2009)	Emerging Multinationals in Emerging Markets	Edited book	Business strategies and theory update
Sauvant (2009)	Investing in the United States: Is the US ready for FDI from China?	Edited book	Political controversies and legal and business implications associated with Chinese investment in the US
Sauvant <i>et al.</i> (2009)	The Rise of Transnational Corporations from Emerging Markets: The Challenges ahead	Edited book	FDI theory update, FDI trend, policy implications
Alon <i>et al.</i> (2010)	China Rules – Globalization and Political Transformation	Edited book	Political economy and governance; institutional trade and investment patterns; industry cases
Buckley (2010)	Foreign direct investment, China and the World Economy	Edited book	FDI theory, FDI history and policy
Voss (2011)	The Determinants of Chinese Outward Direct Investment	Monograph	FDI patterns and determinants
Huang and Austin (2011)	Chinese Investment in Australia: Unique Insights from the Mining Industry	Monograph	Entry process, success factors and lessons
Forns <i>et al.</i> (2012)	The China-Latin America Axis: Emerging Markets and the Future of Globalisation	Monograph	Investment and business of the main players at both the country/region and company levels

Source: Own draft

In general, they can be divided into three types. Firstly, the edited books and reports are mainly about FDI from emerging economies, including from China, such as “The Rise of Transnational Corporations from Emerging Markets” and the World Investment Report 2006 by UNCTAD entitled “FDI from Developing and Transition Economies”. They were typical around 2007, when the research about Chinese outward FDI was in its initial stage. The second type consists of edited books concentrating on Chinese FDI. These books cover diversified aspects of Chinese investment, such as patterns, motivations, entry modes and political influences. They are mainly the fruits of workshops and conferences. The third type involves monographs based on doctoral or postdoctoral research. Except for Yang’s book, most monographs have emerged in the past two years. Each of them focuses on one topic (Voss, 2011), on one industry (Huang and Austin, 2011) or on one host country or region (Forns *et al.*, 2012). The time series of these publications reveal the increasingly focused, solid and deep empirical studies in the IB field. In both the articles and the books, the empirical parts mainly concentrate on the following topics (Child and Rodrigues, 2005): The specialty of Chinese MNEs and Chinese outward FDI and how it challenges the present theories (Deng, 2009; and references therein);

- The general trend, pattern and location choices of Chinese FDI (Ramasamy *et al.*, 2010; and references therein);
- Motivations, entry mode and business strategies (Cui and Jiang, 2009; and references therein);
- The role of government and state-owned enterprises (Luo *et al.*, 2010; and references therein);
- Technology, catching-up process and outward FDI (Li, 2007; and references therein);
- Liability of foreignness (LOF) (Klossek *et al.*, 2012; and references therein).

Regarding the host countries, Chinese investment in Africa is undoubtedly the most heated topic, including the exploitation of natural resources, government involvement and environmental impact (Kaplinsky and Morris, 2009); then investment in Europe and the USA, concerning business safety, government involvement, active knowledge absorption, brand establishment, upgrading along the value chain and LOF (Zhang and Duysters, 2010); thirdly, the investment in Australia, concerning natural resource seeking, state-owned enterprises (SOEs) and merger and acquisitions (M&As) (Drysedale and Findlay, 2009); finally, the investment in Asia, for example the role of Hong Kong and industrial parks in East Asia (Zhou and Lall, 2005). The data falls into three categories: the statistical data from UNCTAD (1979 - present), the Almanac of China’s Foreign Economic Relations and Trade and the Statistical Bulletin of China’s Outward FDI released by the Ministry of Commerce of the People’s Republic of China (MOFCOM) (2003 - present) or from the data of a host country from its statistical database, for example the Deutsche Bundesbank provides a series of data about Chinese firms in Germany; commercial data, such as Thomson Dealogic, which provides firm-based or project-based data focusing on large-scale M&As; first-hand data collected by the authors via interviews, questionnaires and case studies. Owing to the small number of Chinese MNEs and their reluctance to accept the interviews, the number of data samples is mostly less than 20. All in all, the empirical studies on Chinese MNEs and Chinese outward FDI have been developed in terms of both quality and quantity, which provides a better foundation for theoretical development. Meanwhile, more first-hand firm data and field study is needed for further improvement

MNEs and globalization are also one of the main issues in the EG discussion (Giese *et al.*, 2011). Compared with the research in IB field, the geographers pay less attention to the decision making, coordination and human resources management inside the companies. Instead, they carry out works in companies’ location choices, inter-firm linkage and the interaction between firms and the institutional environment the firms embedded in on firm level. On region or country level, geographers have interest in the interaction between spaces, such as talent flows, products flows and knowledge flows between different places. Therefore, the present work of the economic geographers has different focuses from IB scholars. Meanwhile, rare books or special issues concerning outward FDI from mainland China has been published,

although this topic attracted the interest of many geographers (Yeung and Liu, 2008; and references therein). Most work has been implemented under the umbrella of ‘Chinese business firms’ which are owned or operated by Chinese people, no matter they come from mainland China, Taiwan, Hong Kong, Singapore or other parts of the world (Smart and Smart, 2000; Yeung and Olds, 2000). To be specific, geographers’ work includes six main streams:

- Chinese diasporas, the migration of Chinese people and the inter-country knowledge flow (Hsu and Saxenian, 2000; and references therein);
- Chinese diasporas and start-up enterprises in a foreign country (Wong and Hg, 2002; and references therein);
- Family-owned enterprises, Guanxi and their influence on the firms’ location choice and inter-firm network (Lu, 2012; Tan and Yeung, 2000; and references therein);
- Chinese MNEs and the globalization of R&D (Fan, 2011; and references therein);
- Entrepreneurship and the internationalization of Chinese firms (Yeung, 2009; and references therein);
- Investment in developed economies and technical absorption (Lim, 2008; and references therein).

Among economic geographers, Henry Yeung has conducted deep and thorough research for twenty years based on the empirical evidence of the investment of Hong Kong and Singapore firms in East Asia. He has written several frequently cited books regarding the internationalization of Chinese firms, for example *Transnational Corporations and Business Networks: Hong Kong Firms in the Association of Southeast Asian Nations (ASEAN) Region* (Yeung, 1998), *Entrepreneurship and the Internationalization of Asian Firms: An Institutional Perspective* (Yeung, 2002) and *Chinese Capitalism in a Global Era: Towards Hybrid Capitalism* (Yeung, 2003), which analyze in detail the role of business networks, entrepreneurship and institutional environment in the internationalization process of Chinese firms. Meanwhile, several geographers have also studied the overseas Chinese business network on the empirical basis of Taiwanese investment in mainland China (Hsing, 1996) and in the USA (Zhou, 1998). However, they elaborate upon different arguments. In contrast to the works on mainland China that support the opinion that Guanxi provides resources for Chinese firms to coordinate and control transnational business, Hsu and Saxenian (2000) state that the skill and competence required for technological upgrading are not necessarily guaranteed within the ethnic network. Although ethnic networks facilitate transnational business and technology cross-fertilization, it seemingly goes too far to argue that the USA–Taiwan connection is another version of Chinese Guanxi capitalism. Comparing overseas Chinese investment coming from Hong Kong and Taiwan to mainland China, Yang (2006, 2007) argues that Hong Kong and Taiwan investments have followed different transformation paths with regard to sector composition, investment motivations, market orientation, entry modes and strategies in response to institutional changes. All these studies discovered the special nature of overseas Chinese enterprises, such as ownership and the management of business networks. They also conclude a diversity of Chinese capital, which varies between home and host countries. Since outward FDI from mainland China has distinct characteristics compared with others, i.e. against the special institutional background of “globalizing China”, a complex phenomenon in which the Chinese State is strategically and intricately entangled with the corporate interests of its leading business firms, more empirical studies are needed to fill this gap (Yeung and Liu, 2008).

To conclude, most empirical research by geographers is based on first-hand data, with the assistance of second-hand data, i.e. statistical data or archive material. The field study takes half a year or longer. Therefore, their empirical studies are solid. Moreover, they study not only Chinese MNEs, but also small and medium-sized enterprises run by overseas Chinese. They have a historical tradition of describing the interaction between firms and the institutional environment, particular the role of the government and culture in Chinese business. They attempt to reveal how the human flow, capital flow and goods flow link

China with other parts of the world. The focus on the relationship between firm and country is one of their competitive advantages compared with IB scholars.

3.2 FDI from China to Germany

Although Europe has received a relatively small amount of Chinese FDI, Chinese FDI has attracted the attention of managers and policy-makers in Europe for its recent landmark cross-border M&As (Clegg and Voss, 2011). Given that the research on Chinese outward FDI is still in its initial stage, there has been limited empirical research focusing on Europe. The present empirical findings indicate that investment is highly related to knowledge acquisition and learning. Based on a case study of Chery Automobile Co. Ltd, a Chinese company that is attempting to catch up technologically via acquisitions in Europe, Zhang *et al.* (2012) demonstrate that the internationalization of Chinese firms is a process in which they gradually integrate strategic alliances. Strategic alliances and acquisitions help Chinese firms enhance their internationalization competence. Minin and Zhang (2010) found evidence of the growing tendency of Chinese companies to engage in less explorative and more exploitative R&D activity, adapting technologies developed elsewhere for the European market, gaining access to good indigenous labor and technologies. Moreover, Chinese firms are facing more difficulties in Europe than in other regions because of many factors. For example, the trade between China and Europe is relatively low, there is less experience with respect to Europe, and there are a relatively large number of deals related to state owned enterprises, which makes a deal sensitive (Ebberts and Zhang, 2010). Research on England and Italy shows similar results to the research on Europe in general. Liu and Tian (2008) examine the patterns of and the motives for Chinese enterprises investing in the UK based on questionnaires collected from 20 companies. They conclude that Chinese firms investing in developed countries are driven by the attractions of large markets and asset augmentation, and problems of psychic distance can be offset by the benefits from such investment activities. Pietrobelli *et al.* (2011) investigate the motivations driving Chinese outward direct investment to Italy based on 9 in-depth interviews with key informants and senior managers of Chinese affiliates in Italy. They claim that Chinese investments in Italy are increasingly targeting the acquisition of technological capabilities and of design skills and brands to tap local competences available in specialized manufacturing clusters in sectors such as automobiles and home appliances. The main industries of specialization of Chinese outward FDI in Italy reflect this approach and appear to be related to China's strategy to increase the sophistication of its exports and to move away from standardized commodities and intermediate manufacturing and components.

We now turn to examining the literature on Chinese investment in Germany. Knoerich (2010) analyzed 5 Chinese acquisitions of German firms in the machinery and equipment industry. His paper shows that German firms can gain substantially from the global ambitions of the Chinese firms for advancement of their own business objectives. This is due to complementarities in the motivations for engaging in the deals, as well as the underlying strategic needs of both firms. In the context of emerging economy enterprises acquiring advanced economy firms, motivations on both sides of the acquisitions appear to go beyond the commonly known goals such as capital transfer and additional market access, as the acquisitions provide the companies involved with conditions favorable to expansion into previously inaccessible market segments. Liu and Woywode (2012) used in-depth interviews with 5 Chinese companies in Germany to discover the influence of absorptive capacity on the post-M&A operation. They found out that a light-touch approach, which maintains the domestic management team and provides decision-making autonomy, enables the success of subsidiaries. Klossek *et al.* (2012) present insights from 31 semi-structured face-to-face interviews with employees belonging to 7 Chinese MNEs and stakeholders and find that Chinese MNE subsidiaries' strategies to reduce their LOF depend on the establishment mode chosen: the subsidiaries established via acquisition are more likely to use due diligence, sharing control

with the local management and sharing work with local forces, whereas those established via greenfield prefer installing key employee roles.

To conclude, current discussion has been of a rather general and conceptual character, with very limited empirical investigation. Most of the above-mentioned research focuses on four aspects: general trend and pattern of Chinese investment, motivation of Chinese enterprises, LOF, and M&As as well as managerial and cultural integration after M&As. They are explorative and involve qualitative research with around 20 interviews or less than 10 case studies. Given that the current work has mainly been done by IB scholars, the inter-firm linkage and the geographical perspective are missing. More empirical works are needed if people wish to understand the Chinese investment in Germany and to modify the theories based on them.

4 Own work and contribution

Against this theoretical and empirical background, I started the research on FDI from China in 2009. This PhD dissertation consists of four papers. The first two papers state the historical development and geographical distribution of Chinese outward FDI based on the archival documents and statistical data. They were written before the field study as an initial step towards understanding the general characteristics of Chinese outward FDI. The latter two papers were finished after the field study, which focuses on the specific behavior of Chinese MNEs in Germany. Since this field study provides unique first-hand data for my dissertation and is also an important part of my empirical work, I will briefly introduce the general information of the field study in this section. I will then summarize the main contents and results of the four papers, the theoretical and empirical contribution, and further research.

4.1 Research design and methodology: Field study

A qualitative approach has advantages for discovering how and why things happen when the area of research is in this infant period and the researcher is engaged in theory-building types of research (Ghauri and Hronhaug, 2005). It has been widely applied in the empirical research on Chinese outward FDI, as illustrated in the literature review section. Therefore, I have chosen two qualitative data collection methods - overt participant observation and interviews - as the methods of carrying out field study from April 2011 to February 2012.

Overt participant observation was implemented with the state of Hesse as a major supporting institution. I collected information from formal events within the local Chinese community, such as “Focus on China- Frankfurt/Rhine/Main (FRM) inviting you”, “China in Dialogue” and “China Talent Day”. Secondly, I held informal talks with the participants during free time, such as lunch or dinner, drinking and sports time. I then referred to the above-mentioned local publications and gray materials. The extensive participant observation allowed me access to informal discussions and interchanges, and provided inductive understanding of actors’ perceptions.

Interviews were conducted in three steps. Firstly, I interviewed 19 experts or key persons in government and public organizations to gain an initial impression of Chinese MNEs in Germany. I then approached the Chinese MNEs. I held 19 interviews with general managers or other members of the management group. Finally, I held 18 interviews with associations, parent firms, local partners or customers and service corporations to gather their comments on Chinese firms’ behavior. Each interview lasted 2 hours and 45 minutes. For detailed information on the research region, sample characters and the way I arranged and carried out interviews, please refer to article 3 (Page 60).

I designed the interview guidelines as questionnaires with specific options. When carrying out interviews, I asked open questions and ticked off the options after I received the answers from interviewees, followed by the successful experience or failure in detail. If I received answers that went beyond the

questionnaire, I added these as one of the options in the following interviews. I assumed that the answers that interviewees gave were the most important factors in their minds. This method is used to avoid the subjective bias when designing questionnaires with definite options.

There were two sets of interview guidelines (Referring to the appendix 1). One was used in expert interviews in steps 1 and 3 to evaluate the role of the expert and organizations in the process of Chinese investment in Germany and to learn their attitude to Chinese firms as the third party. The expert interview had four parts in total. It began with the general information of the expert or the institute in which he or she worked. The second part was his or her evaluation of Chinese MNEs in Germany in general, including industry, entry modes and successful examples. The third part concerned the establishment of branches, such as the motivation, location choice and competitive advantage. The last part was about difficulties and firms' contribution to the local and the Chinese economy.

The other was used in the interviews with Chinese firms in step 2 (Referring to the appendix 2). The firm interview guideline was very similar to the expert interview, but the questions about the firm were more specific and detailed. It began with the general information of the firm, including the year of establishment, ownership, industry, function, entry model, employees and brief introduction of the interviewee (mostly managers). The second part concerned the establishment of branches, such as the motivation, location choice and competitive advantage. It was followed by the business operation after the cross-border investment, for example local embeddedness and knowledge acquisition channels and objectives. The last part was about difficulties in Germany and cooperation and communication with headquarters in China. The two kinds of interview guidelines are attached as appendixes in this dissertation (Appendix 1 and 2).

When writing articles, I cite the information from the interviews directly as the evidence for testing the existing theories and supporting our arguments. This kind of direct citation and description has been used widely in EG research (Yeung, 1998; and references therein).

Table 5 compares my database with other empirical research from the EG and IB fields. Most geographers have started their research on mainland Chinese MNEs in the last 5 years. Therefore, their research is mainly based on official statistics and case studies. The research on Chinese investment in Europe, on the other hand, is mainly conducted by IB scholars on the basis of firm interviews.

In contrast, my research is based on statistics, reports, local newspapers and 56 interviews not only with firms, but also with other players such as officers and local partners. The triangle data set could provide more sound evidence for understanding the Chinese firms in Germany.

4.2 Outline and publication status of articles

This section presents the main content of articles 1 to 4. The topic, theoretical foundation, main empirical issues, publication status of each articles and my contribution to them are also summarized in Table 6. The table also shows each article's connection with two main issues in the introduction section (page 1) and theoretical review section (Page 2-6).

Table 5 Data source comparison between IB, EG literature and my articles

EG literature			IB literature			My papers	
Authors	Host regions	Data	Authors	Host regions	Data	Article	Data
Yeung and liu (2008)	-	20 Interviews	Liu and Tian (2008)	England	20 questionnaires	1	Statistics and 1 case study
Lim (2008)	Korea	CCPIT data/ 2 Case studies	Pietrobellia <i>et al.</i> (2011)	Italy	9 interviews	2	CCPIT reports and 1 case study
Brienen <i>et al.</i> (2010)	Europe	Statistics	Knoerich (2010)	Germany	5 interviews	3	56 interviews with
Fan (2011)	-	2 Case studies	Liu and Woywode (2012)	Germany	5 interviews	4	government office, firm manager and other experts
			Klossek <i>et al.</i> (2012)	Germany	31 interviews		

Note: CCPIT is short for the China Council for the Promotion of International Trade; - means no data

Table 6 Overview of individual papers and own contribution

Article	Topic	Focus	Theoretical foundation		Main empirical issues	Publication status	Own Contribution			
			IB theory	Other theory			I	T	E	C
1	History	Temporal data	IDP theory	Institution	<ul style="list-style-type: none"> In what way are regulations important for FDI in different periods? 	Accepted by Journal of Contemporary China	●	●	●	●
2	Geographical distribution	Geographical distribution and spatial division	OLI model	LLL model	<ul style="list-style-type: none"> Do Chinese MNEs have different motives when investing in developed economies and in developing economies? 	Published in Chinese Geographical Science	●	●	●	●
3	Difficulty	In Germany	Uppsala model	Network, proximity	<ul style="list-style-type: none"> What is the logic of Chinese MNEs? What causes obstacles for Chinese firms in Germany? 	Accepted with major revision Tijdschrift voor economische en sociale geografie	●	●	●	●
4	Motivation and difficulty	In Germany	Uppsala model	Proximity	<ul style="list-style-type: none"> What causes cognitive distance? The dynamic changes of cognitive distance? 	Accepted with major revision Eurasian Geography and Economy	●	●	●	●

Note: I is short for introduction, T for theoretical part, E for empirical part, C for conclusion. ● means that I did all of the work and ● means that I did half of the work.

Article 1 The Development of Outward FDI Regulation and the Internationalization of Chinese Firms In this article, I trace the historical development of Chinese outward FDI and its co-evolution with the FDI regulation. According to the statistical data and the change of the Chinese government's attitude towards outward FDI, I divide the history into four phases - Phase 1 (1978-1991): Standardization of the approval procedure; Phase 2 (1992-1998): Tightening of the approval procedure; Phase 3 (1999-2005): From approval to supervision; Phase 4 (2006-present): Supervision and providing service - and illustrate the policy, FDI characteristics and company behavior in each phase. In this article, I manage to answer the following question: in what way are regulations important for FDI in different periods? Theoretically, I prove that the FDI development of China still follows the IDP model; however, the Chinese government has accelerated the whole process through active regulation reform. In a transition economy such as China, FDI co-evolves with regulation changes, and the firms which are able to influence or foresee the policy changes can prosper considerably. Chinese outward FDI provides sound evidence on how important institutions are in explaining the behavior of Chinese MNEs as foreground factors rather than in the background.

Article 2 Foreign Direct Investment with Chinese Characteristics: A Middle Path Between the Ownership-Location-Internalization Model and the Linkage-Leverage-Learning Model This article intends to investigate the geographical image of FDI from China based on the comparison between Chinese outward FDI to developed economies and that to developing economies. Here, I review the pros and cons of two important theories, known as the OLI model and the LLL model, and use the statistical data and company case studies from China to test the plausibility of these two models. I believe that neither of them are totally suitable: the OLI model is quite useful for understanding FDI from China to developing economies, while the LLL model is more powerful for explaining the FDI to developed economies. I argue that the companies from China attain a very advantageous position as intermediates in the global economy. They may catch up with the first movers if they integrate OLI-led and LLL-led FDI within one firm. This combination can bring together the most advanced knowledge acquired in developed economies with the knowledge about adaptation needs and the needs for cost reduction in production as expressed in developing economies. It may also accelerate the knowledge transfer globally.

Article 3 Cognitive distance and obstacles to subsidiary business success - the experience of Chinese companies in Germany From this article on, I shift my attention from the general image description to the stream of FDI to developed economies. I take Germany as an example. In contrast to the information from the mass media which claim the success of Chinese outward FDI, I find during the field study that Chinese firms in Germany are faced with considerable difficulties. The survival of Chinese firms is critically dependent on managing the differences in the knowledge bodies of the two regions, which is a general internationalization process involving knowledge learning. In contrast to network and proximity theories which emphasize efforts of subsidiaries to overcome obstacles via local embeddedness and absorbing local resources, this article shows that a fast and successful process of becoming embedded in the host region can hamper the subsidiary's success, as it may cause conflict with the parent firm. My line of thought is based on applying the perspective of the company. While most other related studies in EG primarily examine regions or regionally confined networks, I place the firm in the center of focus. For the research question posed here, this is indeed a promising angle and complements the existing literature.

Article 4 Emerging cognitive distance within and between firms: Conceptual remarks and an application to Chinese foreign direct investment in Germany This article is an extension of article 3. It focuses on the cognitive distance concept, which offers a powerful tool for understanding the motivation and difficulties of Chinese firms in Germany. Cognitive distance is also an important concept in the proximity discussion of EG scholars which is still underdeveloped. Based on qualitative information, this paper discusses factors contributing to cognitive distances between firms in China and in Germany, such as

language or institutional and market differences, and shows that FDI is made to serve as a way of reducing or bridging this cognitive distance. Our research unpacks the concept of global pipelines for knowledge sharing in a local-global context and explores the great difficulties to be overcome for such pipelines to transfer knowledge.

4.3 Origin, policy suggestions and further research

This dissertation contributes to the small but growing body of literature on the internationalization of Chinese companies and their knowledge learning and overcoming LOFs in developed countries. I systematically study the following issues concerned Chinese MNEs:

- The general development of China's Outward FDI
 - The historical development of Chinese outward FDI and the role of government in this history
 - The geographical distribution of Chinese outward FDI and the motivations of Chinese investment
- The Chinese investment in Germany
 - The motivation of Chinese investment in Germany
 - The difficulties of Chinese firms to survive in Germany

This research may contribute to the theoretical development in the IB field. It introduces the geographical perspective into IB studies (Nachum and Zaheer, 2005). Firstly, it has been proved that the regulation evolution in China has not changed the general trend of FDI development as IDP theory indicates, however it changes the tempo-spatial distribution of Chinese outward FDI. When the Chinese government had strong control over outward FDI before 1998, developed economies were more important destinations; however, more FDI flowed to developing economies when the Chinese government began to encourage outward FDI later. The high influence of regulation on location choice has been missing from the traditional IB field. Secondly, neither the OLI model nor the LLL model fully explains the Chinese FDI. This research reveals the effect of the host country on firms' location choice and behavior. Thirdly, the concept of cognitive distance is a dynamic inter-firm relationship concept widely applicable in internal and external network studies, which is also deeply related to country-level institutional factors. This research proves that it provides a better framework than psychic distance from the Uppsala model for evaluating the evolution of an MNE in the internationalization process, the institutional interaction between the host country and the home country via communication, as well as coordination inside MNEs. Therefore, more work needs to be done to integrate the geographical perspective into FDI research.

This dissertation may contribute to EG development as well. It suggests that the combination of investment to developing and developed economies may allow Chinese firms to combine the most advanced knowledge acquired in developed markets with the knowledge about adaption needs and the need for cost reduction in production as expressed in developing countries. With this strategy, Chinese MNEs can function as a shortcut for the otherwise long path that a new idea takes from its first use in expensive and innovative products in developed economies to its final application in a much more basic and cheap product in developing countries. This will not only provide companies with dynamically evolving business opportunities, but may also shorten the time span that innovative companies in developed economies need to exploit their ideas economically. Therefore, this study unpacks the possibility of Chinese firms functioning as a global pipeline between China, developed and developing economies. Based on the empirical study in Germany, it provides evidence of how a global pipeline could be founded and implemented by bridging and reducing the cognitive distance along the pipeline. I also argue that if the cognitive distance cannot be effectively overcome, a dysfunctional pipeline can impede the success of the investment made, which can be bad for the subsidiary, its host regions and clusters, and can have negative

effects for the investing firm as a whole, therefore limiting the positive impact of the investment on the host region. The firm perspective from IB theories thus offers a complementary view that may contradict what geographers find with an examination of regions and network linkages only.

Empirically, this dissertation could increase the understanding of Chinese MNEs. For Chinese firms, it is very important to monitor the regulation changes in China and the host countries. The changeable policy and regulation in China as well as the political and cultural barriers from host countries could lead to both great opportunities and political risks. Therefore, Chinese firms need to monitor and adapt to the institutions and institutional changes efficiently and effectively. It is also essential for Chinese firms to realize the LOFs despite the great attractiveness for business before investing in developed economies.

This paper can bring policy suggestions as well. For Chinese officers, they need to accept that a healthy business environment in China is important to nurture top world MNEs in the long term. The internationalization of Chinese firms will cause institutional changes in China in the future as well. For host country governments, particularly from developed economies, a friendly business environment and talents who are familiar with both China and western knowledge will attract more investments from China.

As this study has been an initial attempt to understand FDI from China, future research could investigate different directions.

- Deeper research on actors of local networks in Germany, i.e. the comparison between Chinese MNEs and the small startups run by overseas Chinese; the role of the German government and producer services in the location choices and internationalization process of Chinese MNEs;
- Deeper research on the types of linkages in local networks, i.e. which kind of linkage is more important for knowledge sharing for Chinese firms - interpersonal linkage or business linkage;
- The globalization of Chinese R&D. Although I have attempted to understand the market and technical knowledge learning of Chinese firms in Germany, the interview cases mainly have a sales function. Therefore, carrying out thorough case studies on firms with R&D functions, such as Huawei, will be my next step to integrate the technological learning of Chinese firms in Germany (Zeng *et al.*, 2011).

References

- Alon I, Chang J, Fetscherin M, Lattemann C, McInyre J R (Eds.), 2010. *China Rules: Globalization and Political Transformation*. Basingstoke: Palgrave Macmillan.
- Bartlett C A, Ghoshal S, 2000. Going global: Lessons from late movers. *Harvard Business Review*, 2000 March.
- Boschma R A, 2005. Proximity and innovation: A critical assessment. *Regional Studies*, 39 (1): 61-74.
- Buckley P J (Ed.), 2010. *Foreign Direct Investment, China and the World Economy*. Basingstoke: Palgrave Macmillan.
- Buckley P J, Cross A R, Tan H, Liu X, Voss H, 2008. Historic and emergent trends in Chinese outward direct investment. *Management International Review*, 48 (6): 715-748.
- Bunnell T, Coe N, 2001. Spaces and scales of innovation. *Progress in Human Geography*, 25 (4): 569-589.
- Cantwell J, Dunning J H, Lundan S M, 2010. An evolutionary approach to understanding international business activity: The co-evolution of MNEs and the institutional environment. *Journal of International Business Studies*, 41 (4): 567-586.

- Child J, Rodrigues B S, 2005. The internationalization of Chinese firms: A case for theoretical extension? *Management and Organization Review*, 1 (3): 381-410.
- Child J, Tsai T, 2005. The dynamic between firms' environmental strategies and institutional constraints in emerging economies: Evidence from China and Taiwan. *Journal of Management Studies*, 42: 95-126.
- Clegg J, Voss H, 2011. Inside the China-EU FDI bond. *China & World Economy*, 19 (4): 92-108.
- Coviello N E, Munro H, 1997. Network relationships and the internationalisation process of small software firms. *International Business Review*, 6 (4): 361-386.
- Coviello N E, 2006. The network dynamics in the international new venture. *Journal of International Business Studies*, 37 (5): 713-731.
- Cui L, Jiang F, 2009. FDI entry mode choice of Chinese firms: A strategic behavior perspective. *Journal of World Business*, 44 (4): 434-444.
- Deng P, 2009. Why do Chinese firms tend to acquire strategic assets in international expansion? *Journal of World Business*, 44 (1): 74-84.
- Drysdale P, Findlay C, 2009. Chinese foreign direct investment in Australia: Policy issues for the resource sector. *China Economic Journal*, 2 (2): 133-158.
- Dunning J H, Kim C, and Park D, 2008. Old wine in new bottles: A comparison of emerging-market TNCs today and developed-country TNCs thirty years ago. In P K Sauvant (Ed.), *The Rise of Transnational Corporations from Emerging Markets*. Cheltenham: Edward Elgar Publishing Limited, 158-179.
- Dunning J H, 1988. *Explaining International Production*. London: Unwin Hyman.
- Dunning J H, 1993. *Multinational Enterprises and the Global Economy*. Berkshire: Wokingham.
- Dunning J H, Lundan S M, 2008. Institutions and the OLI paradigm of the multinational enterprise. *Asia Pacific Journal of Management*, 25 (4): 573-593.
- Dunning J H, Narula R, 1996. The investment development path revisited: Some emerging issues. In J H Dunning, R Narula (Eds.), *Foreign Direct Investment and Governments*. London: Routledge, 1-41.
- Ebbers H, Zhang J, 2010. Chinese investments in the EU. *Eastern Journal of European Studies*, 1 (2): 187-206.
- Fan P, 2011. Innovation, globalization, and catch-up of latecomers: Cases of Chinese telecom firms. *Environment and Planning A*, 43 (4): 830-849.
- Forns G, Butt-Philip A, Fornés G, Philip A B, 2012. *The China-Latin America Axis: Emerging Markets and the Future of Globalisation*. Basingstoke: Palgrave Macmillan.
- Ghauri P, Gronhaug K, 2005. *Research Methods in Business Studies: A Practical Guide*. Prentice Hall: Financial Times.
- Giese E, Mossig I, Schröder H, 2011. *Globalization of the Economy. An Economic Geography Introduction (Globalisierung der Wirtschaft. Eine wirtschaftsgeographische Einführung)*. Paderborn: Verlag Ferdinand Schöningh.
- Hess M, 2004. Spatial relationships? Towards a reconceptualization of embeddedness. *Progress in Human Geography*, 28 (2): 165-186.
- Hsing Y, 1996. Blood, thicker than water: Interpersonal relations and Taiwanese investment in southern China. *Environment and Planning A*, 28 (12): 2241-2261.
- Hsu JY, Saxenian A, 2000. The limits of Guanxi capitalism: transnational collaboration between Taiwan and the USA. *Environment and Planning A*, 32 (11): 1991-2005.

