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Financial Services
and Emerging Markets

Financial Services and Emerging Markets

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Financiële diensten en opkomende markten

Thesis

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Preface

Maybe it sounds a bit awkward, but my research interests in China and the scientific field of organization and strategy I'm currently working in, started in the gym. My personal commitment to practicing Chinese kung-fu on a more than regular basis triggered a particular interest in the major Economics and Business in Pacific Asia during my studies at the Erasmus University Rotterdam. The combination of studying economics and learning some basic Chinese language skills turned out to be a perfect fit for me. Above all, the professors teaching in the major were skilled and extremely motivating. It was professor Bert van der Knaap who quickly caught my attention by sharing his passion for urban development and regional economic issues in Asia. After visiting Beijing and Shanghai for a research project and studying in Hong Kong for seven months, I was stunned and at the same time determined to increase my knowledge about the economic development of China. After finishing my studies, I had the good fortune that Bert van der Knaap offered me a PhD position and that he was very enthusiastic to act as my supervisor. I'm still grateful for this wonderful opportunity.

The years that followed were full of new challenges. Together with Enrico Pennings, I have developed a new course for the first year students: organization and strategy. Our discussions on the different topics of the course and our shared personal research interests resulted in the development of some interesting new research projects and added new dimensions to my PhD research. It was great that Enrico wanted to become my second supervisor. His enthusiasm, abundant knowledge of econometric techniques and curiosity for solving economic puzzles greatly enhanced my personal capabilities and the possibilities to improve my research. Although it is difficult to express my appreciation in a few words, I'm privileged that I have been able to work with Bert and Enrico. I would

like to thank them both for their unprecedented effort to make my research project a success, and I look forward to continue our cooperation in the future.

Obviously, I could not have finished this thesis without the help of my colleagues at the department of applied economics. In particular, I like to express my gratitude to Martijn Burger and Kirsten Rohde for their everyday company, research support, hilarious conversations and preference for Thai/Indian curry's, Frank Neffke for his contagious determination, entrepreneurship and love for Rotterdam, Aurélien Baillon for his macaroon cookies, Han Bleichrodt and Justus Veenman for their outstanding analyses of Feyenoord's victories and Ajax's lost matches each Monday morning, Sandra Phlippen for her enthusiasm, creativity and valuable debates, Nita Ramsaransing for her craving for my home-baked *speculaas* and Thijs Nacken for his data crunching and research assistance. Obviously, I'd like to thank my other colleagues, Italo, Ronald H, Ronald W, Pilar, Teresa, Jan, Hans, Esen, Anka, Gerda, Ramona, Eddy and Harry for the nice atmosphere we created together on the 13th floor. Furthermore, I'm indebted to Hans de Doelder and Weichia Tseng of the Erasmus University China Center, because they are providing me the opportunity to extend my network in China and to meet interesting new people. Thanks!

In my case, there were also some negative effects involved in writing my PhD thesis: I spent too little time with family and friends. Mom, dad, Saskia, Michel, Ilse and Joep thanks for your love and support! Inkie, Vernon, Carmen and Quinten, Miriam, André, Sacha and Yara, Barbara, Henny thanks for continuous interest and care. Menno and Linda, Paul and Ditte, Marc and Jette, Renate and Rhamsey, Aernout and Miranda, Rick and Phebe, Sjoerd and Claire, Juan and Hester, Wendy and Bob, and Paul and Karen, thanks for your patience and I really hope we can reserve more time for our shared hobbies, such as surfing, snowboarding, going out for dinner, drinking some beers, cocktails or limoncello's, BBQ-ing, party etc. To my trainer/sparring partner Sifu Peter Vermeer of Shantung Black Dragon gym I can only say: prepare yourself.

Finally, but most importantly, I would like to express my sincerest gratitude to my girlfriend Sanne who is my true inspiration in life. Your endless love and support (and cooking skills of course) have made me into the person that I am today and for that I can never thank you enough.

Bas Karreman
Rotterdam, December 2010

Contents

Chapter 1:

Introduction

1.1   Financial services and emerging markets[1]

"Does finance make a difference...?" This renowned question put forth by Raymond W. Goldsmith (1969: p.408) in his book *Financial Structure and Development*, clearly captures the essence of the broad debate regarding the importance of financial system development for economic growth. With a rising consensus among scholars about the relevance of the financial system as a mechanism to facilitate economic growth since the second half of the 1990s, the development of well-functioning financial markets has become a focal point for governmental authorities and policy makers in many countries around the world. For "emerging markets" or, more specifically, rapidly developing countries that are restructuring their economies along market-oriented lines, this debate appears particularly relevant. By embarking on structural economic reform and financial liberalization programs, these countries try to create an environment in which intermediaries and markets are able to provide sound financial services.

A key characteristic of emerging markets is their increasing reliance on foreign direct investment (FDI) and portfolio flows, that is, equity and fixed income securities, as their dominant sources of external capital. The implementation of open-door policies and regulatory change aimed at relaxing restrictions on the foreign ownership of assets, encourage foreign firms to invest and to take advantage of the wealth of growth opportunities these countries have to offer. In many emerging economies, the implementation of open-door policies and the resulting FDI and portfolio inflows have direct implications for the restructuring of the banking sector as well as the domestic capital markets.

In banking, for instance, emerging markets often struggle to solve the problems inherited from a system of state-interventionism. Major examples include large stocks of non-performing loans, low savings and investment levels, low productivity, and geographically and sectorally concentrated loan portfolios (Blommestein and Spencer 1994). To overcome these problems and instill discipline in the market, most countries gradually restructured, recapitalized, and privatized their state-owned commercial banks and opened up the domestic banking sector to foreign competition (Naaborg *et al.* 2004). Due to their low level of competitiveness, however, inefficient domestic banks faced a loss of market share and became attractive targets for takeover by foreign financial institutions.

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[1] Parts of this chapter draw heavily on: Karreman, B. (2009) Financial geographies and emerging markets in Europe. *Tijdschrift voor Economische en Sociale Geografie*, 100(2): 260-266.

In many emerging economies and within Central and Eastern Europe (CEE) in particular, this situation triggered a surge of foreign investment into the banking sector.

In addition, a free flow of capital often involves the participation of foreign investors in the stock markets of emerging economies. Opening domestic exchanges to foreign investors may yield several advantages, such as increasing market liquidity and trading volume. Furthermore, foreign investors demand transparency and strict disclosure requirements and they will insist on enhanced management and shareholder rights to avoid the expropriation of wealth by state authorities or controlling shareholders (Kim and Singal, 2000). Although satisfying these demands will decrease the risk of investment and probably reduces the cost of external capital, some emerging economies are reluctant to fully open up their markets. A general concern is that foreign investors are targeting short-run gains, which makes the stock markets sensitive to destabilizing actions by foreign speculators (Bekaert and Harvey, 2003). However, the main reason for capital controls in emerging markets is the restriction on foreign ownership of domestic equity. Especially in mainland China, those firms that are regarded as strategically important are likely to remain under domestic control.

The discussions above illustrate that opening up the financial system provides certain opportunities, not only for foreign banks but also for domestic firms. However, the heterogeneity and the uncertain development path of emerging markets, as well as the financial systems therein, also pose extensive challenges and difficulties for firms to formulate and implement their strategies. As the strategies that foreign banks and domestic firms use to cope with these uncertainties are important for the development of the financial system, the value of understanding firm strategy in emerging markets appears imperative. However, in a financial services context, the issue of firm strategy in emerging markets is still little understood. This study addresses the issue from a banking and a stock market perspective. For the banking sector, the focus is on the expansion strategies of multinational banks (MNBs) across CEE, while for stock markets the decisions of mainland Chinese firms on where to list their shares is examined. For the two stock market studies, the listing strategy of mainland Chinese firms is used to serve the additional purpose of determining the competitiveness of the financial centers in mainland China and Hong Kong. Although multidisciplinary in nature, each topic addresses different but related issues and is therefore rooted in different literatures. In particular, the expansion strategies of MNBs across the CEE region are addressed in a strategy and international

business context, while the decisions of mainland Chinese firms of where to list their shares are analyzed by taking an explicit economic geography approach.

1.2   Aim and research questions

The aim of this study is to examine the strategy of firms operating in emerging markets with a particular focus on the financial services industry. Following the literature on the finance-growth nexus, a distinction is made between banking and stock markets. Two central research questions structure this study. The first research question focuses on the strategy of MNBs in the CEE region and is formulated as follows:

Research question 1: What strategy should multinational banks from developed countries adopt when expanding their firm network across Central and Eastern Europe?

With saturated home markets, the countries in the CEE region provide many opportunities to realize firm growth for MNBs that originate in developed countries. The question is, however, what is the best strategy for MNBs to expand into emerging markets and into the transition economies of CEE in particular? While a burgeoning body of literature exists on the international expansion strategies of firms, most studies focus on the manufacturing industry. However, little is known about the investment strategies of MNBs in emerging markets, despite recurring calls from scholars in the fields of strategy and management to address this issue (Hoskisson *et al.*, 2000; Wright *et al.*, 2005). To provide an answer to the first research question, the two chapters focusing on the strategy of MNBs explicitly take into account that international expansion is a process and that the MNBs' expansion strategies are subject to change as these firms develop over time. As such, a longitudinal approach is taken to examine (1) the strategies that MNBs adopt in terms of the pace of entry into different CEE countries under conditions of uncertainty and competition and (2) whether the configuration of the subsidiary network built over time by the MNB in the CEE region affects performance. In contrast to previous research on multinational banking that discusses the reasons *why* and *where* MNBs expand (c.f. Qian and Delios, 2008; Williams, 1997), both chapters contribute to the literature by solving parts of the puzzle regarding *how* MNBs expand and how they can expand most effectively throughout the CEE region.

The second research question addresses the motives of mainland Chinese firms in deciding where to list their shares:

Research question 2: What is the role of mainland Chinese firms' strategy of where to list their shares in the alleged competition between the financial centers in mainland China and Hong Kong?

Since the stock markets in mainland China began to show rapid growth in the late 1990s, there has been an ongoing discussion in the media and the popular press about the question whether Shanghai could overtake Hong Kong as China's preeminent international financial center in the near future (e.g., Holland, 2010; Ng, 2000; Tao, 2009; Wild, 1997; Wong, 2007). Although previous research has had a clear focus on examining financial center competition in the context of international banking, it is argued that competition between financial centers is most intense in capital and securities markets (see Poon, 2003). Although the trading of securities is where the money is (Grote, 2007), there is no trading without listing. Therefore, stock exchanges compete based on attracting more (and larger) listings than rival exchanges (Pagano *et al.*, 2001). Because firms in search of a location to issue their shares to the public are likely to choose the location that yields the most benefits compared to other exchanges, a firm's strategy and decisions of where to list their shares reflect the competitive advantage of a financial center. In this way, firms' listing strategies can be used to measure the competitiveness of financial centers. Although considerable empirical work exists on this matter, these studies are exclusively focused on the decisions of firms to cross-list shares on foreign exchanges. No studies exist that apply this framework to competing stock markets and financial centers within a single country, let alone in an emerging market such as China.

1.3 Empirical setting

To provide a basic background on the issues examined in the remainder of this study, this section discusses the main characteristics of the banking markets throughout the CEE region and the primary features of the stock markets in mainland China, that is Shanghai and Shenzhen, and Hong Kong.

1.3.1   Central and Eastern Europe

The subtitle of a recent CEE banking sector report by Raiffeisen Research (2007) stating that "the heat goes on" points toward the outstanding prospects for further financial development in the region and the still ample opportunities for foreign banks to tap into the region's market potential.[2] As such, the rise of CEE countries in the global marketplace could not have occurred without rigorous reforms in the financial sector. The key drivers of this process have been the gradual privatization of state-owned banks and the opening up of the banking sector. Accordingly, most of these countries were highly successful in attracting large inflows of foreign investments. As of today, over half the number of banks in the CEE region are foreign-owned. Moreover, with a majority of total bank assets, foreign banks have become a predominant factor in the development of the banking system in Europe's transition economies (Demel and Sikimic, 2009).
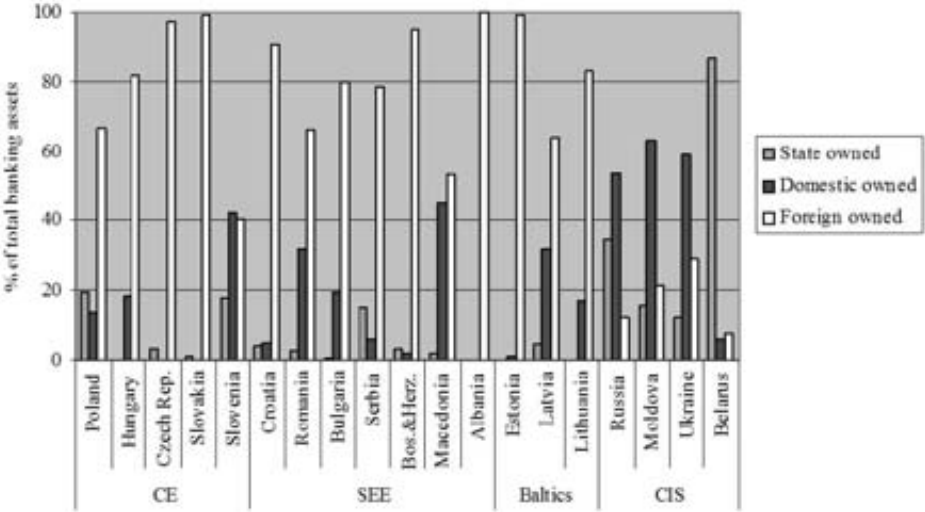
Figure 1.1: Market shares of different bank types per CEE country 2007.
Source: Raiffeisen research 2007 and local banks.

Foreign investments in the banking sector are not evenly distributed across the various countries in the CEE region. This indicates that the heterogeneity of the financial and

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[2] Unless otherwise indicated, CEE consists in this study of Central Europe (CE), South Eastern Europe (SEE), the Baltics, and the Commonwealth of Independent States (CIS). CE includes Poland, Hungary, Czech Republic, Slovakia and Slovenia. SEE includes Croatia, Romania, Bulgaria, Serbia, Bosnia-Herzegovina, Republic of Macedonia, and Albania. The Baltics include Estonia, Latvia, and Lithuania. Finally, CIS includes Russia, Ukraine, Republic of Moldova, and Belarus.

economic conditions across space has serious implications for the investment decisions of foreign financial institutions. When considering national spaces, Figure 1.1 shows that while foreign-owned firms are dominant in the banking sectors of the CE (with the exception of Slovenia), SEE and the Baltics, the foreign presence in CIS countries is considerably lower. This primary difference between the CIS and the other regions is due to differences in the level of financial development and the regulatory measures adopted by the state authorities of these countries to protect their domestic banking sector against international competition (e.g., Minuk, *et al.*, 2007; Karas *et al.*, 2010). Furthermore, the high degree of foreign ownership in the banking sector of the CEE countries implies a strong financial dependence on other countries outside CEE.

Table 1.1: Top-10 largest international banks and their market share in CEE, 2007.

Ranking	Bank	Country	HQ City	Consolidated total assets (EUR billion)	Total market share (%)
1	UniCredit	Italy	Rome	91.0	7.6
2	Erste Bank	Austria	Vienna	59.3	4.9
3	Raiffeisen	Austria	Vienna	55.9	4.6
4	KBC	Belgium	Brussels	43.3	3.6
5	Société Genérale	France	Paris	40.0	3.3
6	OTP	Hungary	Budapest	31.5	2.6
7	Intesa Sanpaolo	Italy	Milan	27.9	2.3
8	ING	Netherlands	Amsterdam	21.1	1.8
9	Citibank	USA	New York	20.6	1.7
10	Swedbank	Sweden	Stockholm	20.2	1.7

Source: Raiffeisen Research (2007) and local central banks.
Note: Data as of year-end 2006, representing ownership structure as of September 2007.

In an expanding European market, multinational financial institutions are positioning themselves to cope with the increasing pressures of international competition. A primary policy is to search for new strategic markets to increase the geographical scope and market power of the firm (see Focarelli and Pozzolo, 2001; Dermine, 2006). The emerging markets of CEE provide interesting new opportunities, especially for those financial institutions within close geographical proximity to the region. Table 1.1 provides an overview of the investments of the largest foreign investors in the banking sectors of CEE. The ranking is dominated by banks from Western Europe, with the United States' Citibank

and Hungary's OTP bank being the exceptions. Table 1.1 includes three additional noteworthy details. First, some of Europe's largest financial institutions are not extensively investing in the region. London-based HSBC and Barclays, for example, have only very limited stakes in CEE. The same holds true for Deutsche Bank. Second, Austrian banks are well-represented in the top 10. In addition to Erste Bank and Raiffeisen, Vienna's Bank Austria, as a member of the Italian UniCredit Group, is responsible for the activities throughout CEE. Third, as the top 10 largest foreign investors only account for 34.1 percent of the total market share, it can be concluded that the foreign holdings are relatively scattered over many different investors when taking the high degree of overall foreign ownership in the region into account.
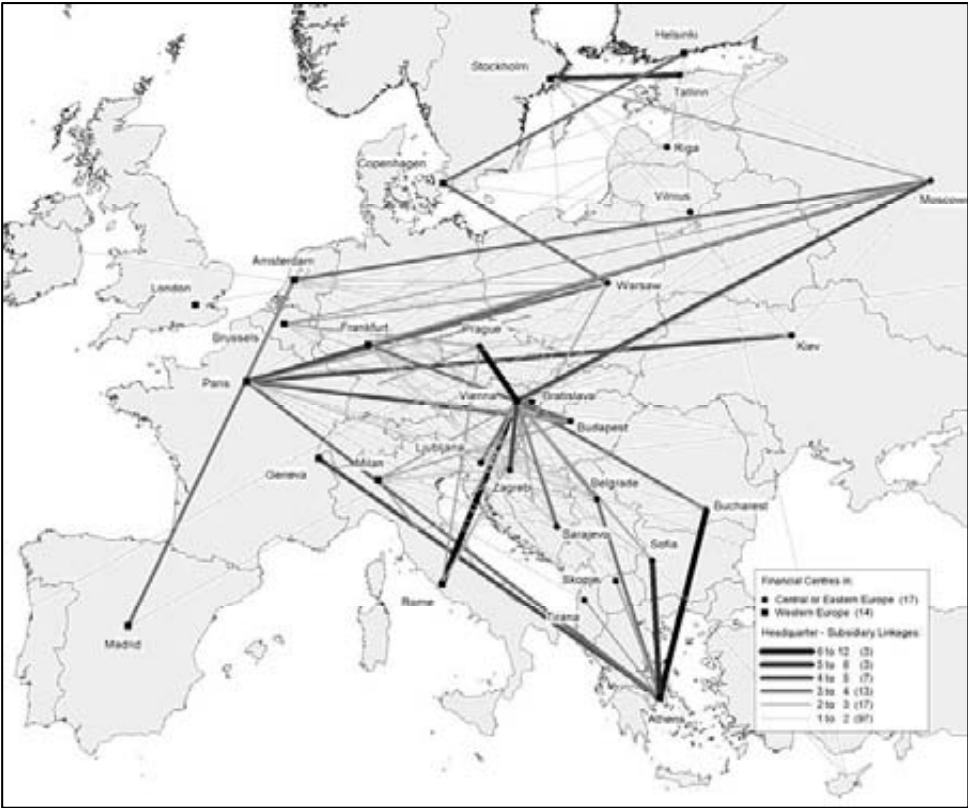

Figure 1.2: Parent-subsidiary links of West European banks to their CEE subsidiaries 2007.

The fact that mostly West European financial institutions are investing in CEE implies a specific role of distance in determining investment decisions. As indicated by Grote *et al.*

(2002), various dimensions of proximity, such as cultural, organizational, institutional, or geographical proximity, are likely to be among the main determinants of the financial sector's spatial organization. These different dimensions of proximity are united by the fact that they all reduce uncertainty (Boschma, 2005) and, therefore, make it less difficult and costly for financial firms to manage the risk profile of an investment project. For financial institutions located within close proximity of the CEE region, it may therefore be more appealing to invest than it is for other multinational financial institutions.

   In terms of investment patterns, Figure 1.2 provides an overview of the parent-subsidiary links of West European banks to their subsidiaries in CEE. Four main issues can be derived from this figure. First, banks headquartered in Vienna play a crucial role as foreign investors in CEE. These investments are predominantly from Austria-based banks, but financial institutions headquartered in other West European centers use their Vienna subsidiary as a gateway to CEE. Second, alongside Vienna, the financial centers that host the most investors in CEE are Paris, Athens and Frankfurt. Interestingly, there are only minor connections between London-based banks and CEE. Third, in addition to Vienna, Athens, Amsterdam and Helsinki perform gateway roles to CEE, largely due to (recent) merger and acquisition activity between Western European banks. For example, Crédit Agricole controls its market share in Albania, Bulgaria and Romania through the acquired Emporiki Bank of Greece headquartered in Athens, while Danish Danske Bank acquired Sampo Bank from Finland, including its CEE subsidiaries, which are still directed from Helsinki at the time of writing. Fourth, the financial centers in CEE with the highest number of foreign investors in banking are, in descending order, Moscow, Warsaw and Budapest. These findings are hardly surprising as they largely correspond with the outcomes of Taylor and Hoyler's (2000) research on the spatial order of European cities in terms of corporate service complexes.

1.3.2   Mainland China and Hong Kong

To facilitate the contemporary rise of China in the world economy, the Chinese state authorities are gradually restructuring the country's financial markets and reforming the economy from central planning toward an increasingly market-oriented system. Within this so-called "socialist market economy", there exists a clear spatial differentiation of economic and financial functions. Beijing, Shanghai and Hong Kong take up complementary roles based on each city's distinctive characteristics and advantages (Lai, 2009). While Beijing can be characterized as the "political center", Shanghai has

developed into the primary business center, or the "dragon's head" of the country (Olds, 1997). For mainland China, Hong Kong plays a particular role and largely functions as an offshore financial center since the handover of sovereignty in 1997 (see Jao, 1997). Because the financial markets in mainland China are largely immature and underdeveloped due to regulatory restrictions and governmental interference, Hong Kong, which remains under autonomous jurisdiction, still functions as the main gateway to global capital. In particular, the *laissez-faire* policy of non-interventionism, the unrivalled economic freedom (e.g., Gwartney *et al.*, 2010) and the corresponding large presence of foreign financial institutions and investors provide Hong Kong with unique advantages relative to other large cities and financial centers in mainland China.

The Hong Kong stock exchange (HKEX) clearly represents the interdependencies between mainland China and Hong Kong. For firms originating from the mainland, there are two possible ways to obtain a listing in Hong Kong: through a red-chip or an H-share. While a detailed description will be provided in the coming chapters, it suffices to note that the main distinction between the two share types is the locational incorporation of the firm issuing shares. Red-chips are issued by firms incorporated in Hong Kong but with a majority owner from the mainland and H-shares correspond to listings of firms incorporated in mainland China (see also McGuiness, 1999 for a comprehensive discussion). Figure 1.3 shows the contribution of mainland Chinese firms in the total turnover value and total market capitalization of the HKEX.
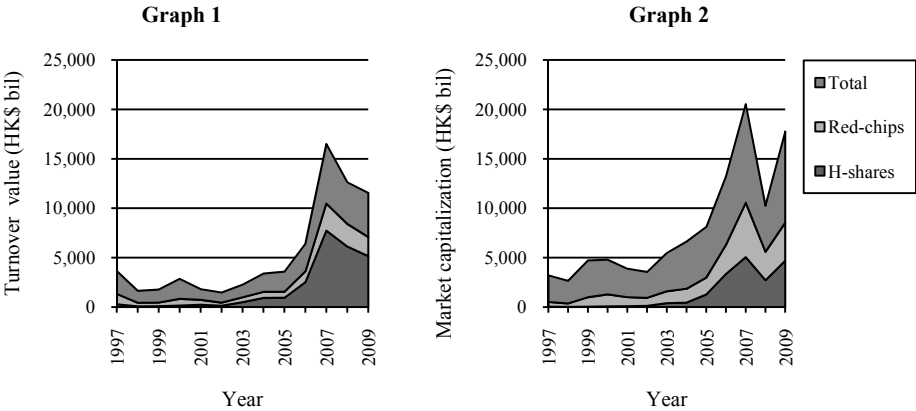
Figure 1.3: Contribution of mainland Chinese firms to the total turnover value and market capitalization of the HKEX.
Source: HKEX factbook various issues.

The graphs in Figure 1.3 reveal two notable issues. First and foremost, mainland Chinese firms represented by red-chips or H-shares corresponded to approximately half of the HKEX in terms of turnover value and market capitalization in 2009. Second, the total turnover value in Graph 1 and total market capitalization in Graph 2 of the HKEX have grown rapidly from 2005 onwards (with a dip during the 2008 financial crises on the market capitalization graph). In addition, the share of mainland Chinese firms in the total turnover value and total market capitalization has also grown markedly during this period. Both issues indicate that the HKEX has become increasingly dependent on mainland Chinese firms from the second half of the 2000s onward. This is not surprising, however, as some of the largest firms in the world originating from mainland China decided to list on the HKEX. For instance, Hong Kong has seen a large influx of financials, such as the Industrial and Commercial Bank of China, Bank of China, China Construction Bank and China Pacific Insurance, but also large firms from energy-related sectors like China Shenhua Energy or China Coal Energy.
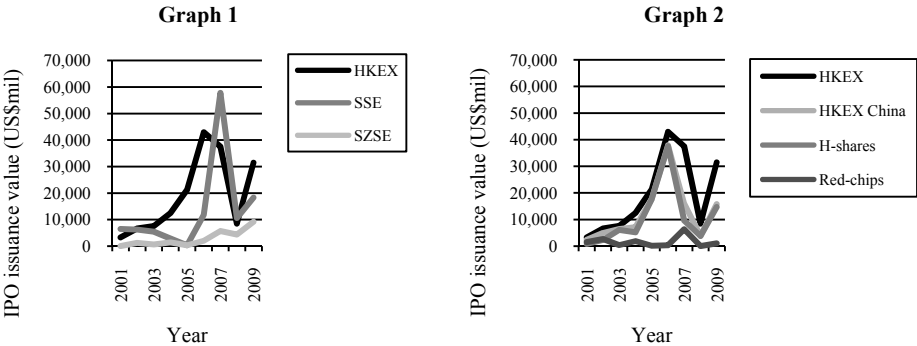
Figure 1.4: Capital raised by mainland Chinese IPO firms on the HKEX, SEE and the SZSE.
Source: World Federation of Exchanges and HKEX factbook various issues.

Despite the ongoing attractiveness of Hong Kong, it is unknown whether the city's competitive advantages are sustainable over time. On 25 March 2009, the Chinese state authorities issued the "Shanghai Opinion" to promote Shanghai's development into an international financial and shipping center by 2020. Although these plans are not new (e.g., Yeung, 2001), it is probably the first time that the State Council has explicitly formed a policy statement concerning the development of Shanghai as China's primary financial center. Furthermore, the plan consists of progressively turning Shanghai into Asia's

leading international financial center. When observing the capital raised by mainland Chinese firms in their initial public offering (IPO) in Graph 1 of Figure 1.4, it becomes clear that the HKEX still outperforms the Shanghai stock exchange (SSE), except for 2007. Furthermore, Graph 2 shows that the HKEX is largely dependent on mainland Chinese firms with regarding IPO value.

Even though the HKEX profiles itself as highly international, it is largely dependent on firms from the mainland. This mono-focus makes the stock exchange of Hong Kong vulnerable to change and development in Shanghai and Shenzhen. However, can Shanghai become another Hong Kong in this regard?

1.4 Outline of the study
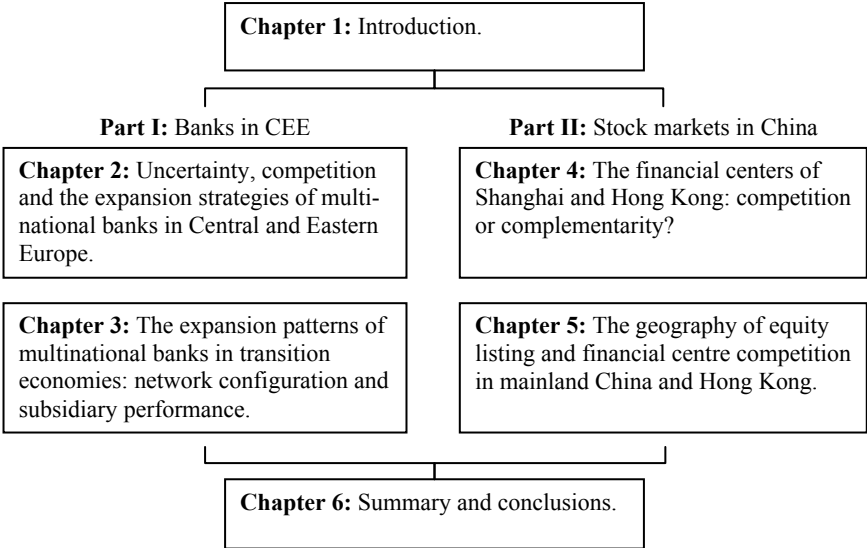
Figure 1.5: Outline of the study.

The outline of the remainder of this study follows the previously discussed empirical settings, and thus consists of two parts. Figure 1.5 provides a schematic overview of the book. The first part focuses on the first research question and examines the expansion strategies of (primarily) West European banks into CEE. Chapter 2 starts with an analysis regarding the investment strategies of MNBs in the CEE region. While previous research has proposed that firms expand into risky and uncertain emerging markets through a time-consuming incremental process of increasing foreign commitments, it is argued that this is

not necessarily the case for MNBs expanding into CEE. In those banking markets where there exists strong competition for securing new investment opportunities, firms may choose to expand quickly. As such, uncertainty and competition are expected to have opposing effects on the pace with which MNBs expand across the different countries in CEE.

