The Best of Both Worlds

The Effects of Knowledge and Network Relationships on Performance of Returnee Entrepreneurial Firms

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Abstract

In an increasingly globalized business world, international human mobility and its association with entrepreneurship presents attractive opportunities for business research. One increasingly important phenomenon in the field is returnee entrepreneurship, which is the reverse flow of migrants who acquired skills in developed countries back to their emerging-market home countries. In this way, knowledge from developed countries transfers back to, and fills technological and entrepreneurial gaps in, emerging countries. This thesis aims to explain returnee entrepreneurship by examining what factors differentiate innovation, internationalization and business performance of returnee entrepreneurial firms.

The empirical investigation uses a mixed method approach comprising a qualitative single case study and four quantitative studies of a recent sample of 200 Chinese returnee entrepreneurial firms, and focuses on factors such as knowledge and network relationships, which are two advantages that returnee entrepreneurial firms are thought to have. By distinguishing among types of knowledge from various sources, and network relationships from both international and domestic origins, the findings show that international opportunity knowledge and domestic business relationships influence the innovation performance of returnee entrepreneurial firms. The structural characteristics of the international network of a returnee entrepreneurial firm are related to that firm’s international networking capability, which in turn influence its opportunity-driven internationalization. Additionally, the international experiential knowledge of returnee entrepreneurs nurtures their firms’ international market knowledge, and these experiences also indirectly affect firm internationalization by being transmitted through that market knowledge. Finally, international networking capability and innovation performance positively influence the business performance of returnee entrepreneurial firms, whereas the international business knowledge has a negative impact on business performance.

The thesis challenges the enthusiastic view of returnee entrepreneurial firms by refining the heterogeneity of both the returnee entrepreneurs themselves, and the performance variances of their ventures. Empirically, this thesis suggests a combination of knowledge and resources from both ‘worlds’ that can best benefit the performance of a returnee entrepreneurial firm. This thesis also contributes to theory by providing new insights into the combined effect of (1) an individual entrepreneur’s international experience, and (2) a new venture’s knowledge base and capabilities; furthermore it also describes what that combined effect will be on the new venture’s performance.

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List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.

I  Bai, W.S. Linking periphery with centre: The usefulness and liability of returnee entrepreneurial firm in home country context. Revision and resubmission to International journal of entrepreneurship and small business.

II Bai, W.S., Johanson, M., and Martín Martín, O. The best of both worlds: Domestic and international business relationships and opportunity knowledge and their impact on returnee entrepreneurial firms’ innovation performance. To be submitted to Strategic Entrepreneurship Journal.


IV Bai, W.S., Johanson, M., and Martín Martín, O. Knowledge and internationalization of returnee entrepreneurial firms. Accepted for publication in International Business Review.


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Wensong Bai
Introduction

Opening story
I want to start my thesis by traveling back to 1990, when a Chinese student named Huanming Yang had just finished his PhD in medical genetics at the University of Copenhagen, Denmark, and started his post-doc research at the University of Washington, USA. While at Washington, he met Jian Wang, who was a Chinese researcher in genomics. In that year, one of the most important exploration endeavors in human history, the Human Genome Project (HGP), was jointly launched by the governments of the US, the UK, Japan, France and Germany, in order to decode the deoxyribonucleic acid (DNA) sequence of the human genome.

“They [Yang and Wang] were working at the University of Washington, where it was an important base of the Human Genome Project. So they had already participated in the Human Genome Project, knowing very well several leaders of the Human Genome Project and had personal relationship.” (Interview with the vice president of BGI, China, 2013)

Nine year later, the two would found BGI in Beijing, with the express purpose of ensuring China's participation in the HGP. Yang and Wang were aware of the significant implications of the HGP for revolutionizing the diagnosis, treatment, and prevention of human diseases, and they wanted to bring the HGP back to China. But did the HGP need BGI? The HGP was thought to be nearing its end after 10 years, and BGI as a newly founded institution from a developing country was weak in technological and financial capacity. Nevertheless, the HGP accepted BGI as a support centre. Yang persuaded the HGP leaders that:

“As a representative nation from developing countries, I convinced Francis Collins [director of the National Human Genome Research Institute] that participation of China was very special, would improve the international image of the HGP.” (Bio•IT World, 2011)

On June 26, 2000, the President of the United States, Bill Clinton, together with the Prime Minister of England, Tony Blair, gave a speech to announce
the completion of the first draft of HGP, which was “the first great technological triumph of the 21st century” (National Institute of Health, 2000). It also marked a great moment for Yang and Wang, as they (through BGI) showed China to be involved in the HGP. President Clinton especially acknowledged “the contributions of scientists from China made to the vast international consortium of Human Genome Project” (National Institute of Health, 2000).

BGI rose to fame overnight. Though it only contributed 1% of the HGP, BGI developed expertise in the field of genomic sequencing, and developed a number of collaborative relationships with HGP member institutes. The founding entrepreneurs pushed BGI forward with the goal of becoming the leading genomic sequencing platform, and BGI used its international collaborations to help it compete for large-scale projects and funding. Between 2000 and 2008, BGI collaborated with former HGP research groups, and it completed several influential genomic sequencing projects, including the Sino-Danish pig genome, the rice genome, the Sino-UK chicken genome, the panda genome project, and the International HapMap project. These collaborative projects resulted in highly influential publications in top journals such as *Nature* and *Science*. *Science* profiled BGI as rising “from standing start to sequencing superpower” and spoke high of Yang and Wang’s leadership (Science, 2002).

As well as being in the spotlight of the international scientific community, BGI also got attention from the Chinese government. The company advertised its outstanding innovative performance, which led to immediate government support in the form of a $1.5 billion line of credit from the China Development Bank at the end of 2009. This significant financial backing allowed BGI to update its infrastructure and to grow faster. BGI purchased 128 of the most advanced DNA sequencers, and it became the largest sequencing center in the world, with a capacity greater than the entire sequencing output of the United States.

Encouraged by its past experiences of international cooperation with competent facilities, BGI started providing commercial sequencing service to global clients in 2010. The main clients were scientists and researchers in universities and pharmaceutical companies. BGI started in markets where its founders had lived and then rapidly internationalized in European and the America markets. In each month of 2010, BGI entered new foreign markets, and each market was growing by 120% per month. After a half year of effort, BGI had covered the entire European market as well as the America market (including the US, Canada and South America). In a short time BGI’s overseas

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1 An international scientific collaboration among research institutions in Canada, China, Japan, Nigeria, the United Kingdom, and the United States that aimed to produce a haplotype map (HapMap) of the human genome.
revenues exceeded its domestic revenue. Internationalization also helped BGI maintain its high rate of collaboration, which was conducive to constant innovation. Yang had this to say about BGI’s internationalization:

“One of the reasons to expand by setting up global subsidiaries—BGI Europe in Copenhagen and BGI Americas in Boston—is because of BGI’s experience. Genomics cannot be done alone, it is international.” (Bio•IT World, 2011)

An internationally competitive genome sequencing institute was formed. According to the Nature index in 2015 (an indicator published to analyze research performance in high quality science articles), BGI was ranked No. 1 in the world as the industry institution with the highest research and development (R&D) collaboration rate, and No. 12 with respect to outputs. A principle investigator in the HGP stated that:

“It’s pretty startling when you think of being a support center for a scientific program in a developing country; you don’t expect them to become 10 times bigger than you are, in less than 4 years, and to start publishing papers in Science.” (Science, 2002)

The above case description presents the emergence and development of a returnee entrepreneurial firm in an emerging market. In this thesis, a firm like BGI is termed a ‘returnee entrepreneurial firm’ (here, often shortened to returnee firm), because its founders are entrepreneurs who first accumulated international experiential knowledge abroad, and then returned to their home country to start a new venture (Filatotchev et al., 2009). Often returnee entrepreneurs are highly skilled personnel, such as scientists and students with higher education, professional training and/or business experience in other countries (Dai & Liu, 2009; Filatotchev et al., 2009), and particularly in developed countries. As the above case illustrates, the international experiential knowledge (here, often shortened to international experience) of returnee entrepreneurs tends to include networks and relationships, technological knowledge from professional training, and direct experience of a foreign market (Wang & Bao, 2015), all of which are important when the returnees establish companies in their home country. The international experience provides not only the capability and skills to develop a technology, but also better understanding of potential opportunities presented by that technology, and also an understanding of the network of relationships that can create opportunity in the international market. By leveraging the experience of its founding entrepreneurs, BGI was able to connect with international collaborators and clients, which led to an increased innovation performance and rapid internationalization.
This case is also a demonstration of theories relating firm performance to the usefulness and consequences of prior international experience (Jones & Casulli, 2014; Reuber & Fischer, 1999). It raises the interesting questions of how much the international experience of returnee entrepreneurs matters, and how that experience and knowledge can be exploited for better performance of returnee firms. Although research in the fields of ‘international entrepreneurship’ and ‘returnee entrepreneurship’ has emphasized the importance of the prior international experience of a firm’s founding entrepreneurs (Filatotchev et al., 2009; Jones, Coviello & Tang, 2011), our understanding of factors that differentiate returnee firms’ performances remains limited. Understanding those influencing factors is the goal of this thesis.

Towards the research gap

According to the knowledge-based theory of the firm, knowledge from developed countries is useful to firms in developing countries that aim to catch up (Liu et al., 2010). Because returnees have the international experience of either education or work in foreign countries, and primarily in developed markets, the returnee has been described as a conveyor of advanced knowledge. This knowledge is seen as filling entrepreneurial and innovative gaps in developing markets (Chen & Tan, 2016; Cui et al., 2015; Dai & Liu, 2009; Filatotchev et al., 2011; Liu et al. 2010; Lee & Roberts, 2015; Wang, 2016).

Accordingly, the concepts returnee and returnee entrepreneurship have received increasing scholarly attention since the late 2000s (Cui et al., 2015; Saxenian, 2006), and these phenomena are widely discussed in the contexts of newly industrialized countries and emerging markets. For example, the presence of returnee managers has been positively associated with the export orientation and R&D expenditures of major Korean corporations (Cho & Lee, 2014). Similarly, Chinese and Taiwanese returnees are seen as the bearers of important technical and organizational knowledge absorbed while in western countries, which contributes to the rapid expansion of the domestic information and technology industry (Kenney et al., 2013). India has also benefitted, in terms of entrepreneurship development, from a large number of skilled workers who have returned from the United States (Wadhwa et al., 2011).

Technological knowledge is one specific aspect of knowledge that returnees convey to their home countries (Lin, 2010; Liu et al., 2010). Firms armed with returnees demonstrate higher innovation performance over local entrepreneurial firms, and are more likely to have patents granted (Liu et al., 2010). Knowledge spillover from returnee firms also helps enhance the innovation performance of local firms (Filatotchev et al., 2011), and this beneficial impact
is stronger when the technology gap between returnee firms and local firms is larger (Liu et al., 2010).

Knowledge about the international market, particularly about the market in which returnees had been living, is another understanding brought back to the home market. This understanding, primarily resulting from a returnee’s international experience, touches on culture, institutions, and interactions with customers and authorities in international markets (Filatotchev et al., 2009). Because returnees have knowledge about and experience of doing business abroad, returnees are also expected to be the promoters of internationalization (Filatotchev et al., 2009). An established firm interested in international expansion out from a developing market can draft returnees (who have the required knowledge) and use them as resource in order to accelerate the firm’s international expansion (Cui et al., 2015).

These studies provide a rather enthusiastic view of returnees’ experiences, and have recognized consequences of the experiences for innovative and international entrepreneurship development in developing countries. However, the current literature falls short in the following regards.

First, empirical research has focused on returnee firms’ knowledge transfer and the spillover effects that affect their local counterparts, while the same research lacks an understanding of the relationship between the knowledge profile of returnees and the performance of returnee firms. It is expected that returnee entrepreneurs will lead their firms to innovation and internationalization, but, with the exception of a few studies (e.g. Dai & Liu, 2009), research about factors behind performance differences of returnee firms is inadequate.

Second, those studies that do look into the performance of returnee firms have inconsistent findings. Dai and Liu’s study (2009) showed that the presence of returnee entrepreneurs led to better firm performance, but in contrast a study by Li et al. (2012) indicated that knowledge gained abroad by returnee entrepreneurs did not necessarily lead to better business performance. This inconsistency may result from shortcomings in the empirical investigation employed up to this point; for instance, returnee firms are often regarded as a group, and comparisons are made between the group performances of returnee and non-returnee firms. While these studies provide some evidence that returnee firms share some characteristics, there is little consideration of the heterogeneity among returnee entrepreneurs, nor to differences among their ventures. Returnee entrepreneurs are different in their experiences and skills, which may give rise to variations of their ventures in performance (Liu, Wright, & Filatotchev, 2015).

From a theoretical standpoint, previous research has tended to focus on the direct relationships between the international experience of individual returnee entrepreneurs and their ventures’ performance and outcomes (Park,
Lipuma, & Prange, 2015). For example, the knowledge of founding entrepreneurs has often been found to exert a strong influence on organizational processes and outcomes, including a higher likelihood of early internationalization activities (e.g., Bloodgood, Sapienza, & Almeida, 1996; Kuemmerle, 2002; Loane, Bell, & McNaughton, 2007; Oviatt & McDougall, 1994; Reuber & Fischer, 1997; Schwens & Kabst, 2009; Wood, Khavul, & Perez-Nordtvedt, 2011). However, other research has questioned this simple direct relationship (Bruneel, Yli-Renko, & Clarysse, 2010; Fernhaber, McDougall, & Shepherd, 2009; Reuber & Fischer, 1999). Prior knowledge is likely to have an important imprinting effect on the behaviors of ventures (Shane, 2000). Thus there could be a connection between returnee entrepreneurs’ experiences and returnee firms’ knowledge and capability development, which in turn influence returnee firms’ performances (Reuber & Fischer, 1999).

In short, returnee entrepreneurs are individuals who “first accumulate international experience and then start a new venture” by “translating this experience into a stock of international knowledge” (Fernhaber, McDougall, & Shepherd, 2009: 299). It is expected that this international experiential knowledge will add value to returnee firms (Qin & Estrin, 2015; Pruthi, 2014). However, the shortcomings of current research limit our potential for understanding the influence of that experience, and for understanding the performance implications for returnee firms.

Specifying the research question

This thesis thus attempts to provide a better understanding of the factors that differentiate the performance of returnee firms. It focuses on three performance aspects of returnee firms, namely business performance, innovation performance, and internationalization performance. Business performance captures financial growth and profitability, which are argued to be the most relevant outcomes of new ventures (Sapienza et al. 2006); innovation performance is concerned with how effectively the returnee firms develop new technologies and products; internationalization performance refers to the extent to which a returnee firm has been involved in internationalization in terms of market commitment and sales.

Returnees start ventures in many sectors, but the majority of returnee firms are found within high-tech areas like information and communication technology (ICT), biotech and pharmacy, new energy and new materials (Wang & Bao, 2015). Most returnee entrepreneurs are technological experts with their own patents who lead their firms to develop new products (Lin et al., 2016). Therefore, it seems logical to investigate factors that could differentially affect
the innovation performances of returnee firms. Similarly, returnee firms are often seen as taking advantage of their founders’ overseas resources and networks in order to develop internationalization opportunities (Wang & Bao, 2015). Therefore, it is interesting to investigate the innovation and internationalization performances of returnee firms. In light of the above, the general purpose of this thesis is as follows:

To examine what factors influence the innovation, internationalization, and business performance of returnee entrepreneurial firms.

The prior international experience of returnee entrepreneurs is assumed to be the knowledge foundation for their ventures. However, the prior international experience may become less useful over time (De Clercq et al., 2012), as foreign market conditions change or understanding about home country becomes ascendant (Liu, Wright, & Filatotchev, 2015). It is thus reasonable to assume that the development of returnee firms requires updated knowledge that is beyond existing stock of knowledge, and the ability of returnee firms to generate and develop new knowledge may differentiate their performance.

Some recent studies have linked prior international experience of entrepreneurs to firms’ knowledge and capability development, suggesting for example that such prior knowledge provides both the source for and foundation of a new venture’s capability and new knowledge development (Helfat & Lieberman, 2002). Founding entrepreneurs retrieve what they know and whom they know from prior experience, and that knowledge provides interpretations and generalizations that can be used in organizing practices (Jones & Casulli, 2014). The experiential knowledge is thereby re-used either directly or adaptively, and it is ultimately solidified and codified to form organizing processes, leading to enhanced knowledge development (Dew & Saravsvathy, 2016; Helfat & Peteraf, 2003).

Following the above reasoning, the relationship between entrepreneurs’ prior experiences and new ventures’ performances may be given nuance by considering an organization’s knowledge development as an intervening variable that mediates the relationship (Reuber & Fischer, 1999). Indeed, much is known about the initial effects of an individual entrepreneur’s international experience on a new venture’s performance (Park, Lipuma, & Prange, 2015), or this experience’s effects on the development of organization capabilities (Autio, George, & Alexy, 2011; Bingham, Eisenhardt, & Furr, 2007). But a chain of evidence linking the prior international experience of entrepreneurs to the development of firm’s new knowledge, and the subsequent impact of that development on a new venture, are rare (Sapienza et al., 2006).
Additionally, there may be other knowledge sources, such as knowledge derived from network relationships, which lessens the importance of prior international experience (De Clercq et al., 2012). In particular, returnee firms are characterized by “simultaneous embeddedness in two distinctive knowledge contexts” (in the country where returnees studied or worked and the home country) (Liu, Wright, & Filatotchev, 2015: 468). Since the context constitutes the network of individuals, firms and organizations (Lundvall et al., 2002), such dual embeddedness may be better exploited through the development of networking capability. The network approach has been important for explaining the performance of entrepreneurial firms (Hoang & Antoni, 2003; Slotte-Kock & Coviello, 2010). A small handful of studies have highlighted returnees’ networks (e.g., Pruthi, 2014; Qin & Estrin, 2015) and embeddedness (Wang, 2016), but few studies have investigated the performance of returnee firms from a network perspective.

In light of those theoretical considerations, this thesis will therefore focus on the effects of prior experience of individual returnee entrepreneurs, and the networking capability of returnee firms on the knowledge development of those firms, which are postulated to explain their performance. Hence two specific research questions are asked: (1) How useful are the international experiences of returnee entrepreneurs and the networking capability of returnee entrepreneurial firms for the firms’ knowledge development? (2) How do the international experiences of returnee entrepreneurs, the networking capability and developed knowledge influence the innovation, internationalization, and business performance of these returnee entrepreneurial firms?