- Huang H, Austin I, 2011. *Chinese Investment in Australia: Unique Insights from the Mining Industry*. Basingstoke: Palgrave Macmillan.
- Huber F, 2012. On the role and interrelationship of spatial, social and cognitive proximity: Personal knowledge relationships of R&D workers in the Cambridge information technology cluster. *Regional Studies*, 46 (9): 1169-1182.
- Johanson J, Vahlne J-E, 1977. The internationalization process of the firm - a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8 (1): 23-32.
- Johanson J, Vahlne J-E, 2009. The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40 (9): 1411-1431.
- Johanson J, Wiedersheim-Paul F, 1975. The internationalization of the firm - four Swedish cases. *The Journal of Management Studies*, 12 (3): 305-322.
- Johanson J, Mattsson L-G, 1988. Internationalization in industrial systems - a network approach. In N Hood, J-E Vahlne (Eds), *Strategies in Global Competition*. New York: Croom Helm, 303-321.
- Kaplinsky R, Morris M, 2009. Chinese FDI in sub-Saharan Africa: Engaging with large dragons. *European Journal of Development Research*, 21 (4): 551-569.
- Klossek A, Linke B M, Nippa M, 2012. Chinese enterprises in Germany: Establishment modes and strategies to mitigate the liability of foreignness. *Journal of World Business*, 47 (1): 35-44.
- Knoerich J, 2010. Gaining from the global ambitions of emerging economy enterprises: An analysis of the decision to sell a German firm to a Chinese acquirer. *Journal of International Management*, 16 (2): 177-191.
- Larcon J-P, 2008. *Chinese Multinationals*. Singapore: World Scientific Publishing Co. Pte. Ltd.
- Li P P, 2007. Toward an integrated theory of multinational evolution: The evidence of Chinese multinational enterprises as latecomers. *Journal of International Management*, 13 (3): 296-318.
- Li Y, Peng M W, 2008. Developing theory from strategic management research in China. *Asia Pacific Journal of Management*, 25 (3): 563-572.
- Liefner I, Hennemann S, 2011. Structural holes and new dimensions of distance: The spatial configuration of the scientific knowledge network of China's optical technology sector. *Environment and Planning A*, 43 (4): 810-829.
- Liefner I, Zeng G, 2008. Cooperation patterns and high-tech companies in Shanghai and Beijing accessing external knowledge sources for innovation process. *Erdkunde*, 62 (3): 245-258.
- Lim S-H, 2008. How Chinese foreign direct investment can achieve success in Korea: M&A deals in the automotive and semiconductor Industries. *Issues & Studies*, 44 (3): 177-204.
- Liu L, Tian Y, 2008. The internationalisation of Chinese enterprises: The analysis of the UK case. *International Journal of Technology and Globalisation*, 4 (1): 87-102.
- Liu YP, Woywode M, 2012. Light-touch integration of Chinese cross-border M&A: The influences of culture and absorptive capacity. *Thunderbird International Business Review*. ISSN 1096-4762.
- Lu J, 2012. A social-network behavioural approach to overseas Chinese and overseas Non-Chinese investments in China. *Tijdschrift voor Economische en Sociale Geografie*, 103 (4): 426-442.
- Luo Y, Xue Q, Han B, 2010. How emerging market governments promote outward FDI: Experience from China. *Journal of World Business*, 45 (1): 68-79.

- Martin X, Anand S, Will M, 1998. Organizational evolution in the interorganizational environment: Incentives and constraints on international expansion strategy. *Administrative Science Quarterly*, 43 (3): 566-601.
- Mathews J A, 2002. Competitive advantages of the latecomer firm: A resource-based account of industrial catch-up strategies. *Asia Pacific Journal of Management*, 19 (4): 467-488.
- Mathews J A, 2006. Dragon multinationals: New players in 21st century globalization. *Asia Pacific Journal of Management*, 23 (1):5-27.
- Minin A D, Zhang J, 2010. An exploratory study on international R&D strategies of Chinese companies in Europe. *Review of Policy Research*, 27 (4): 433-455.
- Nachum L, Zaheer S, 2005. The persistence of distance? The impact of technology on MNE motivations for foreign investment. *Strategic Management Journal*, 26 (8): 747-767.
- Nooteboom B, 2000. Learning by interaction: Absorptive capacity, cognitive distance and governance. *Journal of Management and Governance*, 4 (2): 69-92.
- Nooteboom B, Haverbeke W V, Duysters G, Gilsing V, Oord A, 2007. Optimal cognitive distance and absorptive capacity. *Research Policy*, 36 (7): 1016-1034.
- North C D, 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Peng M W, Wang D YL, Jiang Y, 2008. An institution-based view of international business strategy: A focus on emerging economies. *Journal of International Business Studies*, 39 (5): 920-936.
- Pietrobelli C, Rabellotti C, Sanfilippo M, 2011. Chinese FDI strategy in Italy: The 'Marco Polo' effect. *International Journal of Technological Learning, Innovation and Development*, 4 (4): 277-291.
- Rajan R S, Kumar R, Virgill N (Eds.), 2008. *New Dimensions of Economic Globalization: Surge of Outward Foreign Direct Investment from Asia*. Singapore: World Scientific Publishing Co. Pte. Ltd.
- Ramamurti R, Singh J V (Eds.), 2009. *Emerging Multinationals in Emerging Markets*. Cambridge: Cambridge University Press.
- Ramasamy B, Yeung M, Laforet S, 2010. China's outward foreign direct investment: Location choice and firm ownership. *Journal of World Business*, 47 (1): 17-25.
- Rugman A M, Verbeke A, 2007. Liabilities of regional foreignness and the use of firm-level versus country-level data: A response to Dunning *et al.* *Journal of International Business Studies*, 38(1): 200-205.
- Sauvant K P (Ed.), 2009. *Investing in the United States: Is the US ready for FDI from China?* Cheltenham and Northampton: Edward Elgar Publishing.
- Sauvant K P, McAllister G, Maschek, A W (Eds.), 2009. *The Rise of Transnational Corporations from Emerging Market: The Challenges Ahead*. Cheltenham and Northampton: Edward Elgar Publishing.
- Scott W R (Ed.), 2001. *Institutions and Organizations*. 2nd Edition. Cambridge: Sage Publications.
- Shen J, Edwards V (Eds.), 2006. *International Human Resource Management in Chinese Multinationals*. New York: Routledge.
- Smart A, Smart J PL, 2000. Failures and strategies of Hong Kong firms in China: An ethnographic perspective. In H WC Yeung, K Olds (Eds.), *The Globalisation of Chinese Business Firms*. Basingstoke: Palgrave Macmillan, 244-271.
- Tan CZ, Yeung H WC, 2000. The regionalization of Chinese business networks: A study of Singaporean firms in Hainan, China. *The Professional Geographer*, 52 (3): 437-454.

- UNCTAD, 2007. *World Investment Report 2006*. New York and Geneva: United Nations Press.
- Voss H, 2011. *The Determinants of Chinese Outward Direct Investment*. Cheltenham and Northampton: Edward Elgar Publishing.
- Voss H, Buckley P J, Cross A R, 2009. An assessment of the effects of institutional change on Chinese outward direct investment activity. In I Alon *et al.* (Eds.), *China Rules: Globalization and Political Transformation*. Basingstoke: Palgrave Macmillan, 135-165.
- Wong L L, Hg M, 2002. The emergence of small transnational enterprise in Vancouver: The case of Chinese entrepreneur immigrants. *International Journal of Urban and Regional Research*, 26 (3): 508-530.
- Yang C, 2006. Overseas Chinese investments in transition: The case of Dongguan. *Eurasian Geography and Economics*, 47 (5): 604-621.
- Yang C, 2007. Divergent hybrid capitalisms in China: Hong Kong and Taiwanese electronics clusters in Dongguan. *Economic Geography*, 83 (4): 395-420.
- Yang D, 2005. *China's Offshore Investments: A Network Approach*. Cheltenham and Northampton: Edward Elgar Publishing Inc.
- Yeung H WC, 1998. *Transnational Corporations and Business Networks: Hong Kong Firms in the ASEAN Region*. London: Routledge.
- Yeung H WC, 2002. *Entrepreneurship and the Internationalisation of Asian Firms: An Institutional Perspective*. Cheltenham: Edward Elgar.
- Yeung H WC, 2003. *Chinese Capitalism in a Global Era: Towards a Hybrid Capitalism*. London: Routledge.
- Yeung H WC, 2009. Transnationalizing entrepreneurship: A critical agenda for economic geography. *Progress in Human Geography*, 33 (2): 210-235.
- Yeung H WC, Liu W, 2008. Globalizing China: The rise of Mainland Chinese firms in the global economy. *Eurasian Geography and Economics*, 49 (1): 57-86.
- Yeung H WC, Olds K, 2000. Globalizing Chinese business firms: Where are they coming from, where are they heading? In H WC Yeung, K Olds (Eds.), *The Globalization of Chinese Business Firms*. London: Macmillan, 1-28.
- Zeng G, Bathelt H, 2011. Divergent growth trajectories in China's chemical industry: the case of the newly developed industrial parks in Shanghai, Nanjing and Ningbo. *GeoJournal*, 76 (6): 675-698.
- Zeng G, Liefner I, Si Y. 2011. The role of high-tech parks in China's regional economy: Empirical evidence from the IC industry in the Zhangjiang High-tech Park, Shanghai. *Erdkunde*, 65(1): 45-53.
- Zhang Y, Duyster G, 2010. Alliance-based network view on Chinese firms' catching-up: Case study of Huawei Technologies Co. Ltd. *Journal on Innovation and Sustainability*, 2 (1). Available: <http://revistas.pucsp.br/risus>, accessed February 8, 2012.
- Zhang Y, Duysters G, Filippov S, 2012. Chinese firms entering Europe: Internationalization through acquisitions and strategic alliances. *Journal of Science and Technology Policy in China*, 3 (2): 102-123.
- Zhou Y, 1998. Beyond ethnic enclaves: Location strategies of Chinese producer service firms in Los Angeles. *Economic Geography*, 74 (3): 228-251.
- Zhou Y, Lall S, 2005. The impact of China's surge on FDI in South-East Asia: Panel data analysis for 1986-2001. *Transnational Corporations*, 14 (1):41-66.

Article 1 The Development of Outward FDI Regulation and the Internationalization of Chinese Firms

Manuscript accepted in Journal of Contemporary China, as Si, Y, 2014. The Development of Outward FDI Regulation and the Internationalization of Chinese Firms. Journal of Contemporary China, 23 (88).

Abstract: *The IDP model has been widely accepted for illustrating the relationship between the inward and outward FDI positions of a country and its economic status based on the data from developed economies. In recent years, however, outward FDI from developing economies has increased dramatically and it has been argued that institutions are “forefront” factors in addition to the economic index. In this article, we use statistical data from China, which has gone through dramatic regulation reform and FDI development, to test the validity of the IDP model. We also trace the history of Chinese FDI regulation development to answer the following question: in what way are regulations important for FDI in different periods? We use Lenovo as a case study to show how a Chinese firm “avoids” and “adapts to” regulation changes. We find that the FDI development of China still follows the IDP model; however, the Chinese government has accelerated the whole process through active regulation reform. In a transition economy such as China, FDI co-evolves with regulation changes, and the firms which can influence or foresee the policy changes can prosper considerably.*

Key words: *Institution; Outward FDI; Regulation; History*

1 Introduction

What aspects of the home country affect the characteristics of FDI and the behavior of MNEs over time? In the 1990s, Dunning proposed the IDP theory based on developed country data. This theory argues that the inward and outward FDI positions of a country are systematically related to a country's level of economic development. According to the IDP model, outward FDI is expected to be undertaken only when a country has reached a certain minimum level of Gross Domestic Product (GDP) and the firms has gained the ownership advantage (Dunning, 1993). However, Dunning's theory has been questioned, since the research expanded the geographical scope from developed economies to developing economies. The outward FDI from developing economies emerged earlier and increased more dynamically than that from developed ones (UNCTAD, 2007). Can Dunning's theory still explain the dynamics of outward FDI from developing economies which are institutionally different from the developed ones? What kind of role do the factors beyond economic development play, such as institutions which were treated as an exogenous environment for the MNEs and often faded into the “background” in Western mainstream research?

In the last ten years, researchers have argued that institutions need to be brought to the “forefront” (Porta *et al.*, 1999), because they directly determine what arrows a firm has in its quiver as it struggles to formulate and implement strategies and to create competitive advantages (Peng *et al.*, 2008). Institutions theory could be one of the three pillars - the other two being the more established industry and resource-based views - that study the FDI from developing countries in order to establish a new framework. The issue of how the institutions are important has been pushed to the cutting edge in the theoretical discussion (Peng, 2006). Dunning and Lundan (2008) introduced the work of Douglass North on institutions and examined how an institutional dimension could be incorporated into the eclectic paradigm. Cantwell *et al.* (2010) combined the institutions with evolutionary views and developed a theoretical framework to link historical changes in the characteristics of MNE activities to changes in the institutional environment.

However, more empirical studies are needed, especially about the interplay between the FDI and the institutions of developing economies as home countries.

China is a good case for describing “how institutions are important for outward FDI”. China, as a very important transition economy, has endeavored to pursue great institutional changes and high-speed outward FDI development. In 2010, China was the 5th largest source of FDI, with 68 billion US dollars in outbound flows (UNCTAD, 2011). The Chinese government plays a highly prominent role in nurturing and fostering MNEs, for example a high number of SOEs are the main players in the cross-border investment, the establishment of large sovereign wealth funds (Thomas and Chen, 2011) and the government-led quest for natural resources (Zhao, 2008). Institutional aspects cannot be ignored if one hopes to understand Chinese outward FDI (Sauvant, 2005; Wei, 2002; Child and Rodrigues, 2005). Therefore, we attempt to test whether the IDP model still makes sense for explaining the development of Chinese outward FDI, and how changing institutions interact with the aggregate characteristics of FDI and the individual behavior of Chinese MNEs. Since institutions can be broadly generalized into two types - formal rules (constitutions, laws and regulation) and informal constraints (sanctions, taboos, customs, traditions and codes of conduct) - and the informal institutions of a large country such as China in particular, are difficult to evaluate, we focus on outward FDI regulation at the country level.

The article is structured as follows: we begin by reviewing the theories regarding institutions and their relationship with MNEs; we then trace Chinese FDI history, dividing it into several periods, and discuss how regulations interact with the overall trend of FDI in each period; in the third section, we will reveal how a Chinese MNE behaves in the changing institutional environment based on a case study of Lenovo Group Limited (Lenovo for short); finally, we present the conclusion and a discussion.

2 Theoretical review: Institutions and MNEs

Institutions are formally defined as the humanly devised constraints that structure human interaction (North, 1990). Economic actions are embedded in the institutional environment, and the institutional environment surrounding organizations affects organizations' behavior and decisions in a positive or negative way while the institutions can also change, potentially influenced by organizations (Scott, 2001; Boschma and Frenken, 2009).

The institution theories originated in the social sciences and were later applied in the business, economic and geography fields (Oliver, 1997). The early studies on adopting an institutional perspective in MNEs and FDI research mainly focus on the influence of the institutional environment on the MNEs, although some of this research may not have appeared under an institutional label (Dunning and Lundan, 2008). As mentioned previously, there are two kinds of institutions, and the related research can also be divided into two types. Regarding formal institutions, some authors examined the ways in which national-level laws and regulations of host countries condition the strategies and entry modes of MNEs (Henisz, 2003; Meyer *et al.*, 2009). As for the informal institutions, some authors have explored the ways in which MNE affiliates seek to gain legitimacy and are influenced by the normative and cultural cognitive institutions (Brehm and Rahn, 1997; Peng, 2003). Most of the latter research comes under the umbrella of research on the psychic distance and the Uppsala model. Psychic distance is defined as factors preventing or disturbing firms' learning about and understanding of a foreign environment, such as language, cultural differences and so on (Johanson and Vahlne, 1977; 2009). The Uppsala model combines the perception of foreignness in host countries with an evolutionary learning perspective. It assumes that firms firstly gain experience from the domestic market before they move to foreign markets; firms start their foreign operations in close countries in terms of psychic distance and move gradually to more distant countries (Johanson and Finn, 1975). Although the Uppsala model has been criticized for its time-dependent

processes and deterministic evolutionary paths (Forsgren, 2002), it is still one of the important theories for understanding institutional factors and MNEs' spatial expansion in different development stages.

The issue of how MNEs react to the institutions and institutional changes has attracted increasing attention recently. Oliver identified five strategic responses of an MNE to the institutional environment, which range from passive action to active resistance, namely acquiescence, compromise, avoidance, defiance and manipulation (Oliver, 1991). Cantwell *et al.* (2010) combine an institutional view with the evolutionary theory to understand FDI behaviors through a more dynamic view. According to them, there are three kinds of interaction between the institutions and MNEs. The first is institutional avoidance, in which MNEs take the external institutional environment as a given, but in which they are able to make choices between different institutional environments. This can serve as another explanation about the issue of why a firm carries out investments outside its home country and has location preferences for host countries (Witt and Lewin, 2007). The second is institutional adaptation. Here, MNEs treat the institutional environment as essentially exogenous, but in this case they seek to adjust their own structure to fit the environment better. MNEs may use political influence and bribery (Doh *et al.*, 2004). They may realize their legitimacy through isomorphism (Kostova, 1999), imitation, learning and post-entry changes related to entry modes. In contrast to the first two cases, the third one is institutional co-evolution, in which the institutional environment is assumed to be partly endogenous; the MNEs' objective is no longer simply to adjust, but to affect changes of the local institutions. MNEs might actively seek to shape the "rules of the game" in their favor and to engage in political activities in order to advance specific kinds of regulations or market structure, such as adopting broad diversity policies, corporate governance laws and divergence of governance practices (Bigley *et al.*, 2005; Oxelheim and Randøy, 2003; Khanna *et al.*, 2006). This behavior provides the firm with an advantage over their competitors. Dynamic environments such as China are likely both to allow and to require innovation and a continuous co-evolution for a firm to sustain a competitive advantage. The two studies mentioned above view the institutions and MNEs as related and integrally connected, and provide sound theoretical support for understanding the interaction between them. However, the existing empirical studies are mostly concerned with the institutional difference between the developed economies as home countries and the developing economies as host countries, or about how Western MNEs adjust their behavior, bargain with the host countries or influence the market functions there (Eden and Molot, 2002). Emerging economies, where profound institutional transformations are taking place over time and which are becoming increasingly important sources of FDI, could offer an excellent contrast to the existing research; however, the FDI and MNEs from these economies and related institutions are largely ignored (Wan, 2005). More empirical research is needed to fill this gap and to deepen the theoretical understanding of the relationship between FDI and institutions from an evolutionary perspective.

Since the outward FDI from China is a new phenomenon which has been a hot topic for less than ten years, there is still limited empirical research about Chinese outward FDI and institutions. The existing studies focus on two points. One is an evaluation of the influence of regulations on MNEs, most of which is related to the historical discussion. Wu and Chen outline the historical development of China's outward FDI by examining the firms' motivations, industries and geographical distribution. They notice that the motives for Chinese outward FDI shift from being driven by political motives in the early stages to market-seeking and asset-exploitation later (Wu and Chen, 2001). Ge and Ding (2009) argue that China's institutions in general offer a favorable environment for internationalization. Chinese firms gravitate toward strategies that take advantage of these opportunities, and they examine the effect of government, industry and corporate level on the strategic choices of Chinese MNEs. Voss *et al.* (2009) assess the evolution of the institutional actors and environment that have shaped Chinese FDI. They divide the history since 1978 into five distinctive phases according to China's political and regulatory environment concerning FDI. The other point relates to the validity of psychic distance, but with differing opinions. Li argues that the MNEs

from East Asia as latecomers are less likely to adopt ‘psychic distance’ since they need to obtain advanced technologies as well as strategic partners from developed countries (Li, 2003). Liu and Tan examine the patterns of and the motives for Chinese enterprises investing in the UK and argue that Chinese firms investing in developed countries are driven by the attractions of large markets and asset augmentation and problems of psychic distance can be offset by the benefits from such investment activities (Liu and Tian, 2008). In contrast, Buckley *et al.* use the panel data from China to test the connection between FDI and institutions, and find that the cultural proximity, host country membership of the World Trade Organization (WTO) and geographical distance are important determinants. However, the empirical research about the interaction between Chinese MNEs and institutions is sparse (Buckley *et al.*, 2007).

3 The history of Chinese outward FDI

In this section, we trace the history of Chinese FDI focusing on two aspects. One is the evolution of evolution, including the importance of FDI regulation in the macroeconomic policy framework, the main attitude of FDI regulation, representative policies and measures. The other is the development of FDI and Chinese MNEs, including industrial and geographical distributions of outward FDI and representative MNEs. This history started in 1978, when China’s Reform and Opening up policy was announced (Asia Pacific Foundation of Canada (APFC) and CCPIT, 2005; Wua, 1998).

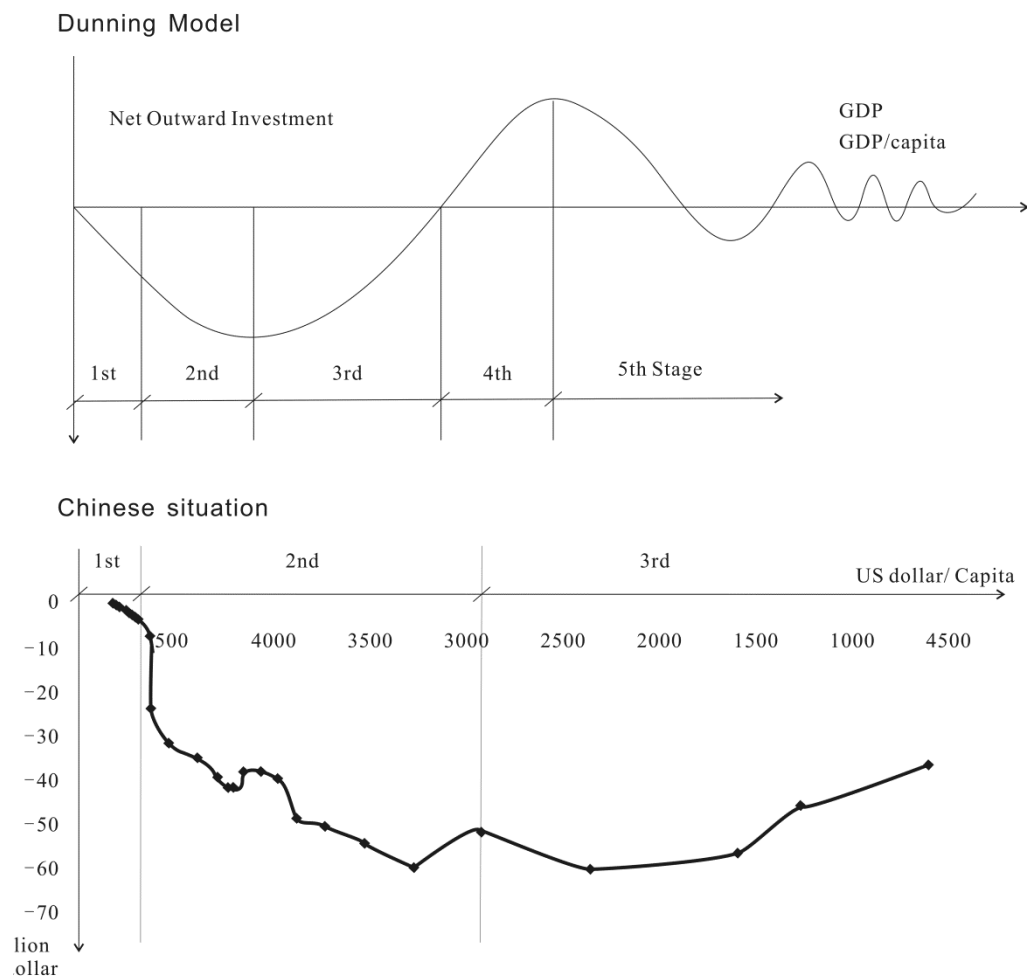
We collected the related data from the following sources: the inward and outward FDI flow data from the UNCTAD database; the other economic data from the World Bank; detailed information about the industrial and geographical distribution of Chinese FDI from MOFCOM and CCPIT; the policy information from the website and reports of the Chinese authorities which are related to FDI management in China, i.e. the State Council (SC), MOFCOM, the State-owned Asset Supervision and Administration Commission (SASAC), State Administration of Foreign Exchange of the People's Republic of China (SAFE), the People’s Bank of China (PBC), the National Development and Reform Commission (NDRC) which was called the State Planning Commission (SPC) before 1998; and finally several academic research and reports.

3.1 Brief history of Chinese outward FDI (1978- Present)

According to the IDP model, countries initially draw in increasing amounts of FDI and subsequently become outward investors as their per capita income rises (Dunning *et al.*, 2008). Figure 1 depicts a freehand drawing of the relationship between GDP per capita and the net outward FDI, which is defined as the difference between gross outward investment and gross inward investment, of the IDP model and its comparison with the data from China. As GDP per capita in China increased every year, the horizontal axis also indicates the years from 1978 to 2010.

The first stage was from 1978 to 1991. In this stage, there was very little inward and outward FDI, with the annual flow amounting to less than 5 billion US dollars. In the second stage, which started in 1992 and ended in 2005, inward FDI emerged and amounted to 61 billion US dollars per year, while outward FDI remained low and only accounted for around 10 per cent of the inward FDI. From 2006, the growth of outward FDI was faster than that of inward FDI, thus signaling the start of the third stage begun. Now, the outward FDI flow is still less than the inward flow and China is still in the third stage of IDP. This trajectory is also consistent with the regulation changes, with the exception of stage 2. During this stage, the Chinese government’s attitude towards outward FDI changed, with the turning point in 1999. Before 1999, the Chinese government was very cautious about FDI approval. In 1999 China began its “Go Global” policy and subsequently changed its regulation from an approval to a supervision process. It was a landmark reform in the history of Chinese outward FDI. Hence, we have divided the second stage into two

parts: from 1992 to 1998 and from 1999 to 2005. We will illustrate the four phases in detail in the following sections.



Data source: UNCTAD <http://unctadstat.unctad.org/TableView/tableView.aspx>

Figure 1 The comparison between the IDP model and Chinese inward and outward FDI

3.2 Phase 1 (1978-1991): Standardization of the approval procedure

This was when China began to establish previously non-existent regulation regarding outward FDI. Before this period, China had been an economically closed country with little involvement in the global economy. The introduction of the reform and opening policy in 1978 was the formal beginning of the Chinese government's initiative to encourage Chinese firms to expand internationally through FDI (Fetscherin *et al.*, 2010). But any overseas projects, regardless of their size, needed to be examined and approved by the SC as the only authority (Zhang, 2003). There was no formal policy until 1984, when MOFCOM issued the "Circular Concerning the Approval Authorities and Principles for Opening Non-trade Joint Venture Overseas as well as in Hong Kong and Macao". The regulation system transformed from case-by-case approval to the gradual standardization of the procedure through authorities besides the SC, such as MOFCOM, SAFE, PBC, SPC and SASAC. The Chinese government could then control the amount, destination and industrial distribution of outward FDI easily. In 1991, the NDRC announced the "Opinion of the State Planning Commission on the Strengthening of the Administration of Overseas Investment Projects" (often shortened to the Opinion 1991). As this policy was issued at the end of the period and had more influence during the next period, we will discuss this in the following subsection. During this stage,

the Chinese government valued inward FDI over outward FDI, since it was attempting to avoid 'unnecessary' outflow of hard currency and also to accumulate foreign exchange earnings (Moore, 1996). Four categories of overseas projects which could secure access to domestically scarce natural resources, access and transfer technology, enhance export possibilities, or augment managerial skills could be successfully approved. The outward FDI shared similar strategic aims with inward FDI.

The annual amount of outward FDI flow was small - below 1 billion US dollars. The firms which carried out the outbound investments lacked competitive advantage in the global economy. They were mostly SOEs, covering industries such as shipping, trading services, mining and restaurants. Most FDI went to economically-developed countries rich in natural resources, such as Canada and Australia, with joint ventures as a favorite entry mode. This was due to the attempt to import technology, management skills and natural resources into China and to serve the domestic market, while not having the knowledge and experience to survive independently in developed countries (CCPIT, 2010). Typical MNEs included Sinotrans Limited specializing in international freight forwarding, air cargo and international express delivery, China Metals and Minerals Import and Export Corporation (MINMETALS) as a major import and export channel for metals and minerals, and China International Trust and Investment Corporation (CITIC), which was set up by the former vice president of China Mr. Yiren Rong in 1979. CITIC invested in the USA in 1980 and acquired the Celgar pulp mill in Canada in 1986.

3.3 Phase 2 (1992-1998): Tightening of the approval procedure

In this phase, inward FDI remained more important than outward FDI for China, and the Chinese government was more cautious and rigorous about the approval of outward FDI, due to the Asian Crisis and a surge of state asset losses in Hong Kong real estate and stock market speculation (Wong and Chan, 2003). As mentioned preciously, the Opinion 1991 claimed that Chinese firms did not have the abilities and conditions to carry out large-scale overseas investment. This was effective throughout the 1990s (Fetscherin *et al.*, 2010). In 1993, the SAFE issued the Examination and Approval Standards on Foreign Exchange Risk and Fund Source Examinations for Outbound Investment. Proposals that involved overseas investment of more than 1 million US dollars had to be examined by SAFE before referring them to MOFCOM for final approval and it could take sixty days for the regulative agencies to give an answer (Woo and Zhang, 2005). The approval procedure became more complicated and time-consuming in this phase, particularly for large-scale investment.

At the beginning of this period, outward FDI increased at a similar speed to inward FDI, and surged to 4 billion US dollars in 1992 and 4.4 billion US dollars in 1993. It was slowed down by the tightened approval procedure and fluctuated around 2 billion US dollars afterwards. The majority of the MNEs remained SOEs, which were in the business service, logistic and natural resource industries. The developed economies were still the important destinations. However, two new phenomena appeared. One was that green field investment became an important entry mode alongside joint venture. The other was that some private manufacturers became overseas investors during this period (MOFCOM *et al.*, 2009). For example, Huawei Technologies Co. Ltd. (Huawei for short), a telecommunications equipment provider, began to establish overseas branches in 1996; Haier Group (Haier for short), a white domestic appliances manufacturer specializing in refrigerators, did so in 1998; Galanz Enterprise Group Co. of Guangdong (Galanz for short), another white domestic appliances manufacturer specializing in microwave ovens, started in 1998. Although the overseas investment by these companies was on a small scale and did not attract too much attention, these companies were the most successful companies in their field inside China and had the entrepreneurship and motives to make themselves an international brand.

3.4 Phase 3 (1999-2005): From approval to supervision

Phase 3 was the official beginning of the “Go Global” policy, which provided a strong public endorsement for an institutional environment that fostered outbound investment. This period was characterized as the most comprehensive opening-up period after China entered the WTO, which evaluated outward FDI higher than inward FDI. Over the whole period, regulations were reformed gradually from approval to supervision. Most of the important policies that had had significant influence in the third and fourth phases were implemented in this period. In 1999, the SC issued the “Circular on Simplifying the Foreign Exchange Regulation over Processing and Assembling Business with Self-bringing Materials Conducted Overseas”. The government encouraged enterprises to engage in processing cross-border trade. Enterprises producing light industrial goods such as textiles, machinery and electrical equipment were specifically encouraged to establish overseas manufacturing projects that could process Chinese raw materials or assemble Chinese-made parts that could eventually spur China’s exports. In 2001, the “Go Global” policy was officially written into the 10th Five Year Plan, which was the key guideline for Chinese development. In 2004, the SC issued a landmark document, the “Decision on Reforming Investment System”, to replace the Opinion 1991. It made sure that firms were the main actors that could invest overseas without the approval of the government. Instead, they simply needed to keep a record with the government. They were no longer required to deposit security at SAFE and were allowed to raise money in international finance markets to help fund outward FDI activity (Wong and Chan, 2003). Besides procedure changes, the government loosened foreign exchange control and granted financing support as well. In 2005, SAFE issued the “Circular on Expanding the Trial Regions for the Pilot Program Concerning Overseas Investment” to give more rights to the local SAFE offices concerning foreign exchange (Yu and Hwang, 2005). In the same year, The NDRC released the “Circular on the Issues of Offering More Financing Support to Key Overseas Investment Projects”. It provided the preferential treatment for investment projects in R&D and M&A.