In addition, in Chapter 3 the questions of whether and how MNBs can expand more effectively in CEE compared to their competitors are addressed. In particular, the question is examined of whether the existing MNB subsidiary network, and the configuration thereof, affects the performance of newly established subsidiaries in CEE. To do so, a differentiation is made between networks that span adjacent countries and those that span non-adjacent countries, as it is expected that new subsidiaries in their early stage of development can take advantage of the operating experience of nearby located sister-subsidiaries.

The second part of this study examines the competitiveness of financial centers in mainland China and Hong Kong based on the geography of equity listing of mainland Chinese firms. In Chapter 4 the focus is on financial center competition as a multilayered concept and the exploration of how financial centers in mainland China and Hong Kong create competitive advantage based on current market conditions. The study begins with an analytic framework that presents an interpretation of financial center competition from a stock market perspective and continues with an analysis of the geographical and sectoral distribution of publicly listed companies to assess whether specific firms prefer to list in Shanghai or Hong Kong. In this manner, an attempt is made to unravel the question of whether these centers have developed as either competitors or complements.

Chapter 5 is a clear extension of the research conducted in Chapter 4. The aim of this chapter is to show that mainland Chinese firms make different decisions of where to list their shares depending on the characteristics of the firm and the specific geographical location of its headquarters. Due to the immaturity of the financial markets in China and the dominant role of the State authorities regarding institutional and regulatory change, it can be expected that firms' decisions of where to list their shares have changed over time. Therefore, a dynamic approach is adopted to examine whether this change has affected the competitiveness of financial centers in mainland China and Hong Kong over the last two decades.

Finally, Chapter 6 summarizes the most important findings and links these findings to the two general research questions formulated in Chapter 1. In addition, overall conclusions are provided together with some recommendations for further research.

Note: Language differences.

An important note concerns the language used in the different chapters. While the default language used in this study is American English, the scientific journals to which Chapters 4 and 5 are sent use British English as their standard. Therefore, in contrast to the rest of the study Chapters 4 and 5 are written in British English.

Chapter 2:

Uncertainty, Competition and the Expansion Strategies of Multinational Banks in Central and Eastern Europe

Abstract

In this study, we examine the pace with which multinational banks expand their presence across the transition economies of Central and Eastern Europe. Estimating hazard rate models on entry data of 35 multinational banks across 16 countries in Central and Eastern Europe, covering the period 1991 to 2007, we find that host market uncertainty reduces the speed of entry by multinational banks across different countries throughout the region. In contrast, host market competition increases the speed of entry of multinational banks.

2.1   Introduction[3]

Progressive deregulation, technological advancements and the corresponding integration of international financial markets have markedly increased the intensity of competition in the globalizing banking industry (Goldberg, 2009). With a low potential for growth in their home markets, many multinational banks (MNBs) originating in mature economies are forced to enhance their competitiveness by enlarging the geographical scope of their international operations (Focarelli and Pozzolo, 2001). Attracted by the potential growth opportunities, foreign MNBs have recently established a considerable presence in Central and Eastern Europe (CEE).[4] For instance, the foreign ownership of total bank assets in the region grew from approximately 14 percent in 1996 to over 70 percent in 2007. In some countries, such as Estonia and the Slovak Republic, this ratio is currently approaching a 100 percent (see EBRD, 1998, 2008).

Previous research has emphasized that entry into the transition economies of CEE is a risky and highly uncertain endeavor (Uhlenbruck, 2004). Notwithstanding the fact that uncertainty provides abundant possibilities and opportunities for learning, it also complicates the design of an optimal investment strategy. Consequently, high levels of perceived uncertainty when expanding into new host markets make firms reluctant to commit substantial resources quickly (Miller and Folta, 2002). However, in multinational banking where competition for new market share is fierce (Bikker and Haaf, 2002; Guillén and Tschoegl, 2000), it can be beneficial to expand rapidly when new investment opportunities arise. In a recent study, Berger and Dick (2007) demonstrate that significant early mover advantages exist in banking, which may provide a pioneer with a competitive advantage over later entrants (Lieberman and Montgomery, 1998). As early mover advantages limit the investment opportunities for later entrants, it can be argued that firms are engaged in a race to internationalize (Hitt, Keats and DeMarie, 1998; Barkema, Baum and Mannix, 2001).

Hence, the primary objective of this study is to shed light on the expansion strategy of MNBs in risky and uncertain markets under conditions of increasing international competition. In particular, we examine the pace with which MNBs establish a presence across unexplored host markets throughout CEE and to what extent this pace is moderated

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[3] This study is joint work with Thijs Nacken and Enrico Pennings.
[4] In this study, CEE consists of Central Europe (CE), South Eastern Europe (SEE), the Baltics, and the Commonwealth of Independent States (CIS). CE includes Poland, Hungary, Czech Republic, Slovakia and Slovenia. SEE includes Croatia, Romania, Bulgaria, Serbia, Bosnia-Herzegovina, Republic of Macedonia and Albania. The Baltics include Estonia, Latvia and Lithuania. And finally, CIS includes Russia and the Ukraine.

by the levels of uncertainty and competition in the host country. Because most countries in CEE opened up their banking sector for foreign investment in the first half of the 1990s (EBRD, 1998), we are able to study an empirical setting where many new investment opportunities emerged at relatively the same time. Given this situation and the ambiguous tradeoff between uncertainty and competition, what expansion strategies could MNBs employ? We hypothesize that uncertainty avoidance causes MNBs to approach transition economies cautiously and implement conservative expansion strategies aimed at slow and incremental cross-country commitment. In contrast, the emergence of unique investment opportunities in a relatively short period of time and fierce international competition is expected to cause MNBs to expand rapidly or even enter different markets simultaneously. Inspired by marketing terminology, these contrasting strategies are referred to as waterfall and sprinkler strategies, respectively (Kalish, Mahajan and Muller, 1995).

To test our hypotheses, we use hazard models on a firm-level panel with entry data on 35 MNBs in various countries of CEE covering the period from 1991 to 2007. Our results suggest that the level of host market uncertainty and competition have an opposite effect on the pace with which MNBs enter CEE markets. While high levels of uncertainty reduce the speed of entry consistent with a waterfall strategy, high levels of competition cause MNBs to enter markets quickly in line with a sprinkler strategy. The main contributions of this study are threefold. First, while internationalization is a time-dependent process by definition, the role and influence of time on the international expansion of the firm has not yet been adequately addressed (Jones and Coviello, 2005), and empirical studies on waterfall versus sprinkler strategies are lacking. Second, we generally reply to the call for firm level research on strategy in banking (Miller and Parkhe, 2002; Williams, 2002; Qian and Delios, 2008) and to the particular call to improve our knowledge of the international expansion of MNBs in transition economies (Wright *et al.*, 2005). Third, and in line with the second contribution, recent research has underlined the relevance of studying how firms operate in new regions or cultural blocks (Barkema and Drogendijk, 2007) as competition has increasingly become a regional issue (Buckley and Ghauri, 2004). In this context, the comprehensiveness of our study regarding the inclusion of most countries in the CEE region is rather exclusive.

The remainder of this paper is organized as follows. In the next section, we provide a theoretical background and present hypotheses regarding the speed of entry and the potential effects of uncertainty and competition on this process. In the section thereafter, we describe the data and the variables employed in the analysis. Furthermore, a discussion

of the appropriateness of hazard models for studying the pace of international expansion is provided. This description is followed by an analysis of the results. The final section includes a discussion, conclusion and provides some managerial implications.

2.2 Background and hypotheses

The pace with which firms commit resources to foreign markets has been a prominent theme in the recent literature on firm internationalization. While traditional "stage" approaches, such as the internationalization process model (Johansson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977, 1990), propose that the internationalization of firms is an incremental, risk-averse and time-consuming process, recent research has emphasized that, under conditions of ongoing globalization, firms across a wide variety of industries internationalize quickly whenever new investment opportunities arise. Well-known examples that cannot be explained by a lengthy staged model of internationalization are the foreign investment strategies of international new ventures (Oviatt and McDougall, 1997) or "born-globals" (Madsen and Servais, 1997). However, it is not only the emergence of new firm types that might render the traditional models obsolete. There is a growing body of literature showing that the globalization of markets and industries is fundamentally changing the competitive conditions of firms and, thus, their international expansion strategies (Hitt *et al.*, 2006; Barkema and Drogendijk, 2007; Chang and Rhee, 2007; Wiersema and Bowen, 2008). Before we elaborate on the different strategies that MNBs can deploy to expand across foreign markets, a general view is provided on the pace with which MNBs are likely to expand across the various countries in CEE.

2.2.1 The speed of entry across countries

From a general perspective, the speed of entry across different countries is likely to be affected by the fact that the expansion of MNBs into the CEE region involves substantial sunk costs. The intangible nature of services and the corresponding inseparability of production and consumption (Goerzen and Makino, 2007) force MNBs to immediately establish a foreign affiliate when expanding abroad. Low modes of resource commitment, such as exports, are a difficult or even impossible expansion strategy to implement. Consequently, the relatively large initial commitment that a MNB has to make to establish a representative office, branch or subsidiary renders expansion into a new host market

costly. Furthermore, it has been previously shown that prior experience with investing abroad is only partly applicable in transition economies. Although experienced MNBs can apply their knowledge on how to organize and manage a network of foreign subsidiaries (Yu, 1990), the peculiarities of the CEE business environment in terms of market liberalization, political democratization and processes of social and cultural change limit the applicability of experiential knowledge developed elsewhere (Li and Meyer, 2009). As a result, large investments have to be made by the MNB to develop and operate an initial subsidiary in CEE.

The sunk costs associated with establishing an initial subsidiary may have an effect on the general pace of subsequent entry across the CEE region. As organizational knowledge is often hard to store, it may be subject to depreciation over time (e.g., De Holan and Phillips, 2004). Hence, firms can optimize the benefits of their prior experiential knowledge by subsequently expanding into relatively similar countries and by limiting the time between investments. As a result, it can be expected that MNBs are likely to set up an additional subsidiary in the region relatively quickly after initial entry. In contrast, if the time between initial investment and subsequent investment increases, the MNB is once more confronted with rising sunk costs and thus becomes less likely to invest. Therefore, we hypothesize:

> **Hypothesis 1:** The time elapsed since the establishment of a first subsidiary in the CEE region has a negative effect on the likelihood of subsequent entry.

2.2.2 Uncertainty and the speed of entry

Grounded in behavioral theory, the main assumption underlying the internationalization process model is that firms choose to expand incrementally to optimize the benefits of learning and to reduce the uncertainty associated with investing abroad. Caused by a lack of knowledge about the idiosyncrasies of a new host market, uncertainty may incur considerable unfamiliarity costs and puts foreign firms at a competitive disadvantage relative to incumbent firms (Hymer, 1976). To overcome this so-called liability of foreignness (Zaheer, 1995), which is also present in multinational banking (Zaheer and Mosakowski, 1997; Miller and Parkhe, 2002), firms have to accumulate resources and market knowledge in a time-consuming process of learning through operational experience (Barkema, Bell and Pennings, 1996). However, the uncertainty and risk associated with investment in transition economies go beyond the liability of foreignness. Firms are also

exposed to increased exogenous uncertainty, such as macroeconomic instability and political risks, which is primarily resolved through the passage of time (Rivoli and Salorio, 1996). Because of the unstable nature of exogenous uncertainty, it is difficult to learn and predict the future states of the macroeconomic and political environment across transition economies and to understand how these future contingencies affect the firm (Fisch, 2008).

To overcome the liability of foreignness and to minimize the risks associated with exogenous uncertainty, large investments are required in, *inter alia*, human capital, technology and market information (Erikson *et al.*, 1997). It is therefore argued that firms are reluctant to make large resource commitments at one point in time and prefer a slow and incremental expansion process to optimize the benefits of learning (Ganesh and Kumar, 1996), to maintain their investment flexibility and to keep their growth options open (Chang, 1995; Fisch, 2008; Miller and Folta, 2002). For MNBs, comparable incremental patterns of international expansion have previously been observed (Engwall and Wallenstål, 1988; Guillén and Tschoegl, 2000; Qian and Delios, 2008). Accordingly, as the level of prior investment experience increases and uncertainty gradually dissolves, MNBs are expected to expand into new and increasingly less familiar countries in a cascading or waterfall-like fashion (c.f. Kalish *et al.*, 1995). Taking these arguments together, it can be expected that the higher the level of uncertainty in a CEE host country, the more time it takes for the MNB to learn the relevant practices and predict the future states of the economy. As a result, a MNB is more likely to delay subsequent entry until uncertainty reaches more tolerable levels. Therefore, if host country uncertainty is high, it can be expected that the pace of MNB expansion will increase over time as the level of uncertainty decreases, consistent with a waterfall strategy. This pattern leads to the following hypothesis:

Hypothesis 2: The level of uncertainty in the CEE host country positively moderates the relationship between time and the likelihood of subsequent entry.

2.2.3   Competition and the speed of entry

While it has been previously demonstrated that firms adopting a risk-averse incremental expansion strategy reduce the risk of investment failure (Li, 1995; Barkema *et al.*, 1996; Shaver, Mitchell and Yeung, 1997), recent studies have underlined that this strategy may not always be optimal (Delios and Beamish, 2001; Barkema and Drogendijk, 2007). Johanson and Vahlne (1990) already suggested three exceptions to the incremental

approach that may reduce the perceived uncertainty of firms when expanding abroad. First, when firms are relatively large, they are better able to bear the costs and risks associated with the internationalization process. Second, while experiential learning is generally time-consuming (Erramilli and Rao, 1990), it is easier to learn when foreign market conditions are stable and homogenous. Third, a large experiential knowledge base in terms of established routines, knowledge and belief structures may facilitate expansion into markets with similar conditions as a market entered previously (Levitt and March, 1988). Consequently, large and experienced firms in more advanced stages of internationalization often leapfrog intermediate steps in the expansion process (Hedlund and Kverneland, 1985) or enter particular foreign markets through immediate investment (Barkema and Drogendijk, 2007).

Aside from the general exceptions, new strategic approaches to internationalization, such as the born global approach, emphasize that new market conditions and technological developments may cause firms to internationalize rapidly (McDougall, Shane and Oviatt, 1994; Moen and Servais, 2002) and to have near-simultaneous commitment with multiple national markets (Chetty and Campbell-Hunt, 2004). As the main drivers of new market conditions, the worldwide liberalization of trade and the deregulation of financial markets have significantly reduced the transaction costs and uncertainty of foreign expansion. Additionally, advances in information and communication technology and transportation have increased the quality and speed with which firms are able to communicate and exchange information across borders. Both factors make accelerated internationalization feasible (Oviatt and McDougall, 2005). However, the main implication of the changing market conditions and technological developments is a substantial increase in competition (Jones and Coviello, 2005; Hitt *et al.*, 2006; Chang and Rhee, 2007; Wiersema and Bowen, 2008).

In industries where firms perceive entire regions or even the world as a single market (Madsen and Servais, 1997), competitive pressures are fierce and a rapid expansion strategy may be particularly appropriate. As shown by Blandón (2001) and Berger and Dick (2007), MNBs may significantly benefit from entering foreign banking markets rapidly whenever new investment opportunities arise. By securing potentially beneficial investment opportunities before later entrants, a MNB that moves early can preempt competitors (Liebermann and Montgomery, 1998). Pioneering new markets may thus facilitate a competitive edge over later entrants by acquiring or developing superior resources that are scarce, valuable and hard to replicate (Barney, 1991). In a transition

economy context, structural economic reforms, political transformations and deregulation will lead to increasing levels of competition. As a result, it is argued that firms should invest early and move quickly (Luo and Peng, 1998).

For MNBs, being an early entrant into a new market may yield several (sustainable) advantages. First, customers often prefer to stay with the same bank for a longer period because of switching costs. The time and funds borrowers previously invested in a banking relationship to obtain favorable conditions could be offset whenever this customer switches banks, because the new bank does not know the quality of the new borrower. Consequently, the importance of information asymmetry and confidence in a bank-client relationship can lock in clients and prevent them from switching, even when other more attractive alternatives are available (Boot, 2000; Petersen and Rajan, 1994; Kim, Kliger and Vale, 2003). Second, Berger and Dick (2007) emphasize the existence of network externalities as banks' early mover advantages appear to be driven by enhanced client convenience due to strategic investments in larger branch networks. Third, as the banking industry in transition economies is highly regulated, especially in the early stages of industry transformation, an early entrant may build up superior government contacts and collaboration (Frynas, Mellahi and Pigman, 2006; García-Canal and Guillén, 2008). A general implication of switching costs, network externalities and superior government relationships is that late entrants perceive these early mover advantages as high barriers to entry.

Therefore, in a globalizing and highly competitive banking industry, the implementation of a slow and lengthy incremental expansion strategy may lead to a competitive disadvantage relative to rivals that adopt rapid investment strategies. This outcome suggests that, under increasing levels of competition, MNBs are forced to expand rapidly or even simultaneously into new markets whenever new investment opportunities arise (c.f. Kalish *et al.*, 1995). In sum, as the level of competition in a CEE host country increases, the less likely a MNB is to take advantage of being an early mover. Consequently, it can be expected that a MNB will quickly expand into those countries where the level of competition is relatively low. Thus, if host country competition increases, the pace of expansion is likely to decrease over time as the advantages of being an early entrant decrease. As such, these arguments suggest that MNBs expand rapidly across CEE countries with low levels of competition in line with a sprinkler strategy.

Therefore we hypothesize:

Hypothesis 3: The degree of competition in the host country negatively moderates the relationship between time and the likelihood of subsequent entry.

2.3 Empirical setting, data and methodology

2.3.1 Empirical setting

Our analysis is focused on the entry of West European MNBs into the CEE region. Most of these firms are relatively large and have built years of experience in their respective home markets as well as internationally. Some banks like ING, BNP Paribas and HSBC are among the 50 largest companies in the world, as ranked in the 2010 Fortune Global 500 list. The opening up of the CEE banking markets to foreign investment provides an excellent opportunity to study the international expansion strategy for mature and experienced firms. The main advantage of using CEE as our empirical setting is that foreign direct investment was nearly non-existent in the region before the 1990s, which creates a natural starting point for analyzing the investment strategies of MNBs in an increasingly competitive and globalizing banking industry. In addition, recent studies have emphasized the importance for firms to adopt regional strategies as regions have increasingly become distinct strategic sites of market growth for internationally operating firms (Rugman and Verbeke, 2004; Buckley and Gauri, 2004). Although the main argument for adopting regional strategies is that the relative homogeneity of markets at the regional level allows a firm to exploit particular cross-country similarities within the region (Ghemawat, 2003), CEE countries differ substantially in terms of macroeconomic uncertainty and political risks. Consequently, these differences may affect the choices MNBs make in designing their regional expansion strategies.

2.3.2 Data

As our primary data source, we use the BANKSCOPE database provided by Bureau van Dijk, which contains balance sheet information for about 29,000 public and private banks worldwide and approximately 2,450 banks in the CEE region (2009 edition). To derive the strategies employed by MNBs to expand across CEE in the period from 1991 to 2007, we extracted information on the investment patterns of foreign MNBs in CEE. Following Miller and Parkhe (2002), we use subsidiaries rather than branches or representative

Table 2.1: Frequency of CEE entries per MNB.

Firm	Country of origin	Number of entries	First entry	Last entry
ABN AMRO Bank	Netherlands	4	1991	1996
Alpha Bank	Greece	3	1994	2005
Banca Intesa	Italy	6	1998	2006
Banco Comercial Português	Portugal	2	1998	2007
Bank Austria	Austria	3	1991	1995
Bank DnB NORD	Denmark	3	2000	2002
BAWAG PSK Group	Austria	3	1997	2005
Bayerische Landesbank	Germany	4	1994	2006
BNP Paribas	France	9	1991	2006
Commerzbank	Germany	3	1993	1999
Crédit Agricole	France	3	2001	2006
Creditanstalt	Austria	11	1990	2007
Deutsche Bank	Germany	3	1995	1998
DZ Bank	Germany	2	1997	1998
EFG Eurobank Ergasias	Greece	5	1998	2007
Emporiki Bank of Greece	Greece	3	1996	1999
Erste Group Bank	Austria	7	1993	2007
HSBC	UK	3	2000	2005
HVB	Germany	9	1992	2002
Hypo Alpe Adria Bank	Austria	4	1996	2003
ING Bank	Netherlands	3	1993	1998
KBC Group	Belgium	8	1997	2007
National Bank of Greece	Greece	4	2000	2007
Nordea Bank	Sweden	4	1998	2004
Oesterreichische Volksbanken	Austria	9	1991	2007
Piraeus Bank	Greece	5	1997	2007
Raiffeisen Zentralbank Oesterreich	Austria	13	1987	2005
Sampo Bank	Finland	4	2000	2006
Sanpaolo IMI	Italy	5	1989	2006
SEB	Sweden	6	1998	2006
Société Générale	France	10	1991	2007
Swedbank	Sweden	5	1998	2007
UniCredit Bank	Italy	6	1999	2003
Veneto Banca	Italy	2	2000	2006
WestLB	Germany	3	1992	1995
Total number of entries		177		

Note: Bank Austria acquired Creditanstalt in 1997 and changed the company name to Bank Austria Creditanstalt.

offices to determine these patterns. While MNBs can withdraw branches and representative offices relatively easily, we will focus on subsidiaries, which represent the highest level of resource commitment, to determine whether a MNB has fully expanded into a particular host country. Because our interest is in the expansion strategy of MNBs across the region, we only include the initial subsidiary of each MNB per country in the dataset.

The selection of the subsidiaries depends on two criteria: specialization and the degree of foreign ownership. First, because of considerable heterogeneity among the different bank specializations, between microcredit banking and investment banking, for instance, we restricted our sample to those MNBs and subsidiaries that are active in wholesale and retail banking only. According to BANKSCOPE's classification, the dataset is limited to commercial banks, savings banks and cooperative banks. Second, only subsidiaries where a foreign MNB owns more than 20 percent of its shares are included. In this way, the sample is restricted to subsidiaries in which a parent MNB has a strategic influence.

Table 2.1 shows an overview of the data. Our dataset only includes those foreign MNBs for which we were able to identify the complete subsidiary network throughout CEE. As a result, our initial sample represents a total of 177 foreign subsidiaries. However, with regard to the balance sheet data of the foreign MNB, BANKSCOPE shows various omissions. Some missing data could be obtained from Thomson One Banker. In line with the banking literature (e.g., Lanine and Vander Vennet, 2007), we use inflation-adjusted balance sheet data from consolidated bank reports, whenever more than one set of accounts is provided. As a result, our final sample consists of 154 subsidiaries located across 17 different CEE countries, that are owned by 35 different MNBs originating from 12 West European countries.

2.3.3 Methodology

When the object of observation is the time to an event, survival analysis is an appropriate econometric method to apply (Cleves *et al.*, 2008). The use of survival analysis enables the examination of factors that determine the transition from one state to another, which in our case concerns the establishment of MNB subsidiaries across the CEE region. A general difficulty with the application of survival analyses to investment behavior is the problem of unambiguously defining the "onset of risk". However, the fact that there were hardly any foreign investments in CEE before the 1990s creates a natural starting point for the onset of risk. Because our focus is on subsequent expansions of the MNB, the onset of risk

is defined by the date at which a foreign MNB establishes its first subsidiary in the CEE region. As a consequence, the 35 initial CEE investments of the MNBs in the final sample function as the onset of risk, leaving 119 subsidiaries for the empirical analysis.

To determine whether foreign bank entry into CEE is dependent upon a predetermined vector of covariates, we make use of the semi-parametric Cox proportional hazard model (Ursacki and Vertinsky, 1992). In this model, the hazard rate is the rate per unit of time that an event occurs. In our case, the hazard rate for any particular MNB represents the instantaneous rate of entry in country x at time t, given that entry in country x has not yet occurred. Hence, in the statistical analyses, the estimated regression coefficients indicate how the hazard rate (i.e., the dependent variable) changes due to a change in the independent variables of the model. The application of the proportional Cox model to duration data has three main advantages. First, it enables us to include as well as estimate the impact of different metric and non-metric covariates. Second, the Cox model does not make any assumptions about the baseline hazard function without a great loss in efficiency (Lawless, 1982). This is a considerable advantage, as specifying the wrong baseline hazard results in biased coefficient estimates. Consequently, if one is interested in the effect of different covariates on the hazard rate and not the hazard function itself, the Cox proportional hazard model is suitable. Third, using Cox models with shared frailty, we are able to include a random effects component to model within-group correlation. As each MNB is matched with multiple entries during the period of observation, this approach is sensible to control for potential within-MNB effects.

2.3.4   Variables and measures

The independent variables are time at risk, uncertainty and competition. As previously discussed, the *time at risk* represents the time from which the MNB has established its first subsidiary in the CEE region. Our measure of *uncertainty* is calculated as the absolute value of the host country's inflation rate minus 2 percent. The 2 percent functions as a benchmark measure of inflation to maintain price stability, which is in line with the primary objective of the European Central Bank's monetary policy. Deviations from 2 percent indicate disturbances in price stability and thus uncertainty. The level of *competition* is measured by the log of the number of rival foreign MNBs in a particular CEE host country. In line with the arguments of Guillén and Tschoegl (2000), foreign MNBs investing in underdeveloped countries may be superior to host country competitors but not relative to other foreign MNBs.

Based on the outcomes of previous empirical research, we include several variables in the model as controls. To control for the size of the MNB, we included the log of *total assets* as a proxy. Large MNBs are more likely to expand quickly because they have greater ability to bear the necessary costs and risks to explore new opportunities abroad (Ursacki and Vertinsky, 1992). Consequently, in line with previous research, we expect parent size to increase the likelihood of entry across the region. In addition, the efficiency of the MNB can affect the pace of expansion of the MNB. According to Focarelli and Pozzolo (2001), efficient MNBs possess the capabilities to efficiently exchange information and knowledge to foreign locations and are therefore more likely to expand across the region relatively quickly. We control for MNB efficiency by including the return on average assets (*ROA*) of the MNB.

We use two variables to control for the effect of prior investment experience on the likelihood of entry: (1) CEE investment experience and (2) within-host country investment experience. The log of *CEE experience* is a measure of the number of previous investments the MNB has made before entering a particular country. Within-host country investment experience reflects whether a MNB has invested in a CEE host country with a lower level of resource commitment prior to establishing a subsidiary. *Branch / representative office* is a dummy variable that takes on a value of 1 if a branch or representative office was already present in a particular host country before a subsidiary was established and 0 if not.

As *geographical distance* and *cultural distance* between the MNB home and host country impede knowledge transfer, effective coordination and monitoring of clients, we control for both distance variables, whereby geographical distance is measured by the log of the distance between the host country subsidiary and the MNB headquarters and cultural distance is based on the European Value Survey (Inglehart and Baker, 2000).

Furthermore, we include the *bank reform index* of the EBRD (2008), measured at year-end and ranging from 1 to 5. A value of 1 represents little private ownership, and a value greater than 4 represents private ownership, effective corporate governance standards and a performance typical of advanced industrial economies. Finally, we use dummy variables to control for a priori differences between host countries. Likewise, we include headquarter dummies to pick up unobserved parent MNB heterogeneity that might affect the likelihood of entry, such as general international experience or MNB-specific levels of risk aversion.

Table 2.2 presents the descriptive statistics and Pearson's correlations of the independent variables. As the correlation coefficients of CEE experience with time at risk

Table 2.2: Descriptive statistics (*N*=4931).

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9
1 Time at Risk	6.83	4.27									
2 Uncertainty	1.30	1.69	-0.29***								
3 Competition	1.82	0.80	0.26***	-0.21***							
4 Cultural Distance	2.02	0.83	0.02*	0.29***	-0.04***						
5 Geographical Distance	7.01	0.53	-0.03*	0.08***	-0.06***	0.40***					
6 CEE Experience	3.09	2.05	0.59***	-0.16***	0.07***	0.18***	0.00				
7 Branch / Rep. Office	0.08	0.28	0.06***	0.06***	0.08***	-0.02	-0.16***	0.00			
8 Parent Assets	18.71	1.51	0.32***	-0.06***	0.01	-0.02	0.08***	0.16***	0.15***		
9 Parent ROA	0.58	0.65	-0.12***	-0.03*	0.05***	-0.04***	0.16***	-0.07***	-0.03**	-0.36***	
10 Bank Reform Index	1.05	0.26	0.24***	-0.51***	0.34***	-0.26***	-0.09***	0.10***	-0.01	0.05***	0.04**

*p<0.1; **p<0.05; ***p<0.01

and bank reform index with uncertainty are statistically high, multicollinearity might pose a problem. We calculated variance inflation factors (VIF) for these variables in the model and found that both of them are smaller than 5. Consequently, we can conclude that multicollinearity does not cause any difficulties in this study, as values of up to 10 are, as a rule of thumb, permissible (e.g., Baum, 2006).