Knowledge development here emphasizes the accumulation of knowledge about a market, and suppliers and customers in that market. It is gained and accumulated through returnee firms’ business operations and practices. An important aspect of knowledge is related to opportunity knowledge, which is perceived by returnee firms as beneficial and includes both new technological ideas and business exchange opportunities that capture the “newness” dimension of opportunity (Alvarez & Barney, 2007; Johanson & Vahlne, 1977).

To answering those research questions, five empirical papers dealing with the effects of various factors on different aspects of the performances of returnee firms are included in this thesis. Figure 1 presents an overview of the specific research focus of each paper comprising this thesis, which all told cover three aspects of the performance of returnee entrepreneurial firms, including innovation, internationalization and business performance.
Paper I presents a longitudinal case study to provide a comprehensive picture of the development and growth of a successful returnee firm, through which it attempts to explain the influence of returnee entrepreneurs’ international experiences on the internationalization and innovation performance of their firms. The findings highlight the importance of international networking capability and political connections in the domestic market.

Paper II looks into factors that differentiate the innovation performance of returnee firms. It focuses on international and domestic networking capability, the correspondingly acquired international and domestic opportunity knowledge, and their effects on the innovation performance of returnee firms.

Papers III and IV focus on the internationalization of returnee firms. Paper III looks into conditions behind the development of the international networking capabilities of returnee firms, which themselves secure international opportunity knowledge. Accordingly, network structure and configurations of

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Returnee entrepreneurship

**Paper I:** A single case study that provides the comprehensive description of a scientific based returnee entrepreneurial firm, from which the relations between the firm’s networking capability in international and domestic market, innovation and internationalization performance are emerged as the focus of discussion.

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Innovation performance

**Paper II:** The connection of international, domestic networking capability and international, domestic opportunity knowledge, and their relations with innovation performance of returnee firms.

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Internationalization performance

**Paper III:** The relations between network structures of returnee firms, international networking capability, and international opportunity knowledge.

**Paper IV:** The relations between returnee entrepreneur’s international experience, returnee firm’s international market knowledge, and internationalization performance.

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Business performance

**Paper V:** The relations between international networking capability, international market knowledge, innovation performance and business performance of returnee firms.
returnee firms are considered as influencing factors. Paper IV pertains to factors such as the prior international experience of returnee entrepreneurs and the international market knowledge of returnee firms, and it discusses how the prior international experience of returnee entrepreneurs translates into their firms’ international market knowledge, and how this knowledge (of both individuals and firms) affects a returnee firm’s internationalization.

Paper V examines the performance implication of the developed networking capability explored in Paper III. The relationships among international networking capability, international market knowledge of returnee firms, and their innovation and business performances are unfolded.

By engaging in the above investigation, this thesis promotes understanding and knowledge in the field of returnee and international entrepreneurship. Theoretically, the current international entrepreneurship literature either emphasizes demographics and the cognitive characteristics of individual entrepreneurs (De Clerq et al., 2012), or focuses on the variances of the firm as the unit of analysis (Cumming et al., 2009). Little attention has been paid to these aspects concurrently, which means that our knowledge about early and rapid internationalization of new ventures is only partial (Keupp & Grassmann, 2009). On the one hand, there is a strong association between the personal traits of the entrepreneur and international entrepreneurship (Zahra, 2005); on the other hand, there are many other potentially important sources of heterogeneity arising from firm-level factors and capabilities that favor entrepreneurship and early internationalization (Autio, Sapienza & Almeida, 2000). This thesis incorporates certain entrepreneurs’ leadership effects and firm-level characteristics (Casillas et al., 2009; Weerawardena et al., 2007), and provides a more comprehensive knowledge-based theory of international entrepreneurship (Autio, 2005; Keupp & Grassmann, 2009).

Empirically, the thesis challenges the enthusiastic view of returnee entrepreneurial firms that has emerged in previous studies. As has been assumed, there do tend to be links and overlaps between the performance of the entrepreneur and the performance of the firm, at least in the early stages of venture development. It is expected that returnee entrepreneurs have international experience that is useful, and therefore that returnee firms have better performances relative to local firms (Li et al., 2012). However, there are differences in returnee entrepreneurs in terms of their qualities and the applicability of their experiences, which leads to varied performances of returnee firms.

Through examination of factors that differentiate the performance of returnee entrepreneurial firms in emerging markets, this thesis also provides important guidelines and practical implications for policy makers and managers regarding the questions of what makes high-tech entrepreneurial firms successful in China.
Structure of this summary

In Chapter 2, I define the terms returnee, returnee entrepreneur, and returnee entrepreneurial firm, which are the empirical focus of this thesis. Different types of returnees are compared, as are other types of migration entrepreneurship. In doing so, I make it clear that the returnee entrepreneurs in this thesis are highly skilled. Other types of returnees, such as low-skilled migrant laborers, and other types of migration entrepreneurship, such as transnational entrepreneurship, are not yet considered. Additionally, I present the standpoint of this thesis within the field of entrepreneurship, which is intended to place the returnee studied in this thesis in relation to other types of returnees and other types of migration entrepreneurship, and also to set my research in the context of existing studies.

In Chapter 3, I present the theoretical framework and core concepts that are applied to and that underpin my theoretical discussion. The knowledge-based view is used to evaluate the knowledge of returnee entrepreneurs and their firms; at the same time, a combination of the network approach and the capability view is used to discuss the development of the networking capability of returnee entrepreneurial firms, and the implication of that capability for the firm’s performance. Chapter 4 explains the methods and datasets applied in the empirical investigations. Chapter 5 presents the main findings derived from Papers I-V, and I discuss these findings in Chapter 6. Conclusions are drawn in this last chapter, where I also discuss the theoretical contributions, managerial implications, and limitations of the whole study, and make suggestions for future studies.
Defining returnee entrepreneurship

This chapter first provides a review of the general definition of returnee and various categories of returnees. Then it specifies the returnee and returnee entrepreneurship studied here, and sets the study of returnee entrepreneurship within the more general field of entrepreneurship. Finally, this chapter empirically discusses the antecedents and development of returnee entrepreneurship in contemporary society.

Who are returnees?

A returnee, or return migrant, is a person who returns to the country where she or he was born, usually after having been away for a long period (Collins English Dictionary, 2012). Systematic investigations about returnees can be traced back to the 1960s (Gmelch, 1980), when return migration was hypothesized to be a sub-process of international migration. This stream of research interest has mainly been on the understanding of who returns, when and why they return, as well as the impacts of returnees on specific social and institutional change in those returnees’ home countries (Cassarino, 2004).

The concept of ‘returnee’ embodied in various academic literature is different depending on the specific context of interest. Studies make a distinction between various types of returnees based on for example emigrating motivation (Cassarino, 2004). Studies on the stream of international migration normally focus on returnees who were migrant laborers or refugees, and who, due to economic or political instability in their home country, experience a prolonged forced absence from their homeland (Gmelch, 1980). These types of returnees tend to be low skilled individuals looking for better life opportunities in developed countries. For example, the descendants of Japanese emigrants to Brazil went to Japan to work in low-qualified labor. They came back to Brazil with their savings and often started small stores or bought agricultural land (Tsuda, 1999).

With the growing diversity of migratory categories, student migrants emerged as a type of returnee who was contributing to international human mobility. This category includes school children who left their home countries
to accompany their expatriate manager parents (Sasagawa, Toyoda & Sakano, 2006). Many studies have been concerned with the re-adaptation of such returnees to their home countries’ schools and societies. In addition, there are adult student migrants who stay abroad with the aim of receiving higher education and/or professional training, which transforms them into highly skilled professionals. Saxenian (2005: p.41) described this type of high-skilled returnee as “top engineering students from middle class households of developing countries whose access to education in the United States has landed them in a very different technological and institutional environment – one that they initially master and later transfer to their home countries.”

In the context of business and management research, returnees become interesting when they are identified as a group of “human resource” that is valuable, rare, inimitable and exploitable by firms (Barney, 1991). Not every type of returnee meets this unique criterion of potentially being able to contribute to firms. In this thesis I focus on returnees who stay abroad with the aim of receiving higher education and/or professional training. This kind of experience can transform returnees into conveyors of sophisticated managerial or technological knowledge when they move back to their home countries. Accordingly, I here restrict the term ‘returnee’ to mean individuals who have had at least completed professional training or a post-graduate education program (a masters or doctoral degree) abroad, and who have then returned to their home country. Often their countries of origin are developing countries, and their countries of residence are developed countries. This definition coincides with the group of adult student migrants mentioned above, and ensures that returnees are knowledgeable and competent as a result of their overseas postgraduate education. Some returnees may have spent only a few years abroad to complete the education program before returning directly to their home country; some may have left for foreign countries earlier in life, or have had years of working experience after their overseas education. This definition is consistent with definitions used by other scholars in the stream of business and management studies (Li et al., 2012; Liu et al., 2010; Wright et al., 2008).

What is returnee entrepreneurship?

Following from the definition of returnee, returnee entrepreneurship has been defined as the phenomenon of skilled individuals returning to their home country to start a new venture after several years of education and/or business experience in a foreign country or countries, particularly developed countries (Liu, 2015). The skilled individuals and the new ventures are called ‘returnee entrepreneurs’ and ‘returnee entrepreneurial firms’ respectively. Although
ventures created by returnee entrepreneurs are in various sectors, their occurrence is most common and promising in technology-intensive industries. Lin (2010) sees such returnee entrepreneurship as a contemporary phenomenon distinct from conventional ‘returnee microenterprises’ run by low-skilled returnees in traditional business sectors such as caterings and groceries (Landolt, Autler, & Baires, 1999).

This thesis considers new high-technology ventures, where the founders are return migrants who have had higher education/professional training in some other host country and who have then returned to their home country. Undoubtedly there are returnee firms that are headed by entrepreneurs who are competent but not necessarily ‘highly trained and skilled; that criterion only applies to a subgroup of returnee entrepreneurs and their firms. This definition is consistent with international business (IB) and strategic entrepreneurship literature about returnee entrepreneurship, where the definition specifically refers to the phenomenon of such migrant entrepreneurs as returnee entrepreneurs (Drori, Honig & Wright, 2009; Liu, 2015), and differentiates highly trained and skilled individuals from other migrant entrepreneurs (Wright, 2011).

There are two reasons for the development of this narrow definition of returnee entrepreneurs. First, ‘returnee entrepreneur’ is a concept developed from empirical observations of migrant entrepreneurs working in Silicon Valley and other high tech clusters (Saxenian, 1999), a very highly trained and skilled group of people. Second, research in IB and strategic entrepreneurship is focused on factors that influence innovation, entrepreneurship and economic growth via cross border activities. The background of returnee entrepreneurs gives them the potential to transfer knowledge to their home country, and to develop new innovation. Meanwhile, the returnee entrepreneur has international network relationships, and the high-tech returnee firms in particular are more likely to maintain intensive international collaborations and to engage in cross-border knowledge exchanges in order to cope with the rapid change in high tech industries.

Returnee entrepreneurship within the field of entrepreneurship

The study of entrepreneurship is multifaceted and the term itself has had many and varied definitions, according to the purpose and objectives of the inquiry. A common definition of entrepreneurship is the “creation of new enterprise” (Low & MacMillan, 1988), and therefore an entrepreneur is an individual who
establishes a new venture (Gartner, 1988). The current returnee entrepreneurship literature follows this new venture creation definition (e.g. Dai & Liu, 2009; Filatotchev et al., 2011; Pruthi, 2014).

The creation of returnee entrepreneurial firms is both the medium and the outcome of the opportunity-driven actions of returnee entrepreneurs, which entails the essential entrepreneurial process of discovery, enactment, evaluation, and exploitation of opportunities across national borders (Liu, 2015; Oviatt & McDougall, 2005). Accordingly, research on returnee entrepreneurship is to a large extent based on international entrepreneurship (IE) literature. In particular, returnee entrepreneurship research draws heavily on the core conception of IE (McDougall & Oviatt, 2000) to explain the influences of the international experiences of returnee entrepreneurs (Jones, Coviello & Tang, 2011). There are criticisms that IE’s conceptual framework cannot fully embrace the phenomenon of returnee entrepreneurship (Drori, Honig, & Wright, 2009), as it lacks consideration of the role of individual entrepreneurs (Wright, Westhead, & Ucbasaran, 2007). However, IE itself has been evolving towards emphasizing the individual entrepreneurs who are behind the new ventures (Knight & Liesch, 2015). Thus, it is believed that, in principle, returnee entrepreneurship is part of IE, but that returnee entrepreneurship simply pertains to individual entrepreneurs who leverage opportunities developed through their international mobility.

What distinguishes returnee entrepreneurship is that the entrepreneurial process entails the adaptation of use of features induced by context change. For example, a feature developed in its original context without a specific application often turns out to be useful in another context after transformation of use (Dew, Sarasvathy, & Venkataraman, 2004). In the case of returnee entrepreneurship, a long period of international study and/or work experience has led to the accumulation of professional knowledge and network relationships. Originally, the accumulation of knowledge and network relationships happened spontaneously and without the specific purpose of later entrepreneurship. However, it turns out that the prior knowledge and network relationships may be used for entrepreneurial aims in the returnees’ home countries, and this knowledge influences an entrepreneur’s ability to comprehend, interpret and implement entrepreneurial opportunity (Shane, 2000). In other words, the knowledge and network relationships developed as adaptive responses to the conceived environment is later used for an entrepreneurial aim in home markets and turns out to be useful (Marquis & Huang, 2010). The change of context also changes of the utility of the knowledge and networks.

So it is the mobility of a returnee across country markets that gives entrepreneurial utility to returnees’ experiences when they are back in their home countries. This international experience provides a foundation for knowledge
and networks to returnee entrepreneurs, and subsequently to their ventures. The mobility of returnees across national markets, their experiences, and the utility of that knowledge and those networks after crossing markets, are all elements in returnee entrepreneurship. All returnees have mobility across national markets, but the inclination to be entrepreneurial rests on the quality of knowledge that a returnee has, and the utility of the knowledge after its transfer to home markets (Lin et al. 2016). And when returnees begin their entrepreneurship, the performance of their firms seems to be related to their ability to employ that knowledge for generating and developing new knowledge. In a nutshell, the returnees’ entrepreneurial process is knowledge focused, and highlights the transformation and utility of knowledge across contexts.

Distinguishing returnee entrepreneurship from other migrant entrepreneurship

There is a significant body of research in international entrepreneurship that is related to migrants and their resultant entrepreneurial activities. This body of literature has multiple definitions regarding various migrant entrepreneurial activities, which may cause ambiguity. These definitions include, but are not limited to, ethnic entrepreneurship, transnational entrepreneurship, and returnee entrepreneurship. This thesis therefore needs to carefully outline its context and definitions, so as to neither violate extant terms nor create overlapping or blurred concepts, which could lead to confusion.

The common ground of various migrant entrepreneurial activities is the cross border mobility of human capital, and the knowledge transfer of migrants and their social capital and network relationships. However, the direction of mobility and the locus of entrepreneurial activities are different in different migrant entrepreneurial activities. Following Lin (2010), a two-dimensional model (Figure 2) is presented to position returnee entrepreneurship relative to other types of migrant entrepreneurship by visualizing their locus of entrepreneurial activities in terms of both host country and home country. The X-axis represents the degree to which migrant entrepreneurial activities are embedded in their home countries, while the Y-axis represents the degree of host country embeddedness.
As shown in Figure 2, Ethnic Entrepreneurship (EE) is in the upper-left corner and has a high degree of embeddedness in the host country. EE is the conventional focus of migrant entrepreneurship studies, and investigates a migrant’s entrepreneurial activities in that migrant’s host country through employment of resources attached to their ethnic community. With the aim of economic adaptation to the host country, EE pays attention to social embeddedness in the host country, and particularly to integration within an ethnic community (Portes & Sensenbrenner, 1993). Business activities of these migrants are characterized as an inward, co-ethnic orientation, which means that they mainly interact with their own ethnic community in their host countries. EE research focuses on the process of assimilation and adaptation of ethnic entrepreneurs in host countries, and how ethnic traits impact these processes.

In contrast, transnational entrepreneurship (TE) and returnee entrepreneurship (RE) are two emergent types of migrate economic activities, sharing the characteristic of a broader embeddedness in both host and home countries (Lin, 2010; Wright, 2011). In TE, the migrant moves among countries and builds an enhanced resource base by maintaining business relations in multiple countries. TE can start from an ethnic community, but grows beyond the boundary of the co-ethnic environment, and capitalizes on resources in multi-
ple countries. Research questions in TE are about why, how and when do migrant entrepreneurs exploit both social and economic resources in more than one country.

TE and RE are both dually embedded in host and home country (Figure 2), but transnational entrepreneurs have a more or less equal degree of engagement in their home and host countries, whereas returnees, just as the term implies, root their businesses more deeply in their home countries (Drori et al., 2009). Table 1 defines various entrepreneurship activities, the types of entrepreneurs involved in each entrepreneurship activity, and what types of questions are asked by researchers about those categories. It also compares returnee microenterprises (which are often the focus of conventional international migration literature) to contemporary returnee entrepreneurship (more often discussed in the IB/IE literature).

Returnee microenterprises are often run by returnees who migrated as laborers or refugees. It can be seen as a kind of ‘necessity entrepreneurship’, as the returnees are simply self–employed (Schumpeter, 1974). Here, entrepreneurial activities are means by which returnees assimilate and re-adapt to their home country, and they mainly target their own domestic market. As a result, these conventional returnee firms are less related to conveying advanced knowledge, and are less likely to be internationally oriented. IB/IE research usually asks how returnee entrepreneurs with experience abroad benefit the growth of their own ventures, as well as other firms in their home countries (Lin, 2010). This research pays special attention to the effects of scientific and technological knowledge transfer and exchange by returnees (see column 4 in Table 1).