Under this flexible regulation, outward FDI fluctuated around 5 billion US dollars and manufacturing became increasingly important. At the end of this period, manufacturing sectors made up 18.6% of the capital and 34.7% of firms (National Bureau of Statistics of the People's Republic of China (NBS), 2006). M&A amounted to 6.5 billion US dollars and more than a half of the outbound flow in 2005. M&A became one of the three important entry modes besides joint venture and green field investment. As for the geographical distribution, developing economies grew to be the preferred location for FDI. In 2005, 52.6% of the outbound flow went to Latin America and 35.6% went to Asia, while less than 10% flowed to developed economies. Some private firms from the electronics industry in particular became very active in FDI, although SOEs remained the main investors. For example, there was TCL Corporation (TCL for short), which produced consumer electronics, mobile communications and home appliances. TCL was established in 1981 and started its rapid international expansion in this period. TCL acquired Schneider from Germany in 2001, a phone branch of Alcatel from France and a Go-Video Corporation from the US in 2003, and Thomson Electronics from France in 2004. This over-expansion brought TCL into the news headlines; but brought a deficit for years as well. Its over-expansion was to some extent due to the policy support and over-optimistic attitude from the home country. Since manufacturing industries joined the overseas expansion in this period, more FDI flowed into developing economies than to developed economies after that. This was the starting point of the geographical distribution changes.

3.5 Phase 4 (2006-Present): Supervision and providing service

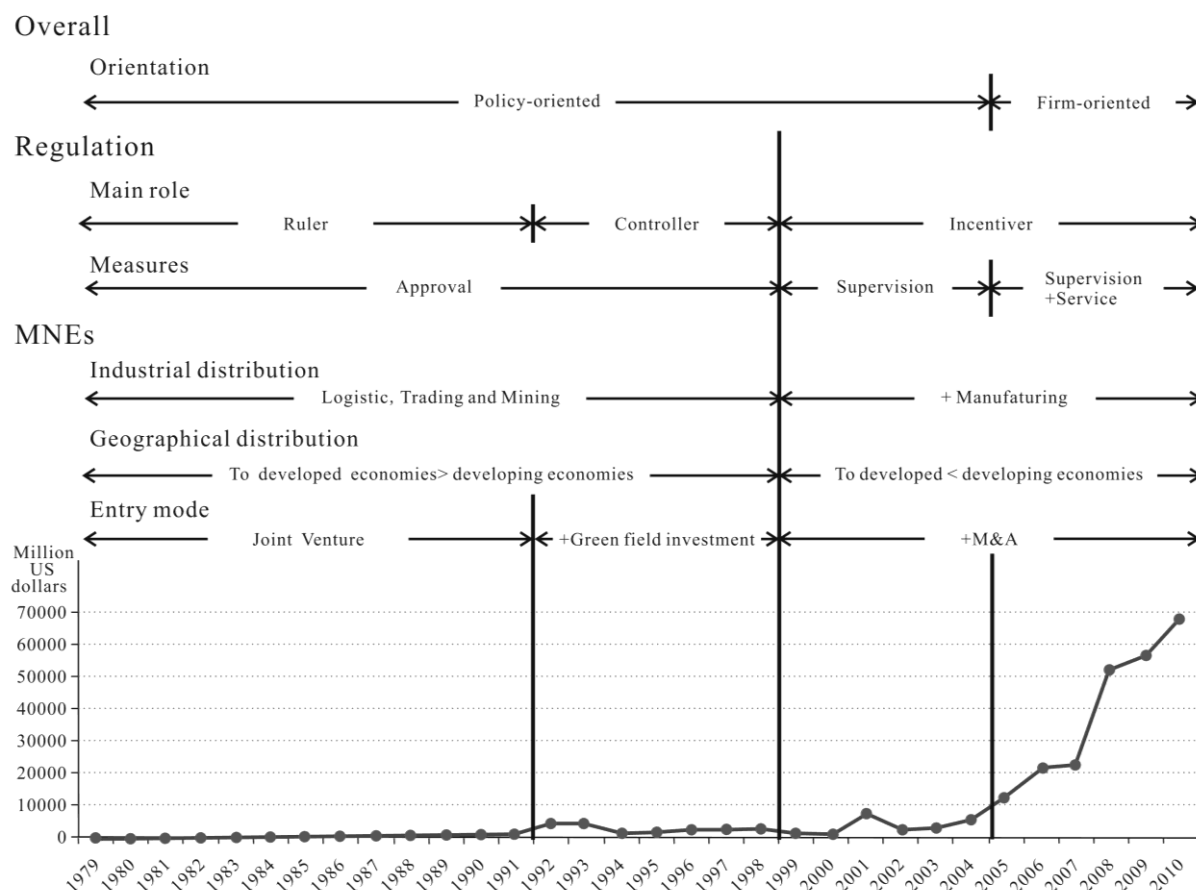
Phase 4 was the successive extension of the last phase. In 2006, SAFE issued the “Circular on Revision of Certain Foreign Control Policies Relating to Overseas Investments to Lift Restrictions on the Amount of Foreign Exchange Annually Available to Domestic Investors’ Outbound Investments” (Stender *et al.*, 2006), and the “Regulation of the People’s Republic of China on Foreign Exchange Administration”. MOFCOM released detailed information about the regulation and removed the barriers as well. What is

more, the government attempted to provide comprehensive service and support, such as providing information and guidance¹, reducing investment risks, and so on. Following the trial period, encouraging outward FDI has been more important than attracting inward FDI for the government, since China has one of the largest foreign exchange reserves in the world.

Outward FDI increased dramatically, from 10 billion US dollars in 2006 to around 70 billion US dollars in 2011. The industrial and geographical composition was similar to that of the last period. SOEs are still the main actors, while the increase of limited liability companies and listed corporations is also very obvious, which accounted for 8% of the total in 2009. The entry modes remain diversified, with the preference for M&A for large investment. Some MNEs which started internationalization early, such as Huawei, Lenovo, CITIC and MINMETALS, have grown strong and experienced, and have made good names for themselves in the global market. Meanwhile, some newcomers from the automobile and other manufacturing industries, such as Zhejiang Geely Holding Group, Sany Heavy Industry Co. Ltd. and Fuxing Group, have become active in M&A and green field investment as well.

Figure 2 shows the history of Chinese outward FDI in the last 30 years in China, which has developed from being policy-oriented to being firm-oriented. During these years, the government explored ways to establish a regulation system. At first, the government was the ruler and directly determined which firms in which industries could invest overseas. As China became a part of the global economy, Chinese regulation gained more experience in the process, and the government moved to loosen its control, letting the firms make the decision and influencing and serving outbound investment increasingly indirectly. Chinese MNEs grew large and strong in the process. At first, only the logistic, trading service and mining industries invested overseas to serve the trading and import of raw materials. Since the announcement of the “Go Global” policy and China’s entry into the WTO, manufacturing has also grown into one of the main industries with global players. The entry modes have become diversified too. Initially, most of the investment was carried out by joint ventures and then through green field investment as well; now, a high portion of M&As has become one characteristic of Chinese outbound investment.

¹For more information see the website of Outward Investment and Economic Cooperation, <http://fec.MOFCOM.gov.cn/>



Source: own draft

Figure 2 Historical developments of Chinese FDI and regulations

This history also illustrates the interaction and co-evolution between Chinese regulation and MNEs' aggregate characteristics. Chinese firms needed to make their strategic choices over time to adapt to the changing regulation. Meanwhile, the government attempted to monitor the aggregate trend of Chinese MNEs and FDI, therefore issuing economically friendly policies to serve the state better. They interacted with each other and created the economic boom in China (Table 1).

Table 1 Examples of the co-evolution between regulation and FDI development

Phases	Regulation	Aggregate characteristics of FDI
Phase 1	The Opinion 1991 (Strict approval procedure)	SOEs lost assets in Hong Kong
Phase 2	Following policies to tighten the outward FDI	The round-trip FDI Green field investment by private manufacturers
Phase 3	Encouragement policy for manufacturers, particularly electronics	2004 is named the Chinese M&A year
Phase 4	Policy support for M&A, particularly M&A seeking knowledge	Large portion of M&As

Source: own draft

In phase 1, China was economically closed, the firms were small and the government had no related regulation experience. The government had significant control over the outward FDI through approval procedures. It encouraged some SOEs to carry out overseas investment to absorb knowledge and natural resources. These SOEs followed the order and accumulated large amounts of capital through trade. At the same time, they also lost assets in Hong Kong due to their lack of experience. This led to the Opinion 1991 at the end of the period and the government's screening and tightening of control over the overseas investment in the second phase.

In phase 2, many investments were stopped or slowed down by the government. At the same time, some round-tripping FDI emerged due to the policy of favoring inward FDI and foreign investors (UNCTAD, 2007). Some firms, established branches, holding companies in particular, in Hong Kong and some tax havens and then invested funds back into China to reap the benefit as foreign investors. By the end of this period, some domestic brands had attempted to establish overseas branches, sales and trading service to explore the global markets. This kind of trial was small and not on the radar of the government.

Phase 3 was the turning point, when the government's attitude changed from caution to encouragement. Firstly, the government adjusted the policies according to the development of firms in the last phase. 30 consumer electronics firms and 20 firms from other main export sectors were selected by MOFCOM to receive priority state assistance to invest abroad (Friedrich and Han, 2002). The related authorities then removed the barriers to let the Chinese MNEs carry out FDI fast and more easily. During this phase, Lenovo, TCL, Haier and other firms were highly active in M&As in the global market. 2004 was even named the Chinese M&A year. This led to the announcement of the financial support for M&A projects in 2005.

In phase 4, M&A has been the preferred entry mode because of the government support for the acquisition of technology, knowledge and management skill. The effect of government on firms is increasingly indirect. For the SOEs, their success depends on the ongoing SOE reform which claims to realize a "state-owned but business run" environment and to establish a modern management system. For private firms, outbound investment has been made easier down and they have been able to make wise strategic moves.

All in all, outward FDI regulation and the growth and cross-border expansion of the Chinese companies are historically interconnected with each other. The evolution of regulations is one of the factors that form the distinctive characteristics of Chinese companies, i.e. developed economies were preferred in the early stage, which was different from the psychic distance model, and there was a high portion of M&As as an entry mode despite their high failure rate. At the same time, the behavior and new trial of the leading firms has also attracted the attention of the government, and the government has adjusted the new policies to provide efficient supervision and help.

4 Case study: Lenovo

In this section, we use Lenovo as a case study to illustrate how a single MNE behaves in a changeable institutional environment. Lenovo, which is the second largest vendor of personal computers in the world, is regarded as an outstanding Chinese MNE and its success is highly related to its internationalization and to some extent to its understanding of Chinese policies, as well as to convenient timing. We discuss what the firm did in different periods of the history of Chinese outward FDI and describe the organizational expansion which it followed.

4.1 Phase 1: The establishment of Lenovo Hong Kong

During phase 1 (1978- 1991), Lenovo started in 1981 as a reseller/distributor of foreign computer firms such as AST Research, Inc. (AST for short), International Business Machines Corporation (IBM for short)

and the Hewlett-Packard company (HP for short). Since it received products through the Hong Kong traders who were able to control the marketing channels, Lenovo could only make a small profit. Meanwhile, it created the Legend Chinese-character Card (LCC) which had a low technological level but was essential for the Chinese market. Although this card won the highest National Science-Technology Progress Award in China, the designing and selling of it did not bring Lenovo high profits. Before expanding overseas, Lenovo did not have the advantage as a beginner, but formed the capabilities to combine market, manufacturing and technology resources.

The foundation of Lenovo Hong Kong in 1988 was a milestone for Lenovo. Lenovo Hong Kong was founded as a joint venture together with Digital China Holdings Ltd, which focused on distribution and service of personal computers (PCs), especially PCs from AST and Legend Capital, one of China's leading corporate venture capital investors, which provided access to bank loans. This joint venture brought Lenovo more trading channels, greater financial possibilities and easier access to technology in Hong Kong. From then on, Lenovo sold computers with its LCC in the mainland, which brought about 15% higher profits. In 1990, the very first Legend PC was launched in the Chinese market and experienced great success.

Lenovo was extremely successful as a trader in the closed Chinese market, and was one of the private firms which carried out FDI in the first phase. This early move brought great benefit to Lenovo in the second phase. On the other hand, Lenovo argued with the government about the importance of a Chinese domestic brand, and attempted to establish its own name as a national brand.

4.2 Phase 2: Listed in the Hong Kong Stock Exchange in 1994 and becoming a domestic brand

During this phase, the Chinese government was very conscious about outward FDI, while at the same time welcoming inward FDI. In 1994, Lenovo Hong Kong was listed in the Hong Kong Stock Exchange and collected a huge amount of money from its initial public offering (IPO). With this huge financial support, it entered the multi-product period. Lenovo introduced the first server in 1996 and the first laptop in 1996 and a pioneering Internet PC in 1999. Each time, Lenovo modified the products for the demands of the Chinese market.

The key to Lenovo's success in this period lay in its overseas expansion and knowledge about Chinese institutions. Lenovo Hong Kong earned a large amount of money using the concept of mainland China and the well developed financial market in Hong Kong. In mainland China, Lenovo received a tax benefit as a foreign company and made a name for itself among customers as a national brand. Lenovo achieved better sales than its competitors and developed a good reputation in mainland China.

4.3 Phases 3 and 4: M&A and the path to becoming an international company

After 1999, the Chinese government was increasingly positive about outward FDI, and M&As in particular. Lenovo began to negotiate with IBM in 2002. With the capital collected in the Hong Kong financial market, Lenovo acquired IBM's PC department in 2004 for approximately 1.75 billion US dollars. The deal not only enabled Lenovo to acquire IBM's laptop production lines, product developers and distribution networks, but also provided Lenovo with IBM's brand. Lenovo retained IBM's customers and employees and gained management skills in running a large foreign business as well. Hence, Lenovo's targeted market expanded from China both to developed economies such as Canada, Japan, the USA and the European Union (EU), as well as to developing economies such as ASEAN, India and some countries in Africa. This deal was reported by the Chinese and US media and made Lenovo known around the world. Lenovo was on the way from being a domestic brand to becoming an international brand. Growing into a global player

was also consistent with Chinese government policy. However, its financial operation was all conduct outside mainland China, mainly in Hong Kong, to escape foreign exchange control in mainland China.

The M&As of Lenovo did not stop there. In 2011, Lenovo formed a PC joint venture with Japanese PC maker NEC, which was registered in the Netherlands. Lenovo then bought German electronics retailer Medion, which specialized in sales of low-cost computers and electronic devices. This helped Lenovo open German and even European markets to compete better with competitors such as Dell and HP. Through M&As, Lenovo gained technology, an international brand and a sales channel.

The story of Lenovo shows how a firm takes advantage of the institutions. Lenovo is a PC maker which did not pursue the highest technology, but rather the most suitable technology for the market, because it was familiar with the Chinese market and Chinese culture. Lenovo acted differently in different policy periods. In phase 1, Lenovo was an institution avoider. It established the joint venture in Hong Kong and carried out round-trip investment in mainland China as a foreign enterprise, because it wanted to escape from the bad situation as a private company in mainland China. At the same time, it co-evolved with the regulations. Lenovo persuaded the Chinese government of the importance of being a national brand and won some support for domestic PC producers. It also received a chance to face strong competitors from developed economies in the domestic market. In the phase 2, Lenovo was an institution adapter. The IPO of Lenovo Hong Kong help it obtain the channels with components suppliers and banks, which allowed it to produce its own brand of computer later. The round-trip investment was very rational for Chinese firms. In phase 3, the acquisition of IBM's PC division gained Lenovo a worldwide name, high technology and market channels around the world. Without this M&A, Lenovo's rapid overseas expansion would probably have been impossible. Now, Lenovo has achieved the successful move onto the global stage and with global resources.

5 Conclusion and discussion

Our research demonstrates that the Chinese outward FDI can to some extent be explained by the IDP model. China has now been through the first stage of IDP (1978-1991) with limited inward and outward FDI, the second stage (1992-2005) with large amounts of inward FDI and limited outward FDI, and the third stage (2006-present) in which outward FDI has increased faster than inward FDI. It proves the argument again that the development of FDI is highly related to the economic status of a country.

Although the active and appropriate government involvement did not change the general trend of the FDI development, it highly influenced the characteristics of each stage. The institutions and institutional changes grant Chinese outward FDI some special characters which could not fully be explained by the IDP model.

First of all, Chinese outward FDI emerged in phase 1, before the firms had gained an ownership advantage; most of the FDI was carried out by the SOEs and went to developed economies. This phenomenon reveals that the outward FDI shared the same strategic motives with China's effort to attract inward FDI. It was driven by technology seeking, management knowledge seeking and natural resource seeking. It also brought mainland China capital. The four big Chinese SOEs in Hong Kong, namely China Merchants Group, China Resource, China Everbright Group and China National Travel Service (HK) Group Corporation, earned foreign exchanges to support the economic development in mainland China during phase 1. These firms were established even earlier than the FDI from the USA and the European Union to China. The active participation of the Chinese central government and SOEs provides another possibility for the start of the IDP.

Secondly, the Chinese government and its regulations enhanced the stage's behavior in China. In phase 2, Chinese inward FDI increased dramatically, while Chinese outward FDI remained stable at a small

amount. The tightening of the control over outward FDI directly eliminated the possibility of outward FDI growth. In contrast, the encouragement of cross-border investment in phases 3 and 4 provided incentive for the high-speed increase of outward FDI. The changes from one stage to another stage in China were less smooth than those of the IDP.

Thirdly, the development of Chinese outward FDI was stimulated by China's regulation reform, which moved from a negative attitude to a positive attitude; from being political objective-centered to being firm interest-oriented; and from direct control to indirect influence. It included the trade regulation and SOE reform as well as the evolution of outward FDI regulation. The role of the government and formal institutional environment, however, was not a part of the IDP model, which was established based on experience in the market economy.

All three points prove the importance of institutions theory for explaining Chinese outward FDI development. The government is as important as firms in the economic and outward FDI development process in a transaction economy. The institutions and FDI grow alongside. The institutions theory needs to be incorporated into the IDP model to explain the FDI from emerging economies.

Our research shows the co-evolution of the FDI regulation and aggregate characteristics of MNEs. It offers some evidence for answering the questions concerning the reasons behind Chinese outward FDI growth and the role of the Chinese government in this process. It also contributes to the development of other FDI theories besides the IDP model. The Lenovo story shows that the firms which can influence or foresee the policy changes can achieve great commercial success in China. The high flexibility and quick action regarding institutional changes are a competitive advantage for Chinese firms in terms of survival on the global stage, particularly in Africa and other developing countries. It is a supplement to ownership advantage in Dunning's eclectic paradigm. We also show that the Uppsala model and the psychic distance concept do not work well for the aggregate characteristics of FDI from China, while it fits somehow with individual behavior. This uncovers two shortcomings of this kind of research: ignoring the changeable government attitude and institutional environment in the home country and overlooking other functions of overseas branches other than a market explanation. The desire to acquire knowledge could drive the outward FDI to overlook the difficulties of greater psychic distance at the government level (in phase 1) and at the firm level (Lenovo's acquisition of the PC department of IBM in the USA). More work could be done to evaluate how psychic distance works in the different stages of the IDP model.

This paper is an initial exploration into the interaction between formal institutions and FDI. Nevertheless, the informal institutions, such as culture, cognition and social network, are as important as formal ones. As the importance of the Chinese government in the development of outward FDI is fading, how informal institutions work and how MNEs behave to adapt to the unfamiliar host counties will be another interesting topic for the future. How these MNEs' behavior influences the formal and informal institutional environment in their globalization process would also be of great interest and significance.

References

- APFC, CCPIT, 2005. *China Going Global: The Why, When, Where and How of Chinese Companies' Outward Investment Intentions*. Vancouver. Available at: http://www.asiapacific.ca/sites/default/files/archived_pdf/can_in_asia/cia_china_global.pdf, accessed November 5, 2010.
- Bigley G, D'Aunno T, Khanna T, Ring P, 2005. Perspectives on how governments matter. *Academy of Management Review*, 30 (2): 308-320.

- Boschma R A, Frenken K, 2009. Some notes on institutions in evolutionary economic geography. *Economic Geography*, 85 (2): 151-158.
- Brehm J, Rahn W, 1997. Individual-level evidence for the causes and consequences of social capital. *American Journal of Political Science*, 41 (3): 999-1023.
- Buckley P J, Cross A R, Tan H, Liu X, Voss H, 2008. Historic and emergent trends in Chinese outward direct investment. *Management International Review*, 48 (6): 715-748.
- Cantwell J, Dunning J H, Lundan S M, 2010. An evolutionary approach to understanding international business activity: The co-evolution of MNEs and the institutional environment. *Journal of International Business Studies*, 41 (4): 567-586.
- CCPIT, 2010. *Survey on Current Conditions and Intention of Outbound Investment by Chinese Enterprises 2010 (2010 Zhong Guo Qi Ye Dui Wai Tou Zi Xian Zhuang Ji Yi Xiang Diao Cha Bao Gao)*. Beijing, China. Available at: http://www.ccpit.org/yewu/docs/Survey_on_Current_Conditions_and_Intention_of_Outbound_Investment_by_Chinese_Enterprises.2010.en.pdf, accessed April 12, 2011.
- Child J, Rodrigues B S, 2005. The internationalization of Chinese firms: A case for theoretical extension? *Management and Organization Review*, 1 (3): 381-410.
- Doh J P, Teegen H, Mudambi R, 2004. Balancing private and state ownership in emerging markets' telecommunications infrastructure: Country, industry, and firm influences. *Journal of International Business Studies*, 35 (3): 232-250.
- Dunning J H, 1993. *Multinational Enterprises and the Global Economy*. Wokingham, Berkshire: Addison-Wesley.
- Dunning J H, Kim C, Park D, 2008. Old wine in new bottles: A comparison of emerging-market TNCs today and developed-country TNCs thirty years ago. In K P Sauvant (Ed.), *The Rise of Transnational Corporations from Emerging Markets*. Cheltenham: Edward Elgar Publisher, 158-179.
- Dunning J H, Lundan S M, 2008. Institutions and the OLI paradigm of the multinational enterprise. *Asia Pacific Journal of Management*, 25 (4): 573-593.
- Eden L, Molot M A, 2002. Insiders, outsiders and host country bargains. *Journal of International Management*, 8 (4): 359-388.
- Fetscherin M, Voss H, Gugler P, 2010. 30 years of foreign direct investment to China: An interdisciplinary literature review. *International Business Review*, 19 (3): 235-246.
- Forsgren M, 2002. The concept of learning in the Uppsala internationalization process model: A critical review. *International Business Review*, 11 (3): 257-277.
- Ge G L, Ding D Z, 2009. The effects of the institutional environment on the internationalization of Chinese firms, in I Alon et al. (Eds.), *China Rules: Globalization and Political Transformation*. Basingstoke: Palgrave Macmillan, 46-69.
- Henisz W J, 2003. The power of the Buckley and Casson thesis: The ability to manage institutional idiosyncrasies. *Journal of International Business Studies*, 34 (2): 173-184.
- Johanson J, Finn W-P, 1975. The internationalization of the firm - four Swedish cases. *The Journal of Management Studies*, 12 (3): 305-322.

- Johanson J, Vahlne J-E, 1977. The internationalization process of the firm - a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8 (1): 23-32.
- Johanson J, Vahlne J-E, 2009. The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40 (9): 1411-1431.
- Khanna T, Kogan J, Palepu K, 2006. Globalization and similarities in corporate governance: A cross-country analysis. *Review of Economics & Statistics*, 88 (1): 69-90.
- Kostova T, 1999. Transnational transfer of strategic organizational practices: A contextual perspective. *Academy of Management Review*, 24 (2): 308-324.
- Li P P, 2003. Toward a geocentric theory of multinational evolution: The implications from the Asian MNEs as latecomers. *Asia Pacific Journal of Management*, 20 (2): 217-242.
- Liu L, Tian Y, 2008. The internationalisation of Chinese enterprises: The analysis of the UK case. *International Journal of Technology and Globalisation*, 4 (1): 87-102.
- Meyer K E, Estrin S, Bhaumik S K, Peng M W, 2009. Institutions, resources, and entry strategies in emerging economies. *Strategic Management Journal*, 30 (1): 61-80.
- MOFCOM, NBS and SAFE, 2010. *Statistical Bulletin of China's Outbound Direct Investment 2009 (2009 Nian Du Zhong Guo Dui Wai Zhi Jie Tou Zi Tong Ji Gong Bao)*, Beijing, China. Available at: <http://hzs.mofcom.gov.cn/accessory/201009/1284339524515.pdf>, accessed May 4, 2011.
- Moore T G, 1996. China as a latecomer: Toward a global logic of the open policy. *Journal of Contemporary China*, 5 (12): 187-208.
- NBS, 2006. *China External Economic Statistical Yearbook 2005 (Zhong Guo Dui Wai Jing Ji Tong Ji Nian Jian 2005)*. Beijing: China Statistics Press.
- North D C, 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Oliver C, 1991. Strategic responses to institutional processes. *Academy of Management Review*, 16 (1): 145-179.
- Oliver C, 1997. Sustainable competitive advantage: Combining institutional and resource based views. *Strategic Management Journal*, 18 (9): 697-713.
- Oxelheima L, Randøy T, 2003. The impact of foreign board membership on firm value. *Journal of Banking & Finance*, 27 (12): 2369-2392.
- Peng M W, 2003. Institutional transitions and strategic choices. *Academy of Management Review*, 28 (2): 275-296.
- Peng M W, 2006. *Global Strategy*. Cincinnati: South-Western Thomson.
- Peng M W, Wang D YL, Jiang Y, 2008. An institution-based view of international business strategy: a focus on emerging economies. *Journal of International Business Studies*, 39 (5): 920-936.
- Porta R L, Lopez-de-Silanes F, Shleifer A, 1999. Corporate ownership around the world. *Journal of Finance*, 54 (2): 471-517.
- Sauvant K P, 2005. New sources of FDI: The BRICs- outward FDI from Brazil, Russia, India and China. *Journal of World Investment and Trade*, 6 (October): 639-709.
- Scott W R (Ed.), 2001. *Institutions and Organizations*. Cambridge: Sage Publications.

- Stender N A, Yin X, Sheets N, Cui L, 2006. PRC outward direct investment: Liberalization momentum consolidated. *China Law & Practice*, 2006 July/August.
- Thomas S, Chen J, 2011. China's sovereign wealth funds: Origins, development, and future roles. *Journal of Contemporary China*, 20 (70): 467-478.
- UNCTAD, 2007. *World Investment Report 2006*. New York and Geneva: United Nations Press.
- UNCTAD, 2011. *World Investment Report 2010*. New York and Geneva: United Nations Press.
- Voss H, Buckley P J, Cross A R, 2009. An assessment of the effects of institutional change on Chinese outward direct investment activity. In I Alon *et al.* (Eds.), *China Rules: Globalization and Political Transformation*. Basingstoke: Palgrave Macmillan, 135-165.
- Wan W P, 2005. Country resource environments, firm capabilities, and corporate diversification strategies. *Journal of Management Studies*, 42 (1): 161-182.
- Wei D Y, 2002. Multiscale and multimechanisms of regional inequality in China: Implications for regional policy. *Journal of Contemporary China*, 11 (30): 109-124.
- Witt M A, Lewin A Y, 2007. Outward foreign direct investment as escape response to home country institutional constraints. *Journal of International Business Studies*, 38 (4): 579-594.
- Wong J, Chan S, 2003. China's outward direct investment: Expanding worldwide. *China: An International Journal*, 1 (2): 273-301.
- Woo Y P, Zhang K, 2005. China goes global: The implications of Chinese outward direct investment for Canada. *Policy Research Initiative Horizons*. Available at: <http://economics.ca/2006/papers/0892.pdf>, accessed October 12, 2009.
- Wu F, Sia Y H, 2002. China's rising investment in Southeast Asia: Trends and outlook. *Journal of Asian Business*, 18 (2): 41-61.
- Wu HL, Chen CH, 2001. An assessment of outward foreign direct investment from China's transitional economy. *Europe-Asia Studies*, 53 (8):1235-1254.
- Wua R, 1998. China's macroeconomy. *Journal of Contemporary China*, 17 (19): 443-458.
- Yu A, Hwang B, 2005. Chinese companies on the global M&A stage - domestic regulatory issues. *China Law & Practice*, 2005 September.
- Zhang Y, 2003. *China's Emerging Global Businesses: Political Economy and Institutional Investigations*. Basingstoke: Palgrave Macmillan.
- Zhao S, 2008. China's global search for energy security: Cooperation and competition in Asia-Pacific. *Journal of Contemporary China*, 17 (55): 207-227.

Article 2 Foreign Direct Investment with Chinese Characteristics: A Middle Path between Ownership-Location-Internalization Model and Linkage-Leverage-Learning Model

Manuscript accepted in Chinese Geographical Science, as Si Y, Liefner I, Wang T, 2013. Foreign Direct Investment with Chinese Characteristics: A Middle Path between Ownership-Location-Internalization Model and Linkage-Leverage-Learning Model. Chinese Geographical Science, doi: 10.1007/s11769-013-0603-z.

Abstract: *The MNEs traditionally originate from developed countries. In the last ten years, however, there has been dramatic growth in FDI from China. It is a comparatively new phenomenon that challenges the classic FDI theories. In this paper, we review the pros and cons of two important theories, known as the OLI model and LLL model, and use the statistical data and company case studies from China to test the plausibility of these two models. We believe that neither of them suits totally: the OLI model is quite useful for understanding FDI from China to developing economies, while the LLL model is more powerful for explaining the FDI to developed economies. We argue that the companies from China attain a very advantageous position as intermediates in the global economy. They may catch up with the first movers if they integrate OLI-led and LLL-led FDI within one firm. This combination can bring together the most advanced knowledge acquired in developed economies with the knowledge about adaptation needs and the needs for cost reduction in production as expressed in developing economies. It may also accelerate the knowledge transfer globally. We thus fill a gap in research into the geographical pattern of Chinese FDI and offer a deeper understanding of the internationalization of Chinese MNEs and revolving knowledge transfer.*

Keywords: *Outward FDI; OLI model; LLL model; China*

1 Introduction

Since entering the WTO, China has shown dramatic growth in outward FDI. It became the fifth largest source of FDI in 2010 (UNCTAD, 2011). Besides the large amount, FDI from China has two distinctive characteristics compared with FDI from developed countries. Firstly, a large number of MNEs which are active in FDI lack competitive advantages in technology and management. Moreover, these MNEs invest on a relatively large scale not only in developing, but also in developed economies, which share little similarity as host countries (Liu and Tian, 2008). It is a comparatively new phenomenon that has great influence in the global economy and it also challenges the classic theories which are based on the observation of MNEs from developed economies (Child and Rodrigues, 2005).

To date, the existing research on China's outward FDI has paid more attention to the Chinese investment in developed economies (Deng, 2009). Liu and Tian (2008) carried out 20 surveys to examine the patterns of and the motives for Chinese enterprises investing in the United Kingdom. Klossek *et al.* (2012) presented insights from 31 semi-structured face-to-face interviews with employees belonging to seven Chinese MNEs and stakeholders in Germany to draw conclusions about Chinese MNEs' establishment modes and strategies. There is also some research about FDI to Africa (Kaplinsky and Morris, 2009) or to East and Southeast Asia (Kang and Jiang, 2012). According to these studies, the FDI in developed economies mainly seeks strategic assets, while that in developing economies mostly goes after the natural resources and low labor costs. Besides motivation, these two kinds of FDI have different

industrial and functional compositions as well (Sutherland, 2009). Functional composition includes manufacturing facilities, R&D and distribution. However, these studies only collect a small number of samples and there are few descriptions about the general spatial image of FDI from China or about the comparison and contrast between FDI from China to these two different kinds of host countries because of limited access to data (Schueler-Zhou and Schueler, 2009).