2.4   Results

The results of the Cox proportional hazard regressions to test our hypotheses are reported in Table 2.3. It is important to mention that the exponentiated individual coefficients should be interpreted as the ratio of the hazards per unit of change in the corresponding covariate. Model 1 and Model 2 function as benchmark models and report the results of the main effects. Four notable issues stand out. First, with regard to the main effect of time at risk, Model 1 demonstrates that, as time progresses, MNBs are less likely to initiate additional entries into CEE countries (β=-0.315, $p<0.05$). This finding is consistent with Hypothesis 1 and suggests that MNBs concentrate their subsequent investments in the immediate periods after the moment they initially entered the CEE region.[5] Second, although it was expected that the main effect of uncertainty on the likelihood of entry is negative, we actually find the opposite effect. This result can be explained by the immediate entry of many foreign MNBs right after the opening of the CEE banking markets for foreign investment. At the time of opening, the level of uncertainty was generally high, which is reflected in a positive coefficient of uncertainty. Third, the presence of foreign rival MNBs exerts a positive influence on the speed of MNB entry (-β=1.334, $p<0.01$). Finally, when including dummies to correct for unobserved home and host country heterogeneity, Model 2 shows that cultural distance takes on the expected sign (i.e., negative). Because MNB total assets and the bank reform index do not vary a lot over time, including home and host country dummies causes total assets and the bank reform index to become insignificant. Note that the hypothesized negative effect of time at risk on the likelihood of subsequent entry is persistent across Model 1 and Model 2.

  Hypothesis 2 states that the level of uncertainty in a CEE host country positively moderates the relationship between time at risk and the likelihood of subsequent entry. Given that in Model 2 the time at risk decreases the likelihood of subsequent entry, we

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[5] To be precise, a 1-year increase in the time at risk decreases the likelihood of subsequent entry by 27 percent because *exp*(-0.315)=0.73.

	Model 1	Model 2	Model 3	Model 4
Time at Risk	-0.315**	-0.175*	-0.251**	-0.007
	(0.126)	(0.102)	(0.110)	(0.124)
Uncertainty	0.293***	0.278***	0.046	0.294***
	(0.088)	(0.105)	(0.153)	(0.108)
Competition	1.334***	1.067***	0.936***	1.570***
	(0.184)	(0.346)	(0.348)	(0.445)
Total Assets	0.317***	0.089	0.104	0.104
	(0.109)	(0.122)	(0.123)	(0.118)
ROA	0.384**	0.304*	0.301*	0.309*
	(0.157)	(0.164)	(0.161)	(0.163)
CEE Experience	0.213***	0.232***	0.231***	0.220***
	(0.065)	(0.065)	(0.065)	(0.064)
Branch / Rep. Office	0.838***	0.845***	0.812***	0.827***
	(0.270)	(0.292)	(0.290)	(0.290)
Geographical Distance	-1.458***	-1.887***	-1.890***	-1.904***
	(0.178)	(0.237)	(0.236)	(0.239)
Cultural Distance	0.211	-0.040	-0.137	-0.082
	(0.162)	(0.644)	(0.651)	(0.645)
Bank Reform Index	-1.072**	0.053	0.080	0.148
	(0.430)	(0.796)	(0.793)	(0.804)
Time at Risk x Uncertainty			0.036**	
			(0.018)	
Time at Risk x Competition				-0.078**
				(0.039)
Theta (frailty)	0.368***	0.020	0.018	0.000
	(0.235)	(0.213)	(0.185)	(0.000)
12 Home country dummies	NO	YES***	YES***	YES***
17 Host country dummies	NO	YES	YES	YES
Log likelihood	-581.74	-563.78	-561.62	-561.74
No. of frailty groups	35	35	35	35
No. of failures	119	119	119	119
No. of observations	4931	4931	4931	4931

*p<0.1; **p<0.05; ***p<0.01

expect that uncertainty causes MNBs to delay their costly investments consistent with a waterfall strategy. In Model 3, the positive and significant coefficient of the interaction

between time at risk and uncertainty corroborates the hypothesized waterfall strategy when uncertainty is high (β=0.036, p<0.05). Specifically, for higher levels of uncertainty, the time at risk is less negative, indicating that, for MNBs in markets with higher uncertainty, more time elapses after their previous entries. In contrast, Hypothesis 3 states that the degree of competition negatively moderates the relationship between time at risk and the likelihood of subsequent entry. For high levels of host market competition, we expect that MNBs become less inclined to make subsequent investments over time, that is, MNBs are expected to adopt a (near-) sprinkler strategy. The positive and significant coefficient for the interaction between time at risk and competition (β=-0.078, p<0.05) is in line with Hypothesis 3. An increasing level of host country competition has a negative effect on the time at risk, indicating that, for higher levels of competition, MNBs are more likely to enter different markets across CEE at a rapid pace.

There are also some notable aspects regarding the control variables in our model. Clearly, MNBs that already have a low commitment presence in a particular country through either a branch or a representative office are more likely to establish a subsidiary in that particular market. In addition, MNBs with a large regional presence are more likely to enter other markets throughout the region. These results provide support for the conjecture that firms can learn from previous experience both within and across countries (Barkema *et al.*, 1996). In addition, in all of the models geographical distance decreases the incidence of entry, while reforms in the banking sectors increases the speed of entry.

2.5   Discussion

While either strategy of internationalization (i.e., incremental or rapid) has particular merits and applicability, both approaches differ in their view on how strategic choice affects the expansion process of the firm. The traditional internationalization process model does not account for strategic choice options (Johanson and Vahlne, 1990; Melin, 1992), suggesting that all firms follow the same strategy of incremental expansion even as the firm matures. In contrast, the born global approach emphasizes the possibility of strategic choice, where the focus and the pace of internationalization are determined by the degree of competition in establishing a dominant position in foreign markets (Chetty and Campell-Hunt, 2004).

Because most existing research concerns the early stages of firm internationalization, there is a general lack of knowledge about the expansion strategies of mature and

experienced firms in increasingly competitive and globalizing industries. While their early expansion strategy could have been incremental, competition may lead to the adoption of more rapid expansion strategies. Over time, strategic options to differentiate and secure potential investment possibilities before rivals may have become an integral part of the international expansion strategy of well-established firms (Chetty and Campell-Hunt, 2004). In addition, most studies concern the expansion of firms from developed countries into other developed countries. While for many mature industries developed countries have rather saturated markets and only little potential for firm growth, strategic choices might be more prevalent when observing the expansion path into new and unexplored markets.

Overall, the findings of this study indicate that MNBs expanding across the CEE region make strategic choices regarding the pace and location of investment based on the degree of host country uncertainty and competition. As such, the results are generally consistent with both the traditional view on the internationalization of the firm (Johanson and Vahlne, 1977, 1990) and new strategic approaches (McDougall *et al.*, 1994; Moen and Servais, 2002). The main implications of our findings are twofold.

First, even though Ohmae (2000) claims that under conditions of increasing global competition and rapid information exchange, waterfall strategies are too conservative and inefficient, our findings show that the traditional expansion strategy of slow and incremental commitment is still relevant in the context of MNB expansion across new and uncertain markets. The result that MNBs prefer to postpone their investment in uncertain markets is consistent with the general arguments from the literature on investment under uncertainty (Miller and Folta, 2002; Fisch, 2008). High levels of CEE host country uncertainty cause MNBs to adopt a "wait and see" strategy of slow resource commitment and to delay their investment until sufficient information has become available to make deliberate investment decisions. However, previously identified determinants that speed up the expansion process also apply to MNBs investing in CEE. Size, profitability and prior investment experience within and across CEE countries all have a positive effect on the likelihood of subsequent entry.

Second, in contrast to the arguments of Johanson and Vahlne (1990), our results suggest that MNBs do make strategic choices concerning their investment strategy when competition is fierce. Higher levels of competitive pressure in the countries across CEE result in MNBs adopting a near-sprinkler strategy of rapid expansion across the region. Aside from the fact that there exist considerable advantages of being an early mover in these new markets, the presence of rivals is likely to facilitate a process of legitimization

and imitation, inducing MNBs to also enter the market. This result is consistent with a pattern of oligopolistic reaction (Knickerbocker, 1973).

2.6   Conclusion

The current literature on the international expansion strategy of firms has predominantly focused on how new firms, in their early stages of internationalization, expand across industrialized countries. However, the question as to whether the strategies applied by these firms also hold for mature and experienced firms when expanding into new and unexplored markets is still largely unresolved. This main premise is central to our study, in which we examine the pace with which mature West European MNBs expanded across different countries in the CEE region from the beginning of the 1990s. Our main findings suggest that high levels of uncertainty in CEE make MNBs reluctant to commit considerable resources to these markets immediately by adopting a slow and incremental expansion strategy. MNBs generally prefer to delay their investments and to wait until new information surfaces that can be used to make less risky expansions at a later date. In addition, when the level of competition is high, MNBs are more likely to adopt a strategy of rapid expansion across the CEE region. To guard against possibly missing out on potential gains in CEE host countries, MNBs try to move quickly when new investment opportunities arise. Furthermore, the presence of rival firms in a particular host country is likely to cause imitation effects among MNBs. In sum, our findings imply that traditional as well as new strategic approaches to firm internationalization can be considered valuable frameworks to explain the expansion strategies of MNBs.

A general problem with analyzing a specific market context is that the results may not be generalizable. Although we use a detailed dataset on the investments of West European MNBs in CEE, the results may not hold for MNBs originating in other home countries investing into other host regions. Furthermore, we do not differentiate between firms initially entering CEE in the early years of opening up and those that first entered the region at a later time. The particular date of entry may incur different strategies to cope with rival MNBs already present in CEE.

Our findings also have some practical value for managers implementing MNBs' international investment strategies. While recent studies indicate that rapid international expansion is the norm under conditions of increasing globalization and competition and that firms are increasingly considered to be in a race to internationalize, our results suggest

that most MNB managers still approach with caution the decision to implement strategies to enter uncertain markets, even managers from MNBs that are relatively large and possess considerable investment experience in these uncertain business environments.

Chapter 3:

Expansion Patterns of Multinational Banks in Transition Economies: Network Configuration and Subsidiary Performance

Abstract

In this study, we examine how prior investment experience of multinational banks (MNBs) affects the performance of new subsidiaries operating in the transition countries of Central and Eastern Europe (CEE). To test our hypotheses, we use a panel of 151 foreign subsidiaries owned by 40 different MNBs operating in CEE in the period 1996-2007. Our results indicate that the size of the total subsidiary network of the MNB in CEE has a positive effect on subsidiary performance during the initial development phase of a new subsidiary. When we distinguish between MNB subsidiary networks that extend over adjacent and non-adjacent countries, we find that the positive effect of MNB subsidiary network size on subsidiary performance only holds for networks across adjacent countries. In addition, we find no significant difference between acquisitions and greenfields with respect to the determinants of MNB subsidiary performance in CEE.

3.1 Introduction[6]

During the past two decades, the increasing integration of international financial markets has initiated an evolving outward orientation of multinational banks (MNBs) from highly developed countries (Goldberg, 2009). To cope with the increasing pressures of international competition, MNBs are positioning themselves by searching for new strategic markets to increase the geographical scope and market power of the firm. This process of international expansion has been particularly apparent in the banking sectors of Central and Eastern Europe (CEE) where, from the beginning of the 1990s, foreign-owned banks have become major players in the local banking markets.[7] At present, more than half the number of banks in the CEE-region is foreign-owned, accounting for approximately 75 percent of total banking assets (Demel and Sikimic, 2009). As this upsurge of MNBs has become a predominant factor in the development of the financial markets in CEE (Naaborg *et al.*, 2004), the importance of understanding the expansion of MNBs in the region seems evident. Nonetheless, surprisingly little is known about the internationalization process of banking multinationals in transition economies, despite the recognition that it is an important topic of strategy research (Wright *et al.*, 2005).

Extant literature on the internationalization of the MNB is primarily concerned with factors explaining why and where these firms expand, emphasizing the importance of follow-the-client behavior (Williams, 2002) and the search for new market opportunities (e.g., Miller and Parkhe, 1998; Focarelli and Pozzolo, 2005). Yet, as recently indicated by Qian and Delios (2008), these studies basically neglect that, similar to firms in manufacturing, the internationalization of MNBs can be considered a learning process, whereby new expansions are altered by prior investment experience (Johanson and Vahlne, 1977). Although the traditional focus of this internationalization process model suggests that firms enter foreign markets in an incremental fashion, the expansion patterns in CEE show that MNBs are rushing to internationalize towards leadership in the region (c.f. Hitt, Keats and DeMarie, 1998). By learning and expanding more effectively, these firms try to outperform their competitors. This suggests that, instead of first learning the local practices to secure successful expansion, MNBs in CEE are inclined to make larger steps and learn

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[6] This study is joint work with Thijs Nacken and Enrico Pennings.
[7] In this study, CEE consists of Central Europe (CE), South Eastern Europe (SEE), the Baltics, and the Commonwealth of Independent States (CIS). CE includes Poland, Hungary, Czech Republic, Slovakia and Slovenia. SEE includes Croatia, Romania, Bulgaria, Serbia, Bosnia-Herzegovina, Republic of Macedonia and Albania. The Baltics include Estonia, Latvia and Lithuania. And finally, CIS includes Russia, Ukraine and the Republic of Moldova.

from expansions to build future success (Barkema and Drogendijk, 2007). For managers within these MNBs, this aggressive expansion strategy incorporates a major challenge, as the fundamental question of how MNBs can expand more effectively than their competitors in the transition economies of CEE remains largely unexplored.

The primary objective of this paper is to address this issue. In particular, we argue that the existing network of foreign subsidiaries in CEE, and the specific geographical configuration thereof, provides a source of competitive advantage for the MNB and thus contributes to successful MNB expansion throughout the region. Based on notions of the internationalization process model (Johanson and Vahlne, 1977) and internalization theory (Buckley and Casson, 1991; Rugman, 1981), we argue that MNBs internalize the operational experiences of their subsidiaries for exploitation in other subsidiaries throughout the network. In this way, the network facilitates the transfer of firm-specific knowledge, that may augment the performance of other subsidiaries (Rugman and Verbeke, 2001). However, the idiosyncratic nature of the business environment in CEE (Uhlenbruck, 2004) limits the applicability of prior operational experience of the MNB (Li and Meyer, 2009). Besides, given that firm-specific experiential knowledge in banking is highly skill-, knowledge- and communication-intensive (Buckley, 1988), it can only be transferred through social sharing mechanisms (Tan, 2009). Because this type of knowledge exchange is costly (Lord and Ranft, 2000), it is most effectively realized between subsidiaries within short geographical and cultural distances (e.g., Bresman, Birkinshaw and Nobel, 1999). Therefore, the extent to which an MNB subsidiary network constitutes a competitive advantage and contributes to subsidiary development is likely to depend on its geographical configuration.

In order to test our hypotheses, we use a firm-level panel of 151 foreign subsidiaries, both greenfields and acquisitions, owned by 40 different MNB parent banks operating in CEE in the period 1996 – 2007. Anticipating our results, we show that the subsidiary network, and the geographical configuration thereof, has a positive effect on the success (i.e., short-run performance) of newly established MNB expansions in CEE. Besides, we find no significant differences in the determinants of subsidiary performance between newly acquired and greenfield subsidiaries in the sample. These results allow us to contribute to the literature on the international expansion of the multinational enterprise (MNE) in a number of ways. First, we reply to the general call for research on financial services in emerging markets (Wright *et al.*, 2005). Second, we focus on the potential importance of the foreign subsidiary network, and the geographical configuration thereof,

in the international expansion process of the MNE. This issue has not yet been adequately addressed, either in manufacturing (Luo, 2005) or in services. Finally, by examining a standardized product (i.e., commercial banking) and using panel data with year, headquarter and host country fixed effects, this study contributes to the literature by isolating experience effects from heterogeneity across years, headquarter characteristics, host-country effects and product characteristics.

The remainder of the paper is organized as follows. The next section provides a theoretical discussion on the potential contribution of the MNB foreign subsidiary network to the international expansion strategy of the MNB. It also presents our working hypotheses. We then describe the data employed in the analysis and the applied methodology. This description is followed by an analysis of the results and various robustness checks. The final section concludes and discusses managerial and policy implications and the limitations of our research. Furthermore, it provides some future research directions.

3.2   Theoretical background

3.2.1   Previous literature

The extant literature on the internationalization of MNBs has particularly focused on the questions of why and where MNBs internationalize. A recurring theme in this discussion is the follow-the-client behavior of banks, which provides an explanation for the initial expansion decision of the firm (see Williams, 2002 for an overview), also in the context of less developed countries (Sabi, 1988; Weller and Scher, 2001). This approach, which draws on insights from internalization theory (Buckley and Casson, 1991; Rugman, 1981), emphasizes that the information embedded in the bank-client relationship is a bank's primary asset (Miller and Parkhe, 1998). Banks internalize this relationship and follow their clients abroad as a defensive strategy. In addition, the need for effective delegated monitoring forces the bank to establish a foreign subsidiary in close geographical proximity to clients abroad (Williams, 1997).

Yet, not all empirical evidence corroborates this argument. For instance, Seth, Nolle and Mohanty (1998) found that foreign banks located in the United States actually allocated a majority of their loans to non-home country borrowers. Others also doubt whether defensive expansion fully explains the pattern of MNB internationalization. Proponents of this alternative approach argue that foreign expansion can be better explained by market-

seeking behavior, where location-specific factors external to the firm, including the degree of economic integration between the MNB home and host country (Ball and Tschoegl, 1982; Grosse and Goldberg, 1991; Buch, 2000), the characteristics of the host country institutional environment (Miller and Parkhe, 1998; Nigh, Cho and Krishnan, 1986) and the existence of various profit opportunities in the host country (Focarelli and Pozzolo, 2005), prove to be important.

In addition, recent research by Qian and Delios (2008) on the international expansion of Japanese banks into the US, suggests that the two approaches are complementary. While their analysis shows that client-following behavior is a clear determinant of initial entry, they also demonstrate that the weaker the intangible assets of a bank, the more important prior investment experience becomes for bank entry. This indicates that MNBs with a large experiential knowledge base may be inclined to enter foreign markets for other reasons than defensive expansion. Accumulated knowledge from experiential learning can therefore be emphasized as an additional driving force behind the internationalization process of MNBs (Eriksson *et al.*, 1997).

3.2.2 Internationalization of banks and learning

Experiential learning is a key element in the internationalization process model (Johanson and Vahlne, 1977, 1990). According to this model, international expansion is a process in which firms internationalize in small, incremental steps rather than by making large, independent investment decisions at a single point in time. The main premise is that the lack of foreign market knowledge constrains a firm's ability to successfully develop operations abroad, which can be overcome through operational experience (Johanson and Vahlne, 1977). The uncertainty and risk associated with this process requires firms to internationalize through incremental commitment and with an initial focus on familiar and nearby markets in terms of language, culture and institutions (Johanson and Wiedersheim-Paul, 1975).

While this model was originally developed to explain the international expansion process of manufacturing firms, similar expansion patterns have been observed for MNBs. For instance, Guillén and Tschoegl (2000) argue that Spanish banks entered the relatively familiar retail banking markets in Latin America in an incremental fashion, by first establishing representative offices and small retail affiliates in the 1970s and 1980s, followed by acquisitions of major domestic banks from 1995 onwards. In addition, Engwall and Wallenstål (1988) discuss the stepwise international expansion of three

Swedish banks. Although these studies corroborate the predicted incremental pattern, this is not necessarily the case. Firms often skip lower levels of commitment (Johanson and Vahlne, 1990) or enter distant regions without initial foreign investment experience close by their home market (Benito and Gripsrud, 1992). Both cases can be better understood when the advantages of the foreign subsidiary network and diversification mode strategies are taken into account.

3.2.3   Subsidiary networks

A large experiential knowledge base affects the costs associated with the internationalization process (Contractor, Kundu and Hsu, 2003; Eriksson *et al.*, 1997) and thus influences the international expansion strategy of the firm. Firms in the early stage of internationalization are confronted with high initial learning costs, not only because they have limited knowledge of the idiosyncrasies of the host country business environment, but also because they lack experience in organizing and managing a foreign subsidiary network (Yu, 1990). This so-called liability of foreignness (Zaheer, 1995), which is also present in banking (Zaheer and Masakowski, 1997; Miller and Parkhe, 2002), can only be surmounted through learning by operational experience (Barkema, Bell and Pennings, 1996). In order to facilitate this learning process, the firm is confronted with substantial investments at both the subsidiary and the headquarter levels, in human capital, technology and market information, such as the training of staff, changes in firm routines and the implementation of coordination procedures and reporting systems (Eriksson *et al.*, 1997). Therefore, the necessary investments the firm has to make render initial expansion costly and time-consuming.

However, firms in more advanced stages of international expansion can achieve economies of scale and scope by having a foreign subsidiary network spread over different countries (Kogut, 1985). Because each foreign subsidiary is embedded in a heterogeneous host country environment, it is differentially exposed to new knowledge, ideas and opportunities (McEvily and Zaheer, 1999). As such, foreign subsidiaries develop firm-specific competencies and capabilities (Gupta and Govindarajan, 2000) through the accumulation of operational experience in their host country markets (Delios and Beamish, 2001; Delios and Henisz, 2003). Besides the impact on the competitive ability of the foreign subsidiary itself, the firm can internalize this knowledge for exploitation in other subsidiaries. In this way, the network facilitates the transfer of firm-specific advantages, which in turn may influence the performance of other subsidiaries within the network

(Rugman and Verbeke, 2001). For example, a firm's procedures and routines for how to learn and search in a host country are applicable across different countries and markets (Blomstermo *et al.*, 2004). When transferred to newly established subsidiaries, this firm-specific knowledge can alleviate the costly and time-consuming process of overcoming the liability of foreignness. Therefore, the merits derived from being embedded in a foreign subsidiary network are most likely strongest during the early stages of subsidiary development (Grosse, 1996).

3.2.4 Subsidiary establishment mode

For the firm, the experiential knowledge embedded in the foreign subsidiary network does not only reduce the cost of subsequent international expansion, it also reduces the risk and uncertainty of this process and, consequently, affects the establishment mode choice of new expansions (Erramilli, 1991). Prior research has argued and demonstrated that MNEs prefer to enter unfamiliar and distant countries through a greenfield, rather than an acquisition, because of the additional management and integration costs of acquisitions (Barkema and Vermeulen, 1998; Harzing, 2002). However, recent work by Slangen and Hennart (2008) shows that these costs are likely to vary with the experiential knowledge of the firm. As the experiential knowledge of an acquired subsidiary has less overlap with the existing knowledge base of the firm, it is argued that acquisitions benefit more from the knowledge residing in the subsidiary network than greenfields (Gupta and Govindarajan, 2000). In this way, prior investment experience may reduce the costs of integrating acquisitions in the foreign subsidiary network of the firm.

Furthermore, acquisitions provide subsidiary-level advantages, such as managerial and organizational capabilities (Slangen and Hennart, 2008) and local market knowledge (Wilson, 1980) that endows the new subsidiary with immediate local responsiveness (Harzing, 2002). As these primary, firm-specific advantages are experience-based and intangible, they are difficult and time-consuming to develop through greenfield investment (Johansson and Vahlne, 1977). Hence, acquisitions are particularly well-suited for rapid entry into new foreign markets (e.g., Barkema and Vermeulen, 1998; Brouthers and Brouthers, 2000; Chang and Rosenzweig, 2001; Hennart and Park, 1993). Accordingly, many firms in advanced stages of internationalization skip low commitment modes and target their expansion strategies at whole regions or cultural blocks (Vahlne and Nordström, 1993).

3.2.5 Regional strategy

The transfer of firm-specific advantages across different foreign subsidiaries is, however, not without its limitations. Recently, scholars have emphasized that different regions or cultural blocks need different firm strategies (Buckley and Ghauri, 2004; Rugman and Verbeke, 2004). A firm expanding within a region or cultural block can benefit from the knowledge and capabilities acquired elsewhere in the region, as the countries within a region are often relatively familiar and show little variation in terms of culture (Ronen and Shenkar, 1985) or economic and institutional characteristics (Ghemawat, 2001). In contrast, expansion into a new region or cultural block is often fraught with problems caused by the incapability of the firm to deploy and exploit their firm-specific advantages across regions in an indiscriminate fashion (Rugman and Verbeke, 2007). For service firms, these problems are exacerbated, as they have to adapt a comparatively more complex and more wide-ranging set of resource bundles to the host country environment (Rugman and Verbeke, 2008).

In the literature, CEE is treated as a separate regional block, in which a shared recent history with a communist regime and the transition process towards a market-based economy created a distinct bloc culture (Meyer and Peng, 2005; Peng and Heath, 1996). Especially the unique issues related to market liberalization, political democratization and processes of social and cultural change limit the applicability of firm-specific advantages developed in other regions (Li and Meyer, 2009). However, as these difficulties are common across the different countries in the CEE region, it is argued that the liabilities of foreignness and the solutions of how to handle them are also relatively similar (Barkema and Drogendijk, 2007). This similarity suggests that there exist opportunities for firms to exploit firm-specific advantages across the different countries in the CEE region. The question is how can this knowledge exploitation be done most effectively by the MNB?

3.3   Hypothesis development

3.3.1   Network size, age and performance

As every subsidiary can be considered a bundle of experiential knowledge, it follows that MNBs with a larger subsidiary network may be better equipped to successfully develop new expansions of the firm. According to Meyer and Peng (2005), firms with prior operational experience in the CEE region are better able to exploit organizational and managerial firm-specific capabilities to their full extent, as these firms are already largely

adapted to the idiosyncrasies of the business environment (Uhlenbruck, 2004). In this way, the existing subsidiary network of the MNB facilitates the transfer of experiential knowledge to other subsidiaries in the region, reducing the cost and uncertainty of doing business in other host countries. Consequently, it can be expected that the size of the subsidiary network in CEE provides a competitive advantage for the MNB and thus positively affects the performance of other subsidiaries within the network (Rugman and Verbeke, 2001).

For an MNB to expand successfully throughout the CEE region, it needs to reduce the risk and uncertainty of the initial development stage of newly established subsidiaries. Evidently, the previous operational experiences of older and more developed subsidiaries in the network are crucial in this process. Following Foss and Pedersen (2002), the knowledge embedded within an MNB subsidiary network is less useful for older subsidiaries, as they tend to be more autonomous and thus more likely to transfer experiential knowledge to other subsidiaries. For new subsidiaries, the existing knowledge of the MNB about the characteristics of doing business and setting up a new establishment in the CEE region, may prove to be uncertainty and cost-reducing. This suggest that new subsidiaries are more inclined to employ knowledge and information from the MNB subsidiary network, especially during the initial development phase. Accordingly, the positive effects of MNB subsidiary network size in CEE on subsidiary performance are likely to be moderated by the age of the foreign subsidiary. Therefore, we hypothesize:

> **Hypothesis 1**: The age of a subsidiary in its initial development phase negatively moderates the relationship between the size of the subsidiary network in CEE and subsidiary performance.

3.3.2   Network configuration and performance

Aside from the potential importance of subsidiary network size, we expect that the location of a newly established subsidiary in relation to the other subsidiaries in the MNB network is an important determinant of successful MNB expansion throughout CEE. Consistent with the internationalization process model, we argue that familiarity and geographical distance are still important factors affecting the international expansion process (Schulz, 2003). Because the primary firm-specific advantages in banking are intangible, they have to be transferred through social sharing mechanisms (Tan, 2009), which is not easily executed or without costs (Hansen, 2002; Lord and Ranft, 2000). Subsidiaries located in

close geographical proximity, for example, in the same or neighboring countries, can communicate and cooperate more easily than subsidiaries located in distant countries. This reasoning is in line with Levinthal and March (1993), who state that the "near neighborhood" is privileged for organizational learning. Therefore, a densely configured subsidiary network may ease the exchange of knowledge between its corresponding subsidiaries, and thus may lower the costs of the exchange process.

Furthermore, it is important to take into account the differences between the country environments in which the MNB is active (Goerzen and Beamish, 2003; Sundaram and Black, 1992). Market similarity is an important driving force in the internationalization strategies of firms, as the transfer of knowledge to similar countries is easier (Erramilli, 1991). Neighboring countries are often more similar in terms of cultural, political and institutional climate, which makes it easier to exploit and transfer experiential knowledge between subsidiaries located in countries with common borders. Because geographical proximity and market similarity are suggested to augment the effective exchange of knowledge and information across subsidiaries, we expect that subsidiaries within an MNB network spanning adjacent countries are more likely to benefit from this exchange than those subsidiaries that are part of an MNB subsidiary network extending over non-adjacent countries. Therefore, the success of newly established subsidiaries also depends on the geographical configuration of the MNB subsidiary network. Considering both of these arguments leads to the following hypothesis:

> **Hypothesis 2:** Whereas the age of a subsidiary in its initial development phase negatively moderates the relationship between the size of the subsidiary network and subsidiary performance, this effect is larger for adjacent than for non-adjacent MNB subsidiary networks in CEE.

3.3.3   Network configuration, establishment mode and performance

While both the size and the geographical configuration of the subsidiary network are of potential importance for the success of new MNB expansions in CEE, these effects may be moderated by the establishment mode of a new subsidiary. Newly acquired subsidiaries in CEE are often difficult to integrate in the MNB network. For instance, it is costly and time-consuming to restructure the inherited loan portfolio of the subsidiary and to promulgate and implement new risk management procedures and lending practices used by the MNB (De Haas and Naaborg, 2006). However, following Slangen and Hennart (2008), these

integration costs can be reduced by firms that have prior investment experience. This indicates that for newly acquired subsidiaries, the MNB subsidiary network in CEE provides a valuable source of knowledge for reducing the time and costs of integration and reorganization, enhancing the performance of newly acquired subsidiaries during their initial development phase.