The contemporary literature about returnee entrepreneurs does not provide an explicit definition of ‘returnee entrepreneurial firm’, although the empirical observations are based on new ventures created by returnee entrepreneurs in their home countries (Dai & Liu, 2009; Filatotchev et al., 2011; Pruthi, 2014). It is reasonable to assume that returnee entrepreneurs were previously ethnic entrepreneurs if they engaged in business operations in the host countries. Likewise, returnee entrepreneurs can be categorized as transnational entrepreneurs if they maintain business operations in their adopted country (or other countries) while creating new ventures and/or subsidiaries in their home country. In line with IB literature on returnees, this thesis considers the returnee entrepreneurial firm to be the business created by a returnee entrepreneur in his or her home country.
Table 1. Returnee entrepreneurship compared to other migrant entrepreneurship

<table>
<thead>
<tr>
<th>Definition</th>
<th>Ethnic entrepreneurship</th>
<th>Transnational entrepreneurship</th>
<th>Returnee microenterprises</th>
<th>Returnee entrepreneurship (focus of this thesis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>Entrepreneurs who are affiliated with a group because of a common cultural heritage or origin, and are recognized by outsiders as having such labels</td>
<td>Entrepreneurs that migrate from one country to another, but keep business linkages with their country of origin and currently adopted countries concurrently</td>
<td>Entrepreneurs who experience a prolonged forced absence from homeland due to political or economic instability of their home country, and return to home country</td>
<td>People who had studied and/or worked in foreign countries, particularly in OECD countries, and then returned to establish new ventures in their native countries</td>
</tr>
<tr>
<td>Types of entrepreneurs</td>
<td>Immigrant; often with specific language and customs; engaged in formal, informal, or illegal self-employment and/or business</td>
<td>Migrant engaged in two or more national contexts, by which they maintain multiple business relations and maximize resource base</td>
<td>Migrants and refugees, often less educated and low skilled, engaged in self-employment and/or business by making use of saving/experiences derived in the adopted country</td>
<td>Migrants with education/working experience abroad, engaged in business creation in home country, high-tech, internationally oriented</td>
</tr>
<tr>
<td>Locus of entrepreneurial activities</td>
<td>Based in adopted country</td>
<td>Based in both country of origin and adopted country, constantly back and forth</td>
<td>Based in home country</td>
<td>Based in home country</td>
</tr>
<tr>
<td>Primary research questions</td>
<td>What is the process of assimilation, and adaptation of ethnic individuals and communities in adopted country (with a focus on the impact of ethnic traits on the process)?</td>
<td>Why, how and when do individuals exploit both social and economic resources in more than one country, which result in abilities and opportunities to develop new business ventures</td>
<td>What is the process of assimilation, re-adaptation of returnees in home country? How does foreign living experience impact the assimilation, re-adaptation and entrepreneurial process?</td>
<td>How is the human and social capital brought back by REs used as a platform to enable ventures creation and development? How does the capital benefit the growth of local and foreign firms in home country?</td>
</tr>
</tbody>
</table>

Source: adapted from Drori, Honig & Wright, 2009
Antecedents of returnee entrepreneurship

The emergence of returnee entrepreneurial firms is the result of several factors, three of which have been identified based on observations in particular countries (Brinkerhoff, 2006). These three factors are the dramatically increasing number of overseas students and student returnees, an investment-friendly environment, and the opportunity context in emerging markets which can cause overseas students to return.

The increasing number of overseas students and student returnees

In general, increasing globalization provides a more solid environment for human mobility and exchange, and has supported a growing number of students studying abroad. These students comprise a high-skilled talent pool, which is conductive to the emergence of returnee entrepreneurship in large numbers (Tung, 2008). According to the International Consultants for Education and Fairs (ICEF), the flow of students around the world has grown from 2 million to 5 million between 2000 and 2015, with an increase rate of 150% (ICEF, 2015). Due to the knowledge and development gap between many Asian and Western countries, many Asian students are getting their higher education abroad. There is an association between overseas studying/training experience and upward mobility in both economic and social status (Cheng, 2003), so Asian students from countries such as China and India tend to go to Western countries, with the aim of getting a degree or professional training. According to the Institute of International Education (IIE), during the 2014/2015 academic year, the top three countries sending students to the US were China, India and South Korea, with proportion of 31%, 14% and 7% respectively; these three Asian countries accounted for 52% of all international students in the US (Chart 1). China, India, and South Korea also are the most frequently used empirical contexts for investigating returnee entrepreneurship (e.g. Cho & Lee, 2014; Cui et al., 2015; Saxenian, 2006; Wadhwa et al., 2011).
The emerging market opportunities

‘Brain drain’ refers to the migration of highly skilled people from their home countries to a host country, which causes a loss of human capital in the home countries. This issue has disturbed many developing countries, as their own human capital resides in another country and doesn’t contribute to the home country directly. For instance, between 1978 and 2003, only 20% of Chinese overseas students returned to China after completing their studies (Ministry of Education China, 2004)

However, in recent years the trend has changed from ‘brain drain’ to ‘brain circulation’, as the result of the development of home countries. Kenney et al. (2013) examines the role played by returnees in the information and communication technology (ICT) industry’s growth in Taiwan, China and India. They found that returnees came back after local entrepreneurs and policy makers had laid the groundwork for the industry, and they played an active role in the secondary developmental phase. A large number of overseas students are attracted to come back by emerging market opportunities in their homeland. These market opportunities are not created by returnees; rather, they are a result of shortages of technology and knowledge, shortages which can be addressed by technology and knowledge acquired abroad (Zweig, 2006). With profit as the principle motive, returnees come back to capitalize on the emerging market opportunities as well as to contribute to technological development in their homeland (Lin, 2010). Another factor is that advances in ICT and transportation help solidify a connection between overseas students and their home countries, which enhances their knowledge about the development of home country market opportunities, and which fosters the will and ability to return (Brinkerhoff, 2006). Rapid economic development and attractive opportunities have led to a steady rise in the return rates of overseas students,
particularly among Chinese students (Chart 2: see also Wang, Zweig, & Lin, 2011).

Chart 2. The return rate of Chinese overseas students

Data source: Ministry of Education, China

The investment-friendly environment of the home country

In addition to the attractive emerging business opportunities, the investment environment of the home country is particularly important for motivating returnees, and in allowing them to capitalize on opportunities (Lin, 2010). Some emerging markets still have social and institutional gaps that prevent returnees from making business opportunities possible. For example, governments in sub-Saharan Africa sometimes have a suspicious attitude toward returnees who are successful business people, which makes returnees unwilling to contribute to the home country (Itano, 2004). Governments must build necessary infrastructure and an investment-friendly environment in order to support returnee ventures (Singhvi et al., 2001).

To help make a more supportive environment, India has recently changed its citizenship regulations and adopted dual-citizenship. Similarly, China recently started issuing permanent residency to overseas Chinese who would like to make contributions to their homeland. These sorts of changes facilitate the movement of overseas people. These governments have set up business parks and incubators for returnees, which gives them favorable treatment and protects them from the turbulence of the local marketplace until their firms are mature (Lin, 2010). Furthermore, governments issue policies that reward and publicize the knowledge contributed by returnees, which both legitimizes returnees and encourages more to come back (Brinkerhoff, 2006). With these measures for creating a welcoming environment, China and India are two prominent examples that are ready to embrace the contributions returnees can make in building domestic economies.
Theoretical development

This thesis is grounded in a theoretical framework that utilizes the knowledge-based view (KBV) of the firm, and the network approach with a capability view. This chapter first presents the theoretical underpinnings of the KBV of the firm, then it moves on to deconstruct the international experiences of returnee entrepreneurs by discussing different types of knowledge that returnee entrepreneurs may possess. Finally, the chapter discusses the application of a returnee entrepreneur’s knowledge and what such application implies for the development of returnee entrepreneurial firms.

Knowledge based view

Considering that knowledge is the primary advantage that returnee entrepreneurs and returnee firms are thought to possess, using a knowledge-based view is pertinent and very appropriate for this thesis. KBV focuses on the roles of knowledge learning, integration and application within firms (Nonaka & Takeuchi, 1995). Knowledge is referred as validated understandings and beliefs in a firm, and is the most strategically important resource through which a firm structurally coordinates other resources and builds its competitive advantage (Barney, 1991; Kogut & Zander, 1993; Penrose, 1995; Spender & Grant, 1996).

Previous research has distinguished different types of knowledge so as to better understand its learning, integration and application, and the distinction between tacit knowledge and explicit knowledge is useful (Nonaka, 1991). Tacit knowledge results from practical experiences in a specific context over a period of time, and cannot be manifested and articulated in a formal way (Polanyi, 1966). Therefore, tacit knowledge resides within an individual who has done through the process of practical experiences in relevant context. In contrast, explicit knowledge can be codified and presented in a systematic form, which thus can be shared formally and acquired through study. For example, scientific knowledge, such as the laws of motion, can be formulated and abstracted and transferred across time and space, independent of its context.
According to the KBV, tacit knowledge, because it cannot be easily understood, abstracted, and transferred, has the property of inimitability and thus forms the backbone of a firm’s knowledge resources. A firm relies on the use and generation of tacit knowledge, which leads to sustained competitive advantage (Grant, 1996; Teece & Pisano, 1994). Firms differ in their possession of tacit knowledge, and in their capacity for using and generating this knowledge (Nelson & Winter, 1982). Take theories of internationalization for example: both the original Uppsala internationalization model and the new approach of international entrepreneurship (IE) view a firm’s tacit knowledge as the single most important factor in firm internationalization (Johanson & Vahlne, 1977; Oviatt & McDougall, 1994). The former emphasizes experiential knowledge developed and accumulated from a firm’s practice in international markets, which resides in individual managers who had the first-hand experiences. It posits that the firm with increasing experience in foreign markets would increase its commitment to those markets. The latter IE approach emphasizes the entrepreneur’s personal international experiences prior to the company being established, which affects the firm’s pursuit of growth opportunities through fast and early internationalization (Autio, 2005; Sapienza et al., 2006). Although knowledge discussed in terms of role and source is different in each approach, both the KBV and IE approaches highlight the tacit knowledge that is developed through practical experiences in specific contexts over a long period (Nonaka, 1994).

The international experiential knowledge of returnee entrepreneurs

Having been exposed to a context that differs from their home country, returnees have a long period of direct experiences that entail interactions with various actors in the society in which they have been immersed. That experience leads to the development of wisdom and know-how about the institutions, culture and communication in a different context. It becomes indeed knowledge when returnees have faith in the validity and authority of the wisdom and know-how after personal experience. Hereby I refer it as the international experiential knowledge of returnees, or a returnee’s international experience.

The international experiential knowledge tends to be concrete and specific in nature, and could not be cultivated without immersion in that context over a long period of time. In this sense, returnees have developed tacit knowledge (Roberts, 2012). Although much of the literature’s attention has been given to returnees’ unique experiences and knowledges (e.g. Filatotchev et al., 2010; Lin, 2010), few studies have explained what exactly constitutes ‘returnee
knowledge’, or have elaborated on its tacit characteristics. This study distinguishes among different types of returnee experiential knowledge relevant to a returnee’s entrepreneurial activities. These types are technological knowledge, international market knowledge, and social network knowledge.

Technological knowledge is knowledge about advanced science and technology. Technological knowledge can be in an explicit form, such as in a textbook, where it is to be followed and shared. Yet, often the complexity of technological knowledge makes it hard for a person to process, because there is a human limitation (either mental or physical) that can be overcome only through a learning-by-doing process (Collins, 2007). For example, returnees are used to studying or working in world-class labs. That immersive study enables returnees to learn not only explicit ‘textbook’ knowledge, but also gives them tacit understanding of that knowledge through every day’s practice in the lab. The tacit part of the technology knowledge is inimitable, and is therefore the key component driving innovation. Internationally granted patents and scientific papers reflect an explicit form of technological knowledge, but often result from returnees’ possession of tacit knowledge of technology.

The second type, international market knowledge, is experiential knowledge about a specific host country. This knowledge is generated through a returnee’s interaction with collective human activities, which are rooted in historically developed and culturally mediated social environments. This knowledge concerns characteristics of the specific host country market, its social climate, its institutional arrangement and its cultural patterns. It is essentially tacit, because explicitly codifying such knowledge would remove its underlying meaning in the specific environment where it was created. Returnees develop and accumulate such tacit knowledge through their long-term experiences of engagement in, and interactions with, foreign academic institutions, firms, and broader society. The knowledge cultivated from different markets enables returnees to understand and appreciate cultural differences across markets, which prepares them to perceive issues from diverse perspectives, leading to broader and novel problem solving skills.

An additional form of international market knowledge is social network knowledge, which is a relational knowledge that equips returnees with social networks in their host countries (Roberts, 2012). This knowledge is typically generated and accumulated through everyday learning-by-interacting, such having interactions with supervisors and colleagues. With these social practices, returnees build social relationships and get access to the flow of information within their professional communities. In addition, returnees can take part in other social activities such as attending conferences and socializing with coworkers. The more broadly and deeply a returnee engages in social
activities, the greater the extent to which that returnee is integrated in that foreign network. Greater engagement deepens the returnee’s link to the foreign network, which in turn enables the returnee to have greater access to the knowledge flow in that network. Therefore this knowledge entails concrete information about accumulated social contacts, and about who knows what and who knows how to do what. This knowledge becomes useful when returnees start becoming entrepreneurs. In particular, these existing social contacts constitute the initial network capital of returnee entrepreneurial firms and are helpful for developing business relationships (Björkman & Kock, 1995) and for identifying and exploiting opportunities for foreign market entry and international exchange (Ellis, 2000; 2011). In other words, the social contacts developed blindly or intentionally in early years become useful for returnee entrepreneurial firms in their initial stages.

Returnees as a group have much in common regarding the possession of international experiential knowledge. However, there is within-group variation with respect to the quality of that knowledge, which has seldom been discussed in previous returnee entrepreneurship literature. The quality of knowledge to a large extent depends on the depth and breadth of a returnee’s international experience (Jones & Casulli, 2014). The depth of experience, such as the number of years a returnee has spent abroad, together with breadth of experience that results from diverse living, are related to the quality of a returnee’s experiential knowledge. With increasing depth and breadth of experience, returnees have more sustained and intensive participation in the complexity of real problems, and are more likely to become competent in resolving problems by using their own experiences. The implication for returnee firms is that they can make use of the international experience of their founders when the firms are new and small. By comparing with their prior international experiences, returnee entrepreneurs tend to be able to recognize signs and patterns of current problems encountered in similar settings, and thereby enhance their abilities to figure out solutions. A firm established by a returnee entrepreneur would have advanced knowledge compared to a local firm, and that the returnee firm would therefore perform better. The application of a returnee founder’s knowledge in order to explore opportunities in domestic and foreign markets is an essential entrepreneurial activity of a returnee entrepreneurial firm.

The network approach

Having established a knowledge-based conceptualization of returnee entrepreneurial firms, the discussion now turns to the network approach, which has
been an important lens employed in the field of entrepreneurship through which to view and understand the emergence, development and growth of new ventures (Hoang & Antoncic, 2003; Slotte-Kock & Coviello, 2010). This approach posits that a network of relationships is a strategic resource (Jarillo, 1989), through which new ventures could reduce the liability of their newness (Hohenthal, Johanson & Johanson, 2014). Resources, knowledge and legitimacy have been identified as key benefits arising from network relationships (Adler and Kwon, 2002). Exploiting a network for resources and knowledge is an essential part of entrepreneurial activities.

Social and business network perspectives

There are two perspectives for studying the phenomena of network relationships (Slotte-Kock & Coviello, 2010). One is the social network perspective (SNP), which originates in sociology (Coleman, 1988; Granovetter, 1973), and has been particularly interested in studying traditional networks of individuals. In line with this view, a social network is seen as being built on interactions and social exchanges by family, friends and acquaintances, and the emphasis has been on analyzing the structure of the patterns of these networks, such as network size, density, and actors’ positions in networks.

The other view is business network perspective (BNP) that originates from Industrial/International Marketing and Purchasing research (Håkansson & Snehota, 1989; Johanson & Mattsson, 1985). The BNP looks into dyadic interaction between business firms such as a buyer and seller, and the business network aggregated by inter-connected dyadic business relationships. In contrast to the SNP, the BNP does not focus on the social exchanges of individuals, although social networks may present within business networks as the by-products of long term business exchange (Hilmersson, 2014). The BNP specifically accounts for both actors in a dyadic relationship, attempting to understand how and why business relationships change over time. In the view of the BNP, networks consist of relationships that are continually established, maintained, and broken to achieve satisfactory economic return. Actors in a relationship act and react based on perceptions of each other. By acting so as to continually improve their position towards important partners, actors gain experience with their counterparts and with combining resources in new ways (Håkansson & Snehota, 1989). Interactions can change relationships in one part of network, which can subsequently change the wider network. Change within a network is endogenous and results from actors in that network adapting to each other (Ritter, Wilkinson, & Johnston, 2004). According to the BNP, actors manage networks via interacting within the network, rather than by managing the networks themselves (Freytag & Ritter, 2005).
Entrepreneurship research emphasizes the nexus between individual entrepreneurs and opportunity (Shane & Venkataraman, 2000), and is thus conceptually close to and strongly influenced by the SNP (Ellis, 2011; Slotte-Kock & Coviello, 2010). In particular, new ventures are expected to be different than established firms with long-term relationships and inter-firm networks, in that new ventures tend to rest on an entrepreneur’s interpersonal relationships, which is where important information and resource exchanges take place (Ellis, 2011). Therefore, it would seem more appropriate to employ the SNP when using entrepreneurs’ interpersonal relationships to explain new ventures’ developments.

However, the SNP falls short in the following two aspects. First, the SNP emphasizes the influence of the external environment on network development (Aldrich & Zimmer, 1986), which means that firms or entrepreneurs behave reactively and network development is controlled by changes of context. This view conflicts with the entrepreneurship literature that perceives entrepreneurs as the drivers of network change. In other words, using the SNP may potentially limit research efforts in understanding the role of entrepreneurs as the essence of entrepreneurship (Larson & Starr, 1993).

Second, although both entrepreneurship literature and the SNP recognize that a network comprises both social and business relationships, the SNP is less interested in investigating the development and transformation of relationships. In particular, it lacks a rich understanding of when, how, and why relationships shift from social to business (or business to social) (Slotte-Kock & Coviello, 2009). The BNP therefore has conceptual advantages in terms of tracking the development of relationships, with a goal to identify how actors learn and behave (Johanson & Mattsson, 1985). Additionally, the BNP emphasizes the governance role of relationships in networks, which is a role that can influence how firms exchange resources and do business.