Hence, this paper intends to use case studies to investigate the general image of FDI from China based on the comparison between China's outward FDI to developed economies and China's outward FDI to developing economies. Two issues will be addressed: 1) Do Chinese MNEs have different motives when investing in developed economies and in developing economies? 2) What is the logic of Chinese MNEs carrying out direct investment in other countries and regions?

In this paper, the terms country/economy refer to territories or areas; the designations employed and the presentation of the material do not imply the expression of any opinion concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The major country/economy groupings follow the classification of the UNCTAD. Developed countries/economies: the member countries of the Organisation for Economic Co-operation and Development (OECD) (other than Chile, Mexico, the Republic of Korea and Turkey), plus the new EU member countries which are not OECD members (Bulgaria, Cyprus, Latvia, Lithuania, Malta and Romania), plus Andorra, Bermuda, Liechtenstein, Monaco and San Marino. Developing countries/economies: in general all economies not specified above. For statistical purposes, the data for China refers the data from the mainland of China, exclude those for Hong Kong, Macao and Taiwan.

2 Theoretical Framework

2.1 Ownership-Location-Internalization (OLI) Model

In order to answer questions how and why Chinese MNEs invest abroad, we need to review the related FDI theories. The mainstream perspective in international business, based on the experience of MNEs from developed economies, assumes that companies will internationalize on the basis of a definable competitive advantage that allows them to secure enough return to cover the additional costs and risks associated with operating abroad (Buckley and Ghauri, 1999). The eclectic paradigm developed by Dunning draws together elements of previous theories to identify OLI advantages that motivate internationalization (Dunning and Lundan, 2008). However, there are so many differences between FDI from developing economies and FDI from developed ones that the mainstream theory is only partly suitable. The OLI model has been modified by pointing out the unique or distinctive advantages and motives accrued by MNEs from developing economies (Table 1).

Table 1 Differences between original and modified OLI models

Criterion	OLI model	Modified OLI model
Ownership advantages	Firm-specific advantages, superior proprietary resources or managerial capabilities	Initially mainly country-specific advantages, later becoming more firm-specific advantages
Internalization advantages	Asset exploiting	Asset exploiting and asset augmentation
Location advantages	Access & use of local natural or labor resources and markets	Access & use of local resources, markets, capabilities & institutions

Source: Own draft

Firstly, several authors discovered some comparative ownership advantages of MNEs from developing economies (Dunning *et al.*, 2008). Initially, these companies have mainly country-specific advantages stemming from access to home country resources or special cultures such as social networks and relationships. Based on these country-specific advantages, MNEs from developing economies may become specialized among value chains and attain firm-specific advantages such as techniques in special niches and management (UNCTAD, 2007). Secondly, the internationalization strategies of MNEs are not only asset exploiting but also asset augmenting. Asset augmenting means that MNEs venture into international markets in order to acquire strategically created assets such as technology, brands, distribution networks, R&D facilities and managerial competences to offset their shortcomings (Kuemmerle, 1999). Therefore, the locations with the strategic assets, such as the USA, the EU and Japan, are also attractive destinations for FDI from developing economies.

The modified OLI model can, to some extent, explain why companies from developing economies carry out cross-border business, and it is also a good framework for comparing these MNEs with traditional ones. However, this framework is still a comparatively static observation, comparing one point in time with another (Mathews, 2006a). It gives the impression that there is no inter-connection between its various constituent parts (Dunning, 1993). It also ignores the improvement of MNEs in the process of internationalization.

There have only been few surveys evaluating the application of the modified OLI model in China. In 2005, the Foreign Investment Advisory Service carried out interviews with 150 Chinese MNEs regarding their motivations, drivers and competencies. It reveals that a focus on production process is the main advantage source for Chinese MNEs. It also suggests a powerful motivation for strategic asset sought by Chinese MNEs, especially in industries in which they face intense competitive pressures (UNCTAD, 2007). It is a pity that the survey ignores the comparison between FDI to developed economies and that to developing economies.

2.2 Linkage-Leverage-Learning (LLL) Model

Latecomer theory attempts to answer the question how latecomer firms challenge established positions in the global economy (Mathews, 2006a). The theory is guided by the idea of turning the disadvantage of latecomers into a source of advantages. It is also highly related to knowledge absorption theory, which argues that technologically backward companies can substantially upgrade their knowledge base through active knowledge absorption and learning (Humphrey and Schmitz, 2002). Latecomer theory is effective in explaining the catching-up of Asian companies in the 1990s, and also contributes to the theoretical development of the FDI from this area. Among all the models, the LLL model is one of the most plausible.

According to LLL, there are three steps for knowledge acquisition of latecomer firms: linkage, leverage and learning. 1) Globalization multiplies the opportunities for latecomers to link up with the existing network, to draw themselves into circuits of exchange and sources of advantage. 2) Access to new knowledge is turned into leverage opportunities as soon as this new resource is strategically used to upgrade and diversify the recipient company's product portfolio. 3) The success of the recipient firm depends on the integration of the newly acquired knowledge into the company's existing knowledge portfolio, i.e. on learning. Through learning, the company increases its technological capabilities and thus accesses new opportunities for repeated linkage, leverage and learning in other, higher value-added market segments (Mathews, 2002; 2006a; 2006b).

Latecomers will attach the highest importance to ensuring that national firms become global players through an emphasis on outward FDI as well as on inward FDI. While inward FDI can be used to promote linkages within the domestic economy, outward FDI is a way of building linkages with the global economy (Mathews, 2006a). Accordingly, outward FDI is undertaken by latecomer firms to facilitate technological

access due to the fact that they are constrained by assimilation capabilities and policy distortion in their home countries.

The LLL model describes successfully how a company enhances its control over essential resources. It contributes in two important ways to the understanding of latecomers' internationalization. The first is active knowledge absorption, which emphasizes the activity of technology-seeking latecomer firms. The model argues that companies lagging behind technologically can substantially upgrade their knowledge base through active knowledge absorption (Humphrey and Schmitz, 2002). Secondly, it discovers that learning represents the capability of latecomers to capture, control and use the resources via active knowledge absorption.

2.3 Comparison between Ownership-Location-Internalization (OLI) Model and Linkage-Leverage-Learning (LLL) Model

There are more differences than similarities between the LLL model and the modified OLI model (Table 2). Firstly, the LLL model stems from a resource-based view with the fundamental assumption that the competitive advantage of a firm lies primarily in the application of the bundle of valuable resources at the firm's disposal (Wernerfelt, 1984), while the OLI model belongs to asset theory, which assumes that competitive advantage stems from ownership. Secondly, the OLI model also assumes that hierarchy and market are two main kinds of activities of MNEs. For new MNEs, there is the third choice in addition to hierarchy and market: network. The extent to which these new forms of organization present a fundamental challenge to the OLI model has been the subject of recent debate (Narula, 2006). In contrast, the LLL model was developed quite late and incorporates the global network into its framework. Thirdly, the LLL model stresses the key role of knowledge absorption and learning in the process of catching up for latecomer companies. It shares similarity with modified points of the OLI model, but we are not sure whether the LLL model overestimates the power of knowledge absorption. The notion that the internationalization of latecomer firms is motivated by achieving knowledge absorption is still uncertain. Last but not least, the LLL model describes the cumulative development process of firms, while the modified OLI model remains a static observation.

Table 2 Comparison between OLI and LLL frameworks

Criterion	Modified OLI	LLL
Resources utilized	Proprietary resources	Resources accessed through linkage with external firms
Geographic scope	Locations established as part of vertically integrated whole	Locations tapped as part of international network
Make or buy?	Bias towards operations internalized across national borders	Bias towards operations created through external linkage
Learning	Not part of OLI framework	Learning through repetition of linkage and leverage
Process of internationalization:	Not part of OLI framework	Proceeds incrementally through linkage
Driving paradigm	Transaction cost economics	Capturing of latecomer advantages
Time frame	Comparative static observations, comparing one point in time with another	Cumulative development process

Source: Mathews, 2006a

China has been very active in both inward and outward FDI in the last twenty years. Some work has been done to track the relationship between inward FDI, knowledge absorption and catching-up in China (Buckley *et al.*, 2004; Liefner *et al.*, 2012). As FDI from China is a relatively new phenomenon and more advanced in the sense that it entails a commitment to manage and organize operations located outside China (Child and Rodrigues, 2005), only few empirical studies have been carried out. We will thus use the case studies from China later to check the fitting parts of the modified OLI and LLL models, as mentioned in Table 2, and then attempt to derive an explanation for FDI from China.

We have also noticed that a lot of other theoretical and empirical work has been done to renew the FDI theories, such as from the institutional perspective (Li and Meyer, 2009) and the social network and cultural perspective (Yeung, 1999). However, these theories attempt to explain how and why MNEs from developing economies engaged in outward FDI earlier than traditional companies. Each theory focuses on special factors. As this paper concentrates only on how and why China invests overseas, we will not discuss these theories in detail.

3 Methods and Materials

3.1 Methods: Case studies and location quotient analysis

A case study is a useful method when the area of research is relatively unknown and the researcher is engaged in theory-building types of research (Ghauri, 2005). In this article, we will use this method to test the validity of the OLI and LLL models and to understand the general logic of Chinese companies when investing globally. Sany Group (Sany for short) was chosen because it is a private manufacturer founded in 1989 with an internationalizing history of only ten years. As a typical Chinese MNE, it provides a new example of rapid internationalization (Mathews, 2006a).

Location quotient (LQ) analysis is a fundamental and useful tool for determining economic structural differences across space. This method will be used here for geographical analysis. It is calculated as shown below (Haggett, 1965):

$$LQ_{ij} = \frac{X_{i,j} / X_j}{X_i / X}$$

Where LQ_{ij} is China's outward FDI to location j in industry i ; $X_{i,j}$ is FDI stock value from China to location j in industry i ; X_j is total FDI stock value from China to location j ; X_i is total FDI stock value from China in industry i ; X is total FDI stock value from China.

When $LQ_{ij} < 1$, it means China's outward FDI to location j in industry i is at a less than average level, and vice versa. In this paper, location quotient analysis is used to determine the industrial specialization of China's outward FDI across space.

3.2 Materials: Personal observation and official database

Case studies involve data collection from multiple sources (Ghauri, 2005). The main information about Sany in section 4.1 was taken from personal observation, such as a verbal report by the vice general manager of a German subsidiary in Dusseldorf in 2011 and a face-to-face interview with the public relation (PR) manager of the German subsidiary in 2010. Additional information was also collected from gray literature, such as corporate reports, website and working papers.

In the statistical analysis part (sections 4.2 and 4.3), two databases are used. One is the Statistical Bulletin of China's Outbound Direct Investment 2009 (MOFCOM *et al.*, 2010), which released the industrial distribution of FDI from the mainland of China to some important economies such as the EU, the

USA, Special Administrative Region of China, Hong Kong and the ASEAN. These databases will be used to illustrate the general geographical distribution of FDI from China. The other is the Survey on Current Conditions and Intention of Outbound Investment by Chinese Enterprises (SCCIOICE) in 2010, which is a questionnaire survey conducted by the CCPIT in collaboration with the European Commission's Directorate-General for Trade and UNCTAD (CCPIT, 2010). It uses the data from the questionnaire survey from December 2009 to March 2010. The total of 3000 Chinese firms with experience in import and export activities were contacted for the survey, and 1377 firms returned the filled-in questionnaires, 344 of which had carried out overseas investment. The completed questionnaires include those from enterprises in nearly 30 provinces in China and cover various sectors such as agriculture, manufacturing, construction and financial intermediaries, thus providing good industrial and regional representativeness. The objective of SCCIOICE 2010 is to collect in-depth information about the intentions and problems concerning the overseas investment of Chinese enterprises. We will use some of the results to show the functional distribution and motivation of FDI from China. The two reports are written in both Chinese and English. However, detailed information about outward FDI to developed and developing economies separately can only be found in the Chinese version. Both two official databases are very valuable, because FDI from China is a comparatively new phenomenon, the related statistics, rules and regulations have only been in existence since 2003.

4 Results

In this section, we will firstly discuss the geographical distribution of Sany, as an example of a Chinese MNE, in order to explore the international motivation and dynamics. Secondly, we use the official statistic data to analyze the geographical, industrial and functional compositions of FDI from China. Thirdly, we compare the different motivation between FDI to developed economies and FDI to developing economies, to test whether the Sany case indeed reflects a new reality of business strategy of Chinese MNEs.

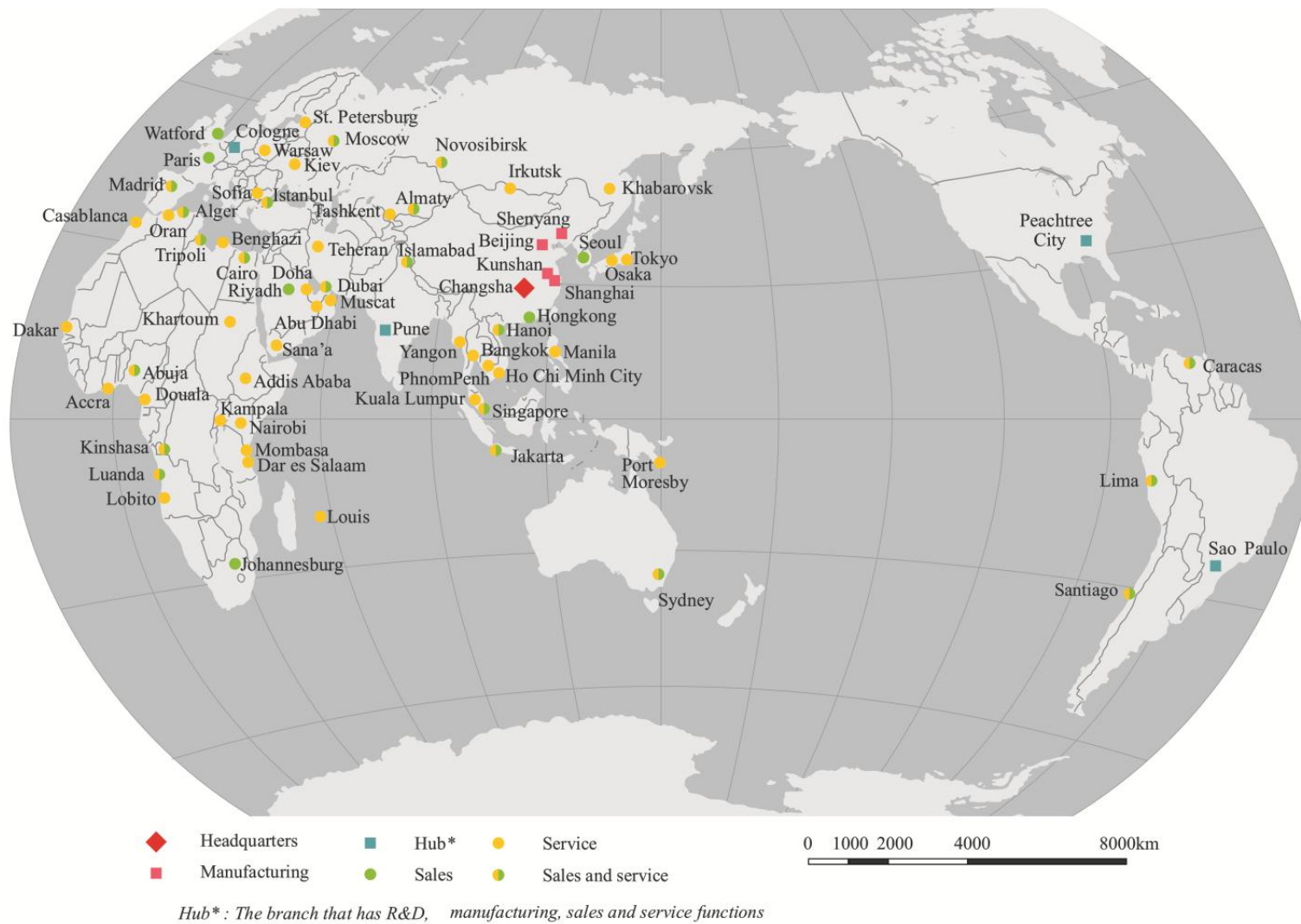
4.1 Spatial structure of a Chinese company: Sany

Sany had 27 domestic and 30 overseas branches in 2009 (Figure 1). Sany's manufacturing bases are mainly in China. Changsha acts not only as the company headquarters, but also as one of the most important manufacturing bases, because it holds location advantages with low-cost and convenient transportation. The industrial parks in Shanghai, Beijing, Shenyang and Kunshan have a manufacturing function as well as R&D ability.

Outside China, the sales and service offices are scattered widely, with Hong Kong being the most important distribution and sourcing center. Sales and service offices are typical market-seeking investments, most of which are located in developing economies. In these economies, competition is not as intensive as in developed economies. What is more, Sany branches prefer capital in all host economies, which shows their limited knowledge or experience concerning the host countries. Hong Kong is chosen for these advantages of efficient access to international markets and global information, and also transportation convenience with the mainland of China.

Sany has four important regional hubs in the world, located in the USA, Germany, India and Brazil. Each hub has R&D, manufacturing, sales and service functions. However, there are some differences between the subsidiaries in developing and developed economies. Take the Indian and German branches as examples: the Indian branch was established in 2002, and Sany India now has a regional R&D center which is active in developing products suited to local needs and solving application-related issues using the suggestions of major customers. It also owns the biggest overseas manufacturing plant at Maharashtra Industrial Development Corporation Chakan, Pune. Sany Germany was established in 2008, 6 years later than the Indian branch. It invested 1×10^8 Euro to build an R&D center and a manufacturing base. This

location is a global R&D center which hires local skilled and experienced engineers to design new products. It then sends the finished blueprint back to China and produces the components there. Finally, all the components are transported to Germany again and assembled there. The products receive the 'Made in Germany' brand and are sold on the European market. Sany India thus has a regional R&D center and strong manufacturing ability, while Sany Germany has a global R&D. These functional preferences match the location advantages in India and Germany.



Source: Base map refers to a world map (Scale 1: 108) from National Administration of Surveying, Mapping and Geoinformation, P. R. China

Figure 1 Spatial distribution of Sany branches

In short, Sany puts its main factory bases in China, its global R&D centers in developed economies as LLL-led investment, its distribution centers in large and important cities, and its sales and service offices all over the world (mainly in developing economies) as OLI-led investment. Neither the OLI nor the LLL model alone can explain the Sany's behavior. The combination of LLL-led and OLI-led investment allows Sany to combine the most latest knowledge acquired in developed markets with the knowledge about adaption needs and the needs for cost reduction in production as expressed in developing economies. With this strategy, Sany can function as a short-cut to transferring knowledge from developed economies to developing economies. This will not only provide companies such as Sany with dynamically evolving business opportunities, but may also shorten the time span that innovative companies in developed economies need to exploit their ideas economically (Figure 2). Besides Sany, several other successful Chinese MNEs also show similar geographical patterns, such as Huawei (Ernst, 2006; Fan, 2011) and Haier (Li, 2007).

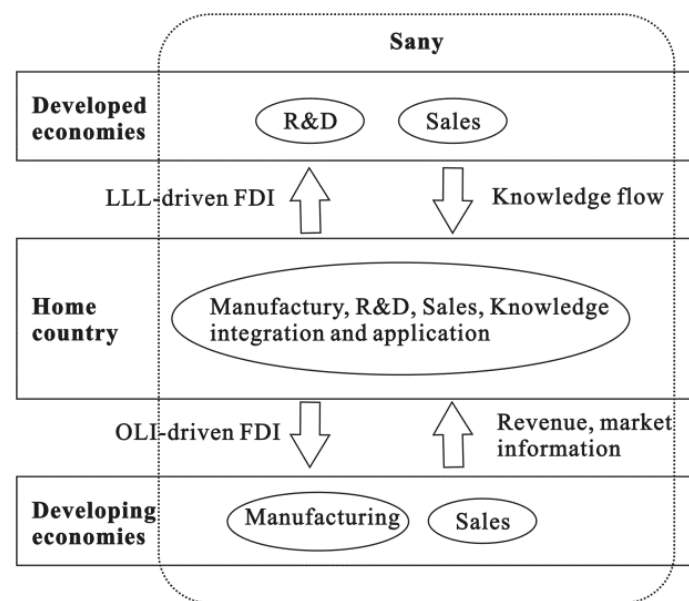
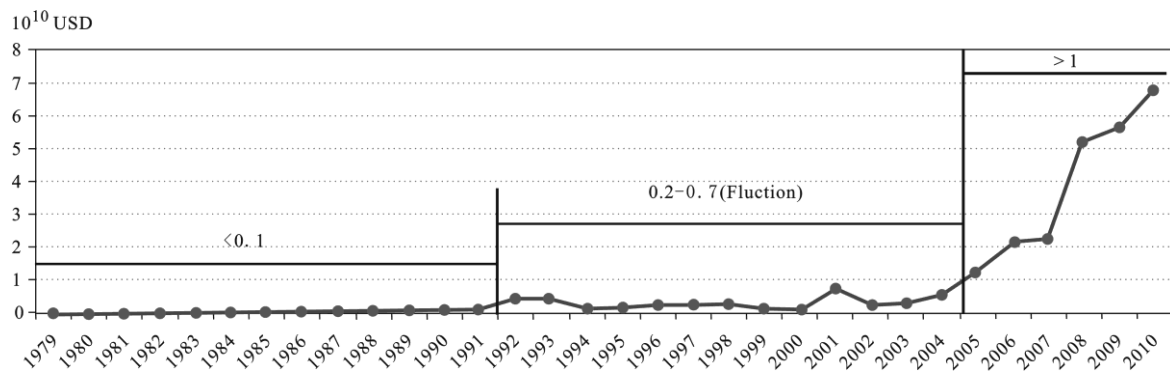


Figure 2 Sany's strategic approach to foreign investment

4.2 Similarities and differences between China's outward FDI to developed and to developing economies

Figure 3 shows the growth of FDI from China as a result of reform and the opening policy of 1978. There are clearly three stages in terms of the changes of outward FDI flow. In the first stage, the annual amount of outward FDI flow was below 1×10^9 United States dollars (USD). It surged to 4×10^9 USD in 1992 and fluctuated around this figure after that. Since 2005, the outbound flow has been more than 1×10^{10} USD each year, which is the third stage for Chinese outward FDI.



Source: UNCTAD, 2011

Figure 3 Growth of Chinese outward FDI from 1979 to 2010

When examining the spatial distribution of China's FDI in the last period (Table 3), it is obvious that the portion of developed economies as host countries has grown in the last five years, amounting to 15.8% with a total value of 1.09×10^{10} USD in 2010. The amount of FDI flow to developed economies in 2010 alone was twice that of the total flow in 2004. The developing economies attract a comparatively large ratio of FDI from China. Among them, Hong Kong, as the gateway to the mainland of China, is the most important destination due to its convenient connection with the mainland of China and its mature financial market and business service standards. Legend Holding Ltd, for example, which holds a 25% share of Lenovo Group Limited and is active in the acquisition of the PC department of IBM, is registered and listed in Hong Kong. Although there is round-tripping FDI between China, Hong Kong and tax havens such as the British Virgin Islands and the Cayman Islands (UNCTAD, 2004), the share has decreased since China entered the WTO and canceled the special treatment and incentives given to foreign investors (Table 3). If these three regions' share of outward FDI is subtracted, half of the remaining FDI goes to developed economies while the other half goes to developing ones. They are all valued as important destinations by Chinese MNEs.

In order to discover the location preference of China's industries, we have taken four host economies – the USA, Russia, the EU and ASEAN, which represent a developed country, a developing country, a developed region and a developing region respectively. The four regions are all important destinations for China's FDI.

Table 3 Geographical distribution of China's FDI flows from 2005 to 2010

Destination	2005		2006		2007		2008		2009		2010		
	Amount (10 ⁹ USD)	Percent (%)	Amount (10 ⁹ USD)	Percent (%)	Amount (10 ⁹ USD)	Percent (%)	Amount (10 ⁹ USD)	Percent (%)	Amount (10 ⁹ USD)	Percent (%)	Amount (10 ⁹ USD)	Percent (%)	
Total	12.3	—	17.6*	—	26.5*	—	55.9*	—	56.5	—	68.8	—	
To developed economies	0.7	6.0	0.6	3.3	2.7	10.4	2.8	5.0	7.0	12.5	1	10.9	15.8
To developing economies	11.5	94.0	17.1	96.7	23.8	89.6	53.1	95.0			58.0	84.2	
To Hong Kong	0.3	27.9	6.9	39.3	13.7	51.8	38.6	69.1	35.6	63.0	38.5	56.0	
To British Virgin and Cayman Islands	6.4	52.1	8.4	47.5	4.5	16.9	3.6	6.5	7.0	12.3	9.6	14.0	

*Note: *The data of China's FDI flow (total) are different from the data in Figure 3, because they are from different sources. UNCTAD records the total FDI flow data from China from 1979 to 2010 (Figure 3), while data from MOFCOM (Table 3) are more detailed including the amounts of FDI in every host country but only from 2003 to 2010.*

Source: MOFCOM et al., 2011

We have illustrated the location differences alone, shown in Table 4. The scientific research, service & geo-survey and information technology (IT) industries are very prominent in the USA, while scientific research, service & geo-survey also show a preference for the EU. This means that there is more knowledge-intensive FDI to developed economies. At the same time, capital and labor-intensive industries favor developing economies. For example, the LQ index of real estate in Russia and the power industry in ASEAN is above 10, and the LQ index of construction in Russia and ASEAN is high as well.

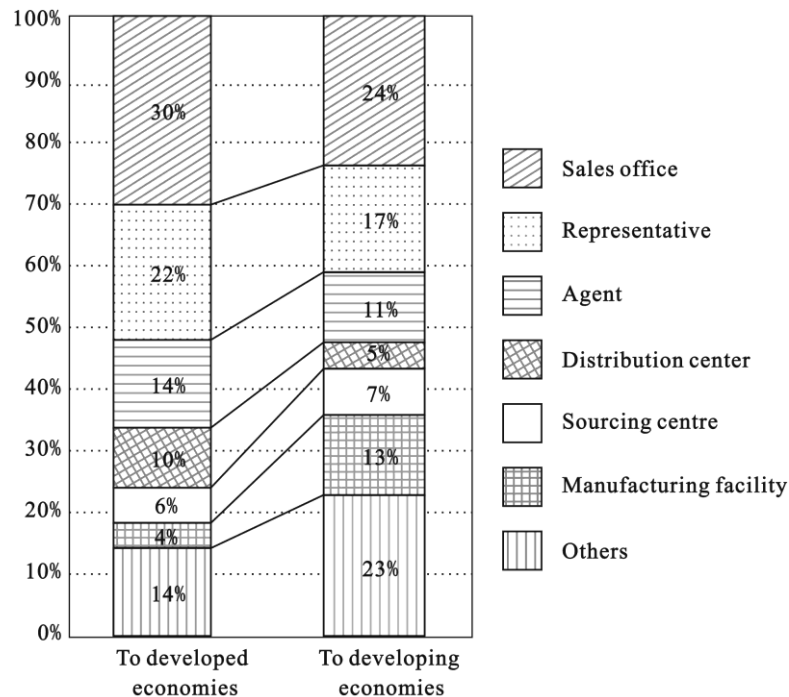
Table 4 Industrial LQ index in EU, USA, Russia and ASEAN

	EU	USA	Russia	ASEAN
Scientific research, service & geo-survey	1.45	5.73	0.34	1.20
IT	*	4.37	*	*
Real estate	0.64	0.64	14.76	0.28
Construction	1.01	1.08	2.30	5.11
Power and other utilities	*	*	*	21.14
Agriculture, forestry, husbandry, fishery	3.76	1.09	29.80	4.36

*Note: * means that the outward FDI stock amount is too small to be listed.*

Source: MOFCOM et al., 2010

The information about functional composition can only be drawn from the SCCIOICE 2010 (CCPIT, 2010). In general, the sales function, including sales offices and distribution centers, is the most important function. Representatives and agents also make up a significant part. What is more, there are two differences between the branches in developed and in developing economies. For one thing, distribution centers, which have an important sales function, are more important in developed economies. Manufacturing facilities in developing economies are also more significant. To put it simply, a larger number of branches in developed economies act in a market function, while a larger number of branches in developing economies act in a manufacturing function (Figure 4).

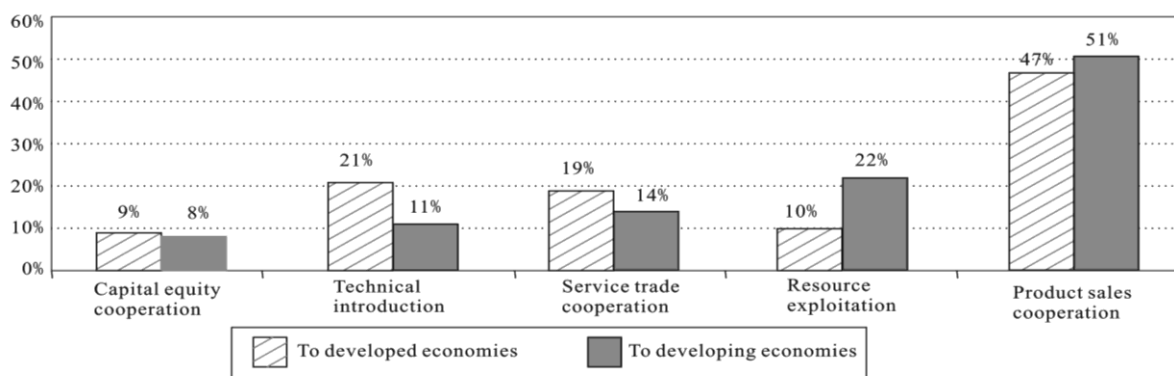


Source: CCPIT, 2010

Figure 4 Functional composition of Chinese overseas branches in 2009

4.3 Diversified motivations of China's outward FDI to developed and developing economies

In this section, we will use the results from SCCIOICE 2010 (CCPIT, 2010) to explain the motivations of Chinese MNE activities (Figure 5). Of the respondent enterprises that have engaged in overseas investment, 205 enterprises are involved in the cooperation with product sales, 62 enterprises are involved in the cooperation with resources, and 63 enterprises are involved in the cooperation with technical introduction. The total of 60% of enterprises hire less than 200 employees and two-thirds of them invest less than 5×10^6 USD abroad. The respondent enterprises share similar scales in terms of the number of employees and investment. These are the three categories currently attracting the most overseas investment from Chinese enterprises. The great advance of sales cooperation is consistent with the industrial and functional composition of Chinese overseas branches, as demonstrated in the previous section, which proves again that the overseas investment of Chinese enterprises aims mainly to exploit overseas markets. Capital equity cooperation, however, which gives Chinese companies little or no managerial rights, is not an interesting choice for them. Figure 5 also reveals two structural differences. In terms of resource exploitation cooperation, the enterprises which engaged in overseas investment in developing economies account for 22%, while the proportion for developed economies is only 10%; in terms of technical introduction cooperation, the enterprises to have engaged in overseas investment in developing economies account for 11%, while the proportion for developed economies is 21%, indicating that Chinese enterprises have prioritized the exploitation of local resources in their investment in developing economies, while focusing more on introducing advanced technologies in their investment in developed economies.



Source: CCPIT, 2010

Figure 5 Motivation structure of China's FDI to developed and developing economies

Table 5 lists the important factors of host countries that influence overseas investment. Market potential and natural resources are very important overall. The other factors vary according to destination regions. Two factors, i.e., access to advanced technology and R&D and acquisition of established brands, are important influencing factors for Chinese overseas branches in developed economies. These companies are eager to establish better presences and to shed the negative image of 'Made in China'. What is more, access to low-cost labor is only an important factor in developing economies.