Acquisitions come with an immediate client base and distinct local market knowledge, two factors that new greenfield subsidiaries generally lack during their initial development phase (De Haas and Naaborg, 2006). Especially in non-transparent markets in CEE, new greenfield subsidiaries may find it difficult to attract clients and identify profitable lending opportunities (Clarke *et al.*, 2003). Yet, prior experience of the MNB regarding the procedures and routines for how to learn and search in local markets in CEE can be readily applied in new greenfields, reducing the cost of obtaining specific market knowledge and thus enhancing subsidiary performance. These arguments suggest that every new subsidiary, regardless of its establishment mode, can benefit from the experiential knowledge embedded in the MNB subsidiary network in CEE. Therefore, we hypothesize that:

Hypothesis 3: There are no differences in the determinants of subsidiary performance between greenfields and acquisitions in CEE.

3.4 Data and methodology

3.4.1 Sample

The data on foreign-owned subsidiaries of MNBs operating in CEE in the period 1996 – 2007 are retrieved from the BANKSCOPE database provided by Bureau van Dijk. This database contains balance sheet information for about 29,000 public and private banks worldwide and approximately 2,450 banks in the CEE region (2009 edition). Following DeYoung and Nolle (1996) and Miller and Parkhe (2002), we focus on foreign banking subsidiaries rather than on branches. In contrast to branches, foreign subsidiaries are separate legal entities, subject to the same laws and regulations as host country banks and with their own capitalization and financial reporting obligation. This makes it possible to analyze subsidiaries in their host country's strategic domain. The disadvantage of working with subsidiary data is that they do not reflect the full geographical scope of the MNE's intra-organizational network.

Our selection procedure of CEE subsidiaries of MNBs is based on two criteria: specialization and foreign ownership. First, to deal with the problem of heterogeneity among the different specializations in the banking sector between, for example, investment banking and microcredit banking, we restricted our sample to foreign subsidiaries of multinational financial institutions active in retail and wholesale banking. As such, our dataset is limited to commercial banks, savings banks, cooperative banks and medium/long term credit banks, as classified by BANKSCOPE. Second, for a subsidiary to be considered foreign and to be included in the sample, the subsidiary has to have a foreign-parent multinational financial institution from outside CEE that owns, either directly or indirectly, at least 20 percent of its shares. In this way, we only include CEE banks in which a foreign financial institution has a strategic influence, according to international financial reporting standards (IFRS). An additional advantage of the ownership criterion is that the finance companies of real sector MNEs, like, for example, GE Money Bank Poland and Porsche Bank Hungary, are excluded from the sample.

Table 3.1: Data characteristics.

	Country	Observations	Subsidiaries			Parents	Period
			Acquisitions	Greenfields	Total		
1	Albania	19	1	3	4	4	1999-2007
2	Bosnia-Herzegovina	38	6	2	8	6	1998-2007
3	Bulgaria	49	6	2	8	9	1998-2007
4	Croatia	70	8	3	11	10	1997-2007
5	Czech Republic	82	6	5	11	11	1995-2007
6	Estonia	24	3	0	3	2	1998-2007
7	Hungary	96	7	7	14	14	1997-2007
8	Latvia	23	3	1	4	5	1998-2007
9	Lithuania	17	3	0	3	4	1999-2007
10	Macedonia	18	2	1	3	3	2000-2007
11	Moldova Republic	4	0	1	1	1	2003-2007
12	Poland	114	14	6	20	18	1996-2007
13	Romania	76	8	6	14	14	1998-2007
14	Russia	59	4	9	13	11	1998-2007
15	Serbia	48	8	6	14	13	2001-2007
16	Slovakia	52	5	2	7	8	1997-2007
17	Slovenia	46	4	4	8	8	1997-2007
18	Ukraine	14	3	2	5	5	1999-2007
	Total	849	91	60	151		

For every subsidiary, we used BANKSCOPE for information on its precise location and yearly balance sheet data on outstanding loans, deposits and total assets. In line with the banking literature (e.g., Lanine and Vander Vennet, 2007; Bonin, Hasan and Wachtel, 2005), we use balance sheet data from consolidated bank reports whenever more than one set of accounts is provided. Also, if IFRS data are not available, we use inflation-adjusted, local accounting standards data. For both ownership and the number of employees, BANKSCOPE displays various omissions. The data on the number of employees are often incomplete, while there is hardly any ownership information available for the period before 2001. In order to solve these problems, we used subsidiary annual reports as complementary data sources. Information on the parent MNB network, as well as the information on the date and mode of entry of the subsidiary, comes from both subsidiary and parent company websites and annual reports. The date of establishment allows us to include new subsidiaries throughout the sample period and distinguishes new entrants from already existing subsidiaries. In this way, we control for possible sample selection bias that may be caused by the unbalanced nature of our panel data. As a result, our final sample, presented in Table 3.1, represents a total of 151 foreign-owned subsidiaries that are located in 18 different CEE countries and have 40 different MNB parent companies.

Using data on the banking sector offers an additional advantage over other sectors, as it suffers less from survivorship bias. Especially in our case, where banks are owned by large financial institutions from developed countries, default risk of these subsidiaries is relatively low. In most cases, the parent organizations are considered "too big to fail", which enables them to provide foreign currency liquidity to their subsidiaries when necessary and, therefore, survival may be ensured. Exit only occurs when foreign subsidiaries are sold to other foreign financial institutions.

3.4.2   Variables and measures

Although variable measurement is particularly problematic in emerging economies research (Hoskisson *et al.*, 2000), this is exacerbated when analyzing the banking industry (Colwell and Davis, 1992). Therefore, we rely heavily on measures which largely build on previous research.

3.4.2.1 *Dependent variable: labor productivity growth*

As a dependent variable, we use a labor productivity construct, which is defined as total outstanding loans per employee of each subsidiary in a given year. The change in the log

of labor productivity is taken as our main performance measure. In the international diversification literature, conventional performance measures are profit and sales efficiency (see Geringer, Beasmish and DaCosta, 1989). However, for emerging economies profitability measures are less relevant, given the highly volatile business environments (Uhlenbruck, 2004). It may therefore be more useful to focus on measures that capture short-term advantages, such as sales growth (Eisenhardt and Martin, 2000). Besides the fact that sales growth is considered a useful measure for comparing subsidiaries in countries with varying accounting standards (Hoskisson *et al.*, 2000), it is also argued to be one of the main targets of the MNE international expansion strategy (Dunning, 1993).

Although sales growth is well-suited for performance measurement in the manufacturing industry, the application in banking is not straightforward. The main problem is the lack of a clearly identifiable measure of output, or "sales". According to the intermediation approach, banks are viewed as service intermediates with capital and labor as the relevant inputs and the values of outstanding loans and investments as measures of output (Colwell and Davis, 1992). While investments are generally considered to be long-term or permanent funding, outstanding loans are often relatively short-term funds with fixed maturity. Based on the potential problems with the underlying asset valuations for long-term investments in emerging economies, we use outstanding loans of the subsidiary as a "sales" substitute. Because we use a learning approach to explain subsidiary performance, the employees of the firm are also an essential input. Combining these arguments leads to the labor productivity construct defined above. To alleviate the disproportionate influence of outliers caused by high volatility in the CEE market, we winsorize the labor productivity measure by taking two times the standard deviation from the mean as the maximum or minimum value.

3.4.2.2 Subsidiary network experience

We distinguish three measures of experience derived from the MNB's subsidiary network: the total foreign subsidiary network of a particular MNB, which in turn is decomposed in geographically adjacent and non-adjacent subsidiary network configurations. The total network is measured as the log of all subsidiaries the parent MNB operates in CEE at year-end (c.f. Miller and Parkhe, 1998). As such, this network construct coincides with traditional measures of MNE foreign experiences (Barkema *et al.*, 1996). A substantial drawback of this measure is that it does not explicitly take into account the geographical

scope of international operations. Tallman and Li (1996) note that especially in studies where competitive advantage is derived from the scope of international operations, country counts are better and less arbitrary. However, as most parent firms operate only one subsidiary per country in CEE, subsidiary and country counts have a correlation of 0.98 in our sample, yielding similar results in the analysis.

The degree of network dispersion is determined by using a simple measure of common country borders (Bevan, Estrin and Meyer, 2004). Adjacent foreign subsidiary networks are therefore defined as the number of sister subsidiaries located in geographically adjacent countries of a focal subsidiary. In contrast, a non-adjacent foreign subsidiary network consists of subsidiaries that do not share common country borders with the focal subsidiary. For example, the Hungarian subsidiary of one of the largest investors in the CEE region, Austria- based Raiffeisen Bank, is part of a dense network consisting of sister subsidiaries in six adjacent countries.

3.4.2.3 Subsidiary age

Subsidiary age is measured by the (log of the) number of months a subsidiary has been in operation under the strategic control of a non-CEE foreign financial institution. Following Foss and Pedersen (2002), within a subsidiary network, older subsidiaries tend to be more autonomous and thus more likely to transfer knowledge to other subsidiaries. This implies that newly established subsidiaries especially can benefit from the knowledge residing in the network. Therefore, in addition to a continuous age variable, we categorize subsidiary age using dummy variables that focus on a 5-year time frame subsequent to subsidiary establishment. A 5-year period is widely used to evaluate performance effects of new firms for two main reasons. First, empirical evidence indicates that it takes a new firm approximately five years to reach stable employment size (Mata and Portugal, 2004). Second, the 5-year period accounts for the often lumpy adjustments made during the early years after establishment (Boeker, 1997). We include three categories: Age 1 represents a subsidiary age from 1 to 12 months, Age 2 ranges from 13 to 36 months and Age 3 ranges from 37 to 60 months. The different categories are operationalized by determining subsidiary age at year-end.

3.4.2.4 Control variables

Based on the outcomes of previous empirical research, we included a number of variables in the model as controls. To control for differences in *establishment mode*, foreign

subsidiaries can either be established through an acquisition or a greenfield investment. Whereas a greenfield is defined as a subsidiary that is set up from scratch by a non-CEE MNB, either solely or with partners, an acquisition entails the whole or partial takeover of an existing host country bank. Hence the establishment mode variable is treated as dichotomous (e.g., Barkema and Vermeulen, 1998); it is represented by a dummy variable with value 1 if the establishment is an acquisition and by 0 if it is a greenfield investment.

Subsidiary assets, which proxy subsidiary size, are included, as larger foreign subsidiaries constitute a relative competitive advantage over competitors in a host country (e.g., Hennart and Park, 1994), due to a more diverse range of experience (Luo and Peng, 1999). Also, Foss and Pedersen (2002) show that subsidiary size may influence the extent to which knowledge is transferred within the MNE. Thus, subsidiary size may affect the performance of the subsidiary. In the analysis, subsidiary assets are taken in logs.

In a similar vein, we control for the degree of *foreign block ownership*. Block ownership may affect subsidiary performance through enhanced control and strategic influence a parent MNB can exert on its foreign subsidiaries. In turn, this may affect the transfer of knowledge (Grosse, 1996). Foreign block ownership is operationalized by a dummy variable that takes on the value 1 when a single foreign financial institution controls at least 50% of all shares and 0 otherwise.

Geographic distance is calculated in kilometers, measuring the distance between the hosting city of the focal subsidiary and the city in which the parent MNB is located. With this measure, we control for the potential cost advantages of investors that are located in closer proximity to the CEE region (Bevan *et al*, 2004). To reduce the high variability of the measure, we take the natural logarithm of geographic distance for our analyses.

To control for country heterogeneity in terms of market reform progress, we included an index of *market privatization* provided by the European Bank for Reconstruction and Development (EBRD) for the CEE host country in which the focal subsidiary is located. This index, measured at year-end, ranges between 1 and 5; a value of 1 represents little private ownership and a value >4 represents private ownership, effective corporate governance standards and performance typical of advanced industrial economies (see EBRD, 1994 for a detailed description).

Finally, we use dummy variables to control for a priori differences between years and host countries. Likewise, we include headquarter dummies to pick up unobserved parent MNB heterogeneity affecting the performance of foreign subsidiaries, such as general international experience or the size of the MNB. Table 3.2 shows the Pearson's

Table 3.2: Means, standard deviations, and correlations (*N*=849).

Variable	Mean	S.d.	1	2	3	4	5	6	7	8	9	10
1 Productivity loans	0.16	0.29										
2 Productivity deposits	0.12	0.26	0.67**									
3 Total network	1.56	0.71	0.00	0.01								
4 Network adjacent	0.82	0.58	0.06	0.07**	0.72**							
5 Network non-adjacent	1.16	0.73	-0.04	-0.04	0.88**	0.37**						
6 Entry mode	0.57	0.49	0.19**	0.11**	-0.37**	-0.19**	-0.38**					
7 Firm size	20.44	1.65	-0.05	-0.07**	0.03	0.01	0.05	0.33**				
8 Foreign ownership	0.91	0.29	0.02	0.05	0.05	-0.04	0.07**	0.05	0.18**			
9 Subsidiary age	3.95	0.97	-0.20**	-0.14**	0.19**	0.14**	0.20**	-0.34**	0.20**	0.16**		
10 Physical distance	6.50	1.01	-0.14**	-0.13**	-0.12**	-0.15**	-0.06	-0.07	-0.09**	-0.14**	-0.04	
11 Privatization index	3.42	0.52	-0.08**	-0.01	-0.12**	-0.10**	-0.06	0.12**	0.41**	0.21**	0.31**	-0.15**

**p<0.05 level.

correlations and the descriptive statistics of the dependent and independent variables. A noticeable aspect of Table 3.2 is that the correlations between the network variables are relatively high, indicating the possibility of collinearity problems. However, the correlated variables will not be included as covariates in the same regression. Also note that the network variables are not correlated with the size of the MNB, as almost all banks investing in CEE are "mid-cap" European banks (De Haas and Naaborg, 2006). For example, Volksbank is only the fourth largest bank in Austria in terms of total assets, but exploits a large CEE subsidiary network extending over nine different countries.

3.4.3   Analysis

Random-effects generalized least squares panel estimation, with fixed effects for year, headquarter and subsidiary host country, is used to examine the relationship between the MNB network and subsidiary performance. We use (cluster) robust standard errors to correct for possible heteroskedasticity. In order to investigate our hypothesis concerning the importance of subsidiary establishment mode on performance growth, we follow Tan (2009) and split the dataset into two sub-samples: acquisitions and greenfield establishments. An advantage of this separation is that it is less restrictive than moderated regression, as it allows variation between the independent variable coefficient estimates in the two sub-samples.

3.5   Empirical results and robustness

3.5.1   Results

The results of the baseline regressions are presented in Table 3.3. We start with an explanation of the outcomes of the benchmark models, followed by a discussion of the results corresponding to our hypotheses.

Three issues are of importance regarding the benchmark models. First, Models 1 and 2 are the benchmark models in which we differentiate between subsidiary age, included as a continuous variable in Model 1, and subsidiary age in the first five years after subsidiary establishment in Model 2. The results of Model 1 indicate that age has a negative effect on subsidiary performance. In addition, Model 2 shows that, relative to the period after year five, the first five years after subsidiary establishment have a positive effect on subsidiary performance, whereby the size of the coefficients over the different age categories decreases when the subsidiary matures. The first three years of the subsidiary yield

significant effects on performance in Model 2. Second, consistent with the existing literature, the outcomes of benchmark Models 1 and 2 show a positive and significant effect of subsidiary network size in CEE on subsidiary performance. However, as Models 1 and 2 represent reduced models, the interpretation has to be done with caution, as inconsistent results may be obtained when using a random-effects specification. To address this potential problem, Model 3 yields the outcomes of a re-estimation, including corrections for unobserved heterogeneity between years, headquarters and host countries. With this new model specification, the initial positive effect of subsidiary network size in CEE on subsidiary performance disappears. Third, the significant negative effect of geographical distance on subsidiary performance in benchmark Models 1 and 2 disappears in Model 3 because headquarter dummies are included. The same holds true for establishment mode, which is likely to vary with headquarter strategy.

Hypothesis 1 states that the relationship between MNB subsidiary network size in CEE and subsidiary performance is moderated by the age of the subsidiary in its initial development phase. This is tested in Model 4. We find a positive and significant coefficient for the first interaction term (i.e., Network x Age 1), whilst the effects of the other two interactions are negative and non-significant. This indicates that the size of the network affects performance significantly, though only in the first full year that the subsidiary is in operation. Hence the result is consistent with the first hypothesis. Based on the size of the interaction term coefficient (β=0.125, p<0.05), the positive effects on short-run performance are considerable when the size of the network increases. Figure 3.1 illustrates this, and shows the effect of network size on performance over time for different network sizes. Whereas "Network small" represents a network of a single subsidiary in CEE, "Network large" corresponds to a network of nine subsidiaries throughout the region. As clearly illustrated in Figure 3.1, productivity gains are achieved in both small and large networks. However, the timing and size of this effect differs considerably between the two. While subsidiaries in large networks realize the largest productivity gains, of approximately 20 percent, in the first full years of operation, subsidiaries in small networks face negative productivity growth in the short run. Yet, after approximately 18 months, the change in performance of subsidiaries in small networks becomes positive and reaches a peak around year three.

Models 5 and 6 show the effects of MNB subsidiary network configuration in CEE on subsidiary performance. The outcomes of Models 5b and 6b, clearly demonstrate that the significant interaction effect found in Model 4 is driven by the positive interaction effect of

Table 3.3: Network configuration and subsidiary performance: dependent $\Delta ln(LP_{Loans})$.

	Model 1	Model 2	Model 3	Model 4	Model 5a	Model 5b	Model 6a	Model 6b
Network	0.036**	0.037***	-0.009	-0.012				
	(0.016)	(0.016)	(0.039)	(0.043)				
Adj. Network					0.019	0.005		
					(0.030)	(0.038)		
Non-Adj. Network							-0.011	-0.002
							(0.033)	(0.036)
Subsidiary Age	-0.031**							
	(0.013)							
Age 1 (0-1)		0.080*	0.122***	-0.045	0.124***	0.036	0.122***	0.046
		(0.041)	(0.043)	(0.076)	(0.043)	(0.057)	(0.043)	(0.063)
Age 2 (1-3)		0.097***	0.118***	0.178***	0.120***	0.135***	0.118***	0.169***
		(0.029)	(0.030)	(0.063)	(0.030)	(0.048)	(0.030)	(0.048)
Age 3 (3-5)		0.000	0.035	0.041	0.036	0.036	0.036	0.062
		(0.026)	(0.025)	(0.061)	(0.026)	(0.049)	(0.025)	(0.043)
Establishment mode	0.128***	0.127***	0.053	0.047	0.050	0.048	0.051	0.052
	(0.029)	(0.027)	(0.033)	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)
Assets	-0.019**	-0.018**	-0.041***	-0.038***	-0.042***	-0.041***	-0.041***	-0.039***
	(0.008)	(0.008)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(0.011)
Block ownership	0.037	0.036	-0.030	-0.035	-0.033	-0.033	-0.031	-0.033
	(0.035)	(0.033)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Geographical distance	-0.039***	-0.037***	0.006	0.007	0.007	0.007	0.005	0.009
	(0.010)	(0.010)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Privatization index	-0.025	-0.022	-0.065	-0.051	-0.069	-0.052	-0.066	-0.057
	(0.025)	(0.024)	(0.072)	(0.072)	(0.071)	(0.071)	(0.071)	(0.071)

Table 3.3 Cont.

	Model 1	Model 2	Model 3	Model 4	Model 5a	Model 5b	Model 6a	Model 6b
Network x Age 1				0.125**				
				(0.053)				
Network x Age 2				-0.043				
				(0.036)				
Network x Age 3				-0.004				
				(0.036)				
Adj. Network x Age 1						0.135**		
						(0.063)		
Adj. Network x Age 2						-0.022		
						(0.047)		
Adj. Network x Age 3						-0.001		
						(0.047)		
Non-Adj. Network x Age 1								0.084
								(0.054)
Non-Adj. Network x Age 2								-0.051
								(0.033)
Non-Adj. Network x Age 3								-0.024
								(0.032)
(Constant)	0.857***	0.663***	1.101***	1.004***	1.123***	1.051***	1.114***	1.026***
	(0.164)	(0.168)	(0.370)	(0.368)	(0.365)	(0.363)	(0.373)	(0.372)
12 Year dummies	NO	NO	YES***	YES***	YES***	YES***	YES***	YES***
40 HQ dummies	NO	NO	YES***	YES***	YES***	YES***	YES***	YES***
18 Country dummies	NO	NO	YES	YES	YES	YES	YES	YES
R-squared	0.09	0.10	0.31	0.32	0.31	0.32	0.31	0.32
No. of observations	849	849	849	849	849	849	849	849

*p<0.1; **p<0.05; ***p<0.01. Robust standard errors in parentheses.

adjacent networks in the first full year of operation of a subsidiary (β=0.135, p<0.05), as demonstrated in Model 5b. Model 6b also reveals a positive effect of non-adjacent networks, though this effect is statistically non-significant. Therefore, contrary to subsidiaries in non-adjacent networks, subsidiaries in adjacent networks significantly benefit from network size during the initial stage of development in terms of productivity growth. This outcome is in line with Hypothesis 2.
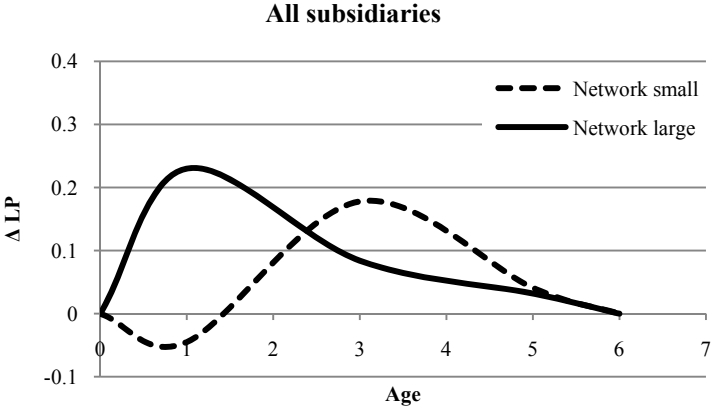
Figure 3.1: Interaction effects over time for total subsidiary networks in CEE.

To account for possible endogeneity of entry mode, Table 3.4 presents the outcomes of the sub-sample regressions, where we differentiate between acquisition and greenfield subsidiaries. The results from the two sub-samples show that there is variation between the *independent* variable coefficient estimates in the two sub-samples, emphasizing the potential advantages of sub-sample regression over moderated regression. Hypothesis 3 asserts that there are no significant differences in the determinants of subsidiary performance between greenfields and acquisitions. The interaction effects in Model 7b show that for acquisitions network size has a positive and significant effect on performance in the first full year of operation of an acquired subsidiary (β=0.134, p<0.05). Model 10b shows that this effect is not significant for greenfields. However, a likelihood ratio (LR) test for joint significance using the restricted Model 4 in Table 3.3 and the unrestricted Models 7b and 10b in Table 3.4, indicates that no significant differences exist in the determinants of subsidiary performance between acquisitions and greenfields (LR $\chi^2_{(77)}$=65.69, p>0.05).

Furthermore, the positive network effect on performance in the first year after acquisition is driven by adjacent networks, as shown by the interaction term in Model 8 (β=0.185, p<0.05), while for greenfields the interaction coefficient is not significant in Model 11. Again, the outcomes of a likelihood ratio test show that there are no significant differences between greenfields and acquisitions (LR $\chi^2_{(77)}$=68.11, p>0.05). Finally, for both acquisitions and greenfields, the independent coefficient estimates of the interaction terms yield insignificant outcomes in Models 9 and 12. A likelihood ratio test shows that also for these models no significant differences exist between acquisitions and greenfields (LR $\chi^2_{(77)}$=70.80, p>0.05). In conclusion, these results are consistent with Hypothesis 3.

With regard to the control variables, three issues stand out. First, total assets of the subsidiary are negatively related to productivity growth and significant in almost all models. This shows that, in banking, larger foreign subsidiaries are generally associated with lower productivity changes relative to smaller subsidiaries. Second, block ownership, geographical distance and the privatization index yield insignificant results in (most of) our models. Finally, in almost all regressions both year and headquarter dummies are significant, indicating significant heterogeneity across both years and headquarters.

3.5.2   Robustness

As deposits are often used as outputs in the intermediation approach (see Bonin *et al.*, 2005; Collwel and Davis, 1992), we use the change in the log of the total deposits of the subsidiary per employee as a robustness check. The results of the robustness regressions in Tables 3.5 and 3.6 show that the same intuition found in the baseline regression also holds for deposits, although less explicitly. Contrary to the baseline model, we find no significant effect in Table 3.5, Model 13b, of network size on performance in the first full year the subsidiary is in operation. However, this effect is significant in Model 14b for subsidiary networks extending over adjacent countries, similar as in the baseline model in Table 3.3. Moreover, in the acquisition sub-sample in Table 3.6, the results are comparable to the baseline models: acquisitions benefit from the presence of a large adjacent network during the first year of their operations. Like in the baseline models, none of the interaction coefficients in the robustness regressions with the greenfields sub-sample are significant. Although relatively large differences exist between acquisitions and greenfields in the total network effects (Models 16b and 19b) and the network effects in adjacent countries

Table 3.4: Acquisitions versus greenfields: dependent $\Delta ln(LP_{Loans})$.

	Acquisitions				Greenfields			
	Model 7a	Model 7b	Model 8	Model 9	Model 10a	Model 10b	Model 11	Model 12
Network	0.028	0.008			-0.085	-0.092		
	(0.052)	(0.055)			(0.075)	(0.091)		
Adj. Network			-0.041				0.031	
			(0.057)				(0.072)	
Non-Adj. Network				0.059				-0.075
				(0.053)				(0.071)
Age 1 (0-1)	0.073	-0.105	-0.050	0.001	0.273**	0.035	0.238	0.099
	(0.053)	(0.096)	(0.084)	(0.076)	(0.124)	(0.244)	(0.153)	(0.429)
Age 2 (1-3)	0.098**	0.127*	0.107	0.124**	0.126*	0.192	0.072	0.286*
	(0.043)	(0.076)	(0.069)	(0.060)	(0.073)	(0.217)	(0.120)	(0.156)
Age 3 (3-5)	0.055*	0.011	0.041	0.039	-0.014	-0.101	-0.088	0.042
	(0.033)	(0.069)	(0.063)	(0.050)	(0.050)	(0.216)	(0.104)	(0.115)
Assets	-0.030**	-0.027*	-0.027*	-0.029*	-0.057*	-0.051	-0.070**	-0.072*
	(0.015)	(0.015)	(0.016)	(0.015)	(0.035)	(0.036)	(0.035)	(0.039)
Block ownership	0.033	0.035	0.043	0.040	-0.167	-0.160	-0.158	-0.136
	(0.046)	(0.047)	(0.046)	(0.047)	(0.107)	(0.108)	(0.106)	(0.108)
Geographical distance	-0.025	-0.031	-0.032	-0.030	0.028	0.028	0.020	0.015
	(0.033)	(0.034)	(0.034)	(0.033)	(0.046)	(0.045)	(0.045)	(0.064)
Privatization index	-0.032	-0.029	-0.024	-0.039	-0.062	-0.044	-0.075	-0.023
	(0.108)	(0.109)	(0.107)	(0.107)	(0.106)	(0.111)	(0.111)	(0.107)

Table 3.4 Cont.

	Model 7a	Model 7b	Model 8	Model 9	Model 10a	Model 10b	Model 11	Model 12
Network x Age 1	0.134**				0.151			
	(0.059)				(0.161)			
Network x Age 2	-0.027				-0.032			
	(0.042)				(0.118)			
Network x Age 3	0.029				0.050			
	(0.040)				(0.116)			
Adj. Network x Age 1		0.185**				0.031		
		(0.090)				(0.147)		
Adj. Network x Age 2		-0.031				0.049		
		(0.063)				(0.107)		
Adj. Network x Age 3		0.010				0.063		
		(0.057)				(0.091)		
Non-Adj. Network x Age 1				0.079				0.165
				(0.054)				(0.311)
Non-Adj. Network x Age 2				-0.031				-0.111
				(0.039)				(0.105)
Non-Adj. Network x Age 3				0.013				-0.027
				(0.037)				(0.080)
(Constant)	1.350**	1.409**	1.343**	1.356**	1.251	1.113	1.635**	1.465
	(0.586)	(0.569)	(0.571)	(0.575)	(0.788)	(0.809)	(0.806)	(0.953)
12 Year dummies	YES***	YES***	YES***	YES***	YES***	YES***	YES***	YES***
39|19 HQ dummies	YES***	YES***	YES***	YES***	YES*	YES	YES**	YES
18 Country dummies	YES	YES**	YES	YES*	YES	YES	YES	YES
R-squared	0.34	0.36	0.35	0.35	0.32	0.32	0.32	0.33
No. of observations	487	487	487	487	362	362	362	362

*p<0.1; **p<0.05; ***p<0.01. Robust standard errors in parentheses.

Table 3.5: Network configuration and subsidiary performance: dependent $\Delta ln(LP_{Deposits})$.