To some extent, therefore, the BNP offers a complementary lens through which I am able to investigate the role of entrepreneurs and firms in terms of changes in networks. Specifically, the BNP focuses on change within relationships, and highlights the management role of entrepreneurs in leading network change. In light of the distinctive foci and explanatory powers of the SNP and the BNP, entrepreneurship theorists have called for applying both of these perspectives integratively (Slotte-Kock & Coviello, 2010). This thesis responds to that call and considers both the SNP and BNP. The research will use the SNP to examine the influence of elements like entrepreneurs’ inter-personal relationships and the structural dimensions of networks on firm performance. At the same time, the BNP will be used to understand the capabilities of new ventures in the initiation, development, and transformation of specific relationships.
The idea of network structure can serve as an example to show how these two perspectives can be complementary. The SNP often uses the two concepts network closure and relational embeddedness to describe characteristics of network structure. The first concept, network closure, captures the interconnected relationships surrounding a firm. A high degree of network closure prevails when the network is characterized by a high number of relationships in relation to the total possible number of relationships. The second, relational embeddedness (Granovetter, 1985), is defined as the interdependence between social relations and economic exchange in the network of relationships, which captures how well the firm knows its counterparts in dyadic relationships. According to the SNP, network closure and relational embeddedness both constrain flows of novel information and knowledge. A researcher using the SNP might conclude that firms that are relationally embedded and part of a closed network are less likely to benefit from network relationships.

In contrast, a researcher who used the BNP to explain the behaviors of firms with the same network characteristics might come to opposite conclusions. The BNP contends that network closure and relational embeddedness serve as a governance mode of firms, which gives rise to mutual learning and coordination. According the BNP, then, network closure and relational embeddedness have facilitated knowledge flow and capability development, not hampered it.

The capability-based view
The exploitation of the experiential knowledge of returnee entrepreneurs is also closely linked with the capability development of their firms (Helfat & Lieberman, 2002). Organizational capability has been highlighted as a critical factor giving a firm a competitive advantage (Barney, 1991), and specifically by improving the entrepreneurial performance of a new venture (Knight & Liesch, 2015). This study adopts the Knight & Cavusgil (2004) knowledge-based definition of organizational capability, which is that this capability manifests in organizational routines and practices that are regularly performed so as to configure resources for value creation. Returnee entrepreneurs distribute experiential knowledge within their firms by developing pertinent management routines and practices. The dissemination and application of such routines and practices within a firm reflects the development of a set of organizational capabilities (Knight & Cavusgil, 2004). If a firm has not yet developed routines and practices, the existing knowledge of a returnee entrepreneur can be a springboard that is routinized within the firm, which will influence a firm’s performance.
The innovation orientation of returnee firms can be seen as explained by the capability view of returnee entrepreneurs’ experiences. A returnee firm is able to innovate rather than only imitate by building on its founder’s specialized knowledge. The technological knowledge that a returnee founder brings from a developed market is an important factor underlying innovation activities such as the development of new products. In addition to the scientific elements, this technological knowledge also includes knowing how institutions and culture affect that technology. The creation and application of technology occurs in a specific market, which means that the transferred technology is attached to certain locally developed elements and can only be applied in another market by complementing elements of that new market (Latour, 1987). Since returnee entrepreneurs have experiences and knowledge of both markets, it is argued that returnee entrepreneurial firms can handle the knowledge transfer process more easily relative to indigenous entrepreneurial and foreign multinational corporations (Lin, 2010).

International networking capability

Networking capability is an integral part of a successful entrepreneurship process (Weerawardena et al., 2007), and its development could result from exploiting the experiences of returnee entrepreneurs. The social knowledge that a returnee might have about a foreign market could transform into a networking capability of that returnee’s firm. This transformation would take the form of a set of routine practices for maintaining and developing networks, and for using these relationships for business development. The transformation of previously developed knowledge results in networking capabilities forming at the organizational level, thereby facilitating a returnee firm’s business development in the international market.

Returnee firms as new ventures are less likely to have established positions within business networks. Rather, they tend to start from relationships at hand (Sarasvathy, 2001), such as social relationships. Because the growth of new ventures is intertwined with the development of their network relationships (Hite & Hesterly, 2001; Larson & Starr, 1993), it is important that a returnee firm expands its relationships to a wider network, i.e. beyond the social relationships of its returnee founder. For returnee firms, the capability of networking is associated with resource accessibility and opportunity creation, leading to better performance (Lorenzoni & Lipparini, 1999). However, the capability view of networking activities has been less discussed (Sullivan-Mort & Weerawardena 2006).

Arising from the resource based view, the capability view posits that a firm’s endowment of resources determines its organizational capabilities and
performance (Barney 1991; Penrose 1995; Wernerfelt 1984). Or rather, knowledge, especially the tacit knowledge that resides in individuals in the firm, is the most important resource, and the integration and application of such knowledge constitutes organizational capabilities (Dierickx & Cool, 1989; Grant, 1996). Accordingly the formation of the networking capability of returnee firms hinges on the nature and quality of that returnee’s specialized knowledge. In other words, the networking capability of returnee firms both results from and reflects a returnee entrepreneur’s knowledge, and comprises customer identification, relationship development, and relationship maintenance.

Customer identification reflects a firm’s ability to identify potential customers, which demonstrates a new venture’s knowledge about its markets and strategic considerations for network extension (Sullivan-Mort & Weerawar德na 2006). Typically, returnee firms take relevant social relationships as a starting point. By capitalizing on these social relationships, returnee firms are able to establish themselves within business networks rapidly, and to learn concrete, valuable information that would otherwise be unavailable. Meanwhile, because the social relationship has been transformed for business purposes, expectations and commitments must be re-adapted between returnee firms and counterparts in social relationships, leading to the maintenance of existing relationships in a business context.

Relationship development and maintenance refers to the capability of establishing and developing business relationships with customers, therefore transforming a potential customer from prospect to counterpart in an ongoing business relationship. This important transformation leads the expansion of a returnee firm’s network beyond existing relationships and augments a returnee firm’s position within that network. Furthermore, social relationships can form based on newly developed business relationships, through which the firm embeds its business relationships in its social relationships with key people in other firms, and develops and maintains a relationship characterized by trust and cooperation. These types of developments reflect the social dimension of business, in line with work on social capital (Coleman, 1988) and social exchange (Cook & Emerson, 1978).

**Domestic networking capability**

The development of a domestic networking capability is also necessary for returnee firms. An important aspect less discussed in the current literature is that returnee firms have their main interests in their (emerging) home markets and tend to take advantage of advanced knowledge learned abroad in order to explore their home market. This advanced knowledge may enable a returnee
firm to introduce novel products and services in its home market, thus conferring an advantage over local firms that do not have such knowledge. However, the extent to which this knowledge advantage can be fully realized may depend on how well it fits into the emerging market’s conditions. This requires a thorough knowledge of the domestic market, complementarity with the knowledge and resources of domestic actors, integration with local businesses, and integration with the firm’s own R&D activities. Based on a thorough understanding of the domestic market, a returnee firm could refine its internationally sourced knowledge and adapt it to address local market needs. Otherwise, a returnee firm relying only on its international knowledge might struggle to introduce customized products and services that fit domestic markets. This local knowledge learning that leads to adaptation requires interaction with local actors such as customers, suppliers and competitors.

Domestic networking capability, which refers to the capacity to develop and use relationships with different players in the domestic market, thus becomes relevant. More than that, extensive actions within the domestic network (through interaction with network partners) help keep a firm aware of its market, which in turn strongly motivates the firm to improve its technology. Returnee entrepreneurs have an existing network of social relationships in their domestic market prior to staying abroad. These social relationships, such as family relationships, can provide local information that would help validate a returnee’s entrepreneurial ideas, as well as give initial resources to help the firm’s establishment. Therefore these relationships help establish the returnee firm (Pruthi, 2014), as well as develop a foundation of domestic networking capability. It is important that the returnee firm is able to develop and maintain relationships with domestic counterparts that provide complementary resources and cooperative support.

Besides business relationships (e.g. Zhou, Wu & Luo, 2007), there are non-business actors in the network that also affect an entrepreneurial firm’s economic behavior. Some studies originating from emerging market contexts (e.g. Peng & Luo, 2000) propose that a firm’s social capital is derived from its manager’s network relationships with business partners and government officials (Luo, Huang & Wang, 2012). Specifically, the emerging market is characterized by a deficiency of institutional infrastructure, such as an uneven distribution of essential production factors (Buckley et al., 2007) and a weak protection of intellectual property rights (Dong, 2013). In such markets, a firm’s political relationships with government officials and regulatory agencies appear to be of particular importance, and a firm might receive key regulatory resources otherwise not accessible in the market (Sheng et al. 2011), which would differ from normal business ties. Thus, through political rela-

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tionships, an entrepreneurial firm may get particular resources that compensate for the negative impact of contextual influences (Peng and Luo 2000; Xin and Pearce 1996).

A general theoretical framework for this study

In this section, I present a general theoretical framework that covers the key theoretical constructs discussed above and their proposed theoretical relationships. As Figure 3 shows, the framework embodies a chain of investigations, from the prior international experience of individuals through the development of networking capability and the procurement of market knowledge, leading ultimately to the three aspects of performance outcomes. It has to be emphasized that only a subset of the theoretical relationships are examined in this thesis. The purpose of this model is to comprehend a number of necessary constructs that have the greatest relative power to explain the performance of returnee firms. The proposed theoretical relationships are discussed below.

Figure 3. A general theoretical framework
As has been assumed, knowledge is the fundamental resource that supports the business development of returnee firms. A returnee firm’s knowledge and its capacity for using and generating that knowledge can cause any firm to perform differently than some other firm. Firms are embodiments of individuals, including owners, managers and employees. And knowledge of the firm, in a simple way, can be an assembly of the knowledge of these individuals. In new ventures that are young and small, there are few employees, and consequently the total stock of knowledge is limited. In such situations, the entrepreneur is often regarded as the primary source of knowledge foundation (Cooper, Gimeno-Gascon & Woo, 1994), partially in compensating knowledge deficiencies. The characteristics and motivations of the entrepreneur highly influence the characteristics, decisions and behaviors of the firm (e.g., Acedo & Galan, 2011; Delmar & Wiklund, 2008). It is thus assumed that the knowledge of an individual returnee founder constitutes the knowledge foundation of a firm, and exerts an initial and persistent influence on the management and performances of this specific type of firm (e.g., Wright et al., 2008). For entrepreneurial endeavors such as internationalization, in which information about complexity, uncertainty, and risk is incomplete, returnee entrepreneurs are especially likely to rely on previous experiences (Figueira-De-Lemos, Johanson & Vahlne, 2014), and to compare their current entrepreneurial endeavors with prior experience in order to figure out solutions (Jones & Casulli, 2014). It is likely that the closer the experience is to the operations of the firm, the more important and useful that experience will be for the firm.

More importantly, there is a link between experience of returnee entrepreneurs and capabilities development of their firms (e.g., Autio, Sapienza, & Almeida, 2000; Sapienza et al., 2006; Weerawardena et al., 2007). Capabilities development involves processes that are knowledge-based (Knight & Cavusgil, 2004), and is shaped by the individuals using their knowledge to accomplish tasks. When firms are new and have not had time to build up a rigid organizational structure, they are more likely to develop routines and structures directly from the knowledge they have access to. Therefore a returnee entrepreneur, who is the primary source of knowledge, can play a prominent role in the development of specific capabilities (Teece, Pisano & Shuen, 1997). For example, the simultaneous embeddedness of returnee entrepreneurs in two or multiple markets provides some of the impetus for the development of networking capability in both international and domestic markets (Liu, Wright & Filatotchev, 2015).

Once the returnee firm is created, its knowledge base has to be upgraded for foreign markets and adapted for the local market to create suitable products
and innovations. The upgrading and adaptation requires interactions with international and local partners, such as customers and suppliers, and acquisition of knowledge. Then the developed capabilities become more significant than the returnee entrepreneur’s experience, as these capabilities embody the practices needed to revise or create knowledge (Weerawardeba et al., 2007). Particularly, the networking capability becomes relevant because it is crucial for acquiring knowledge and developing complementary resources (Tolstoy, 2010), which in turn underpins the innovation, internationalization (Fernhaber & Li, 2013) and business performance (Musteen, Francis, & Datta, 2010) of new ventures.

Hence it is posited that there is an important link between networking capability and the acquisition of knowledge. The acquired knowledge here emphasizes knowledge about market, and suppliers and customers in that market. An important aspect of the knowledge is related to opportunity knowledge, which includes both new technological ideas and business exchange opportunities that capture the “newness” dimension of opportunity (Alvarez & Barney, 2007; Johanson & Vahlne, 1977). The knowledge is acquired and accumulated through mutual learning that results from cooperation and coordination between returnee firms and other firms in network relationships.

At the same time, the international experience of returnee entrepreneurs is postulated as an antecedent to the development of knowledge (Weerawardena et al., 2007), particularly international market knowledge. It is logical to argue that prior international experience drives returnee firms to pursue opportunities in international markets, and that experience is likely to make the first steps abroad quicker and smoother. The firm’s engagement in international operations thus leads to its accumulation of experiential knowledge of the international market (Johanson & Vahlne, 1977). Additionally, the prior international experience leads to greater absorptive capacity in the firm, and therefore enhances the accumulation of experiential knowledge.

Assembling the proposed relationships together, a theoretical framework can be perceived (see Figure 3) in which the development of returnee firms’ networking capability and market knowledge arises from individual entrepreneurs’ prior international experiences. Furthermore, the framework considers the joint effects of the international experiences of returnee entrepreneurs and their firms’ capability and knowledge development on performance of returnee firms. The framework proposes that international experience indirectly impacts performance of returnee firms through the mediation of networking capability and acquired knowledge.
Research design and methodology

This chapter presents the research design and methodology employed in this thesis. It begins by describing the mixed method research design that guides the development of this study. Then it describes the qualitative method that is used for a longitudinal case study. Lastly, it presents the quantitative data collection technique, descriptive statistics of the sample, and the analysis technique.

Research design

This thesis employs a mixed method approach that combines both qualitative and quantitative methods. Qualitative methods aim to provide a deeper understanding of the context, conditions and process of a phenomenon studied, by, for example, an in-depth investigation of a single case (Yin, 2009). Such studies often start with rather broad questions, and typically collect data with open-ended and flexible means, such as unstructured or semi-structured interviews. This approach gives personal experience and first-hand observations of the phenomenon studied, identifies key themes or properties, and gives a basis for theoretical understanding.

In contrast, quantitative methods start with a specific theoretical framework, from which research questions and hypotheses are formulated prior to data collection (Ghauri & Gronhaug, 2010). Data collection is typically pre-planned and structured, and aims for numerical or categorical forms of data through surveys or database archives. The outcomes of quantitative methods are precisely measured variables, and relationships established among those variables, with the goal of revealing underlying patterns and regularities in the setting studied.

This thesis followed a sequential exploratory research procedure (Creswell et al., 2003), and began with a qualitative case study, which provided a contextual understanding of the phenomenon studied for explorative purpose. The research findings from this qualitative research form the empirical foundation that enables a researcher to narrow the focus of the study and to identify the most relevant variables. These findings are also beneficial for developing a
questionnaire and scale items for quantitative study in the second phase (Greene et al., 1989). With a survey and quantitative data analysis in the second phase, I attempted to generalize and validate my research findings within a chosen population, which is assumed to result in a more comprehensive account of the phenomenon studied (Bryman, 2006).

Table 2 shows the collection of studies that apply distinct methodological designs within this thesis. Paper I, based on a single case study of an extreme example, explores the emergent phenomenon of the high-tech returnee entrepreneurial firm and explains the development of a successful returnee firm in the context of a home country with an emerging market. It develops a comprehensive understanding of the phenomenon, which inspires a more specific theoretical focus and identifies the relevant constructs. Building on Paper I, Papers II-V test and confirm theories by estimating relationships between constructs within a population. This collection of articles elaborates the multifaceted factors that determine the performance of high-tech returnee entrepreneurial firms in a specific context.

Table 2. Overview of papers included in this thesis

<table>
<thead>
<tr>
<th>Study</th>
<th>Objective</th>
<th>Data</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper I</td>
<td>To explore the emergent phenomenon and to explain a success returnee entrepreneurial firm’s development process</td>
<td>Archival data; Participant observation; Interviews; Internal documents.</td>
<td>Processual approach: identifying key events; moving back and forth to explain the underlying logic of the sequence of events</td>
</tr>
<tr>
<td>Paper II-III, V</td>
<td>To examine the postulated relationships of constructs</td>
<td>Survey data</td>
<td>Covariance-based Structural equation modeling in pursuit of the close between covariance of sample matrix and theoretical model expectation</td>
</tr>
<tr>
<td>Paper IV</td>
<td>To examine the postulated relationships of constructs</td>
<td>Survey data</td>
<td>Variance-based Structural equation modeling in pursuit of greater explanation of endogenous variable</td>
</tr>
</tbody>
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Case study research: The case of BGI

Sampling

This thesis project started with a rather broad research interest in returnee entrepreneurial firms in emerging markets, and focuses on China. In order to
narrow the research focus and to identify interesting research questions, I started my investigation by searching for appropriate cases to study.

I set three criteria for choosing case companies. First, the parent companies (that is, the firms investigated) should originate from China, and thus could be perceived as a Chinese company. Second, the case company should conduct internationalization through green field investment or cross-border merge and acquisition, and the subsidiary should be operating in the host market for more than one year. This ensures that there are informative data to be gathered. Third, the firms that have been frequently investigated in extant studies would be excluded, as I would like to ensure the novelty and originality of my case studies.

Unfortunately, there is widespread agreement on the difficulties of getting access to Chinese firms. The public in the West generally is appreciative of academic research and often accepts a researcher’s request for access. In contrast, in China research is traditionally regarded as a governmental activity (Tan, 2011). Chinese companies are often unwilling to offer research access unless an individual researcher gets support from the government or has personal networks (guanxi) in the prospective case companies.

In January 2011, I started looking for possible case companies. First, I searched newspaper reports to collect information about which Chinese companies were investing and where (there is no special database gathering such information). Then I made a shortlist of prospective case companies in accordance with the criteria mentioned above and tried to contact these companies. Unfortunately, I did not get any responses, partially due to incorrect contact information, and partially because of the routines and possible prohibitions of the parent companies.