Table 5 Important pull factors of host countries

	Developed economies	Developing economies
Important	Market potential Access to advanced technology and R&D Acquisition of established brands Access to natural resources	Market potential Access to natural resources Access to low-cost labor
Not relevant	Access to international management practices Avoiding transport costs and host preferential investment policies	Access to skilled labor resources Access to advanced technology and R&D Acquisition of established brands

Source: CCPIT, 2010

All in all, the basic pattern and intention of FDI from China shows great similarity with the individual firm Sany. Market seeking is the most important motivation, with the sales office function being an important functional choice for Chinese companies. This proves that the importance of asset augmenting in the modified OLI model and the key role of knowledge in LLL are exaggerated. Asset exploitation is still the most important reason for Chinese overseas business, perhaps because Chinese products have their cost advantages on the global scale. Efficiency seeking is comparatively important in developing economies, and strategic asset seeking is essential in developed economies in particular. These are the reasons why more R&D industries and related functions go to developed regions, while manufacturing, construction industries and related functions go to developing regions. This also proves the point in the LLL model about the reasons why developed economies are also important destinations for China's outward FDI.

5 Discussion

The modified OLI model and the LLL model can not alone explain the phenomenon and motivation of China's FDI. They each have their own pros and cons. The modified OLI model attempts to form a theory which can match both to MNEs from developed economies and to MNEs from developing economies, but which ignores some important characteristics of MNEs from developing economies as latecomers, such as learning and step-by-step internationalization. From the case study of Sany, we can see that it is more suitable for investment in developing economies. In contrast, the LLL model is more meaningful when dealing with investment in developed economies. However, the LLL model puts too much focus on the learning purpose and foreign MNEs as sources of knowledge, without the analysis on the impact of various sources in host countries (Table 6).

Table 6 Suitable application of modified OLI and LLL frameworks

Criterion	Preference	Content	Sany proves
Resources utilized	Modified OLI	Mainly country-specific, later becoming more firm-specific	Action of branches in developing economies
Make or buy?	Modified OLI	Bias towards operations internalized across national borders	Action of branches in developing economies
Geographic scope	Modified OLI	Locations established as part of vertically integrated whole	Action of branches in developing economies
	LLL	Locations tapped as part of international network	Action of branches in developed economies
Learning	LLL	Learning achieved through repetition of linkage and leverage	Action of branches in developed economies
Process of internationalization	LLL	Proceeds incrementally through linkage	Action of branches in developed economies
Driving paradigm	LLL	Capturing of latecomer advantages	Action of branches in developed economies
Time frame	LLL	Cumulative development process	Action of branches in developed economies

Source: Own draft

The mismatch between the OLI model, the LLL model and the Chinese situation is mainly caused by the empirical basis of the two models. The OLI model stems from the observation of American MNEs, which focus on the global advantages with technical and managerial experience from domestic markets, while the LLL model is based on the empirical studies on MNEs from Korea and Taiwan of China, which are actively engaged in global value chains to supply American MNEs and therefore to enter the global market. Hence, technical upgrading to meet the demands of American MNEs is essential. However, China is different: it has a large and booming domestic market which offers the Chinese MNEs experience through exploring the similar market in developing economies, but it does not have the required technology to support the MNEs in exploring the developed market. Since China is becoming a more important source of FDI globally and the importance of outward FDI for the economic development in China is growing as well, a new model based on China's experience is an important issue in the field of economic geography.

The Sany is used here to prove that OLI-led and LLL-led behavior is not only found statistically in China's outward FDI pattern, the combination of OLI-led and LLL-led behavior is rather rooted in the strategy of Chinese MNEs. It reflects the business approach that is currently the most promising for some Chinese MNEs: firms can maintain large-scale and low-cost manufacturing operations at home while

exploring the developing market, which shares similarities with the Chinese market, and absorbing the knowledge in developed economies to realize sustainable development. To support MNEs in becoming global champions, four policies are suggested: encouraging Chinese MNEs to seek knowledge of international markets which would accelerate their technical and managerial ability in a short period; encouraging indigenous innovation inside China and inside the firms which is necessary for integrating and internalizing the newest knowledge acquired in developed economies and developing the new products suitable for domestic and foreign markets due to their low cost and high quality; building more transparent business institutions with international standards, which is a necessary condition for nurturing leading global MNEs; building a better image for China and Chinese firms and overcoming the liability from the bias against 'Made in China'.

6 Conclusion

Our empirical study has thus also discovered firstly that it may be more meaningful to discuss the difference in approaches towards FDI at the firm level rather than at the country level; secondly, that destination and motivation combine for FDI, with the motivation of FDI being affected by the attributes of host countries; and thirdly, that Chinese companies may accelerate the technology transfer from developed economies to developing economies. Some Chinese MNEs have now become large enterprises, but are still not strong enough because they can not control the advanced techniques in the highest value-added niches. The question whether they will become top MNEs and challenge the existing global networks can not be answered by these two models, since learning does not guarantee innovation automatically. It will be an interesting topic for discussion in the future.

Acknowledgements

We would like to thank all the interviewees who were kind enough to share information and knowledge with us. Parts of this article were presented at the conference *Neue Macht aus der Peripherie? Akteure aus Entwicklungsländern in der Globalisierung* in November 2010 in Marburg, Germany, and at the conference *China goes Global* in October 2011 in Cambridge, USA. The authors would like to thank the participants of the conferences for their questions and comments. We would also like to express our gratitude to three anonymous reviewers for their valuable comments.

References

- Buckley P J, Clegg J, Tan H, 2004. Knowledge transfer to China: Policy lessons from foreign affiliates. *Transnational Corporations*, 13 (1): 31-72.
- Buckley P J, Ghauri P, 1999. *The Internationalization of the Firm*. London: Cengage Learning.
- CCPIT, 2010. *Survey on Current Conditions and Intention of Outbound Investment by Chinese Enterprises 2010 (2010 Zhong Guo Qi Ye Dui Wai Tou Zi Xian Zhuang Ji Yi Xiang Diao Cha Bao Gao)*. Beijing, China. Available at: http://www.ccpit.org/yewu/docs/Survey_on_Current_Conditions_and_Intention_of_Outbound_Investment_by_Chinese_Enterprises.2010.en.pdf, accessed April 12, 2011.
- Child J, Rodrigues B S, 2005. The internationalization of Chinese firms: A case for theoretical extension? *Management and Organization Review*, 1 (3): 381-410.
- Deng P, 2009. Why do Chinese firms tend to acquire strategic assets in international expansion? *Journal of World Business*, 44 (1): 74-84.

- Dunning J H, 1993. *Multinational Enterprises and the Global Economy*. Wokingham: Addison-Wesley.
- Dunning J H, Kim C, Park D, 2008. Old wine in new bottles: A comparison of emerging-market TNCs today and developed-country TNCs thirty years ago. In K P Sauvant (Ed.), *The Rise of Transnational Corporations from Emerging Markets*. Cheltenham: Edward Elgar Publisher, 158-179.
- Dunning J H, Lundan S M, 2008. *Multinational Enterprises and the Global Economy*. Cheltenham: Addison-Wesley, 67-68.
- Ernst D, 2006. *Innovation Offshoring: Asia's Emerging Role in Global Innovation Networks*. Honolulu: East-West Center.
- Fan P, 2011. Innovation, globalization, and catch-up of latecomers: Cases of Chinese telecom firms. *Environment and Planning A*, 43 (4): 830-849.
- Ghauri P, 2005. Designing and conducting case studies in international business research. In R Marschan-Piekkari *et al.* (Eds.), *Handbook of Qualitative Research Methods for International Business*. Cheltenham: Edward Elgar Publishing Ltd, 109-124.
- Haggett P, 1965. *Locational Analysis in Human Geography*. London: Arnold.
- Humphrey J, Schmitz H, 2002. How does insertion in global value chains affect upgrading in industrial clusters? *Regional Studies*, 36 (9): 1017-1027.
- Kang Y, Jiang F, 2012. FDI location choice of Chinese multinationals in East and Southeast Asia: Traditional economic factors and institutional perspective. *Journal of World Business*, 47 (1): 45-53.
- Kaplinsky R, Morris M, 2009. Chinese FDI in Sub Saharan Africa: Engaging with large dragons. *European Journal of Development Research*, 21 (4): 551-569.
- Klossek A, Linke B M, Nippa M, 2012. Chinese enterprises in Germany: Establishment modes and strategies to mitigate the liability of foreignness. *Journal of World Business*, 47 (1): 35-44.
- Kuemmerle W, 1999. The drivers of foreign direct investment into research and development: An empirical investigation. *Journal of International Business Studies*, 30 (1): 1-24.
- Li P P, 2007. Toward an integrated theory of multinational evolution: The evidence of Chinese multinational enterprises as latecomers. *Journal of International Management*, 13 (3): 296-318.
- Li PY, Meyer K E, 2009. Contextualizing experience effects in international business: A study of ownership strategies. *Journal of World Business*, 44 (4): 370-382.
- Liefner I, Broemer C, Zeng G, 2012. Knowledge absorption of optical technology companies in Shanghai, Pudong: Successes, barriers and structural impediments. *Applied Geography*, 32 (1): 171-184.
- Liu L, Tian Y, 2008. The internationalisation of Chinese enterprises: The analysis of the UK case. *International Journal of Technology and Globalisation*, 4 (1): 87-102.
- Mathews J A, 2002. Competitive advantages of the latecomer firm: A resource-based account of industrial catch-up strategies. *Asia Pacific Journal of Management*, 19 (4): 467-488.
- Mathews J A, 2006a. Dragon multinationals: New players in 21st century globalization. *Asia Pacific Journal of Management*, 23 (1): 5-27.
- Mathews J A, 2006b. Catch-up strategies and the latecomer effect in Industrial Development. *New Political Economy*, 11 (3): 313-335.
- Narula R, 2006. Globalization, new ecologies, new zoologies, and the purported death of the eclectic paradigm. *Asia Pacific Journal of Management*, 23 (2): 143-151.

- MOFCOM, NBS and SAFE, 2010. *Statistical Bulletin of China's Outbound Direct Investment 2009* (2009 Nian Du Zhong Guo Dui Wai Zhi Jie Tou Zi Tong Ji Gong Bao). Beijing, China. Available at: <http://hzs.mofcom.gov.cn/accessory/201009/1284339524515.pdf>, accessed May 4, 2011.
- MOFCOM, NBS and SAFE, 2011. *Statistical Bulletin of China's Outbound Direct Investment 2010* (2010 Nian Du Zhong Guo Dui Wai Zhi Jie Tou Zi Tong Ji Gong Bao). Beijing, China. Available at: <http://hzs.mofcom.gov.cn/accessory/201009/1284339524515.pdf>, accessed February 25, 2012.
- Schueler-Zhou M, Schueler Y, 2009. The internationalization of Chinese companies: What do official statistics tell us about Chinese outward foreign direct investment? *Chinese Management Studies*, 3 (1): 25-42.
- Sutherland D, 2009. Do China's 'national team' business groups undertake strategic-asset-seeking OFDI? *Chinese Management Studies*, 3 (1): 11-24.
- UNCTAD, 2004. *World Investment Report 2003*. New York and Geneva: United Nations Press.
- UNCTAD, 2007. *World Investment Report 2006*. New York and Geneva: United Nations Press.
- UNCTAD, 2011. *World Investment Report 2010*. New York and Geneva: United Nations Press.
- Wernerfelt B, 1984. A resource-based view of the firm. *Strategic Management Journal*, 5 (2): 171-180.
- Yeung H WC, 1999. The internationalization of ethnic Chinese business firms from Southeast Asia: Strategies, processes and competitive advantage. *International Journal of Urban and Regional Research*, 23 (1): 88-102.

Article 3 Cognitive Distance and Obstacles to Subsidiary Business Success -The Experience of Chinese Companies in Germany

Manuscript accepted with major revision in Tijdschrift voor Economische en Sociale Geografie, as Si Y, Liefner I, Cognitive Distance and Obstacles to Subsidiary Business Success -The Experience of Chinese Companies in Germany. Tijdschrift voor Economische en Sociale Geografie.

Abstract: *The success of FDI from developing countries to developed countries is critically dependent on managing the differences in the knowledge bodies of the regions and players involved. The theories that at least partly explain successful FDI of this kind use the terms cognitive distance and embeddedness. Most of the empirical research takes the perspective of regions and has addressed the problem of becoming embedded in the host regions. This paper takes the firm perspective and examines cognitive distance regarding not only the host region, but also the knowledge of the firms involved. It uses qualitative information from an extensive study of Chinese affiliates in Germany. In contrast to many other studies, this paper shows that a fast and successful process of becoming embedded in the host region can hamper the subsidiary's success, as it may cause conflict with the parent firm.*

Key words: *Chinese Outward FDI; Cognitive distance; Germany; interview; Subsidiary; Obstacle*

1 Introduction

FDI used to be the domain of industrialized countries. Throughout the last decade, however, FDI from China has been on the increase and is becoming a heated topic in the fields of international business and economic geography (Child and Rodrigues, 2005; Yeung and Liu, 2008). By 2010, China had invested 279.6 billion USD, thus being among the top ten largest sources of FDI (UNCTAD, 2012). In contrast to FDI from industrialized countries, Chinese outward FDI displays the following characteristics:

- Government-encouraged FDI: outward FDI receives attention and support from the Chinese government, for example in the form of organizational support (e.g. providing lists of potential candidates for acquisitions), capital support from state banks and verbal encouragement from the government. Altogether, these measures seem to speed up outward investment decisions and some companies seem not to be well prepared, which is obvious for those firms that lack established brands, qualified people and experience abroad (Luo *et al.*, 2010).
- Government encouragement not only speeds up investment decisions, but can also lead to an over-optimistic assessment of business opportunities and reduce the willingness of the top management to adapt to the situation found abroad. Hence, government support can influence the decision to invest abroad, which is then based neither on the motive of generating profits in the long run nor on the experience gained from previous foreign investments.
- China's quest for technology: one of the motives of China's outward investment – particularly prominent in the manufacturing industry – is to acquire the most advanced technology directly, rather than learning it step by step. Consequently, Chinese firms target the technical leaders in certain industrialized countries (Buckley *et al.*, 2007).

Despite the high speed development and huge amount of cross-border investment, more than half of Chinese MNEs have not yet become profitable abroad¹ and they are faced with considerable obstacles compared with the MNEs from industrialized countries (Wright *et al.*, 2005). What causes the obstacles, for example linguistic barriers and a failure to understand business practices, in host countries? Is this particular to Chinese MNEs? Most empirical studies on Chinese MNEs have focused on the role of

government and technology-seeking motivation as mentioned above, while very few empirical investigations into the particular obstacles faced by overseas subsidiaries have been carried out (Klossek *et al.*, 2012). This important issue, decisive for their success, has been overlooked to date.

In this article, therefore, we use the example of Chinese FDI in Germany to explore this interesting issue and compare it with a prominent model from international business - the internationalization process model (Uppsala model). The Uppsala model explains the dynamics of internationalization as follows: the most important obstacle to internationalization is lack of knowledge (Carlson, 1966), which can be reduced through incremental decision-making and experiential learning in foreign markets. The Uppsala model thus provides a framework for analyzing the interaction between obstacles to internationalization and knowledge in a firm's internationalization process. It is also a dynamic behavior model based on bounded rationality, which is suitable for empirical studies (Johanson and Vahlne, 2009).

However, the Uppsala model states that internationalization is a step-wise process: a firm prefers to start in foreign markets that are close to the domestic market in terms of psychic distance, defined as the sum of factors that create barriers to understanding the foreign country (language, culture, institutions, etc.). It then gradually enters other more distant markets (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977) (cp. next section of this paper). During this process, the investing firm acquires knowledge that enables it to manage investment in distant countries at a mature stage of its internationalization process and overcome large psychic distance. Based on the empirical findings from Chinese companies in Germany, however, we have to challenge this notion of internationalization as a gradual process that involves sequential learning. Chinese investment in Germany shares the above-mentioned characteristics that do not correspond with the assumption of the Uppsala model. Based on these features, Chinese investment in Germany – and other advanced economies – must be characterized as radical rather than stepwise, and it cannot build on experience. If Chinese foreign investment were to follow a stepwise approach as assumed by the Uppsala model, research into this phenomenon would be unnecessary.

Hence, it is the aim of this article to illustrate how the Chinese investors' radical move to a very distant location and market leads to multiple obstacles in Germany, such as difficulties managing public relations, a failure to cope with language difficulties, difficulties in hiring local personnel and ineffective knowledge sharing with the parent firm. The article uses the concept of cognitive distance to analyze the existing knowledge gaps between parent and subsidiary that partly relate to psychic distance (see below).

The notion of psychic distance, focusing on the impact of differences between places, is too narrow in scope if we want to understand the difficulties that Chinese MNEs face. Psychic distance is an obvious important point, however, the knowledge of individuals in organizations is also essential, and not simply place-specific knowledge. Therefore, we favor the concept of cognitive distance, defined as the differences in the knowledge bodies of different actors in networks (Nooteboom, 2002), that can describe the importance of individuals in the knowledge of different places in the learning process. Cognitive distance also offers us a multi-actor perspective.

Our argument is based on a short review of theoretical contributions and an extensive and qualitative empirical investigation. Based on dialectic comments on the Uppsala model when introduced to the economic geography field, the literature review (sections 2 and 3) introduces the concept of cognitive distance into the obstacles analysis and extends the Uppsala model by illustrating efforts of subsidiaries to overcome obstacles via local embeddedness and absorbing local resources, particularly talents. The empirical investigation discusses starting points for developing propositions concerning the role of shifts in the complex structures of cognitive distance, its causes and its effects on business performance. We argue that the relevant cognitive distance for an overseas subsidiary has two dimensions: one is cognitive distance with the customers in the host country (external cognitive distance), and the other is with the parent company in the home country (internal cognitive distance). The subsidiary's learning efforts induce

dynamic changes in the patterns of cognitive distance, but do not necessarily remove important obstacles to business success.

Our line of thought is based on applying the perspective of the company. While most other related studies in economic geography primarily examine regions or regionally confined networks, we place the firm in the center of focus. For the research question posed here, this is indeed a promising angle (cp. Maskell, 2001) and complements the existing literature.

2 Theoretical background: Learning, unlearning and cognitive distance

Although the Uppsala model has been widely acknowledged, it has major shortcomings when applied in the economic geography field. Firstly, it does not distinguish between the different functions of the parent firm and subsidiaries within an MNE. It is the experiential learning and decision-making of overseas subsidiaries that provides new knowledge which is potentially relevant for future investment decisions. Nevertheless, the decision about geography and entry mode of further operation is made by the parent firm. Secondly, it treats the business environment as a neoclassical market rather than a network, a web of relationships which is more suitable to the real world. Thirdly, an extremely important, underlying assumption of the Uppsala Model is the crucial role of the people who are involved in the foreign operations (Forsgren, 2002). However, their impact on the internationalization process is under-researched. We thus recall firstly the concept of cognitive distance, which focuses on knowledge actors rather than the state-level concept of psychic distance, secondly the concept of local embeddedness as access to local environments, and thirdly the resource-based view of the firm that explains more clearly the influence of human resources in the overseas branches.

2.1 Liability of foreignness (LOF), psychic distance and cognitive distance

According to the Uppsala model, the obstacles for overseas subsidiaries had their origin in the LOF, defined as the costs of doing business abroad that result in a competitive disadvantage for an MNE subunit (Zaheer, 1995). As mentioned above, psychic distance is used to illustrate the differences between home and host countries. The larger the psychic distance is, the larger the liability of foreignness. Obviously, it is easier for the investor to carry out investment in countries that offer similar conditions. Investment in countries separated by a large psychic distance requires an extended period of learning.

As with cognitive distance, cognition is contingent upon the institutional environment and path-dependent. People perceive, interpret and evaluate the world according to mental categories which they have developed in interaction with their institutional environment. This leads to the notion of cognitive distance between people. For firms, people in a firm need to share certain basic perceptions and values in order to align their competencies and motives sufficiently. Differences in such aspects of organizational focus produce cognitive distance between firms (Nooteboom *et al.*, 2007). It is the virtue of inter-firm relations (Nooteboom, 2000) and a better concept than psychic distance when discussing the interaction between different individuals and firms in different places.

2.2 Liability of outsider (LOO) and local embeddedness

The concept of embeddedness shows what kind of efforts at the firm level - in this case the newly established subsidiary abroad - may be promising. Embeddedness was developed from social network theory (Granovetter, 1985). Networks consist of actors and their connections, and regionally confined networks tend to develop specific institutions that govern and affect communication, knowledge exchange and learning (Cooke, 1998). The concept of embeddedness stresses the positive effects of being part of a dense network of partners in which frequent and repeated cooperation is facilitated through trust and the development of network-specific institutions (Uzzi, 1996). Embedded actors benefit from access to new

information, but also to other actors' perceptions and judgments regarding this information. Hence, embeddedness may effectively allow the learning of place-specific knowledge, which is in fact the knowledge circulating in the network of local actors. For sustaining long-term success for a subsidiary in a host region, building connections into regional networks and becoming embedded seems to be of critical importance. This fact is acknowledged by Johanson and Vahlne (2009) by accepting LOO, defined as the liability that firms suffer when attempting to enter a foreign market where they have no relevant network position, which is an additional source of obstacles besides LOF.

2.3 Resources-based view (RBV): New Argonauts

While empirical research into local embeddedness focuses on the emerging local linkages of firms as an indicator for effective networking, RBV draws attention to the resources commanded by the firm examined, particularly its personnel (Kogut and Zander, 1993). According to this, learning and becoming embedded require people who learn and management that supports their learning efforts. In order to cross the knowledge between countries, 'new Argonauts', as promoted by Saxenian and Sabel (2008), are needed - a special kind of human resources. An Argonaut is a person who is familiar with two distant regional knowledge bodies and network-related institutions; an Argonaut thus represents a crucial resource for entering distant locations and networks, and employing people with these features greatly affects business prospects.

Hence, we must assume that in order to become embedded locally, a newly established subsidiary must acquire certain resources. This can be achieved by acquiring or employing local managers and personnel, in particular people who are familiar with the knowledge of both places, the one with that of the parent firm and the other with that of the subsidiary. Otherwise, embeddedness requires learning at the individual level of the managers and employees, and at the company level as an aggregate of individual learning. In both cases, the subsidiary adapts its resources to the new environment.

However, this adaptation poses a serious challenge for many firms, as will be shown in this article, and firms differ in their capability to become embedded. For example, if FDI is carried out as an acquisition of a local firm whose organization is left unchanged, it will remain firmly embedded locally. However, if FDI is carried out as greenfield investment and mainly involves personnel from the country of origin, i.e. from China, the new firm starts with zero embeddedness. In this case, the expatriate management and personnel must learn or the company must employ local labor, with both necessitating a shift in resources. In short, the characters of firms, such as the background of the management group and the entry model, could lead to different capabilities for overcoming the obstacles abroad. These influences, overlooked by the Uppsala model, require deeper empirical studies.

Table 1 summarizes the logic of our conceptual discussion. Based on the Uppsala model, obstacles for foreign subsidiaries originate from LOF and LOO, which could be overcome by embeddedness within local networks and absorbing new resources. The situation of each subsidiary for conquering the difficulties varies according to its capabilities. However, we have concerns about the effect of subsidiaries' efforts when we attempt to examine the interaction within the MNEs. The adaption of subsidiaries has consequences for the MNE as a whole. It extends the MNE's knowledge body as it adds new knowledge, but it may also create tension between the parent firm and its subsidiary, whose knowledge shifts away from that of the parent firm. The latter effect will be particularly prominent when learning new place-specific knowledge is accompanied by forgetting knowledge that is less relevant at the new location. Forgetting at the level of an individual may be reinforced through interactions at the group level when new routines of working together within the subsidiary are becoming established (Szulanski, 1996). It can be expected that the knowledge, the routines and the core competence of the subsidiary move away from being close to the parent firm. This negative effect will also be checked in the empirical parts.

Table 1 Relevant concepts and their core arguments.

Concept	Level of explanation	Content
Uppsala model	Impact of knowledge gaps between countries	<ul style="list-style-type: none"> • LOF and psychic distance • LOO
Cognitive distance	Impact of knowledge gaps in networks	<ul style="list-style-type: none"> • Place-specific knowledge bodies • Firm-specific knowledge, closely related to its region • Person-specific knowledge
Embeddedness	Impact of social ties	<ul style="list-style-type: none"> • Ways of becoming part of local networks and understanding the local knowledge body
Resource-based view	Impact of firm resources	<ul style="list-style-type: none"> • Need to acquire or employ certain resources (e.g. Argonauts) • Learning in order to add / broaden knowledge body

Source: Own compilation

All these concepts acknowledge to some degree the importance of experience and learning for successful decision-making during foreign investments. The case of China's investors enables us to examine what happens when previous learning has been insufficient. This problem has thus far received little attention in the theoretical and empirical literature, but it is becoming increasingly pressing given the rise of China's outward investment.

3 Literature Review

The structure of cognitive distances has been neglected in the MNE subsidiary literature to date. Current discussion has been of a rather general and conceptual character, with very limited empirical investigation (Yamin and Andersson, 2011). Given that the outbound investment from China to developed economies is still a new phenomenon, most studies on China concern the local embeddedness of foreign MNEs in China (Lin *et al.* 2011; Sun and Du 2011; Zhou *et al.* 2011) and the mismatch between foreign MNEs and local firms in China (Zhou and Tong, 2003; Wei *et al.*, 2011).

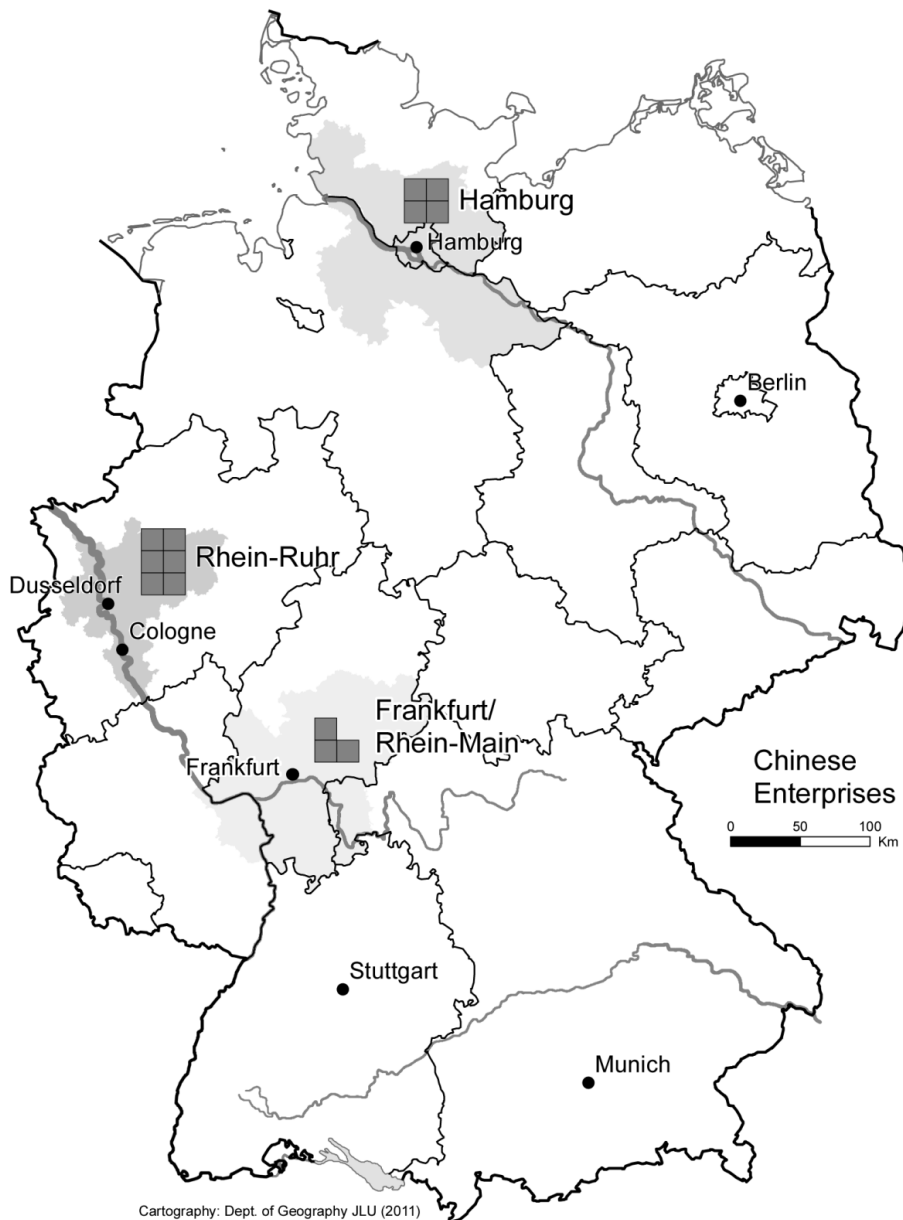
Comparatively little research has been conducted to illustrate the interaction between parent companies, foreign subsidiaries and host regions. Of the few existing studies, some have investigated how the affiliates coped with the difficulties of becoming embedded in a foreign environment and influencing factors. Based on the observation of emerging economy MNEs in the United States, Barnard (2010) drew the conclusion that these subsidiaries are able to develop capabilities by drawing on more skilled employees and a better supplier base. Klossek *et al.* (2012) presented insights from interviews with Chinese MNEs in Germany indicating that subsidiaries' strategies to reduce their LOF depend on the establishment mode chosen: the subsidiaries established via acquisition are more likely to have used due diligence, sharing control with the local management and sharing work with local forces, whereas those established via greenfield prefer installing key employee roles. Meanwhile, some studies investigated the abilities of Chinese parent firms and their impact on subsidiaries. Chinese firms are labeled as latecomer firms lacking the resources such as technology and market access to offer the subsidiaries competitive advantages in developed economies (Mathews, 2002). Liu and Woywode (2011) used in-depth interviews with five Chinese companies in Germany to discover the influence of absorptive capacity on post-M&A operation. They discovered that a light-touch approach, which maintains the domestic management team and provides

decision-making autonomy, enables the success of subsidiaries. The loosened control from the parent firm gives the subsidiaries more chance of survival.

4 Research, method and data

4.1 Research area

Germany is the most important destination of Chinese outbound investment in Europe (MOFCOM *et al.*, 2011). Inside Germany, Chinese investment is concentrated in three regions: the Hamburg Metropolitan Region, the FRM Metropolitan Region and the Ruhr/Rhine Metropolitan Region. In the remainder of this article, these regions will be referred to as ‘Hamburg’, ‘Frankfurt’ and ‘Cologne-Dusseldorf’ (Figure 1).



Source: based on interview with Invest in Northrhine-Westfalia (NRW), the Frankfurt Economic Development Corporation (Frankfurt EDC) (Frankfurt Wirtschaftsführung GmbH) and the Hamburg Chamber of Commerce and Industry

Figure 1 The geographical distribution of Chinese investment in Germany.

For the empirical investigations, we chose Frankfurt and Cologne-Dusseldorf as case-study regions. Three reasons support our decision. Firstly, they are the major destinations for Chinese investors, not only

in terms of firm numbers (more than half of the number in Germany), but also in terms of quality. The most important MNEs (such as Huawei, ZTE, Sany, Haier, Hisense, MINMETALS, five state-owned banks and major Chinese airline firms) have all located their headquarters and main activities in these two regions. Secondly, Chinese investment is also very important for these two regions. They belong to the federal states NRW and Hesse, which are the two states that attract the largest foreign investment in Germany. China was the largest source of FDI for NRW in 2010. Finally, the two regions have excellent personal and business connections, as suggested by interviewees whom we will mention later.