	Model 13a	Model 13b	Model 14a	Model 14b	Model 15a	Model 15b
Network	-0.008					
	(0.040)					
Adj. Network		-0.007	0.032	0.017		
		(0.041)	(0.028)	(0.033)		
Non-Adj. Network					-0.011	0.002
					(0.032)	(0.035)
Age 1 (0-1)	0.132***	0.052	0.136***	0.066	0.133***	0.123**
	(0.041)	(0.074)	(0.041)	(0.061)	(0.041)	(0.060)
Age 2 (1-3)	0.081***	0.109*	0.084***	0.066	0.081***	0.126***
	(0.028)	(0.061)	(0.028)	(0.045)	(0.028)	(0.046)
Age 3 (3-5)	0.004	0.038	0.005	0.033	0.004	0.040
	(0.025)	(0.057)	(0.025)	(0.048)	(0.025)	(0.043)
Establishment mode	0.021	0.019	0.018	0.014	0.020	0.025
	(0.029)	(0.030)	(0.029)	(0.029)	(0.029)	(0.030)
Assets	-0.065***	-0.063***	-0.066***	-0.065***	-0.065***	-0.065***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Block ownership	0.030	0.027	0.026	0.024	0.030	0.030
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
Geographical distance	0.013	0.014	0.014	0.013	0.012	0.015
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Privatization index	0.203***	0.210***	0.198***	0.214***	0.203***	0.206***
	(0.059)	(0.060)	(0.059)	(0.062)	(0.059)	(0.059)

Table 3.5 Cont.	Model 13a	Model 13b	Model 14a	Model 14b	Model 15a	Model 15b
Network x Age 1	0.061					
	(0.048)					
Network x Age 2	-0.020					
	(0.035)					
Network x Age 3	-0.023					
	(0.032)					
Adj. Network x Age 1			0.106*			
			(0.064)			
Adj. Network x Age 2			0.024			
			(0.042)			
Adj. Network x Age 3			-0.032			
			(0.044)			
Non-Adj. Network x Age 1					0.015	
					(0.048)	
Non-Adj. Network x Age 2					-0.042	
					(0.032)	
Non-Adj. Network x Age 3					-0.031	
					(0.030)	
(Constant)	0.394	0.326	0.358	0.408	0.361	
	(0.378)	(0.383)	(0.383)	(0.381)	(0.385)	
12 Year dummies	YES***	YES***	YES***	YES***	YES***	
40 HQ dummies	YES***	YES***	YES***	YES***	YES***	
18 Country dummies	YES***	YES***	YES***	YES***	YES***	
R-squared	0.30	0.30	0.30	0.30	0.30	
No. of observations	849	849	849	849	849	

*p<0.1; **p<0.05; ***p<0.01. Robust standard errors in parentheses.

Table 3.6: Acquisition versus greenfields: dependent $\Delta ln(LP_{Deposits})$.

	Acquisitions				Greenfields			
	Model 16a	Model 16b	Model 17	Model 18	Model 19a	Model 19b	Model 20	Model 21
Network	0.006	-0.018			0.055	0.082		
	(0.047)	(0.048)			(0.085)	(0.093)		
Adj. Network			-0.043				0.090	
			(0.050)				(0.058)	
Non-Adj. Network				0.004				0.048
				(0.047)				(0.078)
Age 1 (0-1)	0.108**	-0.048	0.001	0.047	0.162	0.326	0.264*	0.176
	(0.050)	(0.087)	(0.077)	(0.069)	(0.101)	(0.239)	(0.144)	(0.269)
Age 2 (1-3)	0.082**	0.043	0.047	0.076	0.014	0.055	-0.014	0.085
	(0.039)	(0.066)	(0.059)	(0.054)	(0.059)	(0.205)	(0.101)	(0.141)
Age 3 (3-5)	0.031	-0.002	0.035	0.019	-0.085*	0.030	-0.067	0.009
	(0.032)	(0.064)	(0.061)	(0.048)	(0.046)	(0.201)	(0.096)	(0.141)
Assets	-0.050***	-0.048***	-0.046***	-0.048***	-0.161***	-0.168***	-0.158***	-0.158***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.031)	(0.033)	(0.030)	(0.031)
Block ownership	0.082**	0.084**	0.088**	0.083**	-0.039	-0.047	-0.032	-0.049
	(0.041)	(0.041)	(0.041)	(0.042)	(0.100)	(0.102)	(0.100)	(0.100)
Geographical distance	-0.022	-0.029	-0.030	-0.026	0.038	0.039	0.029	0.047
	(0.037)	(0.037)	(0.038)	(0.037)	(0.053)	(0.056)	(0.046)	(0.058)
Privatization index	0.121	0.123	0.130	0.119	0.219***	0.210**	0.185**	0.227***
	(0.095)	(0.093)	(0.093)	(0.095)	(0.082)	(0.082)	(0.081)	(0.085)

Table 3.6 Cont.

	Model 16a	Model 16b	Model 17	Model 18	Model 19a	Model 19b	Model 20	Model 21
Network x Age 1		0.118**						
		(0.051)						
Network x Age 2		0.027						
		(0.036)						
Network x Age 3		0.022						
		(0.037)						
Adj. Network x Age 1			0.163**			-0.108	-0.109	
			(0.081)			(0.141)	(0.122)	
Adj. Network x Age 2			0.038			-0.030	0.034	
			(0.056)			(0.107)	(0.082)	
Adj. Network x Age 3			-0.012			-0.065	-0.016	
			(0.058)			(0.101)	(0.080)	
Non-Adj. Network x Age 1				0.066				-0.014
				(0.046)				(0.212)
Non-Adj. Network x Age 2				0.005				-0.057
				(0.036)				(0.092)
Non-Adj. Network x Age 3				0.012				-0.066
				(0.036)				(0.087)
(Constant)	0.145	0.183	0.096	0.155	2.022**	2.109**	2.191***	1.844**
	(0.579)	(0.580)	(0.574)	(0.583)	(0.795)	(0.834)	(0.791)	(0.824)
12 Year dummies	YES***	YES***	YES***	YES***	YES***	YES***	YES***	YES***
39 | 19 HQ dummies	YES***	YES***	YES***	YES***	YES***	YES**	YES***	YES**
18 Country dummies	YES***	YES***	YES***	YES***	YES**	YES**	YES***	YES*
R-squared	0.33	0.34	0.34	0.34	0.39	0.39	0.39	0.39
No. of observations	487	487	487	487	362	362	362	362

*p<0.1; **p<0.05; ***p<0.01. Robust standard errors in parentheses.

(Models 17 and 20), likelihood ratio tests show that no significant differences exist in the determinants of subsidiary performance between acquisitions and greenfields (LR $\chi^2_{(77)}$=91.403, p>0.05 and LR $\chi^2_{(77)}$=91.767, p>0.05 respectively). The same holds true for non-adjacent networks, as reported in Models 18 and 21 in Table 3.6 (LR $\chi^2_{(77)}$=89.407, p>0.05).

Besides the robustness check related to the financial production process (i.e., loans versus deposits), we perform two other robustness checks: one for methodological robustness, and the other for robustness with respect to post-acquisition reorganization. For methodological robustness, we checked whether the inclusion of an autoregressive component in the error term affects our results. As reported in Tables 3.7 and 3.8 of the Appendix, the results yield comparable outcomes as those reported in Tables 3.3 and 3.4. Furthermore, to rule out that we did not capture reorganization effects in terms of laying off workers, we included a reorganization dummy for those subsidiaries that decreased the number employees by more than 10 percent during the first year after acquisition. The results of these regressions, reported in Tables 3.9 and 3.10 of the Appendix, indicate that reorganization activities do not affect our results.

3.6   Discussion

All things equal, our empirical evidence suggests that the size of the MNB foreign subsidiary network in CEE has a positive, short-run effect on the performance of newly established subsidiaries extending to adjacent countries in the region. Several issues stand out.

First, accumulated operational experience, that is, a large subsidiary network of the MNB throughout CEE, does not affect subsidiary performance in the long run. These results differ from prior studies on manufacturing MNEs investing in CEE that show that investment experience has a positive effect on subsidiary performance (Barkema and Drogendijk, 2007; Uhlenbruck, 2004). Still, our results are not surprising, as it seems unlikely that experience effects are persistent over time, given that mature subsidiaries act relatively autonomous and depend less on sister subsidiaries in the network (Foss and Pedersen, 2002). However, when we explicitly restrict our attention to the effect of prior operating experience in CEE on the performance of subsidiaries in their initial development phase, we find a significant and sizeable impact of experience on subsidiary performance in the first full year of operation of a subsidiary. This finding suggests that

increasing investment experience of the MNB in CEE will eliminate the barriers to expand throughout the region, as faced by MNBs with no investment experience. Consistent with the MNE-level findings of Contractor *et al.* (2003), the time it takes to overcome the liability of foreignness decreases with increasing operational experience of the MNB in CEE countries.

Second, when controlling for the geographical configuration of the MNB subsidiary network in CEE, we find that the positive effect of CEE operational experience on the performance of subsidiaries in their initial development phase only holds for subsidiary networks that extend over adjacent countries in CEE. This outcome indicates that in the transition economies of CEE, operational experience and the applicability thereof in other CEE host-countries is geographically limited in banking. Therefore, in line with the arguments of the internationalization process model (Johanson and Vahlne, 1977), market familiarity and geographical proximity are essential when investing in CEE (c.f. Bevan *et al.*, 2004). As such, new expansions of the MNB in CEE can be done most effectively in countries adjacent to a country in which the MNB already has a presence. In this way, the subsidiary network provides a competitive advantage for the MNB, as it facilitates the effective exchange of firm-specific experiential knowledge between different subsidiaries in the network (Birkinshaw and Hood, 1998; Ghoshal and Bartlett, 1990; Rugman and Verbeke, 2001).

Finally, we provide some evidence that acquisitions benefit from an increasing experiential knowledge base of the MNB in CEE, while newly established greenfields do not. In line with the findings of Slangen and Hennart (2008), our results indicate that prior investment experience can reduce the difficulties of integrating a newly acquired subsidiary into the MNB. This positive operational experience effect on the short-run performance of an acquired subsidiary is again driven by the geographical configuration of the subsidiary network of the MNB and thus is location bound. In addition, newly established greenfields do not significantly benefit from the prior operational experience of the MNB in CEE in their initial development phase. This result suggests that greenfield subsidiaries of MNBs in CEE are relatively autonomous (c.f. Tan, 2009). However, our results show that the determinants of subsidiary performance do not significantly differ between newly acquired subsidiaries or greenfields.

In general, our findings have important practical value for managers involved in international banking strategy in CEE. While aggressive expansion throughout CEE by means of acquisitions has become the norm (Lanine and Vander Vennet, 2007), the

effectiveness of such a strategy can be enhanced by explicitly taking the geographical configuration of the subsidiary network into account. Our results suggest that to increase the competitive advantage of the MNB in CEE, the subsidiary network has to be dense. MNB management should therefore aim to expand into countries adjacent to those in which the MNB already has a presence. Furthermore, for MNBs with a substantial presence in the region, subsequent expansions can be done effectively through acquisitions, as these new subsidiaries benefit from the operational experience of the MNB in CEE.

3.7   Conclusion

This paper presents an original contribution to the narrowly explored topic of multinational banking in transition economies. Our longitudinal study shows that with increasing investment experience, MNBs improve their ability to integrate newly acquired subsidiaries in the network and boost the performance of these new subsidiaries during their initial development phase. However, this effect is most prominent when subsidiaries are located in a country adjacent to a country in which the MNB already has a presence. This result is in line with earlier studies suggesting that new investments are altered by prior investment experience and organizational learning in services is most effectively done in nearby countries.

From a more general perspective, our findings indicate that the foreign subsidiary network provides a source of competitive advantage for an MNB that should be taken into consideration in the internationalization strategy of the bank. This may be particularly valuable for those MNBs that pursue an aggressive expansion strategy within a specific region or cultural block.

This study is not without its limitations. An important aspect of operational experience is that it takes time to accumulate. However, our estimations do not take into consideration the time between subsequent expansions of the MNB. In this way, the degree of experience between seemingly similar networks may differ. For instance, a newly acquired subsidiary is likely to benefit more from a network consisting of subsidiaries that are more mature, than a network of similar size consisting of relatively new subsidiaries. Furthermore, our common border measure of geographical network configuration is relatively rough and may be refined by using other measures reflecting the psychic distance between the

different subsidiaries in the MNB network. Both limitations provide interesting suggestions for future work.

Appendix: Results additional robustness checks

Table 3.7: AR1 model: Network configuration and subsidiary performance: dependent $\Delta ln(LP_{Loans})$.

	Model 27a	Model 27b	Model 28a	Model 28b	Model 29a	Model 29b
Network	-0.008	-0.011				
	(0.037)	(0.041)				
Adj. Network			0.019	0.004		
			(0.032)	(0.039)		
Non-Adj. Network					-0.008	0.001
					(0.031)	(0.034)
Age 1 (0-1)	0.120***	-0.039	0.122***	0.037	0.121***	0.050
	(0.042)	(0.081)	(0.042)	(0.060)	(0.042)	(0.064)
Age 2 (1-3)	0.115***	0.181***	0.117***	0.134***	0.116***	0.169***
	(0.032)	(0.065)	(0.032)	(0.050)	(0.032)	(0.050)
Age 3 (3-5)	0.035	0.033	0.036	0.032	0.035	0.056
	(0.028)	(0.064)	(0.028)	(0.049)	(0.028)	(0.049)
Establishment mode	0.056	0.049	0.054	0.051	0.055	0.055
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)
Assets	-0.045***	-0.042***	-0.046***	-0.044***	-0.045***	-0.043***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Block ownership	-0.034	-0.037	-0.037	-0.035	-0.034	-0.036
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Geographical distance	0.004	0.005	0.004	0.004	0.003	0.006
	(0.030)	(0.029)	(0.030)	(0.029)	(0.030)	(0.029)
Privatization index	-0.052	-0.039	-0.055	-0.039	-0.053	-0.044
	(0.059)	(0.058)	(0.058)	(0.059)	(0.058)	(0.058)

Table 3.7 Cont.

	Model 27a	Model 27b	Model 28a	Model 28b	Model 29a	Model 29b
Network x Age 1		0.120**				
		(0.049)				
Network x Age 2		-0.047				
		(0.038)				
Network x Age 3		0.000				
		(0.037)				
Adj. Network x Age 1				0.131**		
				(0.061)		
Adj. Network x Age 2				-0.024		
				(0.049)		
Adj. Network x Age 3				0.004		
				(0.046)		
Non-Adj. Network x Age 1						0.077
						(0.048)
Non-Adj. Network x Age 2						-0.053
						(0.036)
Non-Adj. Network x Age 3						-0.018
						(0.036)
(Constant)	1.146**	1.044**	1.169**	1.088**	1.155**	1.067**
	(0.465)	(0.462)	(0.467)	(0.464)	(0.467)	(0.465)
11 Year dummies	YES***	YES***	YES***	YES***	YES***	YES***
38 HQ dummies	YES**	YES**	YES**	YES**	YES**	YES**
17 Country dummies	YES	YES	YES	YES	YES	YES
R-squared	0.31	0.32	0.31	0.32	0.31	0.32
No. of observations	849	849	849	849	849	849

*p<0.1; **p<0.05; ***p<0.01. Robust standard errors in parentheses.

Table 3.8: AR1 model: Acquisition versus greenfields: dependent $\Delta ln(LP_{Loans})$.

	Acquisitions				Greenfields			
	Model 30a	Model 30b	Model 31	Model 32	Model 33a	Model 33b	Model 34	Model 35
Network	0.032	0.013			-0.085	-0.068		
	(0.047)	(0.050)			(0.076)	(0.085)		
Adj. Network			-0.034				0.052	
			(0.056)				(0.063)	
Non-Adj. Network				0.060				-0.086
				(0.046)				(0.061)
Age 1 (0-1)	0.067	-0.097	-0.042	0.003	0.272**	0.096	0.277	0.074
	(0.055)	(0.095)	(0.079)	(0.075)	(0.126)	(0.368)	(0.192)	(0.327)
Age 2 (1-3)	0.093**	0.129	0.109	0.121**	0.123*	0.271*	0.117	0.291**
	(0.044)	(0.078)	(0.066)	(0.060)	(0.074)	(0.149)	(0.115)	(0.117)
Age 3 (3-5)	0.051	0.006	0.039	0.032	-0.014	-0.005	-0.022	0.003
	(0.036)	(0.072)	(0.062)	(0.056)	(0.053)	(0.053)	(0.053)	(0.053)
Assets	-0.035**	-0.031**	-0.030*	-0.033**	-0.060*	-0.050	-0.074**	-0.051
	(0.016)	(0.016)	(0.016)	(0.016)	(0.034)	(0.034)	(0.034)	(0.033)
Block ownership	0.029	0.033	0.040	0.038	-0.168	-0.166	-0.162	-0.158
	(0.055)	(0.054)	(0.054)	(0.054)	(0.110)	(0.110)	(0.111)	(0.110)
Geographical distance	-0.029	-0.035	-0.035	-0.034	0.028	0.026	0.020	0.009
	(0.044)	(0.044)	(0.044)	(0.045)	(0.049)	(0.049)	(0.049)	(0.049)
Privatization index	-0.009	-0.007	-0.003	-0.016	-0.057	-0.022	-0.065	-0.018
	(0.088)	(0.087)	(0.087)	(0.087)	(0.091)	(0.096)	(0.097)	(0.093)

Table 3.8 Cont.

	Model 30a	Model 30b	Model 31	Model 32	Model 33a	Model 33b	Model 34	Model 35
Network x Age 1		0.124**				0.125		
		(0.058)				(0.209)		
Network x Age 2		-0.032				-0.049		
		(0.049)				(0.080)		
Network x Age 3		0.030				-0.091		
		(0.045)				(0.076)		
Adj. Network x Age 1			0.166**				-0.009	
			(0.082)				(0.153)	
Adj. Network x Age 2			-0.038				0.015	
			(0.066)				(0.100)	
Adj. Network x Age 3			0.010				-0.012	
			(0.063)				(0.094)	
Non-Adj. Network x Age 1				0.070				0.200
				(0.055)				(0.243)
Non-Adj. Network x Age 2				-0.032				-0.058
				(0.047)				(0.081)
Non-Adj. Network x Age 3				0.017				-0.137*
				(0.045)				(0.073)
(Constant)	1.370**	1.429**	1.364**	1.380**	1.291	1.014	1.650*	1.171
	(0.614)	(0.608)	(0.605)	(0.614)	(0.876)	(0.894)	(0.901)	(0.859)
9 Year dummies	YES***	YES***	YES***	YES***	YES***	YES***	YES***	YES***
35 | 19 HQ dummies	YES	YES	YES	YES	YES	YES	YES	YES*
16 Country dummies	YES	YES	YES	YES	YES	YES	YES	YES
R-squared	0.34	0.35	0.35	0.35	0.32	0.32	0.32	0.33
No. of observations	487	487	487	487	362	362	362	362

*p<0.1; **p<0.05; ***p<0.01. Robust standard errors in parentheses.

Table 3.9: Network configuration, reorganization and subsidiary performance: dependent $ln(LP_{Loans})$.

	Model 22a	Model 22b	Model 23a	Model 23b	Model 24a	Model 24b
Network	-0.010	-0.013				
	(0.039)	(0.043)				
Adj. Network			0.019	0.004		
			(0.030)	(0.039)		
Non-Adj. Network					-0.011	-0.002
					(0.033)	(0.036)
Reorganization	0.013	0.012	0.010	0.031	0.013	0.011
	(0.064)	(0.055)	(0.064)	(0.059)	(0.064)	(0.056)
Age 1 (0-1)	0.120***	-0.047	0.123***	0.031	0.121***	0.044
	(0.044)	(0.077)	(0.044)	(0.059)	(0.043)	(0.064)
Age 2 (1-3)	0.117***	0.177***	0.119***	0.133***	0.118***	0.169***
	(0.030)	(0.064)	(0.031)	(0.048)	(0.030)	(0.048)
Age 3 (3-5)	0.035	0.041	0.036	0.036	0.036	0.062
	(0.025)	(0.061)	(0.026)	(0.049)	(0.025)	(0.043)
Establishment mode	0.053	0.047	0.051	0.048	0.051	0.052
	(0.033)	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)
Assets	-0.042***	-0.038***	-0.042***	-0.041***	-0.042***	-0.039***
	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)	(0.011)
Block ownership	-0.030	-0.035	-0.033	-0.033	-0.031	-0.033
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Geographical distance	0.006	0.007	0.007	0.006	0.005	0.008
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Privatization index	-0.066	-0.052	-0.069	-0.053	-0.066	-0.057
	(0.072)	(0.072)	(0.071)	(0.071)	(0.071)	(0.071)

Table 3.9 Cont.	Model 22a	Model 22b	Model 23a	Model 23b	Model 24a	Model 24b
Network x Age 1		0.126**				
		(0.053)				
Network x Age 2		-0.043				
		(0.037)				
Network x Age 3		-0.004				
		(0.036)				
Adj. Network x Age 1				0.137**		
				(0.064)		
Adj. Network x Age 2				-0.021		
				(0.048)		
Adj. Network x Age 3				-0.001		
				(0.047)		
Non-Adj. Network x Age 1						0.084
						(0.054)
Non-Adj. Network x Age 2						-0.050
						(0.033)
Non-Adj. Network x Age 3						-0.024
						(0.032)
(Constant)	1.107***	1.010***	1.127***	1.063***	1.121***	1.031***
	(0.374)	(0.372)	(0.369)	(0.366)	(0.377)	(0.376)
12 Year dummies	YES***	YES***	YES***	YES***	YES***	YES***
40 HQ dummies	YES***	YES***	YES***	YES***	YES***	YES***
18 Country dummies	YES***	YES***	YES***	YES***	YES***	YES***
R-squared	0.31	0.32	0.31	0.32	0.31	0.32
No. of observations	849	849	849	849	849	849

*p<0.1; **p<0.05; ***p<0.01. Robust standard errors in parentheses.

Table 3.10: Acquisitions and reorganization: dependent $\Delta ln(LP_{Loans})$.

	Acquisitions			
	Model 25a	Model 25b	Model 26	Model 27
Network	0.025	0.006		
	(0.053)	(0.056)		
Adj. Network			-0.045	
			(0.058)	
Non-Adj. Network				0.058
				(0.053)
Reorganization	0.039	0.037	0.061	0.034
	(0.073)	(0.062)	(0.064)	(0.066)
Age 1 (0-1)	0.068	-0.111	-0.061	-0.004
	(0.054)	(0.098)	(0.087)	(0.078)
Age 2 (1-3)	0.095**	0.123	0.101	0.122
	(0.043)	(0.077)	(0.070)	(0.060)
Age 3 (3-5)	0.055*	0.010	0.038	0.038
	(0.033)	(0.069)	(0.064)	(0.050)
Assets	-0.031**	-0.028*	-0.027*	-0.029*
	(0.015)	(0.015)	(0.016)	(0.015)
Block ownership	0.034	0.036	0.044	0.041**
	(0.046)	(0.047)	(0.047)	(0.047)
Geographical distance	-0.028	-0.036	-0.037	-0.032
	(0.034)	(0.034)	(0.035)	(0.034)
Privatization index	-0.033	-0.030	-0.026	-0.040
	(0.108)	(0.109)	(0.107)	(0.107)

Table 3.10 Cont.

	Model 25a	Model 25b	Model 26	Model 27
Network x Age 1	0.135**			
	(0.059)			
Network x Age 2	-0.026			
	(0.042)			
Network x Age 3	0.029			
	(0.040)			
Adj. Network x Age 1		0.190**		
		(0.091)		
Adj. Network x Age 2		-0.028		
		(0.064)		
Adj. Network x Age 3		0.012		
		(0.057)		
Non-Adj. Network x Age 1				0.080
				(0.054)
Non-Adj. Network x Age 2				-0.030
				(0.040)
Non-Adj. Network x Age 3				0.014
				(0.037)
(Constant)	1.387**	1.445**	1.398**	1.389**
	(0.596)	(0.577)	(0.578)	(0.583)
12 Year dummies	YES***	YES***	YES***	YES***
39 | 19 HQ dummies	YES***	YES***	YES***	YES***
18 Country dummies	YES***	YES***	YES***	YES***
R-squared	0.34	0.36	0.35	0.35
No. of observations	487	487	487	487

*p<0.1 ; **p<0.05 ; ***p<0.01. Robust standard errors in parentheses.

Chapter 4:

The Financial Centres of Shanghai and Hong Kong: Competition or Complementarity?

Abstract

The contemporary rise of China in the new geo-economy is increasingly pressurising the spatial distribution of financial activity in mainland China and Hong Kong. With the reemergence of Shanghai, many people foresee the future demise of Hong Kong as the most important financial centre for the Chinese mainland. This paper shows that this conviction seems rather premature. From an examination of the regional distribution pattern of the mainland-China-based companies listed on the stock exchanges of Shanghai and Hong Kong it appears that both financial centres have relatively distinct hinterlands. Furthermore, it is shown that the exchanges of Shanghai and Hong Kong differ strongly in terms of sectoral specialisation. These results indicate that both centres reveal a considerable amount of complementarity.

4.1   Introduction[8]

Within the contemporary global financial landscape, the success of financial centres is driven by their flexibility. Recent financial deregulation processes have initiated the integration of global financial markets. These processes, together with significant progress in the development of information and communication technology (ICT), have caused a substantial improvement of capital mobility and an increasing volume of international capital flows (see Obstfeld and Taylor, 2004). Despite the apparent decentralising character of ICT improvements, the notion that "geography matters" is widely acknowledged (though not uncontested, see O'Brien, 1992). In fact, the existence of a worldwide system of financial centres which function as basing points for global capital clearly demonstrates the importance of location in this debate.

Though location remains essential, it is subject to an increasingly dynamic environment. As the characteristics of global finance are rapidly changing, so are those of financial centres. In order to maintain or improve their relative position within the global market, financial centres have to be flexible and able to adjust to changing market conditions. Therefore, the competitive power of financial centres depends upon their adjustability in providing the conditions of existence needed for the profitable production of financial services (Lee and Schmidt-Marwede, 1993). Yet, the provision of these specific conditions often creates tensions and specific forms of rivalry between financial centres in a variety of ways. For example, Faulconbridge (2004) discusses the rise of Frankfurt after the launch of the Euro and its potential threat to London's preeminent position. Furthermore, Engelen (2007) evaluates the possible decline in importance of Amsterdam due to the current shift of investment activities to larger financial centres like London and New York. Therefore, dealing with this continuous competitive flux results in each financial centre trying to create advantages over its rivals in different geographical areas or market segments.

The contemporary rise of China in the new geo-economy provides an interesting new case on this topic. China's struggle to become better internationally integrated is reflected in significant processes of spatial restructuring of financial centres in mainland China and Hong Kong (Zhao, 2003). For Hong Kong, with its already long tradition as an international financial centre (see Jao, 1997), this results in being confronted with increasing competitive pressures. On the one hand, there is the traditional rivalry with

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[8] This study is joint work with Bert van der Knaap and is an updated version of: Karreman, B. and Van der Knaap, G.A. (2009) The financial centres of Shanghai and Hong Kong: competition or complementarity? *Environment and Planning A*, 41(3): 563-580.

Singapore and the reemergence of Shanghai (Yeung, 2001), and, on the other hand, one can observe the rise of relatively new localities of importance like Beijing and Shenzhen. For the cities in mainland China and Hong Kong these recent changes in the distribution of financial activity can be seen as the spatial outcome of two mutually related forces: first, the changing Chinese political economy in terms of political strategy, state interference and their effects on economic and financial restructuring; and, second, shifts in global capital accumulation and the spatial competitiveness of Chinese financial centres. Despite the importance of these issues and the increasing popularity of "China" on the international research agenda, literature which integrates these topics is only marginally available.

While the literature on financial centres has a strong tendency to emphasise the role of banking activities, it is argued that financial centre competition is expected to be most intense in capital and securities markets (see Poon, 2003). The aim of this paper is therefore to examine the multilayered process of financial centre competition from a capital market (i.e., stock market) perspective and, building on that, to show how financial centres create competitive advantage in line with current market conditions. The focus will be on the much discussed case in the media and the popular press on the alleged intercity competition between Shanghai and Hong Kong (for example, Wild, 1997; Ng, 2000 and Wong 2007). The structure of the paper is as follows. In section 4.2, an analytic framework is presented to organise the theoretical reflections on financial centre competition. This may shed light on how to interpret competitive advantage and market segmentation from a financial centre perspective. Section 4.3 briefly addresses the main characteristics of Shanghai and Hong Kong and their corresponding stock markets. Section 4.4 provides the outcomes of the empirical analysis, whereas section 4.5 provides concluding remarks and suggestions for further research.