The turning point came at the end of May 2011. I was in Copenhagen attending the Nordic School of International Business. After finishing a course on May 26, I walked around the streets of Copenhagen and happened to find a sign of a Chinese company, with both Chinese and English characters, from the window of a small building. I had heard a little about the company, no more than its name, through public news report in China. Because it is possible that requesting research access face to face would have a higher probability of being accepted, I was excited about this finding as I thought I might have a chance to inquire about the company on site. (I was impatient to visit this company and would have done so right away if it had been not off-duty time.) So, I visited the company’s office during the course break on May 27, a Friday afternoon. There were no employees except a secretary working in the office when I visited there. The secretary was very helpful and gave me contact information for the managers and couple of leaflets of the company. I had to leave Copenhagen just after this, and sent an inquiry email to the managers
instead of meeting face to face. Fortunately, this time I received a response as well as a welcome from a manager. Meanwhile, I coincidently found an Uppsala alumnus through QQ group (a Chinese online social network), who was working as the director of the Nordic district for that company, and I got in touch with him. This personal contact facilitated my research access and information transfer in that company. With his assistance, I had access to the company from top managers in headquarters, through management teams in foreign subsidiaries, to sales representatives in European markets. The office in Copenhagen is the European subsidiary of BGI, which includes functions of R&D, marketing and sales.

After background investigations and two pilot studies on the company in 2011, I determined that the case not only fulfills the above criteria, but turns out to be unique. First, BGI is a science-based high-tech firm that has a world-class R&D performance. A high-tech firm with such features would not be as impressive if it were based in a developed country, but this type of company remains rare in emerging markets in terms of empirical observation and theoretical discussion. Second, the establishment and development of BGI involves dramatic conflicts that may reflect the particular context and conditions of emerging market, and they are thus worth documenting and analyzing (Yin, 2009). As can be seen, the accessibility issue decided that the case chosen would be used, and it is the result of convenience sampling. But the uniqueness of BGI made me stop searching for additional cases for a multiple case study design, and I decided to focus on the single case. I was driven by the observed phenomenon and followed an inductive approach for developing the inquiry focus and the research questions.

Data collection

For triangulation, I adopt a multi-method design for collecting data on the events and processes of BGI with three sources: in-depth interviews, archival data, and participant observation. I conducted a total of 17 interviews during several visits to both the headquarters and to overseas subsidiaries between July 2011 and September 2014. The interviewees included top managers at headquarters, CEOs, project directors and sales directors of the US and European subsidiaries, and business development representatives in international markets. For reducing the potential for informant bias, interviews were also conducted with BGI’s business customers and collaborators. A semi-structured interview guide was adopted to capture certain broad themes: (1) the circumstance of the entrepreneurial process; (2) the patterns of internationalization activities; and (3) the development of relationships with customers and
the role of those relationships to the firm’s knowledge building and development. All interviews were recorded, generating 350 pages of transcriptions.

For archival data, I systematically collected news clippings about BGI’s internationalization process from various media, including sources from top academic journals such as Nature and Science, to popular business magazines such as The Economist, Forbes and Bloomberg, resulting in over 50 articles of news reports and comments. In addition, I collected websites and online materials regarding BGI’s business activities and events, which may provide additional information and insights. For example, I found some videos featuring the founders of BGI, documenting their R&D planning, technological achievement and internationalization. Last but not least, academic publications and authorships, as well as patents and citations, are useful archival data, which can be used to reflect an institution’s technological progress, collaborative relationships and networks. Consequently, I collected information about BGI’s scientific publications. In 15 years, from establishment in 1999 to 2014, BGI’s number of publications in academic journals is 1015, among which 175 are in top journals (including Nature, Science, Cell and The New England Journal of Medicine).

In addition to interview data and archival data, I also conducted participant observations to follow several processes related to BGI, during which I made extensive field notes. These observations included attending professional conferences organized by BGI, meeting existing and prospective customers, participating in social activities with BGI’s top management team, and observing work in the office for 4 days. Figure 4 presents the applied data collection strategies that cover the dynamic process. Information regarding BGI’s development from 1999 to 2011 relies on retrospective data derived from interviews and archives. After 2011, BGI’s development was tracked in real time through interviews, archive data and observations.

Figure 4. Data collection strategies
Analysis procedure

The analysis was organized as follows. First, I read the interview transcripts and other material repeatedly and compiled a narrative about BGI’s development over time. Information became richer during this data collection process, and I rewrote the narrative in order to provide a more complete and comprehensive picture of the company. Second, since analytical strategies of processual study focus on events (Langley, 1999; Van de Ven, 2007), I identified events that were important milestones during BGI’s development. These landmark events were cross-checked by two other researchers who were not involved in the data collection process, as well as confirmed by key informants from the case company. Third, to theoretically understand patterns of events, I used network and entrepreneurship literature to code the events, which leads to the organization of the events into more conceptual categories. Then I followed the iterative approach, back and forth between the data, the relevant theoretical concepts, and the events, from which emerged the logic connecting the events. Last, I followed the suggestion of process researcher (Langley, 1999) and produced ‘visual maps’ of the sequence of events. As the analysis proceeded, a theoretical explanation of the development of a successful returnee entrepreneurial firm was built and refined through repeat cross reference (Van de Ven and Poole, 1995).

Quantitative survey research

Questionnaire design

In the context of China, BGI is a typical returnee firm that is high-tech, knowledge intensive, and internationalized. During this investigation of BGI, the determining role of returnee entrepreneurs in innovation and firm internationalization through using their international experience and network relationships became increasingly prominent. Particularly, with the leadership of its returnee entrepreneurs, BGI managed to constantly expand its business network relationships, which gave rise to updated knowledge. Based on research findings from the case study, a quantitative approach was then designed. The aim of this questionnaire survey is to investigate how and to what extent returnee firms may benefit from returnee founders with regard to business development and growth, and to test and verify patterns of returnee firms that were identified in the previous qualitative study. The survey focuses on returnee entrepreneurs’ international experience, returnee firms’ business and non-business network development in both the foreign markets and home country, and international and domestic market knowledge development. Based on preliminary findings from the case study, as well as the relevant
literature on returnee entrepreneurship, internationalization, international entrepreneurship, innovation, Small and Medium Enterprises (SMEs), networks, and knowledge in the context of business, a structured questionnaire was developed. It includes questions at both the individual level about returnee entrepreneurs, and organization level about returnee firms (see Appendix A).

China is the research setting and it is a suitable country for carrying out survey on returnee firms. China is the second largest economy in the world, has a long history of sending students abroad, and has favorable governmental policies towards returnees (Kenney et al., 2013). The questionnaire was initially designed in English and two researchers reviewed the English draft for minor modifications. Then it was translated into Chinese and sent to two Chinese scholars for language checking and back translation. After some small changes, the questionnaire was pretested in China with four returnee entrepreneurs. This pretest was useful in terms of further polishing ambiguous questions. Due to the issue of information sensitivity (which was brought up in the feedback from the pretest), I particularly re-structured the order of sections presented in the questionnaire and moved the background information of the respondent firm from appearing first to appearing last.

To ensure high rates of survey completion and quality, I took the following actions. First, a survey team consisting of myself and five experienced enumerators was created. The enumerators are well-trained with years of experience of conducting interviews with firms. Then I had a two-hour training seminar with the enumerators, which allowed them to go through the questionnaires question by question, making sure that they understand the questions and could speak them aloud precisely. After the training, they visited each firm in person, explained the purpose of the study, and interviewed the returnee entrepreneurs. To increase participation, I requested a referral letter from the Nordic Center of Fudan University. Fudan University is a well-known top university in China and has a long standing cooperation with Uppsala University. The referral letter from Fudan shows my legitimacy for doing the survey in China. In addition, I followed the enumerators to observe the administration of the questionnaire in situ and made sure that the interview process was carried out as professionally as expected.

Sampling and data

China is indeed the most frequent data collection place for researchers interested in returnee firms. However, in contrast with previous studies (c.f. Dai & Liu, 2009; Filatotchev et al., 2009; 2011; Liu et al., 2010), this study did not limit data collection to a specific entrepreneurial business park (Zhongguancun) in a city (Beijing) but focused on an entire economic region, the Pearl
River Delta Economic Zone. This zone, with a population of 56 million and GDP per capital of USD 17,260 in 2015 was one of the most developed regions in China and one of the top three destinations that allured returnee entrepreneurs (Wang & Miao, 2013). It comprises six cities: Shenzhen, Guangzhou, Dongguan, Zhuhai, Zhongshan and Foshan.

To develop the sampling frame of returnee firms for the survey, I first asked the Administrative Committee of the returnee entrepreneurial business park in each city for the list of returnee firms. I then cross-checked this list with other lists gathered through the internet. For Zhuhai, Dongguan, Zhongshan and Foshan, which are relatively small cities, the lists obtained from both sources were highly consistent, while for the large towns of Guangzhou and Shenzhen there were also returnee firms spread around the city. Therefore, I completed the latter two lists with business ventures outside the business parks. As a result, the initial list of returnee entrepreneur firms consisted of 1,915 companies distributed as follows: Shenzhen (738), Guangzhou (726), Dongguan (220), Zhuhai (111), Zhongshan (25) and Foshan (95). The following table shows the distribution of sampling frame and respondent firms in six towns.

In the second stage, I contacted all 1,915 returnee firms, explained the purpose of the study and excluded those not qualified (as per enquiries about each firm’s background). There are three sampling criteria for exclusion. First, with a confirmatory purpose, I made sure that a returnee had in fact created the firm. Second, the firm had to be operating for more than two years so it was a business already created and functioning. Finally, the firm had to be involved in international operations, i.e., it had to be internationalized. In this manner I obtained a comprehensive sampling comprising 836 internationalized returnee firms. Instead of applying a sampling procedure to draw a sample, I invited all 836 internationalized returnee firms to participate in my study (another positive feature of the data). After two rounds of repeated visits (some returnee founders were out of their office during the first visit), a total of 201 returnee firms completed the survey. Table 3 presents the information about the distribution of firms at the initial and final stage.

<table>
<thead>
<tr>
<th>Total amount</th>
<th>1915</th>
<th>836</th>
<th>201</th>
<th>24</th>
</tr>
</thead>
</table>

Table 3. Information about the distribution of respondent firms
The returnee respondents were the main founders of the company and in charge of business operations at the moment of the visit. After the two above-mentioned rounds of visits, I obtained 201 usable filled-out questionnaires. The overall response rate was therefore 24%. The returnees themselves filled out each questionnaire. On average, they took approximately 25-35 minutes to complete the questionnaire. Data were collected between October 1, 2013 and January 30, 2014, and there are no significant differences between early and late respondents. I also tested non-response bias (Armstrong & Overton, 1977) and there are no significant differences between respondents and non-respondents in terms of firm age (t=1.156, p>0.05) and size (t=1.202, p>0.05).

Descriptive statistics of the sample

The data collected from the survey comprises both individual level information about returnee entrepreneurs and organization level information about returnee firms. The following tables and charts first present a description of the primary features of returnee entrepreneurs that reflects their variation in experiences, and then presents the variations of returnee firms.

The years a returnee spent abroad is a key indicator that reflects their international experience. The longer a returnee spent abroad, the richer and more useful experience she/he accumulated. In the dataset, the average years that returnees had spent abroad is 7.85. Chart 3 shows the distribution of time abroad within the dataset. The Y-axis is the number of years that returnees spent abroad, while the X-axis is bins for the number of returnees that had a specific number of years abroad. The largest group, in which returnees had 5 years international experience, includes 32 firms.

Chart 3. Distribution of time abroad
The diversity of experience is also an important indicator showing the usefulness of returnee entrepreneurs’ experiences. Returnees were asked what kinds of experiences they had during their stays abroad – only education? Only business? Both? As can be seen in Chart 4, 34% of returnees have only education experience, while 6% had only business experience. 60% of returnees have both experiences. It is reasonable to posit that the experience with both education and business is more useful to the development of a firm, since it is closer to the operations and business of the firm. Similarly, the entrepreneurship experiences of returnees are differentiated by asking whether they had started ventures abroad. Only 20.3% of returnees had had set up firms abroad before moving back to China.

Chart 4. Experience abroad

Regarding in which hosting country returnees have had their education/business experiences, 91.3% of returnees were staying in developed countries, while only 8.7% of returnees were in developing countries. This distribution is in line with the general definition of returnee, which suggests that returnees tend to receive education/professional training in developed countries (Wright et al., 2008). Chart 5 further demonstrates the specific countries where returnees have had their experience. The Y-axis is the number of returnees that stayed in each specific country. The X-axis is hosting countries included in the dataset. The most popular hosting country is the US, followed by the UK, Canada, Germany and Japan. Since the US is the world-leading country in innovation and economic development, it is not surprising that a majority of returnees had chosen the US as their host country.
Another issue that is particularly relevant to returnee research is the advanced level of technological knowledge returnees bring back to their home country. The level of technological knowledge is labeled as one of five categories based on responding returnees’ perceptions. The five categories are ‘most advanced in the world’, ‘internationally advanced’, ‘not advanced internationally but new for China’, ‘not advanced for China but new for the region’, and ‘not advanced even in the region’. Chart 6 shows the distribution of technological knowledge level transferred by returnees, from which one may conclude that most returnees brought back knowledge that is at least new for China. The percentage of the responding returnees that brought back the ‘most advanced’ and ‘internationally advanced’ knowledge is 20% and 43.3% respectively.
Table 4 presents the main features of returnee firms. According to the Chinese definition of SME, most responding firms (165 or 82%) are small firms. In addition, there are 16 micro firms, 19 medium firms and 1 large firm. The mean number of employees in the returnee firms is 39.1, with a mean turnover of RMB 27.5 million. The R&D budget of these firms is 58.46% of their sales in 2012. This high rate of R&D investment may imply that these young firms remain in the product development stage. Although the firms studied are relatively young, with an average age of 5.44 years, they started international activities early and, on average, have entered 5.7 countries. Nearly 67% of the returnee firms targeted first the host country where the returnee was living, and around 88% of these first market entries were in developed countries. This last statistic is consistent with the fact that 91% of the responding returnees’ host countries in the sample are developed nations. The last row of Table 4 shows the proportion of ownership that top management team has, which indicates the ownership is concentrated within the top management team.

Table 4. The main features of firm samples in this study

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
</tr>
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<tbody>
<tr>
<td>Firm size¹</td>
<td>39.1</td>
<td>4</td>
<td>400</td>
</tr>
<tr>
<td>Firm age</td>
<td>5.44</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Firm sales²</td>
<td>27.5</td>
<td>1</td>
<td>800</td>
</tr>
<tr>
<td>R&amp;D budget³</td>
<td>58.46%</td>
<td>10%</td>
<td>300%</td>
</tr>
<tr>
<td>No. of international patents</td>
<td>1.1</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Timing of internationalization⁴</td>
<td>1.76</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>No. of international markets</td>
<td>5.7</td>
<td>1</td>
<td>56</td>
</tr>
<tr>
<td>Share of international sales⁵</td>
<td>23.57%</td>
<td>1%</td>
<td>95%</td>
</tr>
<tr>
<td>Proportion of ownership by management team</td>
<td>91.45%</td>
<td>10%</td>
<td>100%</td>
</tr>
</tbody>
</table>

¹ Size measured as number of employees.
² measured in RMB million.
³ measured in relation to total sales in 2012.
⁴ no. of years gap between the first year having international sales and the year of firm establishment.
⁵ measured in relation to total sales in 2012.

Chart 7 shows the industrial classification of sample firms, which includes seven industries, namely manufacture in chemicals (C20), pharmaceutical products (C21), electronic (C26), electrical equipment (C27), and machinery and equipment (C28), as well as computer programming (J62) and information services (J63). According to the Chinese high-tech industry classification,
these seven industries all belong to the high-tech industry. This industry distribution is in line with previous findings in the returnee literature that returnee firms often engage in high-tech industry (Lin et al., 2016).

Chart 7. Industrial classification

The literature indicates that government accreditation of high tech qualification is an important means for returnee firms to gain legitimacy in the home country market (Armanios et al., 2016). I investigated how many returnee firms were qualified as high-tech firm according to various levels of the Chinese governments (Chart 8). High-tech firms are accredited by the national (49 firms in total), provincial (39 firms) and municipal governments (31 firms). Over 50 percent of the samples are accredited as high-tech firms by some level of government. These labels do not mean that the samples without any accreditation are not high-tech firms. However, accreditation takes time for application and approval (and may benefit from the assistance of well-developed local business relationships).
The following four charts describe the internationalization patterns of returnee entrepreneurial firms. As shown in Chart 9, most of the firms start their internationalization within their first 5 years. More than 90 firms (accounting for 45% of total observations) internationalize in the second year after firm inception, and nearly 40 firms start internationalization in the third year after establishment. In addition, there are over 30 firms that directly internationalize with inception. These indicators show that my observations can be considered international new ventures.

Chart 9. Timing of internationalization

Chart 10 shows the distribution of firms’ foreign sales in relation to total sales. The Y-axis is the frequency of returnee firms with a specific percentage of international turnover. The X-axis presents the distribution of foreign sales relative to total sales. The returnee managers were asked the share of turnover...
sold outside China in 2012. The majority of sample firms have international turnover that is less than 50% of total turnover. In particular, 91 firms (45% of total sample firms) have only 10% of foreign sales in relative to total sales, while 35 firms (20% of total sample firms) have foreign sales more than 50% relative to total sales. The results imply that many firms are at an early stage of internationalization, or alternatively that the returnee firms in this dataset have their business focus in the home market.

Chart 10. Distribution of foreign sales relative to total sales

Chart 11 shows the distribution of the number of foreign markets. Returnee firms that have 3 foreign markets account for 29% (the largest group), followed by firms that have only 1 foreign market (20%), and 5 foreign markets (19%). A further analysis shows that close to 67% of the returnee entrepreneurial firms first targeted the host country where the returnee entrepreneur previously lived, with around 88% of these first market entries taking place in developed countries. The US (48%) and the UK (15%) were the most frequent foreign markets.
Survey research analysis

The quantitative studies adopted the technique of structural equation modeling (SEM) to process the data analysis. Three benefits may derive from applying the SEM technique. First, compared to many multivariate analyses that allow estimation of only a single relationship between dependent and independent variables, SEM can estimate multiple relationships among variables simultaneously, and specify the structural nature of the model. Accordingly, the structural model presents a systematic set of variable relationships, and is thus particularly useful in testing theories that use multiple equations to comprehensively explain phenomena. Second, the structural model provides a means to measure theoretical or psychometric concepts that are unobserved. Third, it provides an improved statistical estimation that is able to correct biases attributed to random error and construct-irrelevant variance (Bollen, 1989).