4.2 Company population in the study region

The research that deals with the above-mentioned questions must concentrate on companies that are fully functioning subsidiaries of parent companies in China, i.e. excluding independent Chinese-owned firms in Germany, particularly restaurants and supermarkets. However, an accurate and complete database of these companies in Germany does not exist for the following reasons:

- Germany does not have specific authorities or statistical surveys regarding Chinese MNEs. The related authorities, such as the EDC or Investment in Germany, register all firms that received the registration money from China as Chinese firms, regardless of whether they are affiliates of MNEs or single firms.
- The main job of these authorities is to attract FDI rather than to supervise the business routine. Therefore, some Chinese subsidiaries that only exist on paper or that have gone out of business or have moved out of the region may still remain on their lists. An illustrative case is that of a consultant firm in Frankfurt which is representative for at least twenty firms.

Therefore, the company population had to be established by using and comparing various sources.

- From the Chinese side, there is information for 399 Chinese firms which received a license from the Chinese government to invest in Germany released by MOFCOM on its official website², including information such as names and locations of parent firms and names, locations and business arrangements of affiliates. All the firms listed are MNEs, which makes this suitable as the basic database for our research. However, the database is quite rough. Among the 399 Chinese firms, around 40 lists are duplicated and only around half of the firms' names can be found on the German website. As for our study region, we could only confirm the contact information of 50 firms.
- Since there are no identical statistics from the German side, we collected data from interviews with Frankfurt EDC and Investment in NRW. According to them, there are around 900 firms in the study region. However, the number of Chinese MNEs' subsidiaries is far lower than this number for the two reasons mentioned above.
- The third data source is local Chinese publications: the Chinese business yellow pages in Germany, called "China address book 2011", and local Chinese newspapers, such as the Chinese Business Newspaper (Hua Shang Bao) and the Europe Times (Ou Zhou Xin Bao), which report the Chinese business news in Germany.

Finally, we completed the list with 93 firms that released their contact details. The number is twice that collected from the Chinese side, but 10% of that collected from the German authorities. During this company list search period, we were able to gauge the general situation of Chinese enterprises in Germany. First of all, most of the FDI flow is concentrated in a small number of large M&A projects (e.g. Lenovo acquiring Medion) and large companies (Sany invested 100 million Euro³ and Huawei has hired more than two thousand employees in Germany⁴), while small firms such as consultant or trading service firms hiring fewer than 5 employees account for the largest number of firms (Wang and Noisser, 2008). Secondly, a

large number of small firms suggests that personal investment and immigration is still an important reason for Chinese investment in Germany (Sohm *et al.*, 2009). Thirdly, some MNE subsidiaries are not willing to release their information, including contact information, to the public. Some enterprises simply wish to promote the brand name by “investing” in Germany, while others do not realize its importance, or say that they do not follow the rules for running a business in Germany.

4.3 Data collection: understanding Chinese foreign subsidiaries

As the research on China’s investment in industrialized countries is still in its infant stage, empirical research must be exploratory in nature. Two approaches have been chosen: overt participant observation and interviews.

Participant observation was introduced into geographical research in the 1980s (Jackson, 1983) and has been reexamined recently. In one overt study, the researchers informed the study group about the purpose and scope of the study before they joined the group (Hay, 2000). The observation was carried out by the joint Chinese and German team from October 2009 to September 2011, with the state of Hesse as a major supporting institution. We collected information from formal events within the local Chinese community, such as “Focus on China-FRM inviting you” held once every three months by FRM GmbH, “China in Dialogue” held by Frankfurt EDC, “China Talent Day” held by the Chinese Enterprises Association (CEA) in NRW and the Chinese Student Association in Germany, along with others. Secondly, we held informal talks with the participants during free time, such as lunch or dinner, drinking and sports time. We then referred to the above-mentioned local publications and gray materials. The extended participant observation allowed us access to informal discussions and interchanges, and provided inductive understanding of actors’ perceptions (Berg 2003) from both the Chinese and German sides.

Interviews were also conducted parallel to gain a more formal and direct understanding of our main research issues (Garcia-Pont *et al.*, 2009). The interviews were taken step by step. Firstly, we interviewed some experts or key persons in government and public organizations to gain an initial impression of Chinese MNEs in Germany, particularly in the study region. We then approached as many firms as possible to interview the general managers and other members of the management group. Finally, we interviewed associations, parent firms, local partners or customers and service corporations to gather their comments on subsidiaries’ behavior. We attempted to reach them in the same manner, namely by first sending an e-mail with an introduction and letter of recommendation from the Economic and Transport Department of the state of Hesse, then by telephoning them within a month if there was no reply, and finally by carrying out interviews if accepted. The face-to-face semi-structured interviews were chosen because interviews could provide better answers to the questions about how and why. This is particularly relevant for our case, since Chinese people are often too “polite” to mention difficulties and bad experiences via questionnaire, as suggested by an expert who conducted a questionnaire in Hesse in 2008, “*You need to talk with them face to face, (because it is only in this way that) they will tell the true story and you can feel and understand the words between lines*”.

4.4 Sample characters

We carried out 56 interviews with Chinese MNE subsidiaries and related organizations lasting between 45 minutes and 2 hours. The interviewees were mainly general managers or even founders of the subsidiaries, as well as PR managers and engineers. We talked with some of them more than twice if necessary. The structure of the interview is shown below (Table 2).

Table 2 Characteristics of companies and experts interviewed.

Classification	Examples	Person-time
First step		
Government	<ul style="list-style-type: none"> • Economic and Transport Department of the State of Hesse • General Consultant of P. R. China in Frankfurt am Main • China Council for the Promotion of International Trade German branch 	4
Quasi-Government	<ul style="list-style-type: none"> • Frankfurt EDC • Investment in NRW 	13
Academic experts	<ul style="list-style-type: none"> • Andreas Klossek 	2
Second step		
Chinese SOEs	<ul style="list-style-type: none"> • China Telecom • China Travelsky 	5
Chinese private enterprises	<ul style="list-style-type: none"> • Huawei • ZTE • Shenyang Brilliant elevator 	12
Chinese-German joint venture	<ul style="list-style-type: none"> • Xiamen Hongfa Electro acoustic Co., Ltd 	2
Third step		
Intermediary services	<ul style="list-style-type: none"> • MPR GmbH (Market and strategic consultant) • Wotax (Tax adviser) 	6
Non-profit organizations	<ul style="list-style-type: none"> • German-China Economic Association • CEA in NRW 	6
German cooperator	<ul style="list-style-type: none"> • Global Fenestration Relation GmbH 	3
Parent firm in China	<ul style="list-style-type: none"> • MINMETALS 	3

The methods were chosen as it seemed crucial to understand how the Chinese affiliates work and to acquire in-depth and firm-centered information. The results are not representative in a statistical sense; however, the methods ensure that key structures and processes that shape firms are captured. They allow the establishment of initial propositions regarding our research questions. The results discussed here are solid in the sense that they were checked with triangulation (Baxter and Eyles, 1997). The following section uses quotes from the interviews to illustrate the findings.

5 Results

When carrying out interviews, we concentrated on four issues: (1) whether Chinese companies experience obstacles when they invest in Germany; (2) if so, what kind of obstacles they face; (3) the reasons for these obstacles; (4) Their reactions and these difficulties with taking proper reactions. This section cites the content of the interviews to illustrate these issues. It is organized as follows: firstly, we discuss the external cognitive distance originating from psychic distance and LOF. Then we evaluate the effect of local embeddedness. We present the fact that the process of embeddedness can ‘create’ internal cognitive distance and illustrate the knowledge structure an overseas subsidiary must face. This paradox can be carefully linked to company characteristics and resources, which is explained in the third part. The lack of new Argonauts, which makes the situation of Chinese firms in Germany more difficult, will be discussed in the final part. This structure follows the logic of our interviews and reflects typical experience of investors.

5.1 The external cognitive distance stemming from liability of foreignness (LOF)

Based on our observation, Chinese MNEs face external cognitive distance when investing in Germany. Chinese companies and experts interviewed asserted that the business environment in Germany was too complicated and unfamiliar to understand. The situation was tougher because they, unlike MNEs from developed economies, did not own the internationally acknowledged brand to offset the cognitive distance (Child and Rodrigues, 2005). As an executive and an associate secretary mentioned:

“[Among Chinese MNEs in Germany], only [a limited number of firms such as] Huawei are successful. They have to deal with all kinds of misunderstandings with customers and the public], most of which turn out to produce failures’, and ‘Some members of our club, such as Dongfeng Auto, are well-known in China with good reputations, however they are questionable to the public in Germany. Most Germans think that ‘made in China’ means low quality and price”.

The external cognitive distance is caused by huge language, business customs and cultural differences between China and Germany. Firstly, some Chinese employees speak only English or just very basic German. The linguistic incompetence causes many misunderstandings (Wang and Noisser, 2008). Secondly, German business is based on laws, while network relationships are more important in China (Yeung, 1994). A tax adviser gave us a good example of the misunderstanding:

“In China, channels and connections with the government are important; in Germany, knowing the rules is important. A small company did business well in Germany but the manager thought it too time consuming to claim the tax, so he asked me whether it was possible to give some money to a government officer and save his trouble. When he asked, he didn’t realize the importance of following the legal and accounting system. That is also why Chinese companies don’t have a good reputation here”.

Thirdly, German business culture values information transparency, while China prefers modesty (Sohm *et al.*, 2009), for example only large firms such as Huawei and Sany have a PR department and release the firms’ information regularly. A PR manger put it this way:

“Chinese people believe that silence is a good character. They value low-key behavior. People would rather do business than talk. But the ‘silence’ adds more suspicion for the German public”.

5.2 The negative effects of embeddedness: the emergence of internal cognitive distance

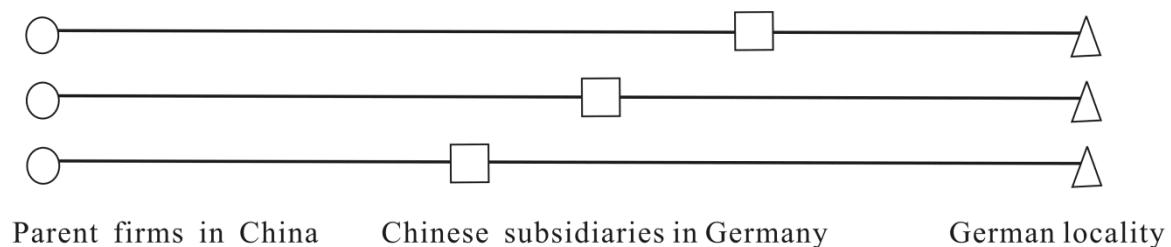
In the above cognitive distance analysis, Chinese MNE subsidiary is equated to Chinese institution, while German firm is equated to German culture. The theoretical discussion summarized in this paper’s theory section suggests that the appropriate solution for this problem is becoming embedded and learning to deal with the local culture. However, the growing internal cognitive distance between subsidiaries and the parent firm is another cause of problems. Individual learning in affiliates in Germany shifts the understanding, values and ideas of the managers in the affiliate. This move is not understood back in China, and the cognitive distance is thus not reduced, but rather shifted from being external to internal. This is the negative effect of local embeddedness and learning that has been overlooked in the Uppsala model. A subsidiary manager asserted that:

“The communication between the parent firm and customers via us costs a lot of time and money. [Taking after-sales service as an example]. We have to hire a German to negotiate with customers, while employing a Chinese to talk [with the parent company] about the quality of goods and logistics. They [the parent firm] don’t care about the schedule and are flexible regarding the plan, which can’t be understood by German employees and customers. ”.

A German cooperator of a Chinese subsidiary held the opinion that:

“The parent companies send Chinese people [to Germany] but do not give them the autonomy to decide. All decisions are made in China, not knowing what really happens in the German market. Of course, all the subsidiary’s decisions are behind the market and sometimes even wrong”. The opinion is also shared by a subsidiary’s manager: “It is really not easy to communicate with the board back in China. The chief executive officer (CEO) is not well educated. It was possible [for him] to run a firm with dozens of employees based on experience. But it can’t work for a firm with thousands of employees, particularly with international ambition”.

As Figure 2 shows, we found cases illustrating that cognitive distances between the parent firms in China and the customers in Germany are the same prior to firms’ internationalization, since the cognitive distances at this time are mainly due to the psychic distance between China and Germany and the Chinese firms’ ability remains at a similar level. All the subsidiaries have the same total cognitive distances with which to cope. They must maneuver in a spectrum of cognitive distances between places and firms and make sure that they learn how to succeed in the host locality, while at the same time maintaining their ability to communicate with the parent firm.



Source: Own draft

Figure 2 The cognitive distances between parent firms, subsidiaries and local customers

5.3 Characteristics of the enterprises' resources: different positions of subsidiaries in the cognitive distance structure

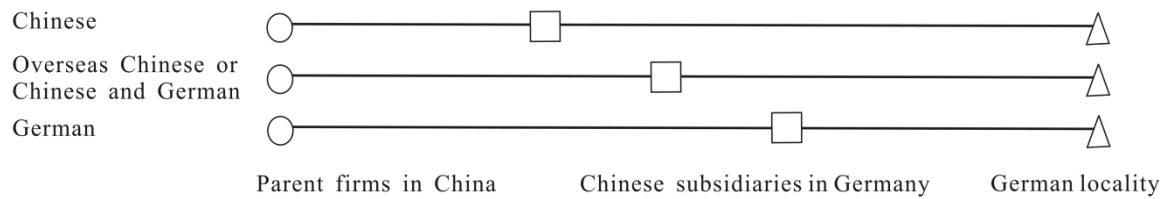
The theoretical section suggests that firm resources influence the extent of embeddedness. They also influence the position of a subsidiary between parent firm and local customer based on our observation in figure 2. The following three factors are important.

The first is the background and prior experience of the management team, most importantly in new and small companies (Reuber and Fischer, 1997). The structure of the management team could be Chinese only, overseas Chinese who studied or worked outside China before, Chinese and Germans cooperating together, and German only. The position a subsidiary could take is moving further away from the parent firm and closer to German customers correspondingly (Figure 3). The reasons are easy to understand. The Chinese managers know parent firms well but lack the language ability and knowledge about the German locality (Wang and Noisser, 2008). As a market consultant mentioned:

“The Chinese manager, who has never spent time in Germany, needs to learn [himself] first, [which] could take years. He cares about the career path when he goes back to China. Therefore, he may have more tendencies to keep in step with the parent firm in China”.

On the other side, the German managers mostly find it difficult to work with the parent firms in China:

“They [parent firm] pay little attention to the time schedule. I need to do extra work to entertain these guys [from China] who always want to have Chinese food only”.



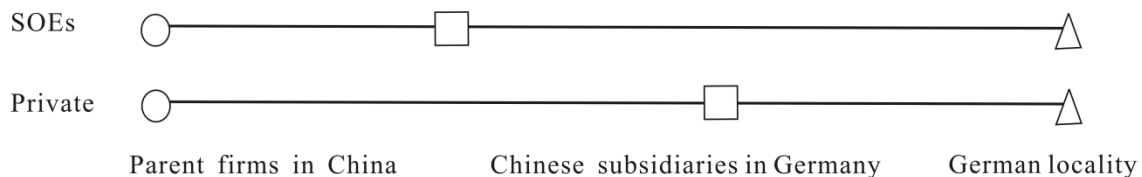
Source: Own draft

Figure 3 The background of manager groups' influence on cognitive distance structure

Secondly, the situation varies according to the ownership of the parent firms, since firms of the same ownership have a similar tendency of choosing management groups. Normally, SOEs, such as China Bank, Air China and Minmetal, have more to consider beyond profit. The general manager is mostly Chinese, sent from the parent firm, who does not have overseas experience. Private firms, however, prefer to hire overseas Chinese who can manage the German employees, understand German customers, and communicate with the Chinese parent firm at the same time. Take Hongfa as an example. The general manager is overseas Chinese. He hired two vice-managers, an experienced German responsible for marketing and a Chinese for logistics and communication with China. He stated that:

"The differences between German [customers] and the Chinese [parent firm] are settled by the heterogeneous management group inside the firm [subsidiary]".

In this situation, the subsidiaries are closer to German society (Figure 4).



Source: Own draft

Figure 4 The subsidiary ownership's influence on cognitive distance structure

The third structural factor is entry modes (Klossek *et al.*, 2012). What was mentioned in the last paragraph concerning the influence of ownership is based on the data of firms with greenfield investment as an entry mode. The subsidiaries that engage in merger or acquisition in Germany normally retain the management group from the German part and send Chinese from the parent firm as supervisors and communicators (Liu and Woywode, 2011), such as Beijing No. 1 Machine Tool Plant (acquiring Adolf Waldrich Coburg GmbH & Co. KG). In this situation, the cognitive distance inside Germany is very small and the main distance exists between the affiliate and the parent firm (Klossek *et al.*, 2012).

5.4 The lack of new Argonauts

When asked about the biggest reason for the obstacles for Chinese firms, all interviewees admitted that qualified managers who can understand both China and Germany, in other words new Argonauts, are essential for the affiliates to survive in Germany (Tirpitz *et al.*, 2011). However, the firms found it difficult to find and hire them. According to the interviews, three factors may explain this phenomenon.

The first is a lack of new Argonauts in Germany (Wang and Noisser, 2008). Germany is not an immigrant country and the official language, German, is not well known among Chinese, therefore the local Chinese community is far less developed than in the USA. Meanwhile, limited numbers of Germans have had previous experience working with or for Chinese companies, or know the Chinese language and habits. Moreover, as a human resource consultant stated:

"The qualified ones normally work in good German firms which do business in China with high salaries. They don't know the Chinese firms [subsidiaries] and prefer to avoid the unknown risks, such as insurance".

Secondly, the local Chinese community has two sub-circles which share little overlap. This means that fewer Chinese can be approached or used by the other sub-circle. The first sub-circle is made up of overseas Chinese who came to Germany 20 years ago or earlier. They speak fluent German and know the local environment quite well. Some of them are not well educated, for example without university degrees. The second consists of the Chinese who came to Germany after the Chinese 'Go Global' policy in 1999. These Chinese may have family in China and return there regularly, most of them speaking English as a foreign language and working in Chinese SOEs and Chinese authorities. Generally, they are well educated. Inside the sub-circles, people are well connected, and they can obtain business and employees through recommendation between friends, as asserted by an interviewee. Little overlap exists between sub-circles because of different educational backgrounds, career appeal, different opinions on Chinese policies and other reasons.

Finally, most subsidiaries lack the ability to manage the talent. Some companies do not realize the importance of the local employees. Some companies do not know how to manage it, or are not even aware of it. Take an example from our interviews:

"A company hired a German but had no idea about contracts. The employee downloaded the contract from the website and the company just signed it. After three months, the company wanted to fire this person, but he claimed 30,000 Euro as compensation. This caused a significant loss for this firm".

It seems that the new Argonauts are missing for Chinese firms in Germany. On the one hand, this explains why Chinese firms have many difficulties in Germany and do not perform well financially. On the other hand, the new Argonauts argument based on the intensive connection between Taiwan and the USA may not be suitable for other countries with different language and immigrant histories.

In this section, we argue that the obstacles for foreign subsidiaries come not only from LOF and LOO, but also from the emerging internal cognitive distance arising from the embeddedness efforts, with the lack of new Argonauts making the situation of Chinese firms in Germany tougher.

6 Conclusion and discussion

This paper introduces the cognitive distance concept into the analysis of Chinese MNE subsidiaries' obstacles in Germany as a contrast to the well-established Uppsala model. The concept of cognitive distance – which is more open and actor-focused rather than country-focused – is better suited for understanding the problems of Chinese investors in Germany, as many of them follow a radical approach to foreign investment. It allows us to take into consideration what happens when an affiliate manages to overcome the LOF and the LOO: it experiences a transformation that takes it further away from the parent firm and the home country and closer to the host country and its local networks. Cognitive distance also allows us to understand what can be done to allow an affiliate to manage external and internal knowledge gaps successfully: the main field of action is learning at an individual level, or employing managers who

live in both business cultures and know how to bridge the distances. Hence, the concept of cognitive distance can combine elements of the Uppsala model, the RBV and the embeddedness approach.

Moreover, our research supports a key insight from the cognitive distance concept: we highlight the fact that learning to become part of local networks for the purpose of accessing relevant host locality knowledge simultaneously increases the unwillingness or inability to communicate effectively with the parent firm. The standard assumption that communicative abilities and knowledge distance diverge holds true. This is particularly important for inexperienced investors who have not had the chance to establish management routines that allow the handling of these difficulties.

This article was not intended to come up with a new model of internationalization that could replace existing ones and relate better to the case of Chinese investors. However, it is important to notice that Chinese investors constitute a group of firms whose behavior does not fit the assumptions of this standard model. This needs to be taken into account when conducting empirical research on China's Outward FDI and assessing its prospects and potential economic impact both worldwide and on the local scale. The concept of cognitive distance offers a framework which is better suited to studying and understanding the nature and consequences of Chinese investment in advanced markets.

We have no indication that the case of Chinese investment in Germany is a single exception to the rule. On the contrary, we assume that Chinese firms in other non-English-speaking countries face similar challenges, including most other parts of Europe. For these countries, obstacles – language barriers and the lack of Argonauts – can be assumed to exist as well. It is mainly due to the prominence of the German economy in continental Europe that these challenges can be observed earlier.

Finally, the interesting question remains concerning to what degree our results are typical for a Chinese firm or simply features of investors from developing countries in general. Obviously, a lack of experience, resource scarcity and the liability of being unknown in the host locality are features shared by firms from other national backgrounds as well. However, there are also China-specific factors involved that shape the pattern observed here. The fact that many Chinese firms feel encouraged to go abroad without having a history of experience from investing in countries that are closer may be a unique feature. The same may hold true for the desire to reach out for technological leaders and leapfrog through outward investment. However, another major factor may affect the promises of Chinese investment negatively, and strongly so when compared with investment from many other developing countries, namely public skepticism: some segments of the German public express general concern about investment from China; however, such concern is not unique to Germany, but indeed widespread in the Western world. Three factors can be identified which affect the success of Chinese firms in the early investment period. Firstly, the government support for investors raises the question of who is investing in the end – independent firms or the Chinese nation? Secondly, the image of China as a 'low-quality' provider is reiterated frequently in the public media. Thirdly, a lack of transparency in Chinese business transactions – be it real or an outcome of the Chinese language – raises the suspicion that investors may follow hidden agendas. Taken together, the resulting public skepticism is a huge burden for those Chinese affiliates that wish to build up close contacts to local business partners and, more importantly, attract qualified personnel.

Hence, while many Chinese investors can command large amounts of capital and draw on huge sales successes, their prospects for quick success in advanced markets must be viewed with caution. Their radical approach to foreign investment faces important obstacles, the overcoming of which will take time. The fact that many difficulties faced by Chinese investors result from inadequate background knowledge, however, signals that there is room for private or public support services to smoothen their entrance into advanced locations and markets.

Endnote

1. <http://finance.china.com.cn/news/gnjj/20120619/813071.shtml>, accessed in August 2012
2. http://wszw.hzs.mofcom.gov.cn/fecp/fem/corp/fem_cert_stat_view_list.jsp, accessed in July 2010
3. <http://fw.xinhua08.com/a/20111031/839574.shtml>, accessed in July 2010
4. From interview

References

- Barnard H, 2010. Overcoming the liability of foreignness without strong firm capabilities - the value of market-based resources. *Journal of International Management*, 16 (2):165-176.
- Baxter J, Eyles J, 1997. Evaluating qualitative research in social geography: Establishing 'rigour' in interview analysis. *Transactions of the Institute of British Geographers*, 22 (4): 501-523.
- Berg B L, 2003. *Qualitative Research Methods for the Social Sciences*. 5th Edition. Boston: Allyn & Bacon.
- Buckley P J, Cross A R, Tan H, Liu X, Voss H, 2008. Historic and emergent trends in Chinese outward direct investment. *Management International Review*, 48 (6): 715-748.
- Carlson S, 1966. International business research. *Acta Universitatis Uppsaliensis Studiae Oeconomiae Negotiorum I*. Uppsala, Sweden.
- Chen TJ, Chen H, Ku YH, 2004. Foreign direct investment and local linkages. *Journal of International Business Studies*, 35 (4): 320-333.
- Child J, Rodrigues B S, 2005. The internationalization of Chinese firms: A case for theoretical extension? *Management and Organization Review*, 1 (3): 381-410.
- Forsgren M, 2002. The concept of learning in the Uppsala internationalization process model: A critical review. *International Business Review*, 11 (3): 257-277.
- Gaacia-Pont C, Canales I J, Noboa F, 2009. Subsidiary strategy: The embeddedness component. *Journal of Management Studies*, 46 (2): 182-214.
- Granovetter M, 1985. Economic action and social structure: the problem of embeddedness. *The American Journal of Sociology*, 91 (3): 481-510.
- Hay I, 2000. *Qualitative Research Methods in Human Geography*. Oxford: Oxford University Press.
- Jackson P, 1983. Principles and problems of participant observation. *Human Geography*, 65 (1):39-46.
- Johanson J, Vahlne J-E, 1977. The internationalization process of the firm - a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8 (1): 23-32.
- Johanson J, Vahlne J-E, 2009. The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40 (9): 1411-1431.
- Johanson J, Wiedersheim-Paul F, 1975. The internationalization of the firm - four Swedish cases. *The Journal of Management Studies*, 12 (3): 305-322.
- Klossek A, Linke B M, Nippa M, 2012. Chinese enterprises in Germany: Establishment modes and strategies to mitigate the liability of foreignness. *Journal of World Business*, 47 (1): 35-44.

- Kogut B, Zander U, 1993. Knowledge of the firm and the evolutionary-theory of the multinational-corporation. *Journal of International Business Studies*, 24:625-645.
- Lin G CS, Wang C C, Zhou Y, Sun Y, Wei D YH, 2011. Placing technological innovation in globalising China: Production linkage, knowledge exchange and innovative performance of the ICT industry in a developing economy. *Urban planning*, 48 (14): 2999-3018.
- Liu YP, Woywode M, 2011. Cultural influences, absorptive capacity, and integration mode in international mergers and acquisitions: light- touch approach of Chinese cross-border M&A in Germany, paper presented at China goes global conference, Cambridge, MA, October 2-4, 2011
- Luo Y, Xue Q, Han B, 2010. How emerging market governments promote outward FDI: Experience from China. *Journal of World Business*, 45 (1): 68-79.
- Maskell P, 2001. The firm in economic geography. *Economic Geography*, 77 (4): 329-344.
- Mathews J A, 2002. Competitive advantages of the latecomer firm: A resource-based account of industrial catch-up strategies. *Asia Pacific Journal of Management*, 19 (4): 467-488.
- MOFCOM, NBS and SAFE, 2011. *Statistical Bulletin of China's Outward FDI 2010 (2010 Nian Du Zhong Guo Dui Wai Zhi Jie Tou Zi Tong Ji Gong Bao)*. Beijing, China. Available at: <http://hzs.mofcom.gov.cn/accessory/201109/1316069658609.pdf>, accessed March 27, 2012.
- Nooteboom B, 2000. Learning by interaction: Absorptive capacity, cognitive distance and governance. *Journal of Management and Governance* 4 (2): 69-92.
- Nooteboom B, 2002. *A Cognitive Theory of the Firm*. Paper presented at a workshop on theories of the firm. Available at: http://esnie.org/pdf/ws_2002/Nooteboom.pdf, accessed March 1, 2012.
- Nooteboom B, Haverbeke W V, Duysters G, Gilsing V, and Oord A, 2007. Optimal cognitive distance and absorptive capacity. *Research Policy*, 36 (7): 1016-1034.
- Reuber R A, Fischer E, 1997. The Influence of the management team's international experience on the internationalization behaviors of SMEs. *Journal of International Business Studies*, 28 (4): 807-825.
- Saxenian A, Sabel C, 2008. Roepke lecture in economic geography venture capital in the “periphery”: The new Argonauts, global search, and local institution building. *Economic Geography*, 84 (4): 379-394.
- Sohm S, Linke B M, Klossek A, 2009. *Chinese Companies in Germany: Chances and Challenges*. Available at: www.bertelsmann-stiftung.de/deutsch-chinesische-zusammenarbeit, accessed October 15, 2010.
- Sun Y, Du D, 2011. Domestic firm innovation and networking with foreign firms in China's ICT industry. *Environment and Planning A*, 43 (4): 786-809.
- Szulanski G, 1996. Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17 (1): 27-43.
- Tirpitz A, Groll C, Ghane K, 2011. *Chinese companies enter Germany- Market entry challenges for Chinese companies (Herausforderungen chinesischer Unternehmen beim Markteintritt in Deutschland)*. Berlin, Germany. Available at: www.entergermany.com/files/CCEG_GER.pdf, accessed May 16, 2011.
- UNCTAD, 2012. *World Investment Report 2011*. New York and Geneva: United Nations Press.
- Uzzi B, 1996. The source and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review*, 61 (4): 674-698.

- Wang Y, Noisser N, 2008. *Chinese Enterprises in Hessen: Survey on Barriers to Business Management* (*Chinesische Unternehmen in Hessen: Untersuchung ueber Hindernisse bei der Geschaeftsabwicklung*). Hesse, Germany. Available at : http://www.de-moe.edu.cn/upload/1227606910_file1.pdf, accessed October 15, 2010.
- Wei D YH, Liefner I, Miao CH, 2011. Network configurations and R&D activities of the ICT industry in Suzhou municipality, China. *Geoforum*, 42 (4): 484-495.
- Yamin M, Andersson U, 2011. Subsidiary importance in the MNE: What role does internal embeddedness play? *International Business Review*, 20 (2): 151-162.
- Yeung H WC, 1994. Transnational corporations form Asian developing countries: their characteristics and competitive edge. *Journal of Asian Business*, 10 (4): 17-58.
- Yeung H WC, Liu W, 2008. Globalizing China: The rise of Mainland Chinese firms in the global economy. *Eurasian Geography and Economics*, 49 (1): 57-86.
- Zaheer S R, 1995. Overcoming the liability of foreignness. *Academy of Management Journal*, 38 (2): 341-363.
- Zhou Y, Tong X, 2003. An innovative region in China: Interaction between multinational corporations and local firms in a high-tech cluster in Beijing. *Economic Geography*, 79 (2): 129-152.

Article 4 Emerging Cognitive Distance within and between Firms: Conceptual Remarks and an Application to Chinese Foreign Direct Investment in Germany

Manuscript accepted with major revision in Eurasian Geography and Economy, as Si Y, Liefner I, Emerging cognitive distance within and between firms: Conceptual remarks and an application to Chinese foreign direct investment in Germany. Eurasian Geography and Economy.

Abstract: *This paper introduces the cognitive distance concept into the analysis of Chinese FDI in Germany. This is a recent phenomenon still poorly understood theoretically and empirically. Based on qualitative information, it discusses factors contributing to cognitive distances between firms in China and in Germany, such as language, institutional and market differences, and shows that FDI is made to serve as a way to reducing or crossing this cognitive distance. Our research unpacks the concept of global pipelines for knowledge sharing in a local-global context and explores the great difficulties to be overcome for such pipelines to transfer knowledge.*

Keywords: *Chinese transnational company; Subsidiary; Cognitive distance; Germany*

1 Introduction: FDI and cognitive distance

In the last ten years, transnational companies (TNCs) from China have developed very quickly. China was among the top ten largest sources of FDI in 2010 (UNCTAD, 2011). China's FDI has been an interesting topic both theoretically and empirically, as its development, its consequences and the conditions affecting it are not yet well understood (Child and Rodrigues, 2005). Despite a number of studies on FDI to Africa (Kaplinsky and Morris, 2009) or to East and Southeast Asia (Yeung and Liu, 2008), research about FDI from China to developed economies, particularly to the EU, remains underdeveloped.