4.2 Background: how to interpret financial centre competition?

From a stock market perspective, the intrinsic tensions in terms of financial centre competition relate to the attraction of more (foreign) listings with corresponding trading volume and business opportunities relative to rival centres (see Pagano *et al.*, 2002). This notion implicitly raises questions about what factors make some financial centres and the stock markets therein more attractive than others and why? The adopted approach in addressing these questions is based on the assumption that the listing decision of firms is likely to depend not only on the characteristics of a specific stock exchange but also on the

institutional features of the country and the corresponding financial centre in which the exchange is located. Generally, there exist large differences between financial centres regarding these characteristics. As a consequence, not all financial centres are equally adaptive to changing market conditions. This results in centres improving their competitive position in those market segments and geographical areas which reflect their superior capabilities. Accordingly, much of the discussion about competition and complementarity between financial centres rests on concepts of competitive advantage and "territorial" competition (Budd, 1995).
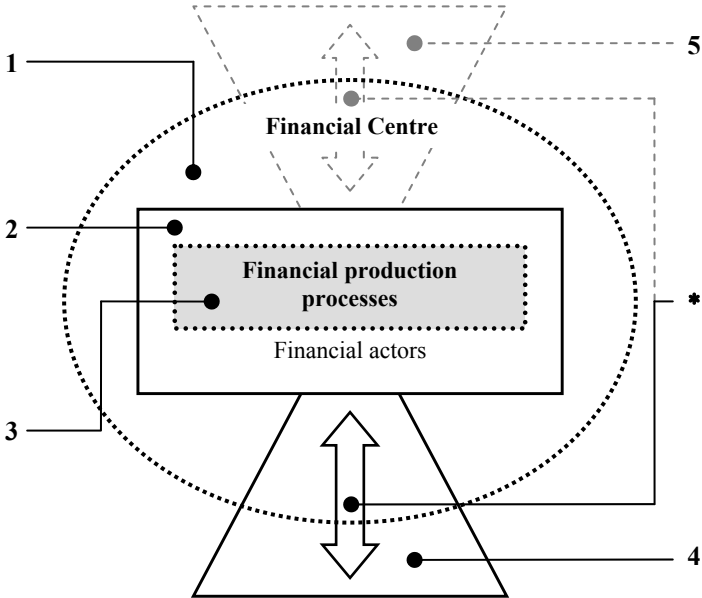
Concentration of financial activity:
  1   The financial centre as an entity in space.
  2   Organizational and institutional structure.
  3   Functional layers (territories/market segments).

Spatial scope of the financial centre:
  4   The hinterland.
  5   The exterior and international linkages.
  ✱   Two-way flow of resources, information and knowledge.

Figure 4.1: The financial centre, an analytic framework.

In order to structure the discussion, a multidimensional analytic framework is proposed on how the functioning of a financial centre can be interpreted (Figure 4.1). Generally, two mutually dependent dimensions stand out. First, the financial centre represents a

concentration of financial activity in space (**1**). More specifically, this concentration is confined to a small area within an urban agglomeration with unique characteristics and endowments (**2**). Although the financial production processes taking place within the centre are considered a black box, it is important for our argument to note that these processes occur in "territories" with specific market segments which are present in the centre (**3**). Here a distinction is made between territories as representing different financial markets like, for instance, stock, commodities, or derivatives markets and "market segments", which can be considered particular industry clusters or sectors within these territories.

Second, the firms and markets located in the financial centre determine, through their associated activities, its spatial scope. From a stock market perspective, for example, the location of the firms which have a public listing on a financial centre's stock exchange represent, when aggregated, the hinterland of the exchange. Furthermore, in a world with increasingly footloose capital, it is essential for the financial centre to create strong international attachments in order to channel foreign capital into the local economy. Therefore, the hinterland represents the centre's action space (**4**), whereas the exterior refers to the worldwide spatial organisation of financial institutions and markets to which the centre is attached (**5**).[9] In this context, the financial centre has a twin-role in its respective operation and orientation due to its functioning in the hinterland as well as the exterior.

In linking both dimensions, the framework is in line with the ideas of Porteous (1999), who argues that the financial centre is the best access point for the profitable exploitation of valuable resources and information. Primarily due to economies of localisation – like, among others, a pool of specialised labour, intermediate services and information networks – the centre functions as a point of intersection, connecting resources and information flows from the hinterland and the exterior and *vice versa*. In Figure 4.1 this is shown by the double-headed arrows (✱). In order to understand the precise meaning and the implications of this framework in relation to the competitive advantage of financial centres from a stock market perspective, the factors constituting the concentration of financial activity and the spatial scope of the financial centre are discussed in more detail.

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[9] As this paper tries to explore the intercity competition hypothesis between Shanghai and Hong Kong from the action space of each centre only, the empirical analysis of the exterior is beyond the scope of this paper (see dotted lines).

4.2.1 Concentration of financial activity and institutional embeddedness

Notwithstanding the global tendency of financial deregulation, there still exist large differences between financial centres in the effects of state intermediation. Differences in financial regulation, corporate governance practices, and the general business environment are institutional factors which are the basis of maintaining national or subnational spaces (Budd, 1995). In terms of the analytic framework, the concentration of financial activity is compliant with the institutional features of the country and the region where the concentration is located. In the specific case of stock markets, the heterogeneity of the institutional environment of financial centres across space has serious implications for the attractiveness and competitive position of its respective stock exchange. This is because the firms and investors who want to manifest themselves in such an environment have to adapt to the unique conventions of a country's financial system and institutional environment. Basically, these standards emphasise the importance of information in finance. From an investor's perspective, these standards refer to the possibilities to gather, monitor, and evaluate potential investment projects.[10] Obviously, the evaluation process is highly dependent upon the costs and availability of (detailed) information about the project targeted for investment. Listed firms are, therefore, similar to the investor, confronted with the conventions of the financial system and the stock exchange, primarily regarding the provision of information about the performance and prospects of the firm. This information is, however, subject to a varying degree of imperfections for which the investor is offered a risk and return dependent premium. In general, these imperfections take the form of information asymmetries, which denote the possible discrepancy between the investor and the borrower concerning the information about the risk profile of the investment project.

As argued by Klagge and Martin (2005), the costs of information disclosure impose serious constraints on firms in search of a stock market listing. As these costs are predominantly scale sensitive, it is especially difficult for new and small firms to access funds through a stock market listing. Pursuing a listing on an exchange with relatively high financial reporting standards, for example, forces a firm to comply with a high degree of corporate transparency. For firms with low initial reporting standards, this transformation can become a very costly operation. Nevertheless, the reduction of the monitoring costs for potential shareholders becomes a major benefit. In addition to the level of financial

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[10] In addition to institutional factors, Thrift (1994) underlines the importance of social and cultural factors like (face-to-face) contacts, trust, and relationships for generating business information.

reporting standards, there are two more important standards determined at the country level. First, as shown by the seminal paper of La Porta *et al.* (1998), the legal environment (both legal rules and their enforcement) matters for corporate governance. The foremost subjects are standards of investor protection against the misconduct of managers of listed firms and the general level of bureaucracy. When the standards of investor protection in a country are high and the bureaucracy is relatively efficient, the cost of capital for the company concerned may decrease. Second, it seems evident that firms in search of a listing can reduce transaction costs, especially in terms of communication costs, when listed in a location which is culturally homogeneous to its location of residence. Thus, the relative importance of the nation-state and its institutional features as such can already account for significant differences in terms of financial centre attractiveness. As a result of this often unique institutional embeddedness, stock exchanges differ in their underlying characteristics as well.

The two characteristics which are commonly assigned to be the most important in affecting the listing decisions of firms are market liquidity and size. A market is said to be liquid when individual transactions cause only minor price reactions. In illiquid markets, even small orders may significantly affect price changes. Risk-averse investors, for example, prefer to trade in liquid markets because the risk of price changes caused by liquidity shocks of individual traders is lower, which can attract more trading volume. Therefore, markets which are relatively liquid can cause a lower cost of capital for the firm (Brennan and Subrahmanyam, 1996). In this sense, liquid markets are, due to scale economies, self-reinforcing and can be found in financial centres with a high number of traders and a bigger size of the market. Besides the number of potential investors, the visibility, reputation, and prestige of the firm can be enhanced when a firm decides to list on a larger, more prominent stock exchange (see Bancel and Mittoo, 2001; Pagano *et al.*, 1998). Reputation and prestige are, in this context, predominantly concerned with the signal a listed firm provides to investors and customers alike about the willingness to subject itself to the scrutiny of outside financial analysts. As a consequence, these market conditions directly influence the competitiveness of the financial centre and, due to their uniqueness and immobility, contribute to establishing competitive advantage.

4.2.2   The spatial scope of the financial centre

Finally, the attraction of stock market listings may depend on the characteristics of the financial centre itself. Centres which vary significantly in terms of institutional features,

stock market characteristics, and size often attract different sorts of client groups. The firms constituting these client groups can consecutively be categorised according to size, international orientation, and market segmentation. The discussion of these subjects is intimately related to the second part of the analytic framework, namely the spatial scope of the financial centre.

As argued by Clark and O'Connor (1997), financial products often have a distinct spatial configuration of information embedded in their design. The more transparent a financial production process is, the better the accessibility of the information needed to monitor the product itself and its supplier. Accordingly, as information about the product is generally accessible and ubiquitous, only a few large financial centres around the globe with distinct economies of scale offer these products. In most cases, the same principle holds true for stock markets. As showed by Pagano *et al.* (2002), U.S. exchanges like NASDAQ and the New York Stock Exchange, which offer relatively low trading costs, tight financial reporting standards, and better shareholder protection, attract far more listings, both domestic and foreign, than European exchanges (apart from Frankfurt and, to some extent, London). The attracted listings involve significantly larger firms as well, especially in the case of cross-listed firms. These outcomes imply that exchanges which impose strict rules in terms of information disclosure attract more (international) listings and consequently have a larger spatial scope. That the firms attracted to these internationally oriented financial centres are also quite large is obvious: an international (cross-) listing does not come cheap in terms of transaction costs. In contrast, minor capital markets with lenient rules concerning information disclosure attract relatively smaller firms which are predominantly domestically oriented.

Although large international financial centres attract relatively more listings compared to national or local ones, it does not necessarily mean that national financial centres have no possibilities for creating competitive advantage. National centres, which benefit from the advantages of scale economies to a lesser extent, often (re)focus on specific financial territories like, for example, commodities, foreign exchange, and/or derivatives markets in order to attract specific firms or investors. In addition, specialisation is also possible in specific market segments. For instance, an important source of competitive advantage for stock exchanges can be the centre's hinterland itself because of the nontradable, implicit forms of localised information (see Lo, 2003). In contrast to many large financial centres, the information about listed firms on exchanges with a national focus is often not easily accessible and generally interpretable (i.e., the information is nonstandardised). This may

result in an increase of information asymmetries due to distant decay effects. In turn, for listed firms within close proximity of the financial centre, this could lead to distinct market advantages as compared to firms which are located in financial peripheral regions (Klagge and Martin, 2005). Therefore, the market segmentation of a stock exchange may be biased to those *real*-sector activities present in the immediate hinterland of the financial centre, opening the possibility of sectoral specialisation. Whenever sectoral specialisation exists, the attractiveness and competitive advantage of the financial centre increases considerably. An explanation for this is that firms prefer to list on the same exchange as their peers. Those firms which are not capable of becoming listed on this specialised exchange (due to, for example, high transaction costs), cannot make use of the signalling effect to consumers and investors. In turn, this results in a competitive disadvantage for the firm on industry level (Stoughton *et al.*, 2001). Accordingly, sectoral specialisation initiates imitation effects for firms in search of a listing, an effect already found by Pagano *et al*. (2001) with reference to cross-listings. For countries with spatially decentralised capital markets, like China, this issue seems especially relevant.

4.3 Shanghai and Hong Kong as financial centres

As discussed in the previous section, financial centre competitiveness refers to the competitive power of centres to attract more listings relative to rival centres. Therefore, the question of how Shanghai and Hong Kong have been able to adjust to changing market conditions for their competitiveness appears imperative. To answer this question, it is important to know that the current level of financial system development in both centres is rather different. For external finance, Shanghai is still heavily reliant on a state-controlled credit-based system, which is burdened by nonperforming loans and high overhead costs (Allen *et al.*, 2005). Capital markets perform a subordinate role only (Green, 2004). On the contrary, Hong Kong has been associated with well developed financial markets and a strong dependence on equity markets for the acquisition of external funds (McGuiness, 1999). This dissimilarity can be traced back to the discussion by Martin (1994) about the evolution of financial systems. In the light of financial centre development, the ambition of China (and, therefore, Shanghai) for achieving the next level of financial development should be focused on the enhancement of international competitiveness and integration through deliberate changes and an increasing flexibility in the institutional and organisational structure of the centre's financial system. As a result, more, larger, and

maybe even foreign firms in search of a stock market listing can be attracted. As China's capital market structure is decentralised and accommodates two domestic stock markets, the role of Shenzhen alongside Shanghai as regional market is included in the remainder of the paper when necessary.

4.3.1 Mainland China: persistent government control

Although the governmental authorities are well aware of the need for spurring reforms, the current state of the institutional environment and the conventions of China's financial system, stock markets included, are not yet optimal for entering the next stage of financial system development. Understanding these problems with regard to the competitiveness of mainland China's stock markets involves an unravelling of the discrepancies within the triangular relationship between the unique ownership structure of stocks, regulatory conditions, and corporate government mechanisms (for and overview, see Green, 2004).

Since the opening of the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange (SZSE), the partial privatisation process of China's state-owned enterprises (SOEs) commenced with the issuance of two types of shares: "A-shares" initially designed for domestic investors and "B-shares" denominated in foreign currency for foreign investors. Whereas all listed firms have issued A-shares, only a small part of those companies issued B-shares. Besides, listed companies have a multiple-ownership structure, dichotomised into nonnegotiable and negotiable shares (i.e., nontradable and tradable shares). These nonnegotiable shares can be divided into various subcategories of which sponsor shares is the largest. As the government owns most of the sponsor shares, listed stock in mainland China can be characterised by a persistent degree of state control. Table 4.1 shows a general overview of the equity structure for year-end 2006.

Regarding market size, it can be seen that the SSE is somewhat larger compared to the SZSE in terms of both the number of listed companies in panel A (59% versus 41%) and total market capitalisation in panel C (80% versus 20%). Of foremost interest is, however, the division of market capitalisation over negotiable and nonnegotiable shares in panel C. Due to the large proportion of nontradable shares of mainland Chinese companies (see panel B), the measurement of market size in terms of total market capitalisation is deceiving. As a consideration: when 72% of the total market capitalisation is represented by nontradable shares, there remains a small float (28%) of the total stocks issued for tradable market capitalisation. The true activity of the SSE and the SZSE is, therefore, represented by 18% and 10% of total market capitalisation, respectively. Instead,

meaningful market comparisons can be made by using turnover figures, which give an indication of the throughput or liquidity of an exchange.

Table 4.1: Equity structure of companies listed in mainland China 2006.

	Absolute numbers		%	
Panel A: number of listed companies				
Shanghai Stock Exchange (SSE)	886		58.79	
A-shares		832		55.21
B-shares		54		3.58
Shenzhen Stock Exchange (SZSE)	621		41.21	
A-shares		566		37.56
B-shares		55		3.65
Total	1507	1507	100.00	100.00
Panel B: number of shares (in billion of shares)				
Non-negotiable shares	925.98		72.40	
Sponsor shares		522.13		40.82
Private placement of legal person shares		11.59		0.91
Others		392.26		30.67
Negotiable shares	352.98		27.60	
A-shares		330.08		25.81
B-shares		22.90		1.79
Total	1,278.96	1,278.96	100.00	100.00
Panel C: market capitalisation (in US$ billion)				
Non-negotiable market capitalisation	825.34		72.05	
Shanghai Stock Exchange		707.19		61.74
Shenzhen Stock Exchange		118.15		10.31
Negotiable market capitalisation	320.22		27.95	
Shanghai Stock Exchange		210.40		18.37
Shenzhen Stock Exchange		109.81		9.58
Total	1145.55	1145.55	100.00	100.00

Source: CSRC (2007).

As shown in Table 4.1, the characteristics of both mainland China stock markets in terms of equity structure are unique. However, the specific market conditions regarding the institutional environment need to be considered. According to recent empirical work by Allen *et al*. (2005), mainland China's legal system and institutions, including investor protection, corporate governance practices, and financial reporting standards, are

significantly less developed than in most of the 49 countries used in the sample of La Porta *et al*. (1998). Besides, and probably more importantly, the enforcement of the imposed rules and regulations is highly inadequate. Two reasons stand out. First, while stock trading occurs in Shanghai and Shenzhen, the listing authorisation, monitoring, and registration is done by the China Securities Regulatory Commission (CSRC) located in Beijing. This decentralised configuration and the crucial role of Beijing as information provider is noneffective and induces persistent information asymmetries (see Zhao, 2003). Second, as a result of the low cost of audit failure and the low reliance on capital market funding, managers of listed Chinese companies face weak incentives for corporate transparency through sufficient information disclosure (see Ferguson and McGuiness, 2004). The inherent results of this nontransparent nature in combination with the unique equity structure have been, *inter alia,* extensive price manipulations, fake transactions, and the issuance of false information (Green, 2004). Therefore, it can be hard and costly, especially for foreign investors who are not familiar with the local practices, to make deliberate investment decisions.

Although the above observations underline the immature development state of the stock markets, China's recent accession to the WTO set off new waves of regulatory reform. Among these, three are most apparent. First, the announcement of the Qualified Foreign Institutional Investor (QFII) Provisional Measures, permits selected foreign institutional investors to participate directly in a wider spectrum of investments, including A-shares, on the SSE and SZSE (see Yeo, 2003). It is anticipated that the QFIIs will demand higher levels of information disclosure and audit quality as a prerequisite for their investment. Those firms which are actively seeking QFII investment are, therefore, forced to increase their transparency. Besides, as Ferguson and McGuiness (2004) argue, other companies are expected to "imitate" these proactive disclosure practices otherwise they may lose competitiveness. Second, China's accounting system is moving towards international financial reporting standards (IFRS). However, the effect of this development is doubtable, as the current lack of independent, professional auditors may undermine the enforcement of these rules (see Allen *et al.*, 2005). Third, in 2005 the authorities decided to encourage listed companies to convert their nontradable shares into tradable ones to facilitate further privatisation. In general terms, the main rationale behind these transformations has been to improve market liquidity and firm performance by introducing modern international practices.

4.3.2 Hong Kong: an international competitive environment

While Shanghai is struggling to reform by creating a better formalisation and circulation of information between the different actors in the market, Hong Kong has been able to create an internationally competitive institutional environment for quite some time already. Originally, the development of international competitiveness benefited significantly from the English origin of the legal system, which incorporates high measures of investor protection and financial reporting standards (see La Porta *et al.*, 1998). Currently, the influx of mainland China affiliated shares provides a considerable contribution to the development of the Hong Kong Stock Exchange (HKEX), both in the ordinary market named the Mainboard and the Growth Enterprise Market (GEM) for emerging high potential firms.

Table 4.2: Equity structure of HKEX listed companies 2006.

		Absolute numbers		%	
Panel A: number of listed companies					
Mainboard & GEM		942		80.31	
Domestic			934		79.63
Foreign			8		0.68
Mainboard & GEM, China dimension		231		19.69	
H-shares			141		12.02
Red-chips			90		7.67
	Total	1,173	1,173	100.00	100.00
Panel B: market capitalisation (in US$ billion)					
Mainboard & GEM		900.93		52.53	
Domestic			845.43		49.29
Foreign			55.50		3.24
Mainboard & GEM, China dimension		814.07		47.47	
H-shares			434.45		25.33
Red-chips			379.62		22.14
	Total	1,715.00	1,715.00	100.00	100.00

Source: HKEX (2007).

As shown in panel A of Table 4.2, the equity structure of the HKEX includes, besides domestic and foreign listings, two dimensions of mainland-China-controlled shares: H-shares and red-chips. The difference between the two is best explained by their locational incorporation. H-shares are listings of mainland China incorporated SOEs, but subscribed

for and traded at the HKEX. Conversely, red-chips represent shares of China-controlled companies incorporated outside the mainland. Similar to H-shares, red-chips are characterised by mainland majority control, which may stem directly from the state, provincial, or municipal authorities (see McGuiness, 1999). These H-shares and red-chip markets have been initiated because of the infrastructural inferiority of the mainland stock exchanges and the need to acquire foreign capital. Currently, these shares contribute significantly to the development of the HKEX. While H-shares and red-chips represent only 19.7% of the total number of listed companies, they account for approximately 47% of total market capital (see panel A and B of Table 4.2). This large difference between the percentage of firms and their market capitalisation figures can be explained by the fact that a listing in a country with different financial reporting practices is costly and usually reserved for firms of considerable size.

In line with the Hong Kong domestic listings, H-shares and red-chips are required to conform with IFRS regarding the disclosure of information. Nevertheless, China-affiliated corporations listed on the HKEX do not guarantee the enhancement of corporate transparency. As illustrated by Ma (2002), some of the China affiliated listings on the HKEX suffer from the same problems as SSE and SZSE listings due to the remaining ambiguous and controlling role of state authorities. While examples exist for both red-chips and H-shares in this respect, the problems have been more apparent for H-shares. Consequently, red-chips tend to be more successful and have been widely adopted by foreign (institutional) investors in their portfolios. Even so, it can be expected that the introduction of the QFII scheme will enhance the disclosure of information in both the H-share and red-chip market. In addition, the "imitation" argument proposed by Ferguson and McGuiness (2004) seems applicable for HKEX-listed mainland affiliated companies as well.

4.4 Competition or complementarity?

Based on the features of the institutional environment it can be concluded that the Hong Kong and mainland China stock exchanges are structurally different. The question remains, however, whether or not this distinctiveness is accompanied by a corresponding variation in the attraction and accommodation of listed firms. Contrary to the HKEX, the SSE and SZSE do not have any foreign listings. Therefore, to identify possible competitive interaction, the analysis focuses on a market in which all centres are active: public listings

of mainland-China-based companies. The research methodology for identifying explicit differences between each centre is concentrated around two different approaches which, when combined, cover the spatial scope discussion as proposed in the analytical framework. First, the geographical distribution of publicly listed mainland Chinese companies is analysed. This will throw light on the geographical area of dominance of each centres' stock markets. The basic approach has been to locate the headquarters of all listed companies based on their zip codes. For A-shares, B-shares, and H-shares the zip codes of the companies' headquarter locations reveal the regional distribution of the data. For the red-chips, the situation is a little more complex. Although red-chips are controlled from the mainland, their headquarters are located in Hong Kong. By unravelling the ownership structure and the underlying network of cross-shareholdings through web-based research, the controlling shareholder of the company has been located. It is the geographical zip code location of this shareholder which provides a proxy for the home region of the particular company. Second, a sectoral analysis of publicly listed mainland Chinese companies is conducted. The outcomes make it possible to distinguish between each financial centre based on their sectoral dependence. The underlying financial and sectoral data are from Thompson DataStream.

4.4.1   Geographical distribution of publicly listed companies

Figure 4.2 shows the proportional regional distribution of the mainland-China-based publicly listed companies, which involve A-share and B-share listings on the SSE and the SZSE in addition to H-share and the red-chip listings on the Mainboard and GEM of the HKEX.

For the SSE and the SZSE, it is clear that the geographical scope of each exchange consists of the whole of China and that both exchanges have an absolute and relative dominance in their home province. Furthermore, around 32% of the total number of listed companies on the SSE is located in the Yangzi river delta covering Shanghai, Jiangsu and Zhejiang province. Of the total number of listings on the SZSE, Guangdong and Hunan province account for approximately 26%. From a competitive hinterland perspective, this indicates the presence of a regional home bias which may be the result of geographical proximity. Though the most notable outcome of Figure 4.2 is the uneven geographical distribution of HKEX-listed stock, which is heavily biased towards Beijing dominance. The Beijing municipality which hosts most of the headquarters of the (multinational) SOEs has only 70 listings on the SSE representing 8.3% of the total listings, while 82 Beijing-

based companies or institutions control the listings on the HKEX covering 36% of the total. Moreover, most of these listings, 48 to be precise, are red-chip controlling stakeholders located in Beijing province. As shown, both the SSE and the HKEX provide the opportunity for mainland companies to tap into the pool of global capital. However, the hinterland of the HKEX is heavily biased towards the Beijing area, whereas the hinterland of Shanghai and Shenzhen covers the whole of China. This makes the hinterlands of Shanghai and Hong Kong quite distinctive, a point also made by Yeung (2001).
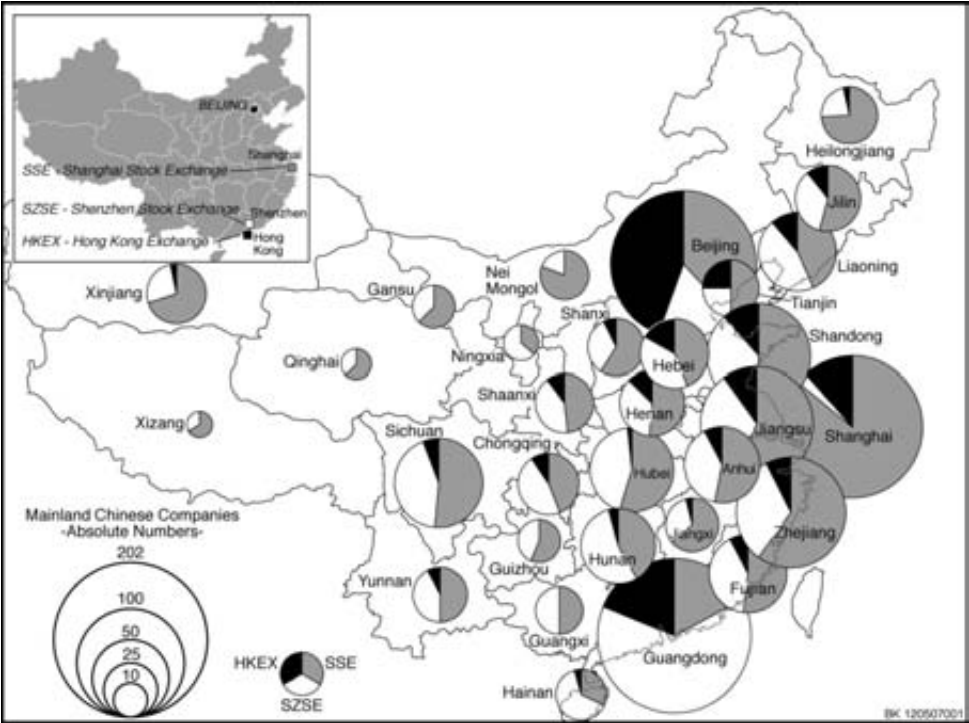
Figure 4.2: The regional distribution of company listings 2006.

As argued in the previous sections, the size of the market is of decisive importance for minimising transaction costs given the specific institutional embeddedness. Therefore, the degree of explicit interaction in terms of competitiveness or complementarity of financial centres is best understood when the discussion about the size or volume of the market activity of each centre is included. As market capitalisation figures are misleading in the mainland China case, Figure 4.3 shows how total turnover value (henceforth, TTV) of each

exchange is regionally distributed in 2006. Two important implications can be derived from the figure.

First, although the number of HKEX listings is relatively small, the pie charts in the proportional circles show that they account for a relatively large share of the TTV. With a significant dependence on the Beijing, Shanghai, and Guangdong provinces, the HKEX accounts for over 30% of TTV of all mainland-China-based listed companies. By taking into account that the HKEX has only 229 listings (compared to the 843 and 590 of the SSE and SZSE, respectively), these charts indicate that the market activity or liquidity of the HKEX China dimension is notably larger relative to the SSE and the SZSE.
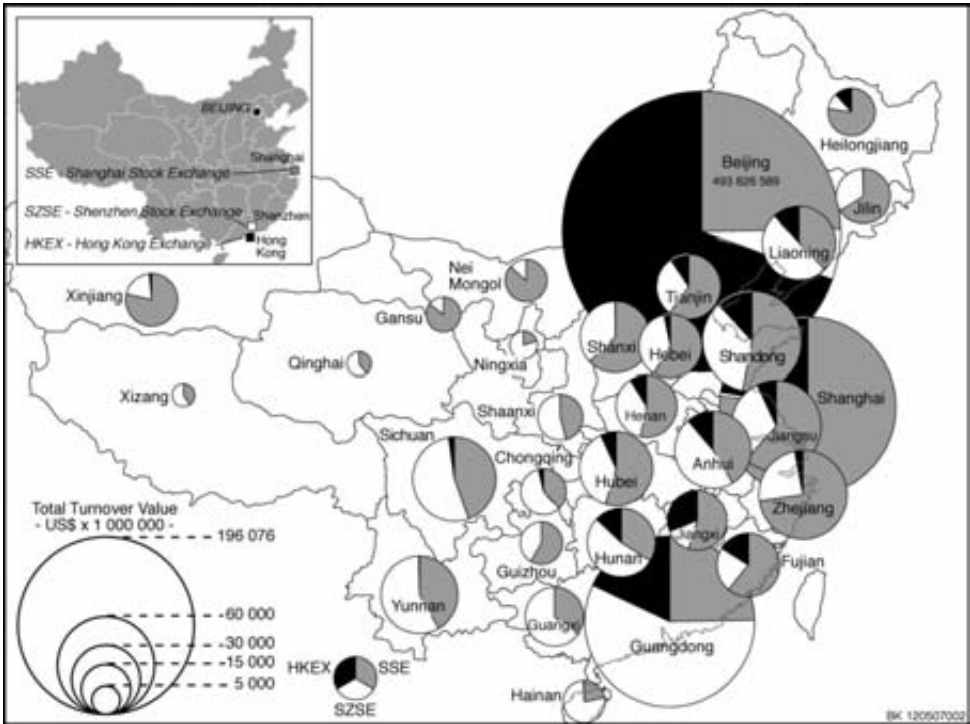
Figure 4.3: Regional distribution of Total Turnover Value 2006.