Two statistical programs are applied to specify the structural equation model for these data analyses. As shown in Table 2, Papers II, III, and V used the linear structural relations modeling (LISREL) (Jöreskog and Sörbom 1993), while Paper IV used the partial least squares modeling (PLS) (Wold, 1982). PLS and LISREL share the same purpose, which is to estimate complex interrelated models with latent variables. However, they represent two paradigms that have different statistical principles. The PLS is a variance-based estimation approach that is suitable for maximizing the amount of variance explained and for predicting relationships between variables. In contrast, LISREL is a covariance-based estimation approach that stresses the statistical accuracy of the estimates for latent variables and structural model (Marcoulides, Chin, Saunders, 2009; Tenenhaus, 2008). Since PLS is oriented towards the prediction of variable relationships, it is considered more as an exploratory
approach; it is more flexible in accounting for different distributions of data and is able to run a model with a combination of different data types, which is an advantage of PLS over LISREL (Hair et al., 2014; Vinzi, Trinchera, & Amato, 2010). Therefore, with the purpose of exploring the newly collected database, I developed Paper IV using PLS.

The estimation of SEM is performed in two steps. The first step is to run a measurement model test, through which constructs comprising the model establish both convergent validity and discriminant validity. The model test ensures that each set of manifested indicators represents one and the same underlying construct, while at the same time, constructs are distinct from each other. The second step is to test the hypothesized relationships that constitute the structural model. Besides providing path coefficients of each pair of connected relationship, LISREL provides goodness of fit indexes to show the fit of estimated model in relation to theoretical model, which is an advantage of LISREL over PLS.

Advantages and limitations of the survey project

India and China are two contexts that have been investigated frequently and have aroused increasing academic attention on the theme of returnee entrepreneurs, and my use of China as the research context limits the possibilities of generalizing the findings to other developing markets. However, in contrast with previous studies (c.f. Dai & Liu, 2009; Filatotchev et al., 2009; 2011; Liu et al., 2010) that limit data collection to an entrepreneurial business park (Zhongguancun) in a city (Beijing), I focused on an entire economic region, the Pearl River Delta Economic Zone in an attempt to diversify the research context and contribute to returnee entrepreneurship research.

Previous studies have looked into performance differences between returnee and non-returnee firms, and have highlighted the characteristics of returnee entrepreneurs as a group (Dai & Liu, 2009; Li et al., 2012). This thesis tried to deepen the investigation by looking into variances within the group of returnee entrepreneurs, and within their ventures’ internationalizations and performances. Of course the future inclusion of new ventures not created by returnees would be another important research opportunity making it possible to compare the internationalization process of international new ventures (INV) to returnee entrepreneurial firms.

The method of firm sampling had some advantages and limitations. Because of the relatively small size and newness of these firms, publically there are few reliable objective data or archive documents covering these companies. Therefore I collected the names of returnee entrepreneurial firm as exhaustively as possible by hand, and used it as a basis for sampling. This list
was (possibly) incomplete, because it was not certain that every firm that would fit the established criteria would be in the list, which weakens the representativeness of sampling and raises concern about making generalizations. Nevertheless, I invited all 836 internationalized returnee firms on the list to participate in this study, and then collected data using personal interviews. Most studies, if data collection were going to be made in person, would have used a sampling procedure to identify a sample to target in order to reduce costs related to the field research. In contrast, I did not apply a sampling procedure to draw a sample, but tried to involve as much firms of the sampling frame in this study as possible, which is a positive feature of this dataset. A possible concern of being inclusive could be self-selection bias resulting from my inability to have a random sample selection and to control for the unobserved heterogeneity (Heckman, 1977).

Common method variance

In light of the new nature and small-to-medium size of the responding firms, and the absence of reliable objective data or archive documents covering them, the completion of the survey lay in the participation of individual returnee entrepreneurs who were in possession of sufficiently detailed information, which thus raises concern of common method variance (CMV). CMV is associated with the use of single source and self-reported data, as the single respondent may be influenced by consistency motifs, temporary mood state and social desirability when answering questions (Podsakoff & Organ, 1986). As a result, the empirical estimates of relationships among variables might be contaminated by the CMV effects.

Although there is an ongoing debate and disagreement with the prevalence and potential impact of CMV (e.g. Podsakoff et al., 2003; Spector, 2006), I acknowledged this issue by using an a priori research design and ex post statistical techniques recommended in the literature (Podsakoff et al., 2003). With respect to the a priori research design, first, I tested the questionnaire and attempted to avoid using confusing, vague, and unfamiliar terms (Chang, van Witteloostuijn, & Eden, 2010). Second, the sets of questions and indicators referring to the investigated constructs and the controls either appeared in different sections of the questionnaire or were measured using different response formats and scales. Third, personal interviews could arguably enhance the reliability and quality of the data (Podsakoff et al., 2003). The small number of members in the survey team diminished potential biases caused by interviewers’ verbal particularities and expectations. In addition, I randomly selected the responses of 30 sample returnee entrepreneurs and asked an alternative senior executive to complete the survey at each firm. When responses to these
surveys were compared against the returnee entrepreneurs’ original survey responses, the results suggested that the two responses from the same company were highly consistent (Pearson correlation = 0.80). Furthermore, in a post-survey stage, we called 55 of the original respondents to check their response accuracy, and the results showed a high level of consistency between their telephone interview reports and their survey answers.

Regarding the diagnostic and ex post statistical tests, the first was the widely employed Harman's one-factor test to check for biases not minimized by the research design in all the four quantitative papers. The second test followed Podsakoff et al. (2003)'s suggestion to control for an unmeasured single latent CMV factor. I performed a confirmatory factor analysis (CFA) by letting manifest indicators load on both the latent CMV factor and their respective theoretical constructs. The results show that all items loadings are still significant after the inclusion of the CMV factor. The third test was to use the CFA marker technique (Williams, Hartman, & Cavazotte, 2010), which extends the idea of correlational marker techniques (Lindell & Whitney, 2001) into structural equation modelling. Following the example of Williams et al. (2010), I estimated a series of models, including a baseline model, method-C model, method-U model, and method-R model. A comparison of the change in chi-square between these models provides a statistical test for detecting CMV effects. Detailed test information can be found in Appendix B.
Summary of the papers

This chapter summarizes the five papers that comprise this thesis. An overview of the papers, including the specific research question addressed in each paper, the main constructs in the qualitative, and the dependent and independent variables in the quantitative papers, is presented in Table 5. The qualitative paper based on a single case, while the other four papers are based on 200 observations of returnee entrepreneurial firms derived from the questionnaire survey.

Paper I: Linking periphery with centre: The usefulness and liability of returnee entrepreneurial firm in home country context

The first paper in this thesis focuses on a successful returnee entrepreneurial firm (BGI) and applies a longitudinal case study approach to unfold the development process of this returnee firm in the context of the emerging home market. There has been much discussion in the recent literature of the idea that returnee entrepreneurship may face straitened conditions in the home country that could depress its development. In particular, returnee firms perceive entrepreneurial difficulties because of differences between the (developed) host country and the (developing) home country. These differences can make it difficult to apply the knowledge gained in the host country, because that knowledge was acquired in a specific context where it was subject to norms, policies, and processes that are different from those in the home countries. This paper attempts to investigate such contextual constraints that influence returnee entrepreneurial firms’ innovation and entrepreneurship performances and to explain how the firms deal with these constraints.

Paper I described three context-specific constraints that hindered the innovation activities and business performance of BGI, namely funding shortages, peripheral research conditions and regulatory regime. Funding shortages were the essential obstacle that BGI had to address in developing scientific research and business in China, while the peripheral research conditions and regulatory
regime aggravated the funding shortage issue. The peripheral conditions re-
sulted from China’s poor scientific research performance in general, which
meant that Chinese research was likely to be excluded from the many scien-
tific opportunities that were available to other institutions. The regulatory re-
gime manifested itself by disallowing state funding, which is the primary
funding source in China, but which is seldom allocated to private firms.

In response to these constraints, BGI took advantage of the international
experience of its returnee entrepreneurs to develop international network re-
lationships with key research institutes and to compete for international col-
laboration; at the same time, it learnt how to more effectively interact with the
Chinese government and its domestic research partners, and it built political
relationships and domestic business relationships. The international network
relationships gave rise to cooperative opportunities and enhanced mutual
learning and trust between BGI and international research institutions. The
domestic network relationships helped the firm learn how state governments
operated and generated trust between BGI and those governments, trust that
in turn helped persuade governments to lighten the regulatory regime. Thus,
BGI managed to overcome the peripheral research conditions and the regula-
tory regime, respectively, and it gained funding resources from both interna-
tional collaboration and the Chinese government. BGI’s overall development
was a trial and error learning process that helped the returnee firm adjust to
the home country market, which in turn enabled it to exploit entrepreneurial
opportunities.

The findings drawn from this case study set an empirical foundation to
understand the development of high tech returnee entrepreneurial firms in the
context of an emerging market, which further benefits the development of the
following quantitative studies. In particular, it highlights the critical influence
of the international experience of returnee entrepreneurs, and the equally crit-
ical influence that international and domestic networking activities have on
returnee entrepreneurial firms while they peruse innovation and internation-
alization.
Paper II: The best of both worlds: returnee entrepreneurial firms’ domestic and international business relationships, opportunity knowledge and innovation performance

The second paper of the thesis investigates the innovation performance of returnee firms by concurrently considering their domestic and international networking activities. This paper assumes that returnee firms are simultaneously embedded in two distinctive knowledge contexts, and the extent to which returnee firms can benefit from those dual contexts may depend on their competence to act in both their domestic and international networks. In particular, interactions with various local actors such as customers and governmental units could provide domestic knowledge complementing the international knowledge brought by returnee firms, which itself is associated with innovation performance. The paper proposes a model in which the dependent variable is innovation performance, and the independent variables are 1) the domestic and international business relationships of the returnee firm and 2) the domestic and international opportunity knowledge of the returnee firm.

The proposed model demonstrated that the domestic and international business relationships were positively associated with the procurement of the corresponding opportunity knowledge. However, those different types of knowledge affected innovation performance in different ways. International opportunity knowledge was positively associated with innovation performance, while domestic opportunity knowledge was not; at the same time, domestic business relationships had a significant positive effect on innovation performance, while international relationships did not.

The findings confirmed the distinct advantage of returnee entrepreneurship that is able to span two or more contexts for tapping knowledge (Wright et al., 2008). Furthermore, the results refine our understanding of the different effects of business relationships and knowledge that have different geographic origins. The novelty and usefulness of internationally sourced knowledge for returnee firms’ innovation development seems to be greater than that of domestically sourced knowledge. This difference may result from knowledge being intertwined with the context in which it was developed and accumulated, and suggests that knowledge sourced from developed countries is inherently more innovative than knowledge sourced from the developing home country. Domestic business relationships provide beneficial cooperation and coordination by giving a returnee firm access to resources and capabilities complementary to its internationally sourced knowledge, and therefore these relationships also form a groundwork for innovation performance.
Paper III: International opportunity networks and internationalization of emerging market firms: A capability and creation view

The third paper of this thesis attempts to understand the internationalization of returnee firms by considering the impact of networking capability on a returnee firm’s pursuit of international opportunity.

The network approach has over the previous two decades emerged as one of the dominant perspectives from which to explain firm internationalization. However, another approach has been advanced, which assumes that finding and acting upon opportunities is the key driver of internationalization (as opposed to the driver being reduction and management of uncertainty). Surprisingly, these perspectives have not often been brought together and studied simultaneously, neither by internationalization scholars nor by network scholars. In line with the current debate in the entrepreneurship literature, this paper views opportunity as a relative and perceptual concept, and something that is created in a specific context together with another firm. In other words, opportunity is not merely ‘discovered’ by a single firm in isolation from other firms, but rather, opportunity happens in a network setting, which in turn implies that a firm’s capability to establish, develop and maintain relationships in such a network is instrumental for creating opportunities. The business network view contends that network structure in terms of closure and relational embeddedness influences networking capability, which in turn influences international opportunity creation.

Paper III brought these concepts together and advanced a structural model of three hypotheses that explain how opportunities are created in an international network setting. The results showed that networking capability mediated the relationship between relational embeddedness and opportunity creation, while a similar mediating effect between network closure and opportunity creation was not seen; instead, network closure directly created more opportunities. The implications are that networking capability is based on knowledge acquired from past actions in international networks, and that the firm accumulates capabilities by acting within these networks. Relational embeddedness enhances accumulation of experiential knowledge, which is particularly related to the development of networking capability. In other words, for relational embeddedness, knowledge has to be transformed into networking capability before it has a positive effect on opportunity creation.

In contrast, network closure has a direct effect on opportunity creation, which implies that information flowing in the network can be instrumental for opportunity creation, but not for networking capability. Network closure, because of its highly interconnected structure, is conducive to information
spread. Individual firms that have access to the same information may evaluate it subjectively differently, and give the same information different implications and values, therefore leading to different opportunity creation. This study indicates specific network structures that favor a returnee firm’s networking capability development and opportunity creation within its international networks.

Paper IV: Knowledge and internationalization of returnee entrepreneurial firms

Paper IV investigates the international expansion of returnee entrepreneurial firms, and more specifically, aims to explain the extent to which, and manner in which, returnee entrepreneurs’ prior international experiences can be useful in these firms’ early stages of internationalization. This contribution is grounded in the knowledge-based view, which highlights the importance of knowledge for firm growth and internationalization. The main proposition here is that the international experience of returnee entrepreneurs influences their firms’ international market knowledge, which, in turn, is expected to have a positive influence on commitment to foreign markets, as well as on the level of internationalization.

Empirical evidence for the proposed model was derived from a PLS modeling analysis. The study showed that international market knowledge drove international expansion and significantly mediated the influence of experience on a firm’s international commitment and level of internationalization. In addition, international market knowledge and international market commitment jointly comprised a longer mediational chain transmitting the indirect effects of experience on the level of internationalization.

The theoretical contribution of this paper is that it distinguishes between the experience of an individual returnee entrepreneur and that entrepreneur’s firm’s international market knowledge. Furthermore, it differentiates the respective effects of those two sources of knowledge on firm internationalization, and it reveals the connection between a returnee entrepreneur’s international experience and that returnee’s firm’s international market knowledge. The study implies that returnee entrepreneurs use their prior experience to develop organizational routines and practices needed for international operations, which provides some of the impetus for other employees of the firm to develop international market knowledge. With the exploitation of an individual entrepreneur’s stock of international knowledge, liabilities can be reduced while a firm’s international market commitment can be increased in terms of the amount of resources a firm has invested in foreign markets. Likewise, the
knowledge enhances a firm’s capability for discovering and formulating opportunities, and enables that firm to be more aware of potential problems and risks that come along with opportunity exploitation, which may increase the success rate of new business developments. Knowledge promotes effective internationalization of the firm.

Paper V: The performance of international returnee ventures: The role of networking capability and the usefulness of international business knowledge

By integrating network theory with a capability view, the final paper attempts to investigate the impacts of international networking capability and international knowledge on the performance of returnee firms. The paper distinguishes between innovation and financial performance, and takes both dimensions into account.

Paper V assumes that the presence of returnees enables a firm to develop the ability to engage in international networking activities, and that international networking capability facilitates the internationalization of returnee firms by helping to build up routines and structures for distant learning. Increased international knowledge resulting from distant learning through international networking activities contributes to returnee firms’ innovation and financial performance by providing novel technology ideas and new business opportunities. International networking capability also affects the innovation and financial performance of returnee firms by expanding these new ventures’ networks of R&D collaboration and business relationships.

A structural model consisting of six hypotheses was tested, and the results showed that international networking capability was positively associated with both international business knowledge and business performance, but not with innovation performance. International business knowledge has a positive relationship with innovation performance but a negative relationship with business performance. Last but not least, the innovation performances of returnee ventures was positively associated with their business performances.

These findings challenge a fundamental idea about returnee entrepreneurs and international new ventures, which is the notion that the business knowledge developed in foreign markets is transferable and useful in other contexts and that networks tend to be more or less the same abroad as in the home market. Contrary to expectations, there may be inherent ‘lock-in’ effects connected with international networks; in other words, returnee firms might simply ‘overembed’ themselves in specific international connections, and thereby limit their own ability to identify new partners. As a result, they fail
to grasp new business opportunities beyond those network boundaries. Furthermore, it is also possible that the knowledge gained from acting in various networks is ‘context-specific’, meaning that it depends heavily on particular times and locations. Although there are benefits from having a diverse international knowledge base, those knowledge-based benefits may be reduced when specific knowledge is taken out of context, which might even cause a knowledge-mismatch that could suppress the financial performance of a venture.

These implications raise the issue of strategic change and network development during entrepreneurial processes. The relationship configuration of networks changes as the returnee firm evolves and discovers different needs during the process, and seeks varied types of resources from diverse relationships. The value of networking activities thus depends on how well the returnee firm can link its capabilities with specific types of resources, and specific knowledge that is relevant for particular business activities.
Table 5. An overview of individual papers

<table>
<thead>
<tr>
<th>Paper</th>
<th>Research focus</th>
<th>Explaining concepts (independent variables)</th>
<th>Explained concepts (dependent variables)</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>How returnee firms deal with home country context constraints that hinder their innovation and entrepreneurship performance</td>
<td>International networking capability; Political relationship</td>
<td>Innovation performance; Internationalization performance</td>
<td>Three context constraints are identified, including funding shortages, peripheral research conditions, and the regulatory regime. The development of international network relationships and domestic political relationships is highlighted as a critical activities for dealing with constraints and facilitating performance.</td>
</tr>
<tr>
<td>II</td>
<td>Do international and domestic business relationships, and the opportunity knowledge gained through network relationships, influence innovation performance?</td>
<td>Domestic and international business relationships; Domestic and international opportunity knowledge</td>
<td>Innovation performance</td>
<td>International opportunity knowledge and domestic business relationships are positively associated with innovation performance, but domestic opportunity knowledge does not exert influence. Meanwhile, domestic political relationships have an impact.</td>
</tr>
<tr>
<td>III</td>
<td>How the structure and configuration of international networks impacts returnee firms’ opportunity driven internationalization</td>
<td>Network closure; Relational embeddedness; International networking capability</td>
<td>Internationalization performance</td>
<td>Networking capability is a mediating factor between relational embeddedness and opportunity creation, but does not mediate the relationship between network closure and opportunity creation; on the other hand, there is a direct relationship between network closure and opportunity creation.</td>
</tr>
<tr>
<td>IV</td>
<td>The extent/way that the knowledge returnees gained abroad can be useful in these firms’ early steps of internationalization</td>
<td>Returnees’ international experience; International market knowledge of returnee firms</td>
<td>Internationalization performance</td>
<td>Returnee entrepreneurs’ international experiences are positively associated with their firms’ international market knowledge, which in turn leads to increased international market commitment and a high level of internationalization. Market commitment also positively impacts the level of internationalization.</td>
</tr>
</tbody>
</table>
Concluding discussion

This thesis aims at investigating returnee entrepreneurship, a phenomenon that has arisen recently in emerging markets. Given the lack of scholarly understanding on this relatively new type of migration entrepreneurship, the purpose of this thesis was to comprehend the returnee entrepreneurial firms by examining the factors that influenced their innovation, internationalization and business performances. In order to fulfill this purpose, this thesis investigated the following research questions: (1) how useful are the international experiences of returnee entrepreneurs and the networking capability of returnee firms for the development of the firms’ market knowledge? and (2) how do the two influencing factors and the developed knowledge influence the performances of these returnee entrepreneurial firms?