This paper limits itself to the discussion of the case of Chinese FDI in Germany in the light of the concept of cognitive distance. It will be shown below that the concept of cognitive distance offers a powerful tool for understanding some of the key features of recent Chinese FDI in Germany, in particular because the concept has so far remained very broad. Hence, cognitive distance can function as a container term for a set of more precisely defined and measurable factors.

Cognitive distance has entered the field of economic geography with the work of scholars such as Noteboom / Boschma. The concept has its origins in the field of network theory. Its main argument centers on the fact that distant actors in networks have different knowledge backgrounds and may seek an optimum balance of novelty in communicability when cooperating: cognitive distance increases learning opportunities but limits understanding. The empirically based literature that uses this concept often takes cognitive distance as a factor that may determine the value and the potential success of network relations. However, the concept itself – i.e. the question of what it is that 'makes' cognitive distance, or to put it differently, the question of what kind of knowledge is relevant here – remains underdeveloped conceptually, with a lack of empirical investigations being the main reason for this (Boschma, 2005). A second void in this young field of studies relates to the dynamics of cognitive distance. Most studies take cognitive distance as a feature of network relations that has to be dealt with as a short-term constant in cross-sectional analysis. However, it is obvious that cognitive distance must be changing dynamically with every learning effort of any of the partners involved in a network relationship. If this point is explored in the related literature at all, it is usually within the context of learning efforts that reduce the cognitive distance between

two partners. A similar focus prevails in the literature that deals with related terms, such as that of psychic distance (Johanson and Vahlne, 1997; 2009). Such a focus, however, draws attention to the benefits of learning and proximity – spatial, sector, temporal, etc. But it is not well suited to exploring the factors which influence the emergence of cognitive distance.

The concept of cognitive distance is neutral towards power differences between actors and the way they affect relations. The issue of power, however, has attracted researchers' interest, in particular in connection with research into global value chains and global production networks (e.g. Boschma, 2005). One observation is that a superior knowledge base – be it technological, organizational, or market knowledge – usually goes hand-in-hand with the power to govern large parts of value chains. Although power relations are not the main focus of this study, and not easy to identify using the cognitive distance framework either, we discuss this issue based on our empirical findings.

Here, the empirical observation of a new stream of FDI between very different countries (China and Germany) and the need to understand the cognitive distance concept match and combine to form the following research question: what factors contribute to the cognitive distance in the dynamic relationship between headquarters (HQ) in China and their subsidiaries in Germany? In answering these two questions, our research investigates the concept of global pipelines for knowledge transfer in a local-global context (Bathelt *et al.*, 2004): Chinese TNCs serve as intra-firm knowledge channels across countries to transfer, explore and exploit the distant knowledge. We also uncover the great difficulties to be overcome for such pipelines to transfer knowledge, while outlining TNC subsidiary capability which influences the nexus between global pipelines and local knowledge.

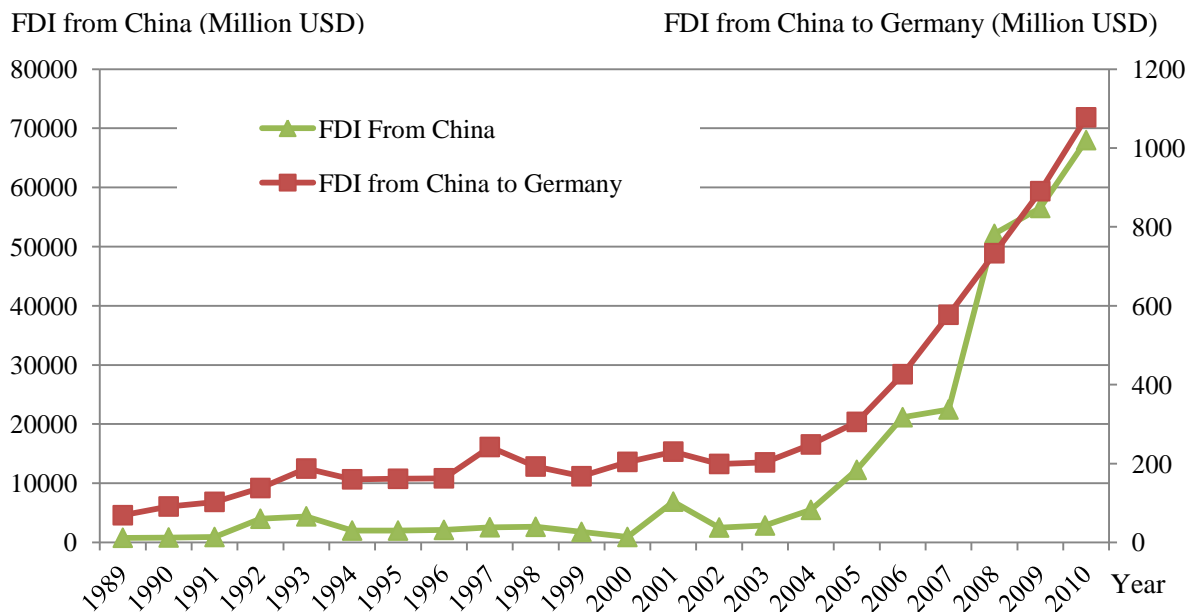
As Chinese FDI in Germany is still at an early stage, and neither the concept of cognitive distance itself nor its link to this type of FDI have been previously discussed in the academic literature, this paper must rely on explorative and qualitative information. Its results will help generate more elaborate hypotheses for quantitative analyses that may follow in the future, but it cannot answer comprehensively the many questions relating to the prospects of Chinese FDI in developed economies. However, the systematic understanding of the factors affecting cognitive distance developed in this paper allows for the formulation of several policy implications for investors and local policymakers.

The remainder of this paper is organized as follows: first, we briefly introduce the overall development of FDI from China to Germany. We then focus on the conceptual development of cognitive distance, including the influencing factors and dynamic development. After a short explanation of the research method and data, we present the results from interviews: why Chinese firms carry out FDI, the supposed function of overseas subsidiaries, and the cognitive distance development among HQ in China, Chinese TNC subsidiaries in Germany and German locality. The final section provides a conclusion and implications for TNCs and government.

2 Overview: Outward FDI from China

Since the launch of the economic reforms in 1978, China has experienced high-speed growth of its economy (GDP) and inward FDI (Wei, 1999). The outward FDI, however, only emerged after 1999 when China carried out the “Going Global” policy, and in 2006, the end of the transition period of China's accession to the WTO, the growth of outward FDI surpassed that of inward FDI for the first time. Among all the destinations, the EU took 8.7 percent of the FDI from China, amounting to 59.63 billion USD in 2010, twice the figure of the previous year. 53.6% of FDI flowed into leasing and business services, 34% into the manufacturing industry and 5.4% into finance (MOFCOM *et al.*, 2011).

Germany is the most important destination of Chinese outbound investment in the EU (MOFCOM *et al.*, 2011). The growth of FDI flow to Germany shares a similar trend to the general FDI from China (Figure 1), which has increased dramatically by some 25% annually since 2005.



Data source: UNCTAD <http://unctadstat.unctad.org/TableViewer/tableView.aspx> and deutsche bundesbank

Figure 1 The historical comparison between FDI from China and FDI from China to Germany

The industrial and entry mode changes are associated with the location changes of Chinese investment in Germany (Table 1). In 1979, the first Chinese Consulate was established in the Hamburg Metropolitan Region (Hamburg), and Hamburg was officially twinned with Shanghai as part of the ports and trade cooperation. Most Chinese enterprises in trade services and logistics were established in Hamburg, taking advantage of its convenient connection to the whole of Europe (Assmann, 2003). Some large enterprises from Shanghai, such as Baosteel from the steel industry, also operated here. From around 1990, the Frankfurt/Rhine/Main Metropolitan Region (Frankfurt) became increasingly important because of its airport, fair events and financial importance in the EU. It is also a historical place of residence for overseas Chinese. Therefore, the industries related to goods logistics became concentrated in Hamburg, while the industries servicing frequent cross-border personnel flow moved to Frankfurt. The four national banks and three national airlines all founded their European headquarters in Frankfurt. Most Chinese firms in both regions, whether from the manufacturing industry, such as Shenyang Brilliant Elevator, or from the service industry, such as China Telecom, function as sales offices or after-sales service providers, with market-seeking being their main motivation (CCPIT, 2010). These firms are small and function as a trial for entering the German and perhaps even the European market (Wang and Noisser, 2008).

Since 2005, however, the Ruhr/Rhine Metropolitan Region (Ruhr), a long-standing industrial region, has emerged as the most attractive location. Many Chinese enterprises from the mining, steel, telecommunication and machinery manufacturing industries invest there due to its strong industrial base, human resources and technical universities. Whether operating via Greenfield investment (Huawei and ZTE) or via M&A (Sany), the individual investments made in Ruhr mostly involve more than 3 million Euro, creating more than 50 job positions. There have been large-scale M&As in South Germany (Baden-Württemberg and Bavaria) in the last five years as well. These firms include construction machinery manufacturers, machinery tool producers and auto components suppliers, i.e. areas in which German firms possess globally advanced technology but display poor financial performance due to Germany's shrinking

market (Shenyang machinery tool). This has been the new trend following the financial crisis, and is also a result of visa limitation for Chinese in these two states. The firms employing M&A and investing a huge amount of money are seeking the good reputation of “made in Germany” and state-of-the-art technology, while leaving the main market in China. Beijing No.1 Machinery Tool Plant merging with Waldrich Coburg and Sany Group merging with Putzmeister Group are examples of this (Sohm *et al.*, 2009). The technology that they seek is mutual and commercialized with low risk. The FDI to Italy and England has similar motivation and entry modes (CCPIT, 2010; Liu and Tian, 2008).

Table 1 The geographical and industrial evolution of Chinese firms in Germany

Region	Active period	Number of firms	Industries	Company example	Entry modes
Hamburg	1980-2000	400	Trade service	Shanghai Far East Hamburg Trading Corporation GmbH	Greenfield
			Logistics	COSCO	Greenfield
			Shipping	China State Shipbuilding (Europe) GmbH	Greenfield
Frankfurt	1990-2010	266	Trade, fair and travel service	CBT China Book Trading GmbH	Greenfield
			Bank	Bank of China	Greenfield
			Airline	Air China	Greenfield
Ruhr	2005-	660	Mining and steel	MINMETALS	Greenfield
			Telecommunication	Huawei, ZTE	Greenfield
			Construction	Sany	Greenfield, M&A
			Machinery manufacturing		

Source: based on interviews with Invest in NRW, the Frankfurt EDC (Frankfurt Wirtschaftsführung GmbH) and the Hamburg Chamber of Commerce and Industry

All in all, the surging of FDI since 2005 is associated with emerging M&As in Ruhr and the other two regions and motivation changes from market-seeking to technology-seeking (cp. Dunning, 2000). Chinese enterprises chose the location according to the industrial competitive advantage of the region. The location changes also reflect the industrial and functional changes of Chinese investment.

3 Theoretical review: Knowledge, cognitive distance and transnational companies (TNCs)

In this section, we will review three issues: where cognitive distance comes from, the interrelationship between learning and cognitive distance, and influencing factors when TNCs from emerging economies become involved in developed economies.

3.1 What is cognitive distance and where does it come from?

Knowledge has been recognized as a central component of innovation and value creation (Gerlter, 2003). Knowledge is associated with a process that involves cognition structures which can assimilate information and put it into a wider context (Howells, 2002). Here, cognition denotes a broad range of mental activity, including perception, sense making, categorization, inference, value judgments, emotions and feelings. Different people perceive, interpret and evaluate the world differently to the extent that they have

developed in interaction with their physical and social/institutional environment, which leads to cognitive distance between people (Nooteboom, 2000). For firms to achieve a common purpose, people inside need to share certain basic perceptions and values to align their competencies and motives sufficiently (Nooteboom *et al.*, 2007). In this article, therefore, we define cognitive distance as knowledge differences in the knowledge bodies (e.g. employees) of different actors (e.g. firms) in networks. It is the virtue of inter-firm relations in knowledge-based economies.

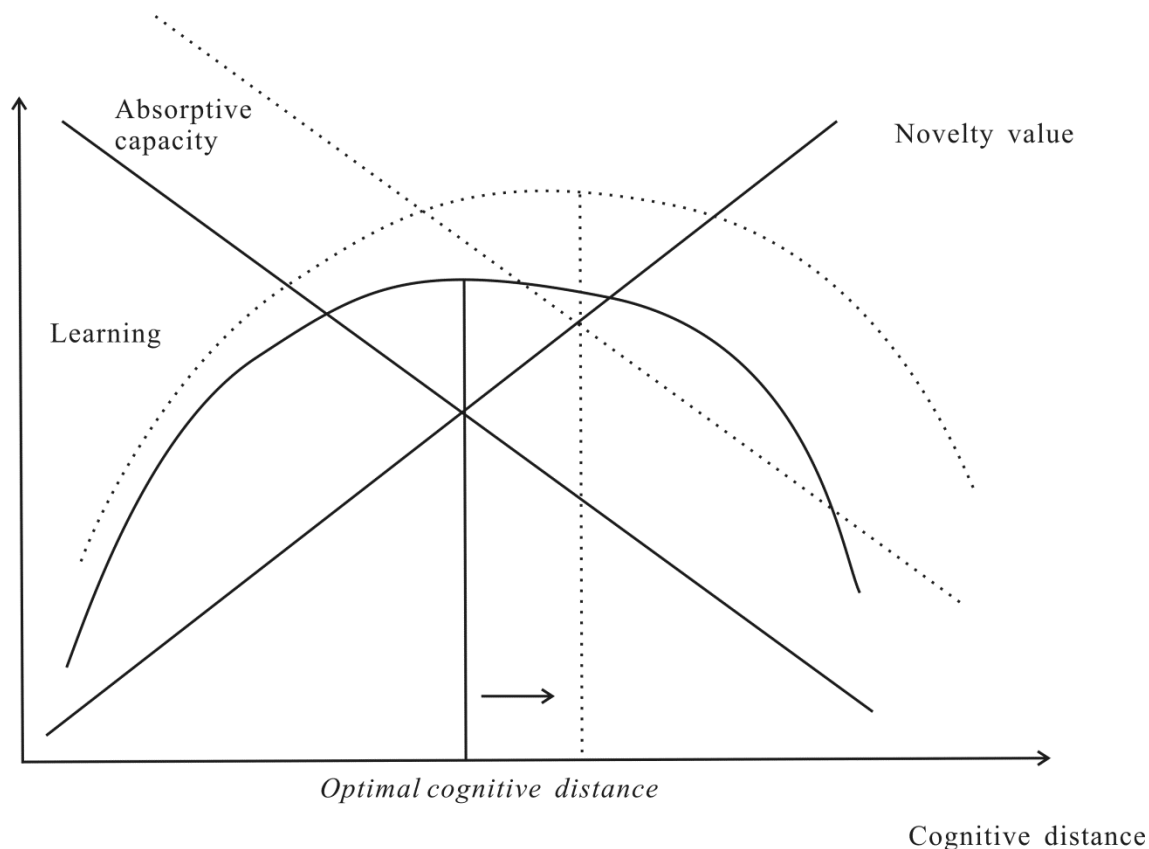
As mentioned in the introduction, the issue of “what kinds of knowledge differences exist” demands deeper research. Based on the existing theoretical and empirical research, three kinds of knowledge differences were included for the cross-country analysis. The first is language, which is the basic tool for acquiring and using systems of communication. When two countries are involved, the sharing of language is very important for exchanging and sharing knowledge among people and firms. The second is institutional knowledge. Institutions are formally defined as humanly devised constraints that structure human interaction (North, 1990). Economic actions are embedded in institutional environments, and the institutional environment surrounding organizations affects an organization’s behavior, decisions and learning-through-interacting (Gertler, 2001). Here, institutional knowledge refers to laws, rules, the methods of searching for an exchange partner and of judging the quality of their offer or the nature of their needs, and the methods of establishing and maintaining relationships with partners (Eriksson *et al.*, 1997). The third is commercialized-technological knowledge. This has two meanings. Firstly, different countries and regions have different preferences which lead to different designs and products to meet the local market demands. This is more obvious for firms focusing on sales and service functions. Secondly, technological knowledge, such as patents and R&D, could also be a factor for cognitive distance. Nooteboom *et al.* (2007) empirically prove that in company alliances for exploration purposes, technological knowledge is a sub-dimension of cognitive distance. This technology knowledge difference is more significant for subsidiaries with research functions.

The knowledge differences have been profoundly analyzed in studies on the local embeddedness and knowledge outsourcing of foreign MNEs in China (Lin *et al.*, 2011; Sun and Du, 2011; Zhou *et al.*, 2011) and the impact of the home countries by comparing the historical and geographical differences between the FDI from Taiwan, Hong Kong and Singapore, which share a similar Chinese culture, and that from other developed economies such as Japan, the USA and the EU (Wei *et al.*, 2012; Wu, 1999; Yang, 2007; Zhao and Zhang, 2007; Zhao *et al.*, 2012). In addition, the studies of the mismatch between foreign MNEs and local firms in China also suggest that the institutional and technical knowledge differences are part of the reason that foreign MNEs are not well integrated into the local networks (He 2003, He and Fu, 2008, Zhou and Tong, 2003; Wei *et al.*, 2011).

3.2 The interaction between learning and cognitive distance

The biggest difference between the cognitive distance concept and other concepts such as psychic distance is that the former treats distance not only as a problem, but also as an opportunity (Mowery *et al.*, 1996). Nooteboom (2002) proposed an inverted U-shaped relationship between cognitive distance and learning. Here, learning is the growth of knowledge: gaining more interpreted data (information), gaining understanding (claims of deductive or causal ordering), or gaining skill to perform. Figure 2 illustrates this fundamental idea. As the cognitive distance increases, so does the positive effect of resource heterogeneity (novelty value line). This is due to the fact that when people with different knowledge and perspectives interact, they stimulate and help each other to stretch their knowledge for the purpose of bridging and connecting differing information. Cognitive distance thus yields opportunities for novel combinations of complementary resources. However, as the cognitive distance increases, the positive effect of resource homogeneity decreases (absorptive ability line), as a certain mutual understanding and familiarity breeds trust (Gulati, 1995), which facilitates successful collaboration. At a certain point, cognitive distance

becomes so great as to preclude the sufficient mutual understanding needed to utilize those opportunities (Nooteboom *et al.*, 2007). This argument was proved when Huber (2012) studied the cognitive distance among firms in the Cambridge information technology cluster based on interviews. The results suggest that knowledge workers enable learning-by-interacting by ensuring that they share a common technical language and by allowing a certain degree of difference in terms of know-how, know-what and the way of thinking.



Source: Nooteboom, *et al.* 2007

Figure 2 Optimal cognitive distance model

This is a static and equilibrium model for the search for optimal cognitive distance. Moreover, cognitive distance is a dynamic concept which evolves as the learning occurs. When talking about two firms, learning can entail the reduction of cognitive distance, which is known as ‘identification’, or the bridging of cognitive distance, which is known as ‘empathy’. When this model is applied to the analysis of the investment of a TNC in a foreign country, not only the cognitive distance between firms, but also that within firms inside the TNC demands attention. The dynamic changes of cognitive distance have not been investigated thoroughly. We will illustrate this in the empirical section.

3.3 Absorptive and communicative capabilities

As mentioned in the section above, cognitive distance can be shortened or crossed, with two kinds of capabilities being important for this process. One is absorptive capability. The other is communicative capability, which is defined as the ability to help others understand what we do or say. Put another way, it is A trying to tell B what he knows in terms of B’s knowledge. Note the difference between (partly) understanding what others know and how they think, and having the same knowledge. As individual capability is an essential component of organizational learning capabilities, we believe that two factors are important for Chinese TNCs to reduce the obstacles caused by cognitive distances.

One is the strong motivation of knowledge acquisition. Knowledge-seeking is believed to be a strong intention of Chinese investment in developed economies. The strong active knowledge absorptive ability is emphasized for latecomer firms including TNCs from China in order to engage in the catching-up process in the global economy (Mathews, 2002; Liefner *et al.*, 2012). To run a TNC successfully, transnationalizing entrepreneurship, which refers to the ability of actors to create and capitalize on multiple spaces, territories and scales (Yeung, 2009), is also of importance.

The other factor is the ability of individuals to manage cross-country business, which influences the learning process. For newly established and small companies, the composition and prior experience of management teams are essential (Reuber and Fischer, 1997). For large firms, the composition of employees plays a role as well. For the subsidiaries of Chinese TNCs in Germany, the managers who have experience and capabilities to understand and communicate Chinese and German knowledge are extremely important for the subsidiary. This difficulty could also be overcome through cooperation and negotiation between German and Chinese people inside management groups or even among employees.

4 Methods and data

A qualitative approach is concerned with how and why things happen, allowing the investigation of contextual realities and of the differences between what was planned and what actually occurred (Anderson, 1993). It is a useful method when the area of research is less well known and the researcher is engaged in theory-building types of research (Ghauri and Gronhaug, 2005). Since we attempt to reveal the underlying mechanisms of Chinese outward FDI in Germany, which has only attracted attention in the last ten years, a qualitative study is indeed a good option.

Our research involves data collection through multiple sources (Ghauri and Gronhaug, 2005). The main information was collected from 18 face-to-face interviews with Chinese TNC subsidiaries in Germany and 3 interviews with HQ in China from April 2011 to February 2012. Each interview lasted between 45 minutes and 2 hours. We have excluded independent Chinese-owned firms in Germany, particularly hotels, restaurants and supermarkets. The chosen firms are subsidiaries of sales and after-sales functions of manufacturing industries, with an average age of 6 years. Three of them have R&D functions as well. For subsidiaries with less than 10 employees, the interviewees were mainly general managers or even founders of the subsidiaries. For larger-scale subsidiaries, more than 2 interviews were carried out involving PR managers, chief technology managers or engineers, as well as general managers. We talked with some of them more than twice if necessary and obtained the updated information from them informally as well.

35 more interviews were conducted with authorities, associations, service firms, local cooperators and academic researchers in Germany who have deep and fluent contacts with Chinese TNC subsidiaries. Since these interviews were carried out anonymously, we have named them Chinese firm 1, 2 ...n and consultant 1, 2 ...n etc, unless the interviewees agreed to release their names. The interviews provide sound comments and evaluation of subsidiaries' behavior with independent ideas.

Moreover, supplementary information was taken from archived documents, such as corporate reports (including website), published books (e.g. Ren, 2001; Wu and Ji, 2009; Zhou, 2011), magazine reports, which included more than fifteen published interviews with the CEOs and management groups of Chinese TNCs, and local Chinese newspapers in Germany, such as *Hua Shang Bao* (the Chinese Business Newspaper) and *Ou Zhou Xin Bao* (the Europe Times). Some 2000 pages of the archival documents were collected, most of which are written in Chinese. Only data corroborated from more than two document sources were used. When citing information from these sources, we will state the firm name and the information of the interviewees as well. These documents and the archive give us a comparatively complete figure of the internationalization of Chinese firms in Germany. The data source triangulation reduces

random measurement error (Kumar *et al.*, 1993) and provides us with a better foundation than that of existing studies.

We cite the information from the interviews directly as the evidence for testing the existing theories and supporting our arguments. This kind of direct citation and description has been used widely in human and economic geographical research (Yeung, 1998; Li and Bathelt, 2012), and particularly in the study of TNCs (Faulconbridge, 2008).

5 Empirical observations

From the empirical study, we observed that the cognitive distance between Chinese firms and German locality is the reason for Chinese investment in Germany. The huge novelty value stemming from the great cognitive distance attracts Chinese firms in their ambition to realize the new combination of knowledge and resources from these two countries. However, the cognitive distance is too great to be easily crossed. Therefore, Chinese enterprises establish subsidiaries in Germany to divide this cognitive distance into two parts: cognitive distance between HQ in China and subsidiaries in Germany, and that between the subsidiaries and Germany itself. Here, German locality refers to the customers (individuals or firms), suppliers and other organizations along the value chain. In the following paragraphs, we firstly present causes of cognitive distance between HQ in China and German locality. We then explain how the subsidiaries reduce or cross cognitive distance. Thirdly, we illustrate the cognitive distance changes after the establishment of subsidiaries. Finally, we present the characteristics of firms which successfully overcome the difficulties from cognitive distance and achieve business success from the combination of knowledge from Germany and China.

5.1 What causes cognitive distance?

The cognitive distance between Chinese TNC HQ and German locality is caused by three kinds of knowledge differences between China and Germany.

The first fundamental difference is language. The native language in China is Chinese, while that in Germany is German. Individuals who can speak both languages are rare both in China and in Germany. Although both countries share the same second language, i.e. English, not every employee is fluent in it. The language incompetence causes many misunderstandings and difficulties between the two sides (Wang and Noisser, 2008). As consultant 1 asserted:

“Without understanding the language, it is difficult for most of the Chinese to understand German thoughts. I remember on a visa form, one Chinese interpreter wrote: ‘I speak and hear German.’ But the right word would have been ‘understand’ rather than ‘hear’.”

The second difference is institutions. Germany has a well-developed legal system enabling contractual agreement and control after transaction, including a transparent information system and legal framework, and trust based on contracts. In this environment, German firms prefer to hire professional service firms such as law firms, accountants and tax advisers to help them deal with the complex institutions, and they search for and release information via formal channels, such as websites and newspapers. In China, keeping good relationships with government is important. Companies emphasize the importance of Guanxi or ethical relationships (Qiu, 2005), and are inclined to search for and contact partners via informal channels, such as telephone conversations and dinner together. Negotiation is carried out before the formal discussion about contracts. Some firms and businessmen do not realize the institutional differences between China and Germany and therefore lack the institutional knowledge about their counterparts. This lack of awareness about knowledge differences causes a lot of misunderstanding. Consultant 2 gave us a good example:

“China rules the country based on people, while Germany rules through law. In China, channels and connections with the government are important; in Germany, knowing the rules is important. A small Chinese company did business well in Germany but the manager thought it too time consuming to claim the tax, so he asked a tax adviser whether it was possible to give some money to a government officer and save his trouble. When he asked, he didn’t realize the importance of following the legal and accounting system. That is also why Chinese companies don’t have a good reputation here.”

German customer 1 made several mistakes because of institutional differences as well:

“We made a lot of mistakes by trusting the information on the Chinese firm website. At first, we checked the certificate on their website and ordered their products directly. The products were not as good as we assumed. Now we have to go to Chinese firms and check whether the manager is trustworthy and the products are of good quality.”

Chinese TNC subsidiary 1 complained:

“We had a nice talk with our German partners and we trusted them, that was why we didn’t check the contract very carefully. However, the contract didn’t turn out as we assumed. There were a lot of ‘legal traps’ and it cost us a lot of money later.”

The institutional knowledge is mostly tacit knowledge beyond people’s awareness. This kind of misunderstanding could lead to distrust and do more harm to further business development than language. It is a major cause of cognitive distance.

The third difference is technical or market knowledge highly related to products and service. It is not difficult to understand that different customers in different countries have different tastes concerning products. Moreover, the product technology is also different because it needs to suit the market preferences. As the manager of Chinese TNC subsidiary 2 mentioned:

“The construction machinery manufacturing enterprises in China emphasize the knowledge which could produce the machine fast and cheaply because of the huge demand from Chinese real estate markets. Every Chinese firm wants to expand and occupy a larger portion of the market in a short time. In Germany, the market need is different and the technology is also different. Firms seek to produce humane products which are easy and comfortable to use and to repair. That is why our products are not popular in Germany, and that is also why we invest in Germany (to learn from German standards and technical knowledge).”

The three kinds of knowledge differences function differently. Language and institutional knowledge differences mainly cause the misunderstandings between Chinese enterprises and Germany, while technical and market-related knowledge could potentially provide novelty through a new combination of knowledge. As the CEO of the Chinese firm Sany, who represents the views of HQ in China, claims:

“If we can successfully combine the knowledge from China and from Germany, we can produce products with Chinese costs and German quality. Our products would be very competitive in the global market².”

5.2 Why carry out FDI in Germany? A stepping stone with two faces

Can the establishment of the overseas subsidiaries help Chinese TNCs overcome the obstacles caused by the cognitive distance between China and Germany? What is the supposed function of these subsidiaries?

²The talk about the investment of Sany in Germany by Liang Wengen
<http://news.sohu.com/20120625/n346425681.shtml>

This section illuminates the issues in detail. Firstly, we present some information from the interviews with managers of subsidiaries:

“Our company already had customers in Germany and Europe (before the establishment of this subsidiary); however, we couldn’t understand our customers fully and quickly. That is also the reason for the existence of this subsidiary. Now we can visit our customers frequently and know their demands immediately. Our potential customers can also visit us and know more about our products personally. All the information we collect is transferred back to the HQ in China” (Chinese TNC subsidiary 3).

“We function as a switch or translator between German customers and Chinese parent firms. For example, a German customer orders service from our German branch but we need to provide service in Germany and in China. In Germany, I just need to tell our technical employees to provide them with normal service, however I need to tell the Chinese branch to provide VIP service and I need to travel back to China personally to make sure of the quality of service. When we talk about the translation of different standards, it seems pretty easy, but a lot of firms do not realize the quality difference or don’t have the ability to guarantee equal service globally, and therefore they lose”(Chinese TNC subsidiary 4).

“This subsidiary is quite important for the exchange of knowledge between Chinese HQ and German customers. Our R&D employees (in the subsidiary) discuss with German customers in order to find out their real demand and then tell R&D employees in China the original idea of products via telephone conference, video conference, e-mails or meeting face-to-face. Then they need to understand the products’ design, which is mainly done in China, and explain it to our German customers”(Chinese TNC subsidiary 5).

“As a part of the firm (Chinese TNC), we know our products very well, including their advantages and disadvantages. As a firm in Germany, we also know the German market and firms. We could find market opportunity in Germany for our parent firm in China and we could also find some potential firms or technology to merge. Knowing both sides is the advantage of an overseas subsidiary”(Chinese TNC subsidiary 6).

Based on these interviews, we can preliminarily conclude that the establishment of a subsidiary is used to bridge the cognitive distance. It is intended to function as a translator or switcher to help both sides understand each other. This finding is consistent with the argument from the updated Uppsala model: the boundary of a TNC is expanded and the overseas subsidiary is founded to overcome the liability of being an outsider and therefore to benefit from “being inside the local network” (Johanson and Vahlne, 2009).

To fulfill this function, an overseas subsidiary needs to have “two faces”: it needs to understand knowledge from China and from Germany, such as language, signals or behavior, and to be aware of the similarities and differences between the two sides and to be able to explain them clearly. To use a simile, a subsidiary is like the “hybrid” of Germany and China. To be specific, an overseas subsidiary needs to deal with two cognitive distances and create a balance between them.

On the one hand, a subsidiary needs to reduce cognitive distance with German locality by speaking and understanding the German language and respecting and following German institutions, as consultant 3, who had more than 10 years’ working experience with German-Chinese economic cooperation, said:

“I saw a lot of German firms make mistakes when they did business in China and I hope the Chinese investors in Germany will not make the same mistakes again. No matter where the capital comes from, a firm in Germany has to act as a German firm by following all the rules here. This is the only path to success.”

Based on the ‘identification’, trust could be established and the tacit knowledge related to market or technology could be exchanged and shared between subsidiaries and German locality through frequent meeting and communication taking advantage of geographical proximity (Desrochers, 2001).

On the other hand, an overseas subsidiary needs to cross the cognitive distance with HQ in China. Chinese is normally the only language for discussion and communication, therefore language is not the main reason for the difficulties. The cognitive distance mainly stems from the different institutional environment, and the employees of subsidiaries could make an effort to understand and respect the institutions in China in order to enable the bridging of the cognitive distance. The manager of Chinese TNC subsidiary 5 explains:

“The communication with HQ can only be done by our Chinese employees in the subsidiaries. They (HQ) don’t care about the schedule and they are flexible regarding the plan, which can’t be understood by German employees.”

The organizational proximity between HQ and the subsidiary in Germany enables the interaction across geographical distance via e-mails, telephone conferences, mutual human resources training and face-to-face interaction. Several interviewees admitted that they spend one-third to half a year in China on average to supervise the knowledge exchange and sharing. Just as Gupta and Govindarajan (2000) claim, the primary reason why TNCs exist is because of their ability to transfer and exploit knowledge more effectively and efficiently in the intra-corporate context.

5.3 Dynamics: The increasing importance of cognitive distance between headquarters and subsidiary

In the above analysis, subsidiaries are established to help Chinese TNCs cross the cognitive distance with German locality, and in order to fulfill this function, subsidiaries are inclined to learn to reduce the cognitive distance with German locality first. What exactly is the learning effect? Does the learning work? What happens to subsidiaries 5 or 10 years after their establishment and after years of deepened embeddedness?

Our survey suggests that individual learning in subsidiaries in the more formal business culture shifts the understanding, the values and the ideas of the managers in the subsidiary; however, this move is not easily understood back in China. The cognitive distance between HQ in China and subsidiaries in Germany is increasingly becoming another source of obstacles.

The subsidiaries hold the opinion that they have struggled very hard to survive in a foreign country. However, they have not received more trust and support from HQ as time passes. The incompetence and distrust of HQ is the cause of their difficulties. The manager of Chinese TNC subsidiary 7 was very disappointed with HQ:

“It is really not easy to communicate with the board back in China. They can’t understand what is happening in Germany. The CEO is not well educated. It was possible (for him) to run a firm with dozens of employees based on experience. But it can’t work for a firm with thousands of employees, particularly with international ambition.”

Meanwhile, HQ often thinks that it is wise not to trust the subsidiaries totally. The employees may leave after acquiring enough knowledge about the local business environment. The HQ of Chinese TNC 8 stated:

“We made a lot of mistakes trusting the subsidiaries. We spent a lot of money sending employees to Germany but we are not sure what happened there. Some employees quit the job after two or three years and established sales branches alone to compete with us.”

Repeated and similar complaints from subsidiaries against HQ reflect the fact that managers and employees in the subsidiaries did not fully understand their supposed function and paid much more attention to the cooperation with German locality while neglecting the importance of communication with HQ. Some of them were not aware of their knowledge and routine changes after spending a long time in Germany. These all cause the increasing cognitive distance between subsidiaries and HQ, which is then more difficult to reduce or cross than at the beginning.

5.4 The ability is important: the capability of subsidiaries and the delocalization of headquarters

Since overseas subsidiaries need to survive in a foreign and unfamiliar country and at the same time balance the cognitive distances with HQ and with German locality, many subsidiaries turn out to be failures. It has been reported that 70% of Chinese MNEs have not become profitable abroad³. In this section, we establish the characteristics of successful ones based on our interviews and observations. Here, we define success according to the stability of employee numbers. During the interviews, we inquired as to the employee numbers in the past three years. If the amount went up steadily, we regarded the company as a successful one.

The first characteristic is the heterogeneous personnel and cooperation between German and Chinese people within subsidiaries, which is essential for subsidiaries to act as ‘German-Chinese hybrids’. A heterogeneous management group is important. Take Chinese TNC subsidiary 5 as an example. The general manager of this subsidiary is an overseas Chinese. He hired two vice managers, an experienced German responsible for marketing and a Chinese for logistics and communication with the Chinese parent company. He stated:

“The differences between German (customers) and the Chinese (HQ) are settled by the heterogeneous management group. That is our main advantage compared with German or Chinese enterprises.”

Meanwhile, the joint work between German and Chinese employees is important in big companies as well. The “2-in-the-box” system, which means that a German and a Chinese work together for an assignment, was introduced in two successful Chinese TNCs: Huawei and Lenovo. Take Lenovo as an example: initially, “2-in-the-box” was introduced to accelerate the exchange between the two cultures. For example, in the supply chain area, German and Chinese employees worked together on a project in order to understand as quickly as possible the system, the problems and the advantages of their partner’s way of doing things, and above all in order to merge their networks. At the start of the convergence process in particular, this system provided a real boost. Lenovo also acknowledged that internationally mixed teams which work together on the basis of mutual trust and intercultural understanding are essential for becoming a truly internationally competitive enterprise (Sohm *et al.*, 2009).

The second secret of success is the de-localization of HQ and detachment between HQ and Chinese subsidiaries in China associated with strong international entrepreneurship (Yeung, 2009). Huawei is a good example. The interviewee told us that the Chairman of Huawei possesses strong internationalization entrepreneurship and supports the market expansion of overseas subsidiaries fully. He also encourages everyone in the top management group to spend more than one year abroad to “unlearn the Chinese habit and think internationally”. The HQ gradually improves capabilities through learning by experience (Johnason and Vahlne, 2009), eventually becoming internationally successful.

Thirdly, the global flow of employees is also important. When Lenovo Germany recruits new employees, vacancies are always advertised globally within the corporation first, and then made public, the

³ <http://info.yidaba.com/201202/111144111007100100000408079.html>

aim of which is to hire the best people from every culture (Sohm *et al.*, 2009), and therefore to reduce the cognitive distances among subsidiaries inside Lenovo. It is similar in Chinese TNC subsidiary 9. The interview produced a similar statement:

“The Chinese enterprises need to run the business according to the international standard. The employees in both overseas branches and the domestic market need to keep the international concept in mind.”

Finally, the international experience matters as well. The firms such as Huawei, Lenovo and Sany, which had their international operation abroad before entering the German market, have fewer issues with HQ and handle the issues such as image relations with the local public better (Tirpitz *et al.*, 2011). The international experience is learned by doing, therefore the longer the firms operate internationally, the better the subsidiaries in Germany handle the cognitive distances.

6 Discussion and conclusion

This paper introduces the cognitive distance concept into the analysis of Chinese TNCs' investment in Germany. We find that an overseas subsidiary is established to divide the cognitive distance between HQ in China and the German locality into two parts - one with German locality and the other with HQ in China - and then to reduce or bridge the cognitive distances separately. The former is mainly reduced by repeated communication associated with geographical proximity, while the latter by organizational proximity. As time passes, the latter becomes a more important cause of the obstacles. The findings contribute to an understanding of how TNC subsidiaries can configure themselves in order to respond to the multifaceted and differentiated context.

Our research results have three theoretical implications: firstly, it has become apparent that the concept of cognitive distance is a dynamic inter-firm relationship concept widely applicable in internal and external network studies, which is also deeply related to country-level institutional factors. It provides a good framework for evaluating the evolution of an MNE in the internationalization process, the institutional interaction between the host country and the home country via communication, as well as coordination inside MNEs. Secondly, the optimal cognitive distance model is a rational and static model which is not the same as what really happens to Chinese TNCs. The firms did not invest in the locations with optimal cognitive distance, instead being attracted by the huge novelty value between China and Germany. The established subsidiaries then adapt their thoughts and behavior to move towards the optimal position. Our work illustrates the dynamic changes when the cognitive distance model is applied to the TNC subsidiary analysis. Thirdly, we provide evidence of how a global pipeline could be founded and implemented by bridging and reducing the cognitive distance along the pipeline. We also argue that if the cognitive distance cannot be effectively overcome, a dysfunctional pipeline can impede the success of the investment made, which can be bad for the subsidiary, its host regions and cluster, and can have negative effects for the investing firm as a whole, therefore limiting the positive impact of the investment on the host region. The firm perspective thus offers a complementary view that may contradict what we find with an examination of regions and network linkages only.

Here, we need to mention that neither cognitive distance nor pipeline analysis involves a power relation discussion. However, to understand the FDI from China to Germany more clearly, taking a brief look at power differences in the two contexts is helpful. Based on theory, one has to assume that superior knowledge, for example technical expertise, relates to the power to arrange cooperation and knowledge exchange. Consequently, before we conducted the interviews, we anticipated that German locality may have the upper hand and Chinese firms would need to learn the right (German) way. However, the empirical evidence does not support our assumption. Chinese firms in Germany mainly collect the market knowledge from customers, and their inter-firm linkages within the local networks are weak, with the

technical knowledge acquisition from German parts also being rare. Several factors could lead to this result: firstly, Chinese FDI in Germany is still in the initial stage with sales and after-sales-service as its main functions. The technical or industrial linkages with the German firms are not as strong as assumed. Secondly, the knowledge acquisition through inter-firm linkage is difficult, since the German firms treat Chinese firms as competitors and are afraid that Chinese firms may take techniques back to China, which would cause German firms to lose their competitiveness. The knowledge acquisition could be realized by M&A and the knowledge flow inside the firms. However, we did not discuss the M&As in detail in this article, since they have appeared in Germany only in the last 3 years, while M&As normally take 5 years or longer. It is thus too early to say whether they are successful or not. It will be an interesting topic for Chinese FDI in the future. As of today, superior technology does not give the German subsidiaries the upper hand in their contacts with China. What we did observe via our interviews is that the Chinese firms in developed economies are faced with more suspicions than any TNCs in China, such as ‘made in China’ equating to bad quality and them being “copy cats” who could steal knowledge and cause job losses in Germany, and so on. Therefore, Chinese firms have the strong intention to learn how to operate a modern company with transparency and a good social image. The managerial learning from the German institutions is more obvious than the technical learning.

Our results may have some fundamental implications for MNEs from developing economies. Internationalization is becoming a valuable strategy for enterprises. It is important for HQ to choose the right group management composition before establishing a new foreign subsidiary. The overseas Chinese who can handle both Chinese and Western business, for example the general manager with a heterogeneous management group, seem important. The overseas experience of the management group in the HQ and the frequent flows of employees among different subsidiaries also help the unlearning of Chinese habits and the de-localization of HQ.

Our results may have some policy implications as well. Most importantly, local support – public or private – for new affiliates in the host region needs to be rearranged. It is not sufficient to attract investment and help firms to become embedded. A more far-sighted approach is needed. The creation of a pool of people who are familiar with both business cultures and countries would be most promising in the long term. In the short term, the local affiliates should be supported in their struggle to communicate effectively with their parent firms, for example with information about the local business culture and its rules, and the offer to communicate with representatives of the host region that travel to China.

As this study has been an initial attempt to understand how Chinese investment in developed economies is organized and can be successful, future research could investigate different directions. It seems promising to move towards quantitative methods and to extend this to other countries of FDI origin as well as to other host countries.

References

- Anderson G A, 1993. *Fundamentals of Educational Research*. London: Falmer Press.
- Assmann J, 2003. *Chinese Firms in Hamburg- Chances and potentials for the Economic Locations (Chinesische Unternehmen in Hamburg – Chancen und Potenziale für den Wirtschaftsstandort)*. Münster, Germany. Available at: <http://www.hk24.de/linkableblob/361978/7./data/chinaunternehmen1-data.pdf;jsessionid=06509C0E225920248E835B5D45A1FFB1.repl2>, accessed July 30, 2010.
- Bathelt H, Malmberg A, Maskell P, 2004. Clusters and knowledge: Local buzz, global pipelines and the process of knowledge creation. *Progress of Human Geography*, 28 (1): 31-56.

- Boschma R A, 2005. Proximity and innovation: A critical assessment. *Regional Studies*, 39 (1): 61-74.
- Child J, Rodrigues B S, 2005. The internationalization of Chinese firms: A case for theoretical extension? *Management and Organization Review*, 1 (3): 381-410.
- CCPIT, 2010. *Survey on Current Conditions and Intention of Outbound Investment by Chinese Enterprises 2010 (2010 Zhong Guo Qi Ye Dui Wai Tou Zi Xian Zhuang Ji Yi Xiang Diao Cha Bao Gao)*. Beijing, China. Available at: http://www.ccpit.org/yewu/docs/Survey_on_Current_Conditions_and_Intention_of_Outbound_Investment_by_Chinese_Enterprises.2010.en.pdf, accessed April 12, 2011.
- Desrochers P, 2001. Geographical proximity and the transmission of tacit knowledge. *The Review of Austrian Economics*, 14 (1): 25-46.
- Dunning J H, 2000. The eclectic paradigm as an envelope for economic and business theories of MNE activity. *International Business Review*, 9 (2): 163-190.
- Eriksson K, Johanson J, Majkgård A, 1997. Experiential knowledge and cost in the internationalisation process. *Journal of International Business Studies*, 28 (2): 337-360.
- Faulconbridge J R, 2008. Managing the transnational law firm: A relational analysis of professional systems, embedded actors, and time-space-sensitive governance. *Economic Geography*, 84 (2):185-210.
- Gertler M S, 2001. Best practice? Geography, learning and the institutional limits to strong convergence. *Journal of Economic Geography*, 1 (1): 5-26.
- Ghuri P, Gronhaug K, 2005. *Research Methods in Business Studies: A Practical Guide*. 3rd Edition. Prentice Hall: Financial Times.
- Gulati R, 1995. Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. *Academy of Management Journal*, 30 (1): 85-112.
- Gupta A K, Govindarajan V, 1991. Knowledge flows and the structure of control within multinational corporations. *The Academy of Management Review*, 16 (4): 768-792.
- He C, Fu R, 2008. Foreign banking in China: A study of 279 branch units in 32 cities. *Eurasian Geography and Economics*, 49 (4): 457-480.
- He C, 2003. Entry mode and location of foreign manufacturing enterprises in China. *Eurasian Geography and Economics*, 44 (6): 399-417.
- Howells J R L, 2002. Tacit knowledge, innovation and economic geography. *Urban Studies*, 39 (5-6): 871-884.
- Huber F, 2012. On the role and interrelationship of spatial, social and cognitive proximity: Personal knowledge relationships of R&D workers in the Cambridge information technology cluster. *Regional Studies*, 46 (9): 1169-1182.
- Johanson J, Vahlne J-E, 1977. The internationalization process of the firm - a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8 (1): 23-32.
- Johanson J, Vahlne J-E, 2009. The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40 (9): 1411-1431.
- Kaplinsky R, Morris M, 2009. Chinese FDI in Sub Saharan Africa: Engaging with large dragons. *European Journal of Development Research*, 21 (4): 551-569.

- Kumar N, Stern L W, Anderson J C, 1993. Conducting interorganizational research using key informants. *Academy of Management Journal*, 36 (6): 1633-1651.
- Liefner I, Broemer C, Zeng G, 2012. Knowledge absorption of optical technology companies in Shanghai, Pudong: Successes, barriers and structural impediments. *Applied Geography*, 32 (1): 171-184.
- Lin G CS, Wang C C, Zhou Y, Sun Y, Wei D YH, 2011. Placing technological innovation in globalising China: Production linkage, knowledge exchange and innovative performance of the ICT industry in a developing economy. *Urban Planning*, 48 (14): 2999–3018.
- Liu L, Tian Y, 2008. The internationalisation of Chinese enterprises: The analysis of the UK case. *International Journal of Technology and Globalisation*, 4 (1): 87-102.
- Mathews J A, 2002. Competitive advantages of the latecomer firm: A resource-based account of industrial catch-up strategies. *Asia Pacific Journal of Management*, 19 (4): 467-488.
- MOFCOM, NBS and SAFE, 2011. *Statistical Bulletin of China's Outward FDI 2010 (2010 Nian Du Zhong Guo Dui Wai Zhi Jie Tou Zi Tong Ji Gong Bao)*. Beijing, China. Available at: <http://hzs.mofcom.gov.cn/accessory/201109/1316069658609.pdf>, accessed March 27, 2012.
- Mowery D C, 1998. *International Collaborative Ventures in US Manufacturing*. Cambridge, MA: Ballinger Publishing Corporation.
- Nooteboom B, 2000. Learning by interaction: Absorptive capacity, cognitive distance and governance. *Journal of Management and Governance*, 4 (2): 69-92.
- Nooteboom B, 2002. *A Cognitive Theory of the Firm*. Paper presented at a workshop on theories of the firm. Available at: http://esnie.org/pdf/ws_2002/Nooteboom.pdf, accessed March 1, 2012.
- Nooteboom B, Haverbeke W V, Duysters G, Gilsing V, Oord A, 2007. Optimal cognitive distance and absorptive capacity. *Research Policy*, 36 (7): 1016-1034.
- North D C, 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Qiu Y, 2005. Personal networks, institutional involvement, and foreign direct investment flows into China's interior. *Economic Geography*, 81 (3): 261-281.
- Ren Z, 2010. *The Winter of Huawei (Huawei de Dong Tian)*. Available at: <http://money.163.com/10/0625/14/6A1G9KH300253G87.html>, accessed June 26, 2011.
- Reuber R A, Fischer E, 1997. The influence of the management team's international experience on the internationalization behaviors of SMEs. *Journal of International Business Studies*, 28 (4): 807-825.
- Sohm S, Linke B M, Klossek A, 2009. *Chinese Companies in Germany: Chances and Challenges*. Available at: www.bertelsmann-stiftung.de/deutsch-chinesische-zusammenarbeit, accessed October 15, 2010.
- Sun Y, Du D, 2011. Domestic firm innovation and networking with foreign firms in China's ICT industry. *Environment and Planning A*, 43 (4): 786-809.
- Tirpitz A, Groll C, Ghane K, 2011. *Chinese companies enter Germany- Market entry challenges for Chinese companies (Herausforderungen chinesischer Unternehmen beim Markteintritt in Deutschland)*. Berlin, Germany. Available at: www.entergermany.com/files/CCEG_GER.pdf, accessed May 16, 2011.
- UNCTAD, 2012. *World Investment Report 2011*. New York and Geneva: United Nations Press.

- Wang Y, Noisser N, 2008. *Chinese Enterprises in Hessen: Survey on Barriers to Business Management (Chinesische Unternehmen in Hessen: Untersuchung ueber Hindernisse bei der Geschaeftsabwicklung)*. Hesse, Germany. Available at :http://www.de-moe.edu.cn/upload/1227606910_file1.pdf, accessed October 15, 2010.
- Wei D YH, 1999. Regional inequality in China. *Progress in Human Geography*, 23 (1): 49-59.
- Wei D YH, Liefner I, Miao C H, 2011. Network configurations and R&D activities of the ICT industry in Suzhou municipality, China. *Geoforum*, 42 (4): 484-495.
- Wei D YH, Zhou Y, Sun YF, Lin G CS, 2012. Production and R&D networks of foreign ventures in China: Implications for technological dynamism and regional development. *Applied Geography*, 32 (1): 106-118.
- Wu F, 1999. Intrametropolitan FDI firm location in Guangzhou. *The Annals of Regional Science*, 33 (4): 535-555.
- Wu J, Ji Y, 2007. *The World of Huawei (Huawei de Shi Jie)*. Beijing: CITIC Press Corporation.
- Yang C, 2007. Divergent hybrid capitalisms in China: Hong Kong and Taiwanese electronics clusters in Dongguan. *Economic Geography*, 83 (4): 395-420.
- Yeung H WC, Liu W, 2008. Globalizing China: The rise of mainland Chinese firms in the global economy. *Eurasian Geography and Economics*, 49 (1): 57-86.
- Yeung H WC, 1998. *Transnational Corporations and Business Networks: Hong Kong Firms in the ASEAN Region*. London: Routledge.
- Yeung H WC, 2009. Transnationalizing entrepreneurship: A critical agenda for economic geography. *Progress in Human Geography*, 33 (2): 210-235.
- Zhao S XB, Chan R CK, Chan N YM, 2012. Spatial polarization and dynamic pathways of foreign direct investment in China 1990-2009. *Geoforum*, 43 (4): 836-850.
- Zhao S XB, Zhang L, 2007. Foreign direct investment and the formation of global city-regions in China. *Regional Studies*, 41 (7): 979-994.
- Zhou J, 2011. *The CEO of Huawei from the perspectives of reporter: Ren Zheng Fei (Bian Ji Yan Li de Huawei Zong Cai: Ren Zhengfei Zhe Ge Ren)*. Beijing: CITIC Press Corporation.
- Zhou Y, Tong X, 2003. An innovative region in China: Interaction between multinational corporations and local firms in a high-tech cluster in Beijing. *Economic Geography*, 79 (2): 129-152.
- Zhou, Y, Sun YF, Wei D YH, Lin G CS, 2011. De-centering 'spatial fix'- patterns of territorialization and regional technological dynamism of ICT hubs in China. *Journal of Economic Geography*, 11 (1): 119-150.

Appendix 1 Discussion Guide for Expert Interview

The Embeddedness of Chinese Outward FDI in German Local Network

Section 1: General information

1. What kind of organization? (✓ where applicable)

✧ Profit

✧ Non-profit

2. Do you receive support from Government? (✓ where applicable)

✧ Yes

✧ No

If yes, from which country? (✓ where applicable)

✧ From China

✧ From Germany

✧ From European Union

✧ Others

3. What is the function of your organization?

4. How important the following for keeping connection with you

	1	2	3	4	5
Access to market and industry information					
Getting to know business partners					
Expanding financing channels					
Establishing contact with universities/research institutions					
Get familiar with the German culture					
Acquiring highly qualified staff					
Negotiating with government					

5. History of your organization, and other information

6. Your position and responsibility

Section 2: The development of Chinese Outward FDI in Germany

7. How do the Chinese companies develop in Germany? Overall

8. Are there any regional priorities for the location? Where and why?

9. Which sectors and industries does Chinese Outward FDI focus on?

10. Which strategy leads Chinese companies to their internationalization?

- ✧ Newly built/Greenfield investment
- ✧ Merger/acquisition
- ✧ Initial public offering (IPO)
- ✧ Joint Venture

11. What characters do the comparatively successful or promising Chinese firms have? For example, the ownership (private, state owned enterprises, or others), the size (big or small multinational enterprises, small- and medium enterprises)?

Section 3: Motivations and strategies for Chinese firms in Germany

12. Why do your company choose overseas investment?

Main		Choices	Note	
(O) Exploit ownership advantage		Chinese biggest market and customers		
		Access to resources		
		Technique		
		Low cost		
(L) Location advantage	Push factors	Limited market		
		Limited natural resource		
		Limited technique and information		
	Home country	Product cost		
		Trade conditions		
		Policies		
	Pull factors	Market		
		Natural resources		
		Technique and information		
		Cost		
		Host country	Image of location (Germany)	
			Other business facilitation (finance, human network)	
			Policy framework	
(I) Internalization advantage Business strategy		Follow suppliers and partners		
		Transaction cost decrease		
		Acquire an internationally recognized brand		

13. What are the advantages of Chinese company compared with local German peers?

Type of advantage	Options	Note
Ownership	Expertise and technique	
	Management	
Access to home country resources	Access to natural resources	
	Huge customers to test	
	Access to finance and other infrastructure	
	Low labor cost	
Production process and value chain niches	Specialization among value chain	
	Cluster	

Networks and relationship	Business models, based on Kinship (Guanxi)	
Organizational structure and business culture	Forms of governance (family firm, state-owned enterprise)	

14. Please evaluate the change of the following performance of local subsidiary in last five years? (✓ where applicable)

- ✧ More market share
- ✧ Better access to natural resources
- ✧ More skilled workers and knowledge
- ✧ Cost reduction
- ✧ More attractive product design and Better product quality
- ✧ managerial upgrade
- ✧ Financing capability
- ✧ Social and human network, Global market information
- ✧ Better brand
- ✧ Other _____

15. Are government incentives important for investment by Chinese companies? (Go-Global Strategy)

16. How important is the factors of technical knowledge in their investment decision? Are there other skills and motives Chinese companies aim at? How Germany acts about it?

Section 4: Local cooperation and knowledge augment of Chinese companies in Germany

17. Are Chinese firms embedded in the local network?

Do they have strong business cooperation with German companies, or Chinese companies?

Do Chinese companies use external consultants in Germany to develop their business? (Consulting firms, business development, association or organizations, etc.). Which are more important for them, from China or Germany?

18. From what resources do they get the business information?

19. Do Chinese firms pay more attention to Guanxi? How it helps (✓ where applicable)

	1	2	3	4	5
Access to technology					
Access to bank loans					
Access to government funds					
Access to German market					
Recruitment of skilled personal					
Access to reliable Policy information					

20. What are the differences of Chinese firms with others abroad?

21. What kind of benefit and harm does Germany get from Chinese OFDI?

22. What kind of benefit can parent company in china get?

Appendix 2 Discussion Guide for Company Interview

The Embeddedness of Chinese Outward FDI in German Local Network

Section 1: General information

1. When did your company first invest in Germany: (✓ where applicable)

✧ Itself _____

✧ Headquarter in Germany(if have)

2. Please indicate your company's position as... (✓ where applicable)

✧ Sole firm company

✧ Headquarter of multi-firm company

✧ Regional headquarter

☐ Hesse

☐ Germany

☐ Europe

✧ Affiliate of multi-firm company

☐ Headquarter of parent company in

3. Please indicate your company's ownership status: (✓ where applicable)

✧ Chinese-owned enterprises

☐ State-owned enterprises

☐ Collective-owned

☐ Private

✧ Chinese-foreign equity joint venture

☐ With Germany _____%

☐ With _____ (country) _____%

4. Which province do your come from _____

5. Please indicate industry of your

operation: _____

6. Please indicate activities of your operation (✓ where applicable):

✧ Representative office

✧ Manufacturing

✧ Research & Development (R&D)

✧ Sourcing /distribution centre

✧ Sales/ Marketing

✧ Customer support

✧ Other, please explore _____

7. How was the investment in your establishment accomplished? (✓ where applicable)

✧ Newly built/Greenfield investment

✧ Merger/acquisition

✧ Initial public offering (IPO)

✧ Joint Venture

8. If M&A or IPO is there PE or VC involved?

9. Is there any German in your top-level executives? What position?

10. How do you estimate the development of your company in the three last years? (✓ where applicable)

✧ Positive

✧ Balanced

✧ Negative

11. Have you got bank loan(✓ where applicable)

✧ From China

✧ From Germany

✧ From Europe

✧ None

12. How many employees (full time) do you have now, last year and next year? (to describe the development)

	2009	2010	2011
Company			
Local branch			

13. Which are important suppliers and market, china or Germany? Please indicate the regional distribution of your company's supplies and sales:

Region	China	Germany	Rest World	
a) Supply	%	%	%	= 100 %
b) Sales	%	%	%	= 100 %

14. Additional information about company's history of internationalization

Section 2: Motivations

15. Why does your company choose overseas investment?

Main	Choices	Note
(O) Exploit ownership advantage	Chinese biggest market and customers	
	Access to resources	
	Technique	
	Low cost	
(L) Location advantage	Push factors	Limited market
		Limited natural resource
		Limited technique and information
	Home country	Product cost
		Trade conditions
		Policies
	Pull factors host country	Market
		Natural resources
		Technique and information
		Cost
		Image of location (Germany)
		Other business facilitation (finance, human network)
		Policy framework
(I) internalization advantage Business strategy	Follow suppliers and partners	
	Transaction cost decrease	
	Acquire an internationally recognized brand	

16. What are the advantages of your company compared with local German peers?

Type of advantage	options	Note
Ownership	Expertise and technique	
	Management	
Access to home country resources	Access to natural resources	
	Huge customers to test	
	Access to finance and other infrastructure	
	Low labor cost	
Production process and value chain niches	Specialization among value chain	
	Cluster	

Networks and relationship	Business models, based on Kinship (Guanxi)	
Organizational structure and business culture	Forms of governance (family firm, state-owned)	

17. Please evaluate the change of the following performance in last five years? (✓ where applicable)

- ✧ More market share
- ✧ Better access to natural resources
- ✧ More skilled workers and knowledge
- ✧ Cost reduction
- ✧ More attractive product design and Better product quality
- ✧ managerial upgrade
- ✧ Financing capability
- ✧ Social and human network, Global market information
- ✧ Better brand
- ✧ Other _____

Section 3: Local cooperation and knowledge acquisition

18. Which **channel** is more important for your managerial improvement (managerial knowledge acquisition), mark it by 1, 2, 3

Main	Note
Cooperation based on business	
Cooperation based on non-business	
Labor flow	
External training	
Publication or report reading	

19. Could you tell me which **sources** help you most for your most important managerial knowledge acquisition channel? (✓ where applicable)

Channel	Sources		Note
Cooperation based on business	Suppliers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Customers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Peers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Cooperation partners	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Parent/associate companies	China	
		Germany	
		Rest World	
Cooperation based on non-business	Universities, academy, R&D centers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Market, manager service company	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Lawyer, tax service providers	China	
		Chinese in Germany	

		Germany	
		Rest World	
	Government and authority	China	
		Germany	
		Rest World	
	Economic development organization	China	
		Chinese in Germany	
		Germany	
		Rest world	
	Friends classmates or relatives	China	
		Chinese in Germany	
		Germany	
		Rest World	
Labor flow	Suppliers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Customers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Peers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Cooperation partners	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Parent/associate companies	China	
		Germany	
		Rest World	
	Universities, academy, R&D centers	China	
		Germany	
		Rest World	
	Market, manager service company	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Lawyer, tax service providers	China	
		Chinese in Germany	
		Germany	
		Rest World	

	Government and authority	China	
		Germany	
		Rest World	
	Economic development organization	China	
		Chinese in Germany	
		Germany	
		Rest world	

20. Which **channel** is more important for your technology improvement (technical knowledge acquisition), mark it by 1, 2, 3

Main	Note
Cooperation based on business	
Cooperation based on non-business	
Labor flow	
External training	
Publication or report reading	

21. Could you tell me which **sources** help you most for your most important technical knowledge acquisition?

Channel	Sources		Note
Cooperation based on business	Suppliers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Customers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Peers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	cooperation partners	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Parent/associate companies	China	
		Germany	
		Rest World	
Cooperation based on non-business	Universities, academy, R&D centers	China	
		Chinese in Germany	
		Germany	
		Rest World	

	Market, manager service company	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Lawyer, tax service providers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Government and authority	China	
		Germany	
		Rest World	
	Economic development organization	China	
		Chinese in Germany	
		Germany	
		Rest world	
	Friends classmates or relatives	China	
		Chinese in Germany	
		Germany	
		Rest World	
Labor flow	Suppliers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Customers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Peers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Cooperation partner	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Parent/associate companies	China	
		Germany	
		Rest World	
	Universities, academy, R&D centers	China	
		Germany	
		Rest World	
	Market, manager service company	China	
		Chinese in Germany	

		Germany	
		Rest World	
	Lawyer, tax service providers	China	
		Chinese in Germany	
		Germany	
		Rest World	
	Government and authority	China	
		Germany	
		Rest World	
	Economic development organization	China	
		Chinese in Germany	
		Germany	
		Rest world	

Section 4: Others

22. If possible, could you tell me a good example, or bottleneck?

23. Do you think Guanxi is important in Germany? _____

24. If yes, How important are personal networks to public officials for fulfilling the following tasks?

	1	2	3	4	5
Access to technology					
Access to bank loans					
Access to government funds					
Access to German market					
Recruitment of skilled personal					
Access to reliable Policy information					

25. In which aspect does your investment benefit the Germany? (direction of information)

26. What is your contribution to the whole development of mother firm? (direction of information)

27. Could you give us your three important co-operators?

Erklärung

„Ich erkläre: Ich habe die vorgelegte Dissertation selbständig und ohne unerlaubte fremde Hilfe und nur mit den Hilfen angefertigt, die ich in der Dissertation angegeben habe. Alle Textstellen, die wörtlich oder sinngemäß aus veröffentlichten Schriften entnommen sind, und alle Angaben, die auf mündlichen Auskünften beruhen, sind als solche kenntlich gemacht. Bei den von mir durchgeführten und in der Dissertation erwähnten Untersuchungen habe ich die Grundsätze guter wissenschaftlicher Praxis, wie sie in der „Satzung der Justus-Liebig-Universität Gießen zur Sicherung guter wissenschaftlicher Praxis“ niedergelegt sind, eingehalten.“

.....

Ort, Datum

Unterschrift