Second, when one observes the relative size of the circles, Beijing proves to be the dominant region over Shanghai and Guangdong in terms of TTV. This it not only due to the fact that most of the public mainland Chinese listings are controlled from the Beijing region, but also because of the relatively large regional proportion of HKEX listings. So, while Shanghai and Guangdong both have a strong home bias in terms of TTV, the Beijing

region shows explicit Hong Kong dependence. For instance, Beijing-controlled listings account for around 73% of the HKEX China dimension's TTV, while listings controlled by Shanghai and Guangdong listings account for an approximate share of 13% and 7%, respectively. Unsurprisingly, this is caused by the presence of China's largest state-controlled corporations on the HKEX, which are originally based in the Beijing area. These SOEs have listings whether on the H-share market like China Construction Bank, Bank of China, PetroChina, China Telecom, and China Life Insurance or as a red-chip like China Mobile and CNOOC. Furthermore, despite the home bias of large Shanghai-based companies like BaoSteel and China UniCom, Hong Kong turns out to be an attractive location for listing: a comparison of the regional distribution of TTV between the two exchanges demonstrates this. The 20 Shanghai-based listings on the HKEX represent over 22% of the TTV of the Shanghai region, while the SSE makes up only 77% with 147 listings. Interestingly, there are large Beijing-based SOEs which have a listing on the SSE although some of them have a cross-listing on the HKEX as well. Largest among these in terms of market activity are China Minsheng Bank, Sinopec, Industrial and Commercial Bank of China, and Yangtze Power, of which SinoPec and Industrial and Commercial Bank of China both have an H-share listing.

4.4.2 Sectoral specialisation of Shanghai and Hong Kong

The outcomes of the analysis of the geographical distribution of publicly listed companies show that Shanghai and Hong Kong have relatively distinct hinterlands. The question of why these differences exist is yet unanswered. Therefore, the discussion is extended by including the option of sectoral dependence of each stock market so as to clarify the relation of each centre and its corresponding hinterland. Are both stock markets dependent on the same sectors and, therefore, competitors for attracting equity listings, or do they have a sectoral specialisation which makes both markets relative complements? Answering this question starts by formulating the importance of sectoral dependence of each stock market. A suitable method to illustrate this is to perform a correspondence analysis on the dataset of the publicly listed mainland Chinese companies. Correspondence analysis is a technique for displaying the associations among a set of variables and to allow for a visual examination of any pattern or structure in the data (Greenacre, 1993). Here the stock exchanges of Shanghai, Shenzhen, and Hong Kong are associated with the economic activity of the mainland China publicly listed companies. In order to distinguish between sectors, the global standard for trading and investment decisions is used: the Industry

Figure 4.4: Stock exchanges and their association with economic sectors 2006.
Note: The axes of the graphical outcomes of the correspondence analysis have logarithmic scales which can handle zero and non-positive values. This transformation is as follows:

$$x = \begin{cases} \log(1+|x|) & \text{if } x \geq 0 \\ -\log(1+|x|) & \text{if } x < 0 \end{cases}$$
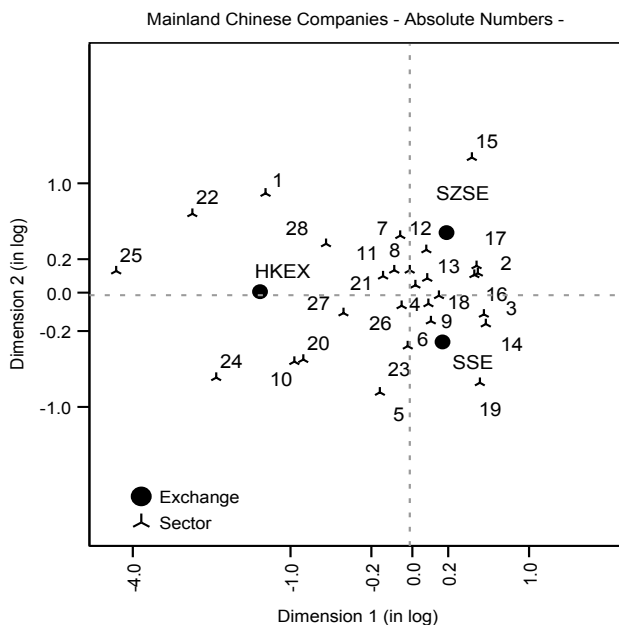
Key	ICB Classification	Key	ICB Classification
1	Oil & Gas	15	Household Goods
2	Chemicals	16	Leisure Goods
3	Forestry & Paper	17	Personal Goods
4	Industrial Metals	18	Healthcare
5	Mining	19	Retail
6	Construction & Materials	20	Media
7	General Industrials, Aerospace & Defence	21	Travel & Leisure
8	Electronic, Electrical Equipment	22	Telecommunications
9	Industrial Engineering	23	Utilities
10	Industrial Transportation	24	Banks
11	Support Services	25	Insurance
12	Automobiles & Parts	26	Financial Services
13	Beverages	27	Software & Computer Services
14	Food Producers	28	Technology Hardware & Equipment

Classification Benchmark (ICB). ICB is a comprehensive structure for sector and industry analysis, whereby the nature of a company's business is determined by its major source of revenue. Figure 4.4 shows the outcome of the correspondence analysis.

Besides the origin (0.0) resembling the average profile of the three stock exchanges combined, two more aspects of this figure are important for a correct interpretation of the results. First, sectors which have similar distributions over the stock exchanges are represented as points in space which are relatively close, whereas sectors which have dissimilar distributions are relatively distant. For the exchanges, the same rationale applies. By taking into account that the axes are displayed in logs, Figure 4.4 shows that the SSE and the SZSE are relatively close to the origin (and each other), indicating corresponding sectoral profiles. In contrast, the HKEX is strongly divergent from the SSE and the SZSE, indicating a different sectoral composition. Secondly, the distance between a specific sector and an exchange is given by the discrepancy between the observed sectoral presence and the hypothetical (random) market presence on an exchange. As the position of a sector in the figure is determined by its presence in terms of number of listings on each stock exchange, a sector which has a higher than expected presence on a specific exchange will be represented closer to that exchange in the figure. Insurance (number 25) and telecommunications (22), for example, show a high overrepresentation on the HKEX, while retail (19) and food producers (14) are strongly represented on the SSE. Therefore, this discrepancy, which is actually a measure of bias, can be used to evaluate sectoral dependence of a stock exchange.

Although the outcomes of the correspondence analysis suggest that there is specialisation among the three stock markets in specific sectors, the technique does not allow for formal testing. In order to test the hypothesis of whether a specific sector has indeed a significant overrepresentation (i.e., specialisation) on one of the three stock markets, a measure of bias is composed based on Theil's (1967) mutual information index. This measure, named sectoral market presence (SMP_{ij}), is tested with a corresponding likelihood-ratio χ^2 test (see Agresti, 1990) and can be used to distinguish significant sectoral overrepresentation on each stock market. In this context, the degree of sectoral dependence with respect to sector i on stock market j is measured as the logarithm of the difference between the observed sectoral market presence s_{ij} and the hypothetical (random) market presence expected from the product of the separate shares of each sector $s_{i.}$ and each stock market $s_{.j}$:

$$SMP_{ij} = \log \frac{s_{ij}}{s_{i.} \times s_{.j}}$$

The higher the sectoral overrepresentation, the larger the SMP_{ij}-value. The significant outcomes of this test are in Table 4.3.

As already suggested by the outcome of the correspondence analysis, there is indeed overrepresentation of specific sectors on each stock exchange. Based on the large SMP_{ij} values for the sectoral specialisations of the HKEX, it can be concluded that Hong Kong is in general more specialised than the SSE or the SZSE. Chemicals is a sector with a special role, but it is overrepresented on both the SSE and SZSE. This is caused by the heavy mass of the sector and the fact that the sector is hardly represented on the HKEX.

Table 4.3: Specialisation of stock exchanges: sectoral dependence 2006.

Key	ICB classification	SMP
SSE		
19	Retail	0.12999*
5	Mining	0.09316*
14	Food producers	0.07295*
23	Utilities	0.05025*
6	Constrcution and materials	0.03597*
2	Chemicals	0.02141†
SZSE		
15	Household goods	0.24052*
17	Personal goods	0.07350*
12	Automobiles and parts	0.07086*
2	Chemicals	0.06893*
HKEX		
25	Insurance	0.86080*
22	Telecommunications	0.65668*
24	Banks	0.58779*
1	Oil and gas	0.45331*
10	Industrial transportation	0.36437*
28	Technology, hardware, and equipment	0.27380*
27	Software and computer services	0.21734*

†p<0.1; *p<0.05

The most prominent finding is, however, that each exchange has a characteristic focus when clustering the significant sectors. In terms of sectoral specialisation of market segments, Hong Kong represents a relative dominance of knowledge and information-intensive industries, whereas Shanghai is directed towards retail and heavy industry. In addition, the SZSE has a strong focus on consumer goods. The sectoral specialisations of the SSE, SZSE and the HKEX are no coincidence. For the SSE and SZSE, these specialisations correspond to the real-sector activities of the (nearby) regions where both exchanges are located. As firms within close proximity of the exchanges may favour from cost advantages, they are more likely to be overrepresented. The real-sector representation argument is valid for the firms with listings on the HKEX as well, though the "be where your peers are" or imitation effect may be of supplementary importance. Information-intensive industry clusters are highly represented on the HKEX. To provide an indication, financials (excluding real estate), telecommunications, and technology represent approximately 40% of total market capitalisation of the HKEX. In conclusion, these numbers, if we consider the sectoral specialisation of each exchange, provide a strong indication that Shanghai and Hong Kong are complementary financial centres when measured from a stock market perspective.

4.5   Concluding remarks

'Shanghai another Hong Kong?' The question posed by Wong (2007) seems more relevant than ever. However, the suggestion that both cities are becoming close substitutes is, at least from a stock market perspective, rather questionable. Essentially, it appears that financial centres try to outperform their rivals in those geographical areas and market segments in which they have a competitive advantage, albeit given the features of the institutional environment. In the case of mainland China and Hong Kong, institutional disparity is maintaining subnational spaces, providing a primary source of competitive advantage. As with all financial centres, the prolongation of competitive advantage appears to be depending on the asymmetry of information and transaction costs.

On the basis of the empirical outcomes, this study reveals two important findings. First, small and locally oriented companies are predominantly listed on the SSE and SZSE, while the large internationally oriented mainland-based companies, foremostly headquartered in Beijing, are attracted to the HKEX. Substantial differences in listing requirements and disclosure standards prove to be imposing dissimilar advantages for each centre. As small

mainland-China-based firms are confronted with costly operations to meet the listing requirements and disclosure standards of the HKEX, the SSE and SZSE prove to be adequate alternatives for fund raising. On the contrary, for large firms, the benefits of increased international credibility may outweigh the cost of increasing corporate transparency. Besides, the persistent government control of many of the large Beijing-based firms may have affected listing decisions. Second, the stock markets of mainland China and Hong Kong all have strong sectoral dependencies. Although the SSE and SZSE are relatively less specialised than the HKEX, distinct industry clusters can be identified. Whereas the SSE features significant overrepresentations of traditional industries like mining, utilities, and construction, the HKEX is largely dependent on information and knowledge intensive industries as for instance financials, telecommunications, and computer software and hardware. For the SSE and the SZSE, these dependencies may be the result of each centre's regional real-sector characteristics. For the HKEX, this argument may be true as well; however, imitation effects may be an additional factor.

In conclusion, the question of whether Shanghai is threatening Hong Kong appears to be premature. In contrast, the empirical outcomes indicate that both centres reveal a considerable amount of complementarity (though it is risky to generalise these outcomes as stock markets are only part of the complete market structure of a financial centre). This conclusion, which is not in line with the expectations of many others, opens up a series of further debates. Most apparent among these is the question of whether the outcomes represent temporary complementarities or not. This explicitly emphasises the need for a longitudinal approach. Perhaps, based on such an approach, it is possible to shed some light on the uncertain future development paths of both centres.

Chapter 5:

The Geography of Equity Listing and Financial Centre Competition in Mainland China and Hong Kong

Abstract

This study examines the changing competitiveness of financial centres in mainland China and Hong Kong based on the geography of equity listing of mainland Chinese firms. Pre-listing firm characteristics are used to explore firms' motives for listing on a particular exchange and whether these motives have changed over time. The results show that Hong Kong's prominence as an international financial centre is attracting the largest and, recently, also the best performing mainland Chinese state-owned enterprises to go public. Less differentiation exists between the competitiveness of Shanghai and Shenzhen, although the renewed strategy of the Shenzhen stock exchange to attract smaller firms appears to be successful.

5.1   Introduction[11]

Ever since the stock markets in Shanghai underwent rapid growth in the late 1990s, there has been a debate in the popular press regarding whether Shanghai could overtake Hong Kong as China's preeminent international financial centre (e.g., Ng, 2000; Tao, 2009; Wild, 1997; Wong, 2007). Fuelled by China's rapid economic development and the increasing efforts of the central government to reform and liberalise the country's financial markets, this discussion has not lost any of its significance. Especially for Hong Kong, which largely derives its competitive advantage from providing mainland Chinese firms with unrestrained access to global capital (Enright *et al.*, 1997; McGuiness, 1999; Meyer, 2002), the recent equity market developments in mainland China and the renewed focus on attracting foreign capital to Shanghai are exceptionally relevant. However, despite the economic significance of this debate, it is by no means clear to what extent equity market development and regulatory change impact the competitive positions of financial centres in mainland China and Hong Kong.

Extant research emphasises that these centres are developing as complements instead of competitors. The work by Zhao and colleagues underlines the functional complementarity of mainland Chinese financial centres based on analyses of the co-agglomeration of banks and (foreign) multinational firms (Zhao, 2003; Zhao *et al.*, 2004; Wang *et al.*, 2007). These findings are corroborated by Lai (2009), who clearly specifies that each financial centre has its own distinctive characteristics and advantages, identifying Beijing as a "political centre", Shanghai as a "business centre" and Hong Kong as an "offshore financial centre". While they provide essential insights into the competitive advantages of each centre, these studies direct only limited attention to institutional and regulatory change and the dynamics of financial centre competition. In addition, the role of stock markets is under-emphasised, even though it was previously argued that stock markets are key building blocks of many financial centres (Thrift, 1994; Wójcik, 2009) and that financial centre competition is expected to be most intense in capital and securities markets (see Poon, 2003). Aside from a stock market study by Karreman and Van der Knaap (2009) showing that Shanghai, Shenzhen and Hong Kong have relatively distinct hinterlands and that these centres are rather complementary in terms of sectoral specialisation, little research has been done on this topic.

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[11] This study is joint work with Bert van der Knaap and appeared as a working paper version: Karreman, B. and Van der Knaap, G.A. (2010) The geography of equity listing and financial centre competition in mainland China and Hong Kong. *ERIM Research Report* ERS-2010-033-ORG.

Therefore, the objectives of this paper are to examine the competitiveness of financial centres in mainland China and Hong Kong from a stock market perspective and to assess whether this competitiveness has changed over time. Following Pagano *et al.* (2001), stock markets compete on the basis of attracting more (foreign) listings than rival exchanges. As firms are generally confronted with various listing options, they are likely to choose the particular location that yields the most benefits relative to other alternatives. Hence, firms' decisions of where to list are a clear reflection of the competitive advantage of a financial centre. To test the degree of financial centre competitiveness, a sample of 1084 mainland Chinese firms that issued an initial public offering (IPO) of their shares on the Shanghai stock exchange (SSE), the Shenzhen stock exchange (SZSE) or the Hong Kong stock exchange (HKEX) in the period of 1993 – 2007 is used. The effectuation of the Securities Law (SL) on July 1, 1999, marks a clear distinction between two periods of stock market regulation and development. Anticipating the results, this study demonstrates that the determinants of listing choice between the SSE, SZSE and the HKEX differ between the pre- and post-SL periods. These differences are driven by significant changes in both financial and geographical attributes of mainland Chinese IPO firms. Overall, the results provide some preliminary evidence that firms in the post-SL period make more distinct listing choices, indicating that, relative to the pre-SL period, the financial centres in mainland China and Hong Kong have become more complementary over time. These findings provide important new insights into the less examined sub-national development process and the competitive dynamics of financial centres in mainland China and Hong Kong.

The remainder of this paper is organised as follows. The next section presents a theoretical background, discussing the factors that affect the geography of equity listing. Section 5.3 applies these insights to understand the listing decisions made by mainland Chinese firms and presents the hypotheses. Section 5.4 discusses the methodology and the data employed in the analysis, and section 5.5 presents the empirical results and their robustness. Finally, section 5.6 concludes with the main findings and some recommendations for further research.

5.2   Background: the geography of equity listing

As worldwide financial markets are by no means perfectly integrated and frictionless, it is generally known that the structure of the financial system in space and time matters for

firms in search of external funds (Clark and Wójcik, 2003; Klagge and Martin, 2005). This continued significance of location is clearly evidenced in the literature on firms' listing decisions. Previous research has identified various motives for firms to enter public equity markets, including, *inter alia*, increased access to new capital (Ritter and Welch, 2002), enhanced credibility and visibility in the market (Bancel and Mittoo, 2009) and the creation of a market for existing shareholders to cash in some of their holdings (Roëll, 1996). However, the heterogeneity of financial markets across space means that not every domestic public equity market is equally beneficial to a firm's particular listing strategy. As a result, many firms decide to list abroad, bypassing their domestic exchanges entirely or by way of an additional (i.e., cross-) listing (see Bancel and Mittoo, 2001; Pagano *et al.*, 2002; Karolyi, 2006).

For firms originating from emerging markets, a listing on a well-regulated and developed foreign exchange may be particularly attractive. Brennan and Subrahmanyam (1996), for instance, argue that the benefits of listing depend on the size and liquidity of the stock market. In liquid markets, individual transactions cause only minor price reactions, which can attract more trading volume and may result in a lower cost of capital for the firm. As stock markets in developing countries often have considerable liquidity problems, a foreign listing may thus be a viable option to overcome the inferiority of the domestic market. Furthermore, La Porta *et al.* (1998) underline the importance of the legal environment, whereby firms listed in a country with high standards of investor protection, strict disclosure requirements and an efficient bureaucracy may signal their overall quality and increase their attractiveness for investors. By subjecting themselves to more stringent listing requirements relative to their domestic market, emerging market firms listed abroad may enhance their information disclosure and transparency. In turn, this may be beneficial to their overall level of corporate governance (Stulz, 1999). As reviewed by Edison and Warnock (2008), the advantages of cross-listing for firms from emerging markets are multiple: lower informational and transaction costs for investors, more accurate analyst forecasts, more informative financial reporting and higher firm valuations. All of these factors should make the firm more attractive for investors and eventually improve its access to capital.

Although the characteristics of the host market largely determine the attractiveness of one listing location over another, the decision of where to list is also affected by proximity preference. Coval and Moskowitz (1999) show that investors are less willing to buy equities of firms with which they are not familiar, creating a geographically constrained

"home bias at home". A similar reasoning applies when explaining why economic, cultural and industrial proximity also play dominant roles in the decision of where to list (Sarkissian and Schill, 2003). Various types of proximity preferences are implicitly discussed in recent work by Wójcik and Burger (2010). In an exploratory study of the geographical patterns of international cross-listings by firms from Brazil, Russia, India and China (BRIC), these scholars underline the importance of industrial specialisation in the host market and the existence of trade links between the home and host markets as factors affecting the choice of listing destination. A novel result of the analysis is that firms from the leading financial centres of the BRIC countries are especially likely to list abroad. For mainland Chinese firms, comparable patterns are identified by Karreman and Van der Knaap (2009), who show that large internationally oriented mainland Chinese firms, mostly headquartered in Beijing, are more likely to list on the HKEX.

5.3 Equity listing in mainland China and Hong Kong

5.3.1 Listing venue characteristics

As a relative newcomer to the international financial market, mainland China constitutes an interesting case. In the traditional bank-based system, the partial privatisation of the large state-owned banks is beginning to erode the availability of cheap and easy credit and thus constrains the main source of capital for mainland Chinese firms (Zhang and King, 2010). As a result, the importance of stock markets and equity financing as an additional source of external finance is rapidly increasing. For example, four out of the world's fifteen largest IPOs were issued by firms from the mainland. Of these four, the Industrial & Commercial Bank of China (ICBC) and the Agricultural Bank of China each raised approximately 19 billion US dollars in 2006 and 2010, respectively, the two largest IPOs ever. Yet, in contrast to the arguments of the general literature on the geography of equity listing, it is not straightforward for mainland Chinese firms to obtain a listing abroad. Due to severe capital account restrictions and exchange rate control, capital cannot flow freely between foreign locations and the mainland (Wang and Di Iorio, 2007). These constraints also affect Hong Kong, even though Hong Kong is under the same political sovereignty.

Despite the restrictions on the free flow of capital, Hong Kong has long been a major source of equity funds for mainland Chinese firms. Before the stock markets in Shanghai and Shenzhen commenced trading at the beginning of the 1990s, the Chinese government allowed selected companies to list in Hong Kong. For these firms, Hong Kong provided

much needed access to foreign capital and a way to overcome the regulatory inferiority and the immaturity of the financial markets in mainland China (McGuiness, 1999). With well-developed and liquid financial markets, Hong Kong has proven itself an attractive location for mainland Chinese firms to issue stock. However, the current abundance of liquidity and recent financial market developments are making the domestic markets increasingly attractive and even encouraging companies initially listed in Hong Kong to dual list on the SSE or the SZSE (Chen, 2009). Given that the HKEX has long been a primary listing location for mainland Chinese firms, these developments might wear down the future competitive position of Hong Kong.

In this context, the IPO of ICBC is an informative example as ICBC was the first company to simultaneously list on the HKEX and the SSE, and the majority of the shares were issued in Shanghai. Given that preceding IPOs of the larger state-owned enterprises (SOEs) from mainland China were generally issued on the HKEX (Jia *et al.*, 2005), the IPO of ICBC is illustrative of the changing competitive environment of the financial centres in mainland China and Hong Kong. The fact that the IPO was distributed over two exchanges underlines that the markets in the mainland and Hong Kong are not yet integrated (Wang and Di Iorio, 2007). Key factors maintaining these sub-national spaces are institutional and regulatory heterogeneity as well as considerable differences between the business environments in the two locations. To understand how these factors affect the listing decisions made by mainland Chinese firms, it is important to have a clear understanding of the market structure of the mainland Chinese and Hong Kong exchanges.

5.3.1.1 Market structure of mainland Chinese exchanges

Mainland Chinese firms are able to issue two types of stock, namely A-shares and B-shares, where A-shares are designed for domestic Chinese investors and traded in domestic currency while B-shares are denominated in foreign currency for foreign investors. Although the A- and B-share markets are segmented, recent share reforms and regulatory developments have relaxed the strictness of this division. For instance, since 2001, the B-share market has been open to domestic investors, while the introduction of the Qualified Foreign Institutional Investment (QFII) measures in 2002 allows selected authorised foreign institutional investors to participate in the A-share market (Yeo, 2003). Although an IPO on the B-share market of the SSE or the SZSE is formally still possible, no new B-shares have been listed since 2001. Therefore, with the decreased necessity of market

segmentation, it is doubtful whether there is a reason for the B-share market to continue to exist (Hovey and Naughton, 2007).

The mainboards of the SSE and the SZSE are dominated by large and partially privatised SOEs, with limited access for smaller and medium-sized enterprises (SMEs) and privately owned firms (Chen, 2009). As a result, most of the listed shares on each exchange are non-tradable and state-owned. For example, at year-end 2008, only 37.3 percent of the total market capitalisation of the SSE and SZSE combined represented tradable market capitalisation (CSRC, 2010). In order to overcome some of the problems of limited access to the exchanges and thus the insufficient functioning of these markets, the SZSE launched the SME board in 2004. Although the number of firms listed grew quite rapidly to 273 at year-end 2008 (CSRC, 2010), the SME board is still underdeveloped and characterised by a small market capitalisation and a rather narrow industry coverage (Chen, 2009). In addition, the introduction of a NASDAQ-like growth enterprise market (GEM) for small high-tech firms in Shenzhen was finally realised in 2009.

5.3.1.2 *Mainland Chinese firms on the HKEX*

There are two ways for a mainland Chinese firm to obtain a listing on the HKEX, either through a "red-chip" or an H-share. The main difference between the two share types is their locational incorporation. Red-chips are companies incorporated in Hong Kong but controlled from the mainland, while H-shares correspond to listings of firms incorporated in mainland China. Both share types are traded on the HKEX and denominated in Hong Kong dollars.

In terms of share ownership, these firms are predominantly owned by state, provincial and municipal authorities (McGuiness, 1999). The mainland Chinese firms listed in Hong Kong are among the largest in the country and are therefore of major importance for the HKEX. In terms of market capitalisation, the combination of 110 H-share and 89 red-chip listings accounted for 54.5 percent of the total market capitalisation of the HKEX at year-end 2008. This is an enormous share of total market capitalisation when taking into consideration that the number of other firms listed on the HKEX at year-end 2008 was 1,062 (HKEX, 2009). Moreover, the HKEX operates a growth enterprise market for small-capitalised high-tech firms that has also been accessible for mainland Chinese firms since 1999.

5.3.2 Listing behaviour of mainland Chinese firms

Although mainland Chinese firms that are listed on the SSE, SZSE or HKEX are relatively large and often only partially privatised, it is by no means clear which firms will choose to list where and why. For instance, why is China Mobile listed in Hong Kong, while Baoshan Iron & Steel Company is listed in Shanghai? Based on the outcomes of previous research, ex ante financial as well as geographical attributes of these firms are examined to provide an indication of the listing choices particular firms make. Following Pagano *et al.* (2002) and Zhang and King (2010), these ex ante predictors are used to explore the motives of listing on a particular stock exchange. As these motives are, in turn, determined by stock market, institutional and regulatory characteristics and financial centre location, they provide means by which to distinguish the competitive advantages of each financial centre.

5.3.2.1 Financial attributes

The sophistication and liquidity of the financial markets in Hong Kong are the main motives for mainland Chinese firms to choose the HKEX as their location for IPO issuance over the SSE or the SZSE. Allen *et al.* (2005) demonstrate and argue that, relative to Hong Kong (and many countries in the world), the legal system and the financial markets in mainland China are still highly underdeveloped in terms of investor protection systems, corporate governance, accounting standards and the overall quality of the government. In addition, Chen (2009) suggests that the rules and regulations governing the mainland Chinese capital markets may already be sufficiently developed, identifying the lack of enforcement as the real problem. For mainland Chinese firms, the low costs of audit failure and the fact that equity finance often represents only a minor part of their total capital structure reduces the incentives for managers to invest in information disclosure and corporate transparency (Ferguson and McGuiness, 2004). As a result, there are many examples of listed firms that were involved in price manipulations, fake transactions, and deliberate provision of incorrect information to investors (Green, 2004).

Mainland Chinese firms that are able to comply with the strict requirements and the close scrutiny of foreign investors and regulatory authorities of the HKEX are more likely to signal their quality and performance as well as their corporate transparency and trustworthiness (Liu and Eddy, 2007). However, it is not easy to list on the HKEX as the costs of listing outside the mainland are relatively high (Zhang and King, 2010). Several explanations exist for these high costs. First, in terms of accounting systems, an H-share

(or red-chip) issue requires firms to comply with international financial reporting standards (IFRS), while for an A-share listing on the SSE or the SZSE, domestic accounting standards are sufficient. Adopting IFRS is a complex and expensive procedure that is easier to accomplish for larger state-owned firms. Second, the HKEX has more stringent listing requirements on market capitalisation and a higher cost of listing than the SSE or the SZSE. In particular, the listing fees and additional administrative costs of listing in a different institutional environment are considerable. Again, these costs are more manageable for large SOEs. Besides, a listing in Hong Kong with foreign shareholders makes the firm more politically and internationally visible and subject to more public scrutiny. Mainland Chinese firms that want to signal their quality and performance are likely to welcome a closer monitoring of regulatory agencies and may voluntarily disclose and disseminate more information about the firm (Liu and Eddy, 2007). Firms that are relatively profitable are more likely to do so. Taking these arguments together, in terms of financial attributes, it can be expected that larger, state-owned and relatively profitable mainland Chinese firms are better able to overcome the inherent difficulties of listing in Hong Kong and are thus more likely to choose to go public on the HKEX versus the SSE or the SZSE.

5.3.2.2 Geographical attributes

Besides financial attributes, it is well-known that geography is a major determinant of firms' listing decisions. Especially in mainland China, where relatively low levels of corporate governance practices and financial reporting standards combined with a large presence of individual investors cause persistent information asymmetries (Bailey *et al.*, 2009), proximity may be an important factor affecting access to relevant information and, thus, may enhance the attractiveness of a firm's stocks. As showed by Karreman and Van der Knaap (2009), the SSE and the SZSE have an overrepresentation of listed firms from nearby provinces, whereas the HKEX is dominated by firms originating from Beijing. This indicates that proximity preference may indeed be an important consideration for firms to list on the SSE and the SZSE, while it may be less important for listing on the HKEX. Therefore, it can be expected that firms that are headquartered geographically proximate to Shanghai or Shenzhen are also more likely to list on, correspondingly, the SSE or the SZSE relative to the HKEX. In addition, it can be expected that mainland Chinese firms located in the Shanghai region and the Shenzhen region reveal a strong "home bias at

home" for the SSE and the SZSE, respectively, while firms located in the region of Beijing are more likely to choose a listing on the HKEX.

5.3.2.3 Stock market development and changes in listing decisions over time

Since the opening of the markets in Shanghai and Shenzhen, the stages of equity market development in mainland China can roughly be subdivided into an expansion stage from 1992 to 1998 and the (current stage of) systematic development and regulation that commenced with the enactment of the SL in 1999 (Chen, 2009). Obviously, the two stages are likely to differ in terms of listing options and procedures and the listing choices made by mainland Chinese firms. Two main events are discussed: first, the development of the equity market structure and, second, the corresponding regulatory reform. An important issue in these discussions is the changing relevance of the China Securities Regulatory Commission (CSRC), which developed from a civil agency with no authority supervising securities firms into a powerful governmental institution controlling all security-related affairs (Green, 2004).

In the pre-SL period, the SSE and the SZSE functioned as two independent exchanges with a similar focus: rapid development. With the limited power of the CSRC, most of the major approvals during the listing application process took place at the local level. According to Green (2004: p.92), this period unfolded as a true "war of the exchanges" for listings, with no clear policy on attracting particular types of firms. The post-SL period has witnessed considerable change in this regard. The CSRC has become the main authority in charge of the listing process, such that a decision on the approval or denial of listing made by the CSRC cannot be opposed. In addition, the rapidly expanding SME board and the recently launched Shenzhen GEM have reconfigured the competitive focus of the SZSE relative to the SSE towards the attraction of smaller high-technology firms. Therefore, it can be expected that, relative to the pre-SL period, smaller-sized and technology-oriented firms are more likely to choose a listing on the SZSE relative to the SSE or the HKEX in the post-SL period.

Based on the characteristics of the current, that is, the post-SL listing process, it has previously been argued that, in terms of financial attributes, larger and relatively profitable mainland Chinese SOEs are better able to overcome the inherent difficulties of going public in Hong Kong. However, in the pre-SL period this was not necessarily the case. Especially between 1992 and 1997, the process of obtaining a listing in Shanghai, Shenzhen or Hong Kong was rather ambiguous (Green, 2004). Firms that struggled

through the provincial bureaucracy and finally obtained approval from the CSRC could apply for a listing on the stock exchange of their choice. However, at that time the CSRC was only a non-governmental organisation and could hardly reject applications that were personally sponsored by high-ranked governmental individuals. As a result, the quality and performance of the SOEs coming to market was generally poor. According to Jia *et al.* (2005), similar arguments applied for the H-share listing process, whereby the firms selected to list in Hong Kong were relatively large and state-owned but not necessarily the best performers. This argument contrasts the previously discussed motive of mainland Chinese firms to preferentially choose a listing in Hong Kong over one on the SSE or the SZSE to signal their quality and performance.

Furthermore, increased specialisation of the exchanges in the post-SL period may reduce the proximity preference of firms. As firms prefer to list on the same exchange as their peers (Pagano *et al.*, 2001), specialisation of stock exchanges may initiate imitation effects for firms in their decisions of where to list. When taking into account that firms that are not capable of becoming listed with their peers may face competitive disadvantages (Stoughton *et al.*, 2001), specialisation is likely to overcome the proximity preference of listing. Therefore, in terms of geographical attributes, proximity preference is expected to be higher in the pre-SL period compared to the post-SL period.

In conclusion, it is reasonable to expect that the attributes that determine the listing choice of mainland Chinese firms differ considerably between the pre-SL and the post-SL period.

5.4   Data and methodology

5.4.1   Data and sample characteristics

The initial sample was collected from Thomson Datastream and includes all IPOs of mainland Chinese firms issued on one of the mainland Chinese exchanges in Shanghai or Shenzhen or on the Hong Kong stock exchange from 1973 to 2007. For Shanghai and Shenzhen, both A- and B-share IPOs are included, while for Hong Kong H-shares and red-chips are considered as two possible options for IPO issuance. The date of initial listing is assumed to be the first day on which Datastream reports financial information about the firm. Balance sheet data on the characteristics of the firm come from Worldscope. As the focus is on the listing choices of firms when they go public, only those IPO firms that actually had a choice between trading on the SSE, SZSE or the HKEX are included in the

dataset (c.f. Corwin and Harris, 2001). For that reason, the initial sample is restricted by four factors: time and IPO suspension, overlap, minimum listing requirements, and data availability.

Tsingtao Brewery was the first firm to list on the HKEX via the offer of H-shares in July 1993. This event marks the date on which mainland Chinese firms became able to formally list in Hong Kong. Therefore, the sample is restricted to those IPOs issued between July 1993 and December 2007. In addition, the markets in Shanghai and Shenzhen were each temporarily closed for new IPOs during certain time periods. For the SZSE, the CSRC imposed a suspension from October 2000 to January 2004 to explore the possibilities of a merger with the SSE and the introduction of the Shenzhen GEM (Green, 2004). For the SSE, an IPO suspension period was imposed from April 2005 to May 2006, mainly to convert state-owned equity into tradable shares (Chen, 2009). Both closures were the direct result of necessary reforms and fundamental changes in the Chinese equity markets. As both periods were characterised by a reduced number of listing venue choices, IPOs issued in these periods on one of the remaining exchanges were removed from the sample.

Second, to avoid overlap in the data, only the initial IPO is included in the sample. Subsequent issues or cross-listings by the same firm on other exchanges are excluded. Additional listings may occur in two ways: within a particular stock market or between stock markets. For instance, a firm may decide to initially issue B-shares and subsequently A-shares on the same exchange. Moreover, there are many examples of mainland Chinese firms with an H-share IPO that later opt for an additional A-share listing on the SSE or SZSE. In these cases, only the first issuance of shares to the public was considered. Note that regulations do not permit B- and H-share combinations. Four firms that simultaneously issued A-shares on one of the mainland Chinese markets and H-shares in Hong Kong. These issuers are included in the Hong Kong sample because the effort required to obtain a listing in Hong Kong relative to that required for the SSE or SZSE signals that the main purpose of the IPO was to issue H-shares (see Zhang and King, 2010).

Third, the sample includes only those firms that meet the minimum listing requirements of the HKEX as these are the most restrictive across the three exchanges. Because the primary interest of this study is to understand the choice of listing venue, only firms that could formally list on all three exchanges are included in the sample. Of the current HKEX requirements, two issues stand out: the profit test and market capitalisation requirements.

Because the CSRC demands higher profits for firms that want to list on the SSE or the SZSE than the HKEX does, the profit test will be met by Chinese issuers. However, following the profit test, the market capitalisation requirements on the HKEX are higher compared to the mainland Chinese exchanges. Therefore, to be included in the sample, a firm has to have a market capitalisation of at least HK 200 million dollars (HKEX, 2010).

Finally, the size of the sample is constrained by data availability; in particular, it is impossible to track the precise locations of some firms' headquarters in mainland China, and in other cases firm specific data are not, or are not fully, available at the time of the IPO. Table 5.1 provides the characteristics of the total sample of IPO firms used in the analysis, in which Panel A shows the frequency of IPOs by exchange per year and Panel B displays the number of IPOs per industry. Three notable issues can be derived from Table 5.1. First, the years 2001 to 2003 are not included due to the closures of the SSE and the SZSE to new IPOs. Second, the restrictive policies on IPO issuance in 1995 and 2005 resulted in relatively low IPO frequencies for these particular years. Finally, it is apparent that the stock markets in mainland China and Hong Kong have a predominant focus on basic materials, consumer goods and industrials.

Table 5.1: Frequency of IPOs by exchange, per year and per industry.

Panel A	MARKET				Panel B	MARKET			
YEAR	SSE	SZSE	HKEX	Total	INDUSTRY	SSE	SZSE	HKEX	Total
1993	34	37	8	79	Basic Materials	79	112	15	206
1994	42	31	12	85	Consumer Goods	90	114	9	213
1995	6	4	2	12	Consumer Services	42	32	8	82
1996	64	57	12	133	Financials	33	33	11	77
1997	69	104	24	197	Health Care	37	36	5	78
1998	49	46	3	98	Industrials	104	149	39	292
1999	42	49	5	96	Oil & Gas	3	8	4	15
2000	52	48	6	106	Technology	24	42	13	79
2004	61	37	11	109	Utilities	21	16	5	42
2005	1	4	2	7	**Total**	433	542	109	1084
2006	7	52	11	70					
2007	6	73	13	92					
Total	433	542	109	1084					

5.4.2   Regulatory change and subsamples

The introduction of the SL marked a major step forward in the development of an improved regulatory framework governing the listing of shares on the mainland Chinese stock exchanges. As this change may have altered the attractiveness of listing on the SSE and SZSE relative to the HKEX, the implementation of the SL on July 1, 1999, demarcates two separate periods of stock market development. The differences between the two periods are examined by splitting the sample into two subsamples: one that captures the 1993 to July 1999 period and one representing the period after the SL implementation from July 1999 until December 2007. Similar to the total sample, the subsamples only include mainland Chinese firms that meet the market capitalisation restrictions of the HKEX.

5.4.3   Methodology: models of financial centre choice

To explain the relation between the choice of listing venue and the attributes of mainland Chinese IPO firms, it is assumed that mainland Chinese firms will choose to issue an IPO in the location where they maximise benefit. This points to two appropriate models: multinomial logit (MNL) and multinomial probit (MNP).

The main difference between these two models is that, in contrast to MNP, the MNL model imposes the assumption of "independence from irrelevant alternatives" (IIA). This assumption states that the choices across alternatives have to be independent. In this context, it can be argued that the choice between listing in Shanghai or in Shenzhen is not independent because these exchanges are subject to the same institutional and regulatory environment. Thus, the violation of the IIA assumption favours MNP over MNL. However, the disadvantages of estimating a MNP model should also be considered when choosing the most suitable model. For instance, the computational difficulties in estimating MNP may yield imprecise parameter estimates, affecting statistical inferences.

As the IIA is a logical property of decision making and not a statistical one, like consistency or unbiasedness, the imposition of the IIA assumption in applied research is often overestimated (Dow and Endersby, 2004). Therefore, MNL is used in the baseline regressions. In addition, to check for the potential impact of IIA violation on the results, MNP estimation is used as a robustness check.

5.4.4   The choice of listing venue

The dependent variable explained in the models is a mainland Chinese firm's decision regarding where to list its shares, that is, the choice between issuing an IPO on the stock

exchange of Shanghai, Shenzhen or Hong Kong. This decision of where to list is explained by the cross-sectional differences in balance sheet and additional firm-specific characteristics between the mainland Chinese firms in the sample.

5.4.4.1 *Financial attributes*

Prior research has underlined the potential importance of particular balance sheet variables in the choice of listing venue (Corwin and Harris, 2001; Pagano *et al.*, 2002). However, as previously argued, some of these variables may have particular meanings in the context of mainland Chinese firms.

Firm size is measured by the *total assets* of the mainland Chinese firm reported at year-end prior to the year of IPO issuance. The nominal values of the total assets are deflated and taken in logs to facilitate meaningful comparison. Although other measures are also applied in the literature to proxy firm size, such as the total number of employees or the market value of common stock, total assets are widely used in predicting the location choices of firms in search of a (foreign) listing (Pagano *et al.*, 2002; Zhang and King, 2010).

As a performance indicator, the return on assets (ROA) is used. *ROA* is defined as the total operating income divided by the total assets of the mainland Chinese firm prior to the IPO. Sales to assets is also used quite often, but it has the disadvantage that many service firms do not report sales. As such, using a measure that depends to some extent on sales may exclude particular industries (i.e., services industries) from the sample.

Because it is difficult to measure precisely the degree of state control of each mainland Chinese IPO firm, *block* ownership is used as a proxy. An IPO firm has a block owner when a single institution controls at least 50 percent of its shares. On average, most of the shares of mainland Chinese firms that opt for a listing are state-owned (see Allen *et al.*, 2005). These shares are often distributed among several other legal persons, such as municipalities or other listed or non-listed firms, in a cross-shareholding structure. However, strategically important SOEs are likely to be majority owned by a single governmental institution in order to facilitate optimal corporate control. Block ownership is a dummy variable that takes the value 1 when a single institution controls at least 50 percent of the shares and 0 otherwise.

5.4.4.2 Geographical attributes

To account for the effects of proximity preference on the choice of listing venue, two geographical attributes are included. The first is the (log of) *geographical distance* between the location of the headquarters of the listed companies and their respective stock exchanges. Although this can be calculated relatively easily for A-, B-, and H-shares by tracking the firms' zip codes, for the red-chips this identification is more demanding. As the registered headquarters of a red-chip firm are in Hong Kong, the controlling mainland Chinese shareholder has to be identified by unravelling each firm's shareholder structure. The zip code of this majority shareholder is used to calculate the geographical distance between the red-chip controlling firm and the HKEX. Second, dummy variables are included for *Beijing*, *Shanghai* and *Shenzhen* to control for the overrepresentation of firms from the home province of each exchange, whereby Beijing is considered to be the home province of the HKEX (c.f. Karreman and Van der Knaap, 2009). As Shenzhen is only a county in Guangdong province and both Beijing and Shanghai are city provinces, Shenzhen is represented by the cities located in the Pearl River Delta economic zone in order to capture overrepresentation correctly and to facilitate comparison.[12]

5.4.4.3 Additional controls

To control for the potential influence of imitation effects among firms active in similar industries (see Pagano *et al.*, 2001), industry dummies based on the Industry Classification Benchmark (ICB) are included in the model. This is of particular importance in the case of listing choice between the stock markets in mainland China and Hong Kong as previous research has demonstrated that these markets exhibit sectoral complementarity (Karreman and Van der Knaap, 2009). Finally, year dummies are added to the model to control for a priori differences between the years in which the IPOs were issued.

Table 5.2 shows the Pearson's correlations and the descriptive statistics of the dependent and explanatory variables. A notable aspect of Table 5.2 is that the Shanghai and Shenzhen dummies to control for the overrepresentation of firms from the home province of each exchange display a rather high negative correlation with geographical distance, which indicates the possible existence of a regional home bias. However, these discussed correlations are not expected to inflict collinearity problems.

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[12] Following Enright *et al.* (2005), the Pearl River Delta economic zone includes: Shenzhen, Guangzhou, Dongguan, Foshan, Zhongshan, Zhuhai and Jiangmen.

Table 5.2: Descriptive statistics (*N*=1084).

Variable	Mean	S.d.	1	2	3	4	5	6	7
1 Exchange	1.70	0.64							
2 Total Assets	18.52	1.16	0.192*						
3 ROA	7.05	6.68	0.097*	-0.181*					
4 Block	0.80	0.40	0.002	-0.106*	-0.029				
5 Geographical Distance	6.22	1.96	0.136*	-0.065*	0.028	0.049			
6 Beijing	0.10	0.30	0.190*	0.154*	0.007	-0.161*	0.198*		
7 Shanghai	0.07	0.26	-0.163*	0.129*	-0.02	-0.091*	-0.459*	-0.094*	
8 Shenzhen	0.10	0.31	0.164*	0.026	0.026	-0.004	-0.582*	-0.115*	-0.096*

*p<0.05 level.

5.5   Results: Determinants of listing venue choice

5.5.1   Results of the baseline models

Table 5.3 shows the results of the MNL estimation whereby the SSE functions as a base alternative. It is important to note that the estimated coefficients in Table 5.3 are not marginal effects like in ordinary least squares models, but represent the effect of a change in each independent variable on the probability of selecting either of the other two exchanges *relative to* the probability of choosing the SSE.

Model 1 of Table 5.3 shows the MNL estimates for the total sample and yields some interesting results. First, in terms of total assets, large IPO firms are significantly more likely to choose a listing on the HKEX than a listing on the SSE but are significantly less likely to choose a listing on the SZSE relative to the SSE. This result is in line with expectations and clearly demonstrates a relative distinction between the three exchanges in terms of the attractiveness of firms of particular sizes. Second, the significant positive coefficient of ROA suggests that high performing firms are more likely to list on the HKEX relative to the SSE. This finding is consistent with the argument that firms choose to list in Hong Kong to signal their quality and performance. Zhang and King (2010) report similar findings. Third, when considering the geographical distance of the headquarters of the IPO firm to the exchange of listing, the coefficients show that firms that are located further away from one of the exchanges have a significantly higher likelihood of choosing the SZSE or the HKEX as listing venues relative to the SSE. Finally, the results reveal a considerable "home bias at home" for firms originating from Beijing and Shenzhen. For instance, relative to the SSE, firms from Beijing are significantly more likely to list on the

HKEX and significantly less likely to list on the SZSE. Additionally, Shenzhen-based firms have a significantly higher likelihood of listing on the SZSE (and the HKEX) versus the SSE.

Table 5.3: MNL estimates of listing choice between SSE, SZSE and HKEX.

	(1) MNL TOTAL		(2) MNL PRE-SL		(3) MNL POST-SL	
	SZSE	HKEX	SZSE	HKEX	SZSE	HKEX
Total Assets	-0.377***	1.440***	-0.104	1.634***	-0.803***	1.870***
	(0.100)	(0.213)	(0.114)	(0.254)	(0.229)	(0.466)
ROA	0.010	0.055†	0.001	-0.038	0.040	0.226**
	(0.013)	(0.032)	(0.014)	(0.032)	(0.041)	(0.073)
Block	0.244	0.429	0.068	-0.290	0.547	1.371†
	(0.194)	(0.418)	(0.256)	(0.515)	(0.349)	(0.814)
Geographical Distance	0.359**	0.881***	0.255	0.733***	0.371*	1.142*
	(0.129)	(0.178)	(0.176)	(0.210)	(0.182)	(0.454)
Beijing	-0.516†	1.511***	-0.643†	1.827**	-0.131	1.786**
	(0.276)	(0.380)	(0.367)	(0.533)	(0.459)	(0.654)
Shanghai	-0.842	-0.035	-2.734†	0.454	0.586	-0.351
	(0.562)	(0.671)	(1.411)	(0.651)	(0.682)	(1.576)
Shenzhen	3.449**	4.674***	2.780*	4.627**	3.732**	3.159
	(1.010)	(1.192)	(1.299)	(1.537)	(1.331)	(2.228)
Industry Dummies	Yes	Yes**	Yes	Yes**	Yes	Yes
Year Dummies	Yes***	Yes**	Yes	Yes	Yes***	Yes**
Pseudo R²	0.288		0.238		0.444	
Log pseudo-likelihood	-728.931		-467.904		-224.754	
Obs.	1084		651		433	

†p<0.1; *p<0.05; **p<0.01; ***p<0.001
Notes: Base exchange is the SSE. Standard errors in parentheses. Industry and year dummies significance based on joint test.

Models 2 and 3 in Table 5.3 show the MNL estimates for the pre-SL and the post-SL periods respectively. There are notable differences in both financial and geographical attributes across the two time periods. First, larger firms are significantly less likely to list on the SZSE versus the SSE in the post-SL period, while in the pre-SL period this difference between the SZSE and SSE is not significant. This result indicates that in the

post-SL period, smaller firms prefer to list on the SZSE relative to the SSE, which is consistent with the expectations that the transformation of the equity market structure in Shenzhen results in the attraction of smaller-sized firms. Second, the positive and significant coefficient of ROA for the HKEX in Model 3 indicates that, in the post-SL period, high-performing firms are significantly more likely to issue an IPO on the HKEX than on the SSE or the SZSE. As expected, this significant and positive coefficient of ROA is not present in the pre-SL period in Model 2. Third, the positive and significant coefficient of block is consistent with the expectation that majority-owned SOEs are more likely to list on the HKEX relative to the SSE and the SZSE, but in the post-SL period only. Fourth, in terms of geographical attributes, the pre-SL period shows that firms headquartered in Beijing and Shanghai are significantly less likely to list on the SZSE relative to the SSE. In contrast, this is not the case in the post-SL period. This finding is noteworthy as it indicates that, in the post-SL period, proximity preference has become less important for the decision of where to issue an IPO. In addition, while Shenzhen-based firms are significantly more likely to choose the HKEX over the SSE in the pre-SL period, no such relationship is observed in the post-SL period.

An additional finding is the variation in the joint significance of the industry dummies between the pre- and post-SL periods in Models 2 and 3 of Table 5.3. To explain this difference, the individual coefficients of the industry dummies are presented in Table 5.4. To start with, Model 4 shows that the Industrials, Oil & Gas and Technology coefficients for the HKEX are positive and significant, implying that, compared to Basic Materials, these firms are significantly more likely to choose to list on the HKEX relative to the SSE. These findings are similar to the results of Karreman and Van der Knaap (2009). Yet, in Models 5 and 6 of Table 5.4, the positive and significant effects of Industrials and Oil & Gas for the HKEX are largely driven by the listing decisions in the pre-SL period, while Technology firms make more explicit decisions regarding where to list in the post-SL period. While contrary to the expectation that technology-oriented firms prefer to list on the SZSE in the post-SL period, these finding are consistent with previous research stating that high-growth, capital-intensive firms have a higher propensity to list abroad than those from stable sectors like consumer goods (Wójcik and Burger, 2010). Finally, it is noteworthy that the post-SL year dummies become highly significant due to the unstable distribution of IPO frequencies between the SSE, SZSE and HKEX (see also Table 5.1, Panel A). Additionally, the model fit of Model 3 is considerably better than those of Models 1 and 2.

Table 5.4: Industry dummies of the MNL estimates.

	(4) MNL TOTAL		(5) MNL PRE-SL		(6) MNL POST-SL	
	SZSE	*HKEX*	*SZSE*	*HKEX*	*SZSE*	*HKEX*
Consumer Goods	0.044	-0.161	-0.010	-0.624	0.182	1.257
	(0.227)	(0.572)	(0.287)	(0.837)	(0.394)	(1.076)
Consumer Services	-0.568†	0.001	-0.463	-0.613	-0.668	2.298
	(0.323)	(0.664)	(0.359)	(0.847)	(0.789)	(1.473)
Financials	-0.115	0.088	0.154	-0.032	-1.764	0.928
	(0.359)	(0.647)	(0.393)	(0.798)	(1.076)	(1.529)
Health Care	-0.219	0.962	-0.287	0.595	-0.227	2.611
	(0.305)	(0.739)	(0.391)	(0.912)	(0.490)	(1.667)
Industrials	0.028	1.182**	0.071	1.606**	-0.291	1.172
	(0.221)	(0.436)	(0.275)	(0.519)	(0.379)	(1.424)
Oil & Gas	0.874	2.267*	1.075	2.134†	0.648	3.627
	(0.671)	(1.069)	(0.803)	(1.187)	(0.984)	(3.459)
Technology	0.132	1.638*	0.056	0.849	0.069	3.541*
	(0.326)	(0.645)	(0.425)	(0.782)	(0.569)	(1.727)
Utilities	-0.299	-0.786	-0.461	-0.711	-0.042	-0.030
	(0.383)	(0.735)	(0.471)	(1.026)	(0.597)	(1.155)

†$p<0.1$; *$p<0.05$; **$p<0.01$; ***$p<0.001$

Notes: Omitted industry dummy is Basic Materials. Base exchange is the SSE. Standard errors in parentheses.

In sum, a likelihood ratio (LR) test for joint significance, stating that all coefficients of Model 1 do not vary between the disjointed subsets of the data in Models 2 and 3 of Table 5.3, indicates that the differences in the determinants of the listing choices of mainland Chinese firms between the pre- and post-SL periods are highly significant (LR $\chi^2_{(32)}$ = 72.55, $p<0.001$).

5.5.2 Marginal effects

Because the coefficient estimates in Table 5.3 represent the effects of the independent variables on the relative probabilities of choices, it is difficult to make meaningful comparisons of the absolute values of the coefficients across the different exchanges. To overcome this problem and to determine the direct (instead of the relative) effects of the independent variables on the listing choices of mainland Chinese firms, marginal effects can be estimated. These marginal effects are listed in Table 5.5.

Table 5.5: MNL marginal effect estimates of listing choice between SSE, SZSE and HKEX.

	(7) MEs TOTAL			(8) MEs PRE-SL			(9) MEs POST-SL		
	SSE	SZSE	HKEX	SSE	SZSE	HKEX	SSE	SZSE	HKEX
Total Assets	0.069**	-0.117***	0.048***	0.004	-0.046	0.043***	0.164**	-0.196***	0.032*
	(0.024)	(0.024)	(0.008)	(0.028)	(0.028)	(0.010)	(0.054)	(0.056)	(0.015)
ROA	-0.003	0.002	0.001†	0.000	0.001	-0.001	-0.010	0.007	0.003†
	(0.003)	(0.003)	(0.001)	(0.003)	(0.003)	(0.001)	(0.009)	(0.009)	(0.002)
Block	-0.062	0.054	0.008	-0.012	0.021	-0.009	-0.128	0.117	0.011
	(0.047)	(0.047)	(0.010)	(0.062)	(0.062)	(0.016)	(0.081)	(0.081)	(0.010)
Geographical Distance	-0.093**	0.074*	0.019***	-0.070	0.054	0.015**	-0.084*	0.073†	0.012*
	(0.030)	(0.029)	(0.005)	(0.044)	(0.042)	(0.005)	(0.039)	(0.039)	(0.005)
Beijing	0.067	-0.174**	0.107*	0.067	-0.199**	0.132*	0.010	-0.065	0.055
	(0.065)	(0.063)	(0.044)	(0.084)	(0.075)	(0.056)	(0.098)	(0.108)	(0.055)
Shanghai	0.194	-0.206	0.013	0.422***	-0.468***	0.047	-0.113	0.120	-0.008
	(0.130)	(0.127)	(0.025)	(0.101)	(0.093)	(0.041)	(0.118)	(0.120)	(0.012)
Shenzhen	-0.472***	0.361***	0.111*	-0.507***	0.320**	0.188†	-0.393***	0.393***	-0.001
	(0.045)	(0.060)	(0.053)	(0.092)	(0.113)	(0.106)	(0.053)	(0.057)	(0.019)

†p<0.1; *p<0.05; **p<0.01; ***p<0.001
Notes: Standard errors in parentheses. Industry and year dummies included in the regressions but not displayed.

The results are generally consistent with the findings in Table 5.3. However, some differences exist in Model 9 of Table 5.5. For instance, block is no longer significant, indicating that the initial finding of a significant effect of block in Model 3 of Table 5.3 is rather weak. Another difference is that, in the post-SL period, firms headquartered in Beijing are no longer significantly more likely to choose a listing in Hong Kong. A possible cause of these differences is the relatively small number of observations from Beijing-based firms in the HKEX sample. In addition, note that, while they are significant, the marginal effects of ROA on the decision of where to list are very small. Overall, Table 5.5 provides a more easily interpretable indication of the impacts of the individual variables on the choice of listing. For instance, Model 4 shows that firms headquartered in the Shenzhen region have a 36 percent higher probability of choosing to list on the SZSE than on the SSE.

5.5.3 Robustness

To make sure that the results are robust, two additional methodological checks are performed. First, as already announced in the methodology section, the model is re-estimated by MNP estimation to check for the potential importance of the IIA property's affecting the MNL estimates. The results of MNP estimation in Table 5.6 (see Appendix) lead to similar conclusions as the MNL outcomes in Table 5.3, indicating that IIA is not a severe problem in this particular case. Second, because the primary equity markets in mainland China and Hong Kong include some extremely large IPOs, the sample contains non-erroneous outliers on both the SSE and HKEX. To examine the possible effects of these outliers on the predicted choice probabilities in the baseline models, an outlier analysis is performed. Although the determination of outliers is rather arbitrary, an often applied method is to exclude all cases that are larger than the mean plus two times the standard deviation of the variable of interest. For this study, extreme values are selected based on an extremely large IPO in terms of total assets of the underlying firm. This method yielded 16 outliers representing the largest and most well-known mainland Chinese firms, such as SinoPec, Air China and China Mobile. Most of these extremely large IPOs (11) were issued on the HKEX. The results in Table 5.7 (see Appendix) show that the baseline regressions in Table 5.3 are robust to outliers as the findings from both models yield similar conclusions. One interesting difference however, is that the industry imitation effect for the HKEX relative to the SSE and the SZSE becomes persistent across the pre- and post-SL periods.

5.6   Conclusion: towards specialisation and complementarity?

The current literature on financial centre competition is uniform in its conclusion that the financial centres in mainland China and Hong Kong have become relative complements over time. Although financial centre competition is expected to be most intense in capital and securities markets, these conclusions are primarily based on insights from the banking sector. This leaves the question of whether this complementarity issue also holds for financial centre rivalry from a stock market perspective. While previous research shows that these centres have relatively distinct hinterlands and that they are sectorally specialised, there is little, if any, knowledge on how and why these financial centres, and the stock markets therein, developed as relative complements over time. This study attempts to shed some light on this issue by unravelling the competitive advantages of Shanghai, Shenzhen and Hong Kong as financial centres based on the decisions of mainland Chinese firms of where to list. To examine how these advantages have developed over time, a distinction is made between two periods of stock market development: a pre- and a post-SL period. The main findings are twofold.

First, the results show that, in terms of financial attributes, mainland Chinese firms make more distinct listing choices in the post-SL period compared to the pre-SL period. For the pre-SL period, the only finding is that larger firms are more likely to list in Hong Kong. In contrast, for the post-SL period, it can be concluded that larger and more profitable (majority owned) firms prefer to list on the HKEX over the SSE and the SZSE. Although obtained in a limited setting, this outcome is consistent with the Chinese public's concern that the largest and best performing SOEs from the mainland are currently listing abroad (see Lai, 2009). Besides, in the post-SL period, smaller mainland Chinese firms are more likely to list on the SZSE, which is in line with the recent strategy of the CSRC to redevelop the SZSE into