The thesis employed a framework that combined the knowledge-based view and capability view with network approach to examine the associations between the suggested advantages of returnee entrepreneurship and the performance of returnee entrepreneurial firms (Li et al., 2012; Lin, 2010; Liu et al., 2010). One paper (the qualitative foundation for the subsequent, more quantitative papers) comprehensively investigated the development of a successful returnee firm as a longitudinal case study. Four subsequent papers then tested and verified subdivided research questions pertaining to different aspects of the overall question. The main findings of all five papers have been presented in Chapter 5, where Table 5 also provides a brief summary of the findings. Detailed discussions of the findings and their theoretical contributions can be found in the five papers respectively.

Main findings

This thesis contributes to understanding the antecedents and management of international entrepreneurship in general, and more specifically to factors that influence the performance of returnee firms. Empirically, this thesis investigates the performance implications of returnee firms’ international and domestic networking activities, as well as knowledge procurement under circumstances of innovation, internationalization and business performance.
First, to explain the innovation aspect of performance, the networking capability in both the international and domestic markets and the resultant international and domestic opportunity knowledge were considered in Papers II and V. The results suggested the domestic networking capability and international opportunity knowledge were related to the innovation performance of returnee firms, while the international networking capability and domestic opportunity knowledge were not associated with the innovation performance. Those results highlight two aspects that are related specifically to the innovation of returnee firms and also to entrepreneurial firms in general. First, they implied that the domestic network relationships between returnee firms and local organizations are important, because cooperation and coordination with local business counterparts complement the capabilities that the returnee firms develop abroad. The domestic network relationships help returnee firms have access to local industrial infrastructure in which they can effectively exploit opportunities. Second, the results revealed that the innovation of returnee firms largely relies on the internationally sourced knowledge. Domestically sourced knowledge may drive the adaptation of returnee firms to the home market, but domestic knowledge lacks the novelty that is the foundation for returnee firms’ innovation activities. An additional finding was that the political relationships of returnee firms in domestic markets are related to their innovation performance, which is in line with the findings of case study, where returnee firms often relied on government funding for innovation development.

With regard to factors that influence internationalization performance of returnee firms, the prior international experience of returnee entrepreneurs and international networking capability of returnee firms were studied. The results of Paper IV suggested that returnee entrepreneurs bring individual experiential knowledge that contains international routines and practices to follow, which further facilitates development of international market knowledge in returnee firms. In turn, returnee firms with knowledge about the international market had a greater international market commitment and higher level of firm internationalization (Johanson & Vahlne, 1977). This paper emphasizes the role of individual returnee entrepreneurs in the internationalization of their firms, where individual entrepreneurs’ experiences were transferred into the knowledge base of the firm, and influenced the firm’s international learning and internationalization outcome. Paper III investigated the formation of the international networking capability of returnee firms, and its relation with the returnee firm’s opportunity driven internationalization. The results from this paper suggest that relational embeddedness is related to the formation of international networking capability and this embeddedness indirectly affects ac-
quisition of international opportunity knowledge through the mediation of international networking capability. In contrast, the network closure directly impacts acquisition of international opportunity knowledge.

As for the overall business performance of returnee firms, the results from Paper V suggested that the international networking capability and innovation performance of returnee firms are positively associated with business performance. Specifically, networking capability led to cooperative relationships, by which the returnee firms obtain external resources at a relatively low cost. In other words, international networking provides an efficient means through which the returnee venture addresses resource constraints. Meanwhile, when returnee firms demonstrate higher innovation performance by effectively converting innovative projects into innovative products, they have a much better chance of seizing opportunities and even dominating niche markets. A surprising result was the negative association between international market knowledge and returnee firms’ business performance, which challenges the common view that access to the international market knowledge benefits business performance of returnee firms (Dai & Liu, 2009). In other words, it seemed that the ‘distant’ knowledge sourced through international network was useful for returnee firms’ business performances only when that knowledge was processed and assimilated through R&D activities.

The usefulness of various sources of knowledge

In this thesis, and in the five individual papers, the concept of knowledge is the core of discussion. These papers examine different sources of knowledge, including the prior international experiential knowledge of returnee entrepreneurs, international market knowledge that returnee firms developed and accumulated through international practices, and opportunity knowledge gained through international and domestic network relationships.

To holistically comprehend the interplay of these various sources of knowledge and their influences on the performance of returnee firms, this thesis considers two issues, the first of which is about the usefulness of knowledge. Having access to knowledge about doing business in various cultural and institutional environments is one characteristic of returnee entrepreneurs. However, the influence of internationally and domestically sourced knowledge on returnee firms’ innovation performances differs, which implies that internationally sourced knowledge has greater novelty compared to domestically sourced knowledge, and thus is able to benefit returnee firms’ innovation performance. These results highlights the critical importance of internationally sourced knowledge for returnee firms. The nature of returnee
firms as high-tech and innovation-oriented appears to be associated with (and indeed rely on) access to internationally sourced knowledge.

Second, from a dynamic perspective (Weerawardena et al., 2007), the influence of various sources of knowledge on returnee firm internationalization and performance may be presented as follows. The prior international experience of returnee entrepreneurs triggers early internationalization of returnee firms (Bruneel, Yli-Renko, & Clarysse, 2010). Once these firms start internationalization, they can gain knowledge about international market through further experiential learning or networking (Johanson & Vahlne, 1977; 2009), which in turn supports firm development. Using a cross-sectional dataset restricts the possibilities for studying dynamic processes, but the research design in this thesis includes a built-in time lag: the returnee entrepreneurs were studying/working in the foreign market before their returnee firms were created. Therefore, it can be argued that returnee entrepreneurs’ prior international experiences, and the international market knowledge gained by the firm through experiential learning and networking, hastens these firms’ development in a sequent way. The prior knowledge of individual entrepreneurs exerts a persistent impetus driving the internationalization of new ventures, while the international market knowledge derived from a firm’s learning and network relationships drive that firm’s subsequent development.

Performance implications of network relationships

Following the network approach, this thesis shows networking capability to be another key concept and discusses its formation, as well as its relationship with the innovation and business performance of returnee firms.

Network closure and relational embeddedness as two forms of network structure demonstrate differing influences on the development of networking capability. Specifically, network closure is conducive to information spreading within the network, making it difficult to keep critical knowledge within the boundaries of the firm. But this spread of information is often accompanied by joint research and mutual learning between firms. As a consequence, the firms are more likely to perceive useful information that is specifically related to opportunity creation. An advantage of a high degree of relational embeddedness is that it enhances fine-grained knowledge sharing, thereby promoting mutual trust and openness (Granovetter 1973). Hence the firms are likely to develop shared values and mutual knowledge. In other words, a high degree of relational embeddedness would result in the strengthening and maintenance of existing network relationships.
Since network closure and relational embeddedness provide different types of knowledge and information needed in the network, they have varied effects on the networking capability. Capabilities are experience-based knowledges transformed, integrated, and routinized into the firm’s existing bundle of capabilities (Knight & Cavusgil, 2004; Weeravardena et al., 2007). The networking capability is based on knowledge gained from having acted in international networks. Thus, this knowledge is experiential in nature, and the firm accumulates capabilities when it acts in international networks. Relational embeddedness enhances accumulation of such experiential knowledge, which is particularly related to developing networking capability. In contrast, network closure is related to information flowing within the network, which is not instrumental for networking capability.

Similarly, the networking capability developed in different markets present varied influences. Returnee entrepreneurs, to some extent, are embedded in the markets of both their home and previous host counties (Drori et al., 2009). Their interconnectedness with two different ‘worlds’ provides them a diverse networks of relationships which are related to their ability to address knowledge and resource constraints in more varied and rapidly changing business environments. Therefore this dual embeddedness is an important strategic resource for these individual entrepreneurs, and it allows their ventures to recognize, evaluate and exploit opportunities (Wang, 2016).

However, this study shows the differing roles of international and domestic networking capability, as well as the differing roles of the knowledge derived from international and domestic network relationships. Therefore, this study indicates that knowledge and network capability that are developed in two networks not only differ to their nature, but also have different effects on performance. This result challenges an essential idea in the research on returnee entrepreneurs and international entrepreneurship: the notion that networks tend to be more or less constituted in the same way abroad as in the home market, and that the business knowledge gained through different network relationships is equally useful. Networking capability develops when a firm interacts with various business partners, such as customers and suppliers, and also with organizations such as universities, banks, unions, and so forth. Thus, the networking capability is a result of experiential learning in specific relationships, and networks are specific to their market.

Although returnee firms have connections with firms and organizations abroad, most samples in this study are new, small firms with most of their sales in the domestic market. Consequently, their major customers, as well as their main innovation partners, such as universities or R&D institutions, are likely to be found in the domestic market. Correspondingly, international net-
working capability that leads to network connections with international suppliers and customers is less relevant to a returnee firm’s innovation activities in the domestic market. But often international opportunity knowledge is distant and novel, which is helpful for the development of new products with global potential. Domestic opportunity knowledge, in contrast, appears to be less useful for new product development, as it is gained from domestic context, and does not provide advantageous knowledge relative to competitors in those same domestic markets.

The above findings and reasoning bring to the fore the discussion on strategic change and development of networks during the entrepreneurial process (Lamine et al. 2015). The relationship configuration of the network changes along with the evolution of a returnee firm (Huggins et al. 2015) because the needs of the returnee firm change during the process, and thus the firm seeks various types of resources from diverse relationships, particular from relationships in different markets (Rasmussen, Mosey & Wright 2015). The value of networking activities thus depends on how the returnee firm can link its capabilities with specific resources relevant for particular business activities (Lans, Blok, & Gulikers 2015; Rasmussen, Mosey, & Wright 2015; Sullivan Mort & Weerawardena, 2006; Ter Wal et al. 2016). In the case of returnee entrepreneurship, bringing international networking capability when undertaking innovation projects in a home market requires local resources that are complementary, which in turn requires the purposeful formation of network relationships with diverse local counterparts, such as suppliers, customers, and other organizations. Accordingly, it can be concluded that building and maintaining relevant, superior and effective networks are a fundamental part of a successful returnee entrepreneurship (Weerawardena et al., 2007), particularly in configuring the complementary resources in different markets that are critical for innovation and early internationalization.

Implications for theory
Knowledge and international entrepreneurship

The research findings may contribute to the international entrepreneurship literature with respect to the interactions among various sources of knowledge that drive internationalization. Specifically, knowledge is the result of various forms of learning (Huber, 1991), including experiential, vicarious, congenital, or grafting (De Clerq et al., 2012). International new ventures may benefit from different forms of learning simultaneously or sequentially. Experiential learning is especially pervasive in organizations (Huber, 1991). In the Uppsala
model, which explains the incremental internationalization behavior of conventional firms, experiential learning from international practice is the key driving mechanism (Johanson & Vahlne, 1977). In the IE literature, in which new ventures begin without an organizational history, congenital learning as the result of the founding entrepreneurs’ prior knowledge has been invoked to explain how early internationalization starts (Bruneel, Yli-Renko, & Clarysse, 2010). With a few exceptions (Casilla, Barbero & Sapienza, 2015; Bruneel, Yli-Renko & Clarysse, 2010; Fernhaber, McDougall & Shepherd, 2009), the IE literature has not reconciled an individual entrepreneur’s prior international experience with the presence of other sources of knowledge. A few studies have posited a substitution effect, which would mean that the effect of the knowledge of the founding entrepreneurs diminishes as ventures either gain their own experience through international practice (Bruneel, Yli-Renko & Clarysse, 2010), or procure knowledge through network relationships (Fernhaber, McDougall & Shepherd, 2009).

This thesis establishes a chain of evidence that captures the interplay between the international experience of returnee entrepreneurs and their ventures’ knowledge development via international business practices and network relationships. It demonstrates that prior international experience nurtures international market knowledge at the organizational level. The research reveals a transfer mechanism by which a returnee entrepreneur’s prior international experience provides reference for the development of business practices, organizing and routines, which are distributed and institutionalized within firms and influence subsequent behaviors such as internationalization.

This study not only hypothesizes and observes a link between founding entrepreneurs’ profiles and subsequent organizational behaviors of their firms, but also identifies and articulates the transfer mechanism giving rise to this link. Through a more fine-grained analysis, this study demonstrates the persistent effects of the founding entrepreneurs on early internationalization. Moreover, the transfer mechanism may represent a manifestation of a more general phenomenon, exaptation, which was first observed in evolutionary biology (Gould & Vrba, 1982) and then later in other domains of technology evolution (Dew, Sarasvathy & Venkataraman, 2004) and entrepreneurship (Dew et al., 2008). Specifically, the knowledge of returnee entrepreneurs (knowledge that had developed as an adaptive response to living in a foreign environment) may become useful later in in another context, namely in entrepreneurial activities such as innovation and internationalization. As Dew et al. (2008) noted, entrepreneurs create opportunities by using the resources they have for different purposes or in different ways. As this study shows, the conceptual rationale underlying exaptation is particularly conducive to understanding the phenomenon of returnee entrepreneurship by establishing a clear
link between the historical origin of a returnee’s experiential knowledge and that knowledge’s current entrepreneurial utility.

The relevancy to entrepreneurship research

The thesis also fits into the entrepreneurship literature to the extent that it provides insight into how returnee firms pursue and exploit opportunities in an emerging market like China. First, the entrepreneurship literature has posed the question of whether opportunities are “discovered” or “created” (Avarez & Barney, 2007). This thesis follows the opportunity creation view and discussed it in the capabilities and network context by examining the effects of network characteristics and networking capability on opportunity creation of returnee firms. The results suggest that opportunity is knowledge based, and can be developed with the leverage of network connections. Accordingly, ‘opportunity creation knowledge’ derives from the international and domestic network of relationships (Johanson and Vahlne, 2009) and is influenced by the capability to act in the networks. In adopting this view on opportunity creation, this thesis stresses the temporal and collective dimensions of opportunity creation, as opportunity creation is based on knowledge acquisition through interaction with business partners in networks. Thus, opportunities are neither isolated from the network where the firm is operating nor from the capabilities the firm possesses. The firm both identifies and acts upon opportunities via coordination and cooperation with business partners in networks.

Second, this thesis contributes to the high-tech entrepreneurship research in emerging markets by theoretically articulating and empirically demonstrating the influence of contextual factors. In particular, it reveals the cooperative and coordination benefits of domestic business relationships that provide complementary resources and capabilities, which have been remarked upon but little studied (Li et al., 2012). It has been noted that local entrepreneurial firms already build solid infrastructure foundations for the development of industries such as information and communication technology, which provide a chance for returnee firms to better exploit their internationally sourced knowledge (Kenney et al., 2013). For example, The Economist (2014: 11) indicated that China has become the best place in the world for hardware product development, because the country provides “all kinds of suppliers and services” that are unavailable elsewhere. The results of this thesis support these arguments and further indicate the importance of cooperative relationships with local business partners, whereby returnee firms can tap into resources and capabilities of local partners.

These contextual influences manifest in the positive effect of political relationships on returnee firms. The results demonstrate that returnee firms with
political relationships have better innovation performance. This is to some degree surprising in consideration of the widely presumed knowledge advantage of returnee firms, which is thought to be apolitical. But emerging markets are characterized by a deficiency in institutional infrastructure, like the institutionally uneven distribution of essential productive factors (Buckley et al., 2007) and weak protection of intellectual property rights (Dong, 2013). Political relationships benefit returnee firms in that they will receive favorable government support, such as government sponsored research grants and contracts, and government loans and subsidies (Yiu & Lau, 2008). These strategic resources can greatly relieve new ventures’ stretched financial situations, and assist returnee firms’ performances.

The relevancy to international business

This thesis also complements the international business literature to the extent that it provides additional insight into knowledge flows through individual international mobility. One central issue of the international business literature is knowledge flow and coordination across national contexts. Conventional international business literature is focused on the knowledge flow impact of multinational companies that have dispersed units in multiple countries (Meyer, Mudambi & Narula, 2011). Returnee entrepreneurship represents individual international mobility that has a similar impact on knowledge flows, and adds “a new dimension to IB theory” (Filatotchev et al., 2009: 1017). Particularly, this thesis shows that the transnational nature of returnee firms develops opportunities through multiple embeddedness (Meyer, Mudambi & Narula, 2011). What is distinctive is that returnee firms develop this transnationality as the result of the international mobility of individual entrepreneurs (Lin et al., 2016; Liu et al., 2010).

The study reveals that returnee firms synthesize business relationships and knowledge with both international and domestic origins, which nurture and upgrade their knowledge base and innovation. However, returnee firms may have a lower management and absorptive capacity compared to established multinational firms (Cohen & Levinthal, 1990), and they face a certain limit on being able to synthesize network relationships and knowledge dispersed in different markets (Duysters & Lokshin, 2011). For example, returnee entrepreneurs are strongly influenced by Western cultural and institutional framework (Lin et al. 2015; Liu & Almor, 2016), and tend to behave differently from local entrepreneurs in the early stages. As a consequence, firms led by returnee entrepreneurs may be unable to appreciate the significance of domestic knowledge, and would not recognize opportunity from domestic
knowledge until they have sufficiently updated their understanding of the domestic market. This study not only confirms this knowledge flow of returnee firms, but also suggests that returnee firms may suffer from potential constraints when they are pursuing resources and knowledge distributed distantly.

Implications for practice

The findings of this study have practical implications for returnee entrepreneurs, their business counterparts, and policy-makers. First, the study demonstrates variance among returnee entrepreneurs in terms of their quality and the applicability of their experiential knowledge, each of which lead to differing performances of returnee entrepreneurial firms. There is an increasing number of scientists, engineers, and students moving abroad and then back to their native countries, increasing the population of returnee entrepreneurs, and the competition among them become intense. For returnees who would like to become competent entrepreneurs, international experience and knowledge accumulation prior to returning is critical. For example, returnee entrepreneurs who have their own intellectual property and are able to commercialize the property rights could benefit from internationalization. Accordingly, they should consider the accumulation of relevant knowledge and competences in their profile at the beginning of their international careers.

In addition, this study shows that the development of local business network relationships would enhance innovation performance of returnee entrepreneurial firms. Therefore, it is important that returnee entrepreneurial firms engage in social network activities in their native countries in order to embed the business relationships within social relations. It is also true that a returnee entrepreneur’s international vision and technological knowledge are valuable resources to business partners in native markets. Previous studies show that if a local firm builds business relationships with a returnee entrepreneurial firms, that local firm is expected to have improved innovation performance (Liu et al. 2010). Therefore, returnee entrepreneurial firms may take advantage of their knowledge and resources to attract local business partners.

For policy-makers, this study reveals what types of government policies may be more relevant to support the development of returnee entrepreneurship. Governments in emerging markets are aware of the value of returnees and their knowledge advantage in innovation and economic development (Kenney et al., 2013), and have therefore issued favorable policies toward returnees in order to exploit this resource. Yet governments are less aware of how and to what extent the policies are useful. For example, the study shows that business network relationships with local firms appear to be essential for
the innovation effort of returnee firms, as those networks help returnee firms lessen the liabilities of return that can make the transfer of international knowledge to emerging markets difficult (Lin et al., 2016). Policy-makers may therefore offer incentives not only for the creation of returnee entrepreneurial firms, but also for stimulation of business cooperation and the creation of forums where returnee entrepreneurs could share international experiences. Making those incentives might encourage business relationships, which may in turn alleviate the liabilities of return experienced by returnee entrepreneurs and reduce the international market knowledge gap of domestic firms.

Limitations and future research

This study has some limitations, although these limitations could provide avenues for future research. First, the four quantitative papers had a cross-sectional research design, and could not make causal inferences between the constructs in the model. Therefore, future studies could apply longitudinal research designs to uncover causal connections between the constructs and firm evolution, to shed light on mature returnee ventures and to explore the dynamic process of internationalization. Of particular interest is the relationship between internationalization and domestic market expansion. For many returnee firms, the domestic market remains the business focus and is too important to be overlooked. It is expected that lessons drawn from the returnees’ international experience and the international market knowledge of firms are useful for developing managerial routines and practices for the domestic market. Internationalization may support domestic market learning and overall returnee firm development, but how and to what extent international knowledge can inform domestic market development is still unanswered. Such an inquiry typically would rely on time-series analysis.

Second, the research setting is China, and focuses on high-tech entrepreneurial firms, which obviously limits applicability. There may be returnees also engaging in entrepreneurial activities that involve little if any high-tech. Accordingly, future research should extend to other contexts where the phenomenon of returnee entrepreneurs is prominent. For example, in some contexts, returnee entrepreneurs are profiled as labors working in low-skilled industry abroad and returning to their countries of origin with the savings to start a new business. Such a firm would contradict some of the assumptions about returnee characteristics in my study. Having a greater diversity of research contexts and returnee profiles may therefore benefit both understanding and generalization.
Similarly, the originality of the returnees in question has so far been limited to emerging markets. Theoretically, of course, returnees can have their origins in any country. An intriguing question is whether returnee entrepreneurial firms with roots in developed markets have the same knowledge advantage when their founder moves home after spending several years in an emerging market. Future research may answer this question.

Finally, my research used a theoretical framework that combined the knowledge-based view with the network approach to study the performance of returnee firms. There are certainly other theoretical lenses which might be useful to view these phenomena through. For example, cognition and behavior theory might help understand the adaptation and re-adaptation of returnee entrepreneurs during their international mobility, and enable us to focus on the very nature of individual returnee entrepreneurs as a result of having experiences in diverse cultural and institutional contexts. Future research would benefit from such interesting and insightful approach.

Conclusions

Prior research has made significant inroads into building a body of understanding about the role knowledge plays in the development of new ventures. Along the way, there have been notable shifts in incorporating the interplay of different sources of knowledge, which has become improved our ability to make dynamic explanations. This study investigated factors that influence the performance of returnee entrepreneurial firms by focusing on the interplay between prior international experiential knowledge of returnee entrepreneurs, and the knowledge and capabilities developed at the firm level. The findings reveal that the characteristics of returnee firms, namely the internationally experienced returnee entrepreneurs and the network relationships in multiple knowledge contexts, are closely connected with their firms’ market knowledge development. In turn, market knowledge is related to returnee firms’ innovation, internationalization and business performances. The network relationships and the market knowledge from different geographic origins have differing performance implications. One is led to consider the usefulness of knowledge and network relationships from different contexts. Although these research findings are specific to the phenomenon of returnee entrepreneurship, they are also pertinent for studying international entrepreneurship by advancing knowledge-based theories of internationalization.
References


Lans, T., Blok, V. and Gulikers, J. (2015). “Show me your network and I'll tell you who you are: social competence and social capital of early-stage entrepreneurs.” Entrepreneurship and Regional Development, 27(7-8), 458-473.


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Appendix A Quesionnaire for Returnee Entrepreneurs

This research project “Returnee and Entrepreneurship Development” was developed and implemented by researchers (Principle investigator: Martin Johanson; Project executive: Wensong Bai) at the Department of Business Studies, Uppsala University, Sweden. It receives support from The Nordic Centre, Fudan University, Shanghai, and Nanshan Association of Returnees, Shenzhen. Considering the great importance of this project, and its potential benefits for Chinese entrepreneurs in their efforts to establish business, we invite you to take part in this investigation and to complete this questionnaire. Thank you in advance for your help! Note that all information will be held in strict confidence, and only be used for aims of academic research.

Date: ______ ______ Enumerator: ________________

Section A Returnee founders

1. Was this firm founded by one or more returnee entrepreneur(s)/scientist(s)?
   1. Yes  2. No

2. Years since return to China? ________ years

3. You stayed outside China for:

4. Years spent abroad ________ years; in which country? ______

5. Level of knowledge and technology obtained abroad:
   1. not advanced even in the region
   2. not advanced for China, but new for the region
   3. not advanced internationally, but new for China
   4. internationally advanced
   5. most advanced
6. Did the returnee entrepreneur(s)/scientist(s) set up firm(s) abroad before returning to China?
1. Yes 2. No

7. To what extent do you think the following factors were important for your decision to return to China? (Scale: 1 least important, 7 most important)

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<th>Factor</th>
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<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>Exploit Chinese market</td>
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<td>Exploit both Chinese and foreign markets</td>
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<td>Exploit networks established abroad</td>
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<td>Exploit new technology obtained abroad</td>
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<td>Government incentives for returnees</td>
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<td>Achieve synergy between international and local networks</td>
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<td>Exploit lower costs in China</td>
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<td>Access local skills and resources</td>
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<td>Family links</td>
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</table>

8. The locations of your main business relationships:

9. To what extent do you think the following items are important for the growth of your venture? (Scale: 1 least important, 7 most important)

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
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<th>7</th>
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<tr>
<td>Business networks established in the major markets</td>
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<td>Network ties maintained with people in foreign countries</td>
<td></td>
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<tr>
<td>Membership in different associations abroad</td>
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<tr>
<td>Network ties established in China</td>
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<td>Relations with different government bureaus in China</td>
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</tbody>
</table>
10. To what extent do you think the following types of knowledge have been important for the growth of your venture? (Scale: 1 least important, 7 most important)

<table>
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<tr>
<th></th>
<th>Internationally</th>
<th></th>
<th>Domestically</th>
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<tbody>
<tr>
<td>1. New technological ideas</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<tr>
<td>2. New business ideas, opportunities</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>3. Marketing knowledge</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>4. Financial knowledge (how to acquire financial resources)</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Institutional knowledge</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section B  Business activities
1. To what extent do you think the following activities were employed within the last three years? (Scale: 1 least used, 7 most intensively used)

<table>
<thead>
<tr>
<th></th>
<th>International</th>
<th></th>
<th>Domestic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Putting effort to maintain and develop _______ relationships</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Interaction with ______ business acquaintances to access new information</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Interaction with ______ personal friends and acquaintances to access new information</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
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<td>---</td>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4. Regular participation in trade shows</td>
<td>International</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Making use of support from network organizations</td>
<td>International</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Development and maintenance of relationships with government officials and regulatory departments</td>
<td>International</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Frequent contact with government officials and regulatory departments for important issues</td>
<td>International</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Top managers and government officials meet face to face on a regular basis</td>
<td>International</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Close connection with the government to access business opportunities</td>
<td>International</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. Frequently contacting industrial experts and third parties, like professors, scientists and engineers</td>
<td>International</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11. Development and maintenance of relationships with contacts in financial organizations like banks</td>
<td>International</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
2. To what extent do you agree the following items describe your domestic and international markets within the last three years? (Scale: 1 completely disagree, 7 totally agree)

<table>
<thead>
<tr>
<th></th>
<th>International</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Our firm has established new relationships</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
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</table>

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<th>International</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Our firm has developed cooperative relationship with business partners</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>Domestic</td>
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<th>International</th>
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</thead>
<tbody>
<tr>
<td>3.</td>
<td>Our top managers have social interactions with clients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
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<td>Domestic</td>
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<th>International</th>
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</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>The business between companies is dependent on the social relations between people in the companies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
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<th>International</th>
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</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>It is necessary to have frequent contacts with the customers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>Domestic</td>
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</thead>
<tbody>
<tr>
<td>6.</td>
<td>Companies often solve problems together</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>The supplier’s and the customer’s operations are often integrated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>International</th>
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</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>People from different firms tend to meet outside work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
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<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>International</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>Trust between people is important for the business the companies do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
3. To what extent do you agree the following items describe your domestic and international markets? (Scale: 1 completely disagree, 7 totally agree)

<table>
<thead>
<tr>
<th>Statement</th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitors often know each other quite well</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>It is difficult to keep commercial secrets in our market</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Information flows easily between companies in our market</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>We are often reached by the same news from more than one company in our market</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Everyone knows everyone</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

4. To what extent do you agree the following items describe your relationships with the government? (Scale: 1 completely disagree, 7 totally agree)

<table>
<thead>
<tr>
<th>Statement</th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>We have frequent contacts with different levels of governments</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Keeping long term relationships with the government is important</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>The information exchange between firms and governments/related regulators is easy</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
4. ______ Government/related regulators help the firm solve problems

<table>
<thead>
<tr>
<th></th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

5. Trust between ______ government and firms is important for business development

<table>
<thead>
<tr>
<th></th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

5. To what extent did you receive resources from the following relationships within the last three years? (Scale: 1 none, 7 a lot)

5.1 From ______ government

<table>
<thead>
<tr>
<th>Resources</th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tax relief</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2. Technical training</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3. Business opportunities</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4. Information services</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5. Government contracts and government sponsored research grants</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6. Office spaces and production facilities</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7. Governmental loans and subsidies</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

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### 5.2 From business relationships

<table>
<thead>
<tr>
<th>Item</th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>New relationships in markets</strong></td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>2. <strong>Cooperative relationships with business partners</strong></td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>3. <strong>New technological ideas</strong></td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>4. <strong>New business ideas and opportunities</strong></td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>5. <strong>Marketing knowledge</strong></td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>6. <strong>Financial knowledge and contacts</strong></td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

### 6. To what extent do you agree the following items describe the environment uncertainty of market? (Scale: 1 completely disagree, 7 totally agree)

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. We perceive great uncertainty regarding the institutional system in the market</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>2. It is difficult to forecast technology and product development in the market</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>3. It is difficult to forecast market potential for new products/services</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>4. Understanding customers’ needs has become more difficult than ever before</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>5. The changes of the government’s influence on business cause us great uncertainty</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
Section C  R&D activities and innovation performance

1. Number of patents granted since founding (including utility models and patent of invention) / Intellectual property rights registration
   1. No (Go to question 3)  2. Yes

2. If yes, the number of patents granted
   1. Internationally  
   2. Domestically  

3. Number of collaborated projects since firm foundation
   1. Internationally  
   2. Domestically  

4. The growth of number of employees since foundation to 2012  

5. Compared to competitors, how has your firm’s performance been in the last three years? (Scale: 1 much weaker than average, 7 much stronger than average)
   1. Releasing new products to market quickly  
   2. Making breakthroughs in R&D  
   3. Releasing new technology to market  

6. How satisfied are you with your firm’s performance (compared to the industry average) in the following aspects? (Scale: 1 completely unsatisfied, 7 very satisfied)
   1. Business plans and goals  
   2. Sales growth  
   3. Market share  
   4. ROS  
   5. ROA  
   6. International sales growth  

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Section D Firm information and internationalisation

(1) Basic information
1、Firm’s name __________________________
2、Year founded __________ 3、Main industry _________
4、Respondent’s position __________ 5、Employee numbers _______

(2) Firm technological profile
6、Whether and at which government level(s) the firm is identified as a high-tech firm
    1、No 2、Yes, National 3、Yes, Provicial 4、Yes, Municiple

7、Share (%) of the total employees who are engineers graduated from universities: __________ ( %)

8、Share (%) of the total number of employees who are directly involved in R&D: __________ ( %)

9、R&D budget in relation to total sales in 2012: __________ ( %)

(3) Firm ownership (percentage)

10、Firm ownership ( %)

<table>
<thead>
<tr>
<th>Management Team</th>
<th>Families</th>
<th>Institutions</th>
<th>Venture capital</th>
<th>Other company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

(4) Firm’s board (number of members)

11、Distribution of firm’s board

<table>
<thead>
<tr>
<th>Management Team</th>
<th>Families</th>
<th>Institutions</th>
<th>Venture capital</th>
<th>Other company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
( 5) International market and internationalistion

12. What year did you start selling goods and services abroad (for the first time)? __________

13. Did your firm use the following entry mode into the international market? If yes, please specify in which year your firm used this mode, and to which country (market).

<table>
<thead>
<tr>
<th>Year</th>
<th>Export through intermediaries</th>
<th>Export by self</th>
<th>Overseas agency</th>
<th>Foreign distributors</th>
<th>Foreign sales offices</th>
<th>Self-owned foreign production facilities or joint venture</th>
</tr>
</thead>
<tbody>
<tr>
<td>The country (market)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

14. Turnover 2012 __________ (RMB)

15. Number of export markets in 2012 __________

16. Share of turnover sold outside China in 2012 __________ %

17. Share of employees outside China in 2012 __________ %

18. Share of total assets located abroad in 2012 __________ %

Respondent’s name __________ Contact information __________
Appendix B Procedure of the CFA marker technique

This appendix uses the CFA marker technique applied in Paper V as an example for presenting the analysis procedure in detail. The results are summarized in Table 6. There are four latent variables in question in Paper V, including international networking capability (INC), international business knowledge (IBK), innovation performance (IP), and business performance (BP). The aim of the CFA marker technique is to test and verify that the relationships of these four variables are not significantly biased by effect of common method bias.

Table 6. Summary of CFA marker technique results of Paper V

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CFA</td>
<td>95.27</td>
<td>67</td>
<td>0.98</td>
</tr>
<tr>
<td>2. Baseline</td>
<td>130.79</td>
<td>74</td>
<td>0.96</td>
</tr>
<tr>
<td>3. Method-C</td>
<td>116.22</td>
<td>73</td>
<td>0.98</td>
</tr>
<tr>
<td>4. Method-U</td>
<td>83.07</td>
<td>62</td>
<td>0.99</td>
</tr>
<tr>
<td>5. Method-R</td>
<td>89.64</td>
<td>68</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Chi-Square Model Comparison Tests

<table>
<thead>
<tr>
<th>Delta Models</th>
<th>$\Delta \chi^2$</th>
<th>$\Delta df$</th>
<th>Chi-Square Critical Value; 0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Baseline vs. Method-C</td>
<td>14.57*</td>
<td>1</td>
<td>3.84</td>
</tr>
</tbody>
</table>

First, I chosen a marker variable from the large dataset. Based on the idea that the marker variable is theoretically unrelated to the variables in question, I took ‘attractiveness of home country’ (AHC) as the marker variable, as the variables in question are about returnee firms’ international activities and are therefore less related to the situation of the home country. AHC mainly explains why individual returnee entrepreneurs decided to move back to their home countries by measuring the attractiveness home country. AHC comprises two indicators, ‘Government incentives for returnees’ and ‘Exploit lower costs in China’.

Second, I examined a series of models and compared the differences of Chi-Square and degrees of freedom between different models. The first model
examined is the CFA model, which ran a confirmatory factor analysis considering a complete set of correlations among the four latent variables (INC, IBK, IP and BP) and the marker variable (AHC). The purpose of evaluating this model was to obtain the factor loading and measurement error variance estimates for the two indicators of marker variable, which were used in subsequent models. The second model examined is the Baseline model, where the four latent variables are correlated with each other, but not correlated with the marker variable. The two indicators of marker variable in the Baseline model have fixed factor loadings and fixed error variances derived from the CFA model. This model serves as a baseline compared with subsequent models to evaluate method effects.

The third model examined is the Method-C model, which has additional factor loadings from the marker variable indicators to each of the indicators of variables compared to the Baseline model. These additional factor loadings are forced to be equivalent in value. The comparison of the Method-C model with the Baseline model can indicate whether the method variance associated with marker variable is present. The difference of Chi-Square between the Method-C model and the Baseline model is 14.57, bigger than the 0.05 Chi-square critical value for one degree of freedom difference of 3.84 (see Table 6). This indicates that the method variance associated with marker variable is present. The fourth model estimated is the Method-U model, which is similar to the Method-C model except that the factor loading of the paths from the marker variable to indicators of the four latent variables are freely estimated. So the Method-U model refers that the method factor loadings are unconstrained, while the method factor loadings in the Method-C model are constrained.

Finally, a Method-R model is estimated by using the factor correlations of the four variables derived from the Baseline model as fixed values in either the Method-C or the Method-U model. If the Chi-square difference between the Method-C and the Method-U is greater than the 0.05 critical value, the Method-R model is estimated by fixing values based on the Method-U model. Otherwise it is based on Method-C model. As presented in Table 6, the Chi-square difference between the Method-C and the Method-U is 33.15, greater than the 0.05 critical value for eleven degree of freedom of 16.67. This indicates that the Method-U model represents the best model to account for marker variance on indicators of the four variables. So the Method-R model is estimated based on the Method-U model, and is used to compare with the Method-R subsequently. Table 6 shows that the Chi-square difference between the Method-U and Method-R models is 6.57, lower than the 0.05 chi-square critical value for six degree of freedom of 12.59. It thus can claim that the estimated correlations of variables in question do not suffer from significant bias.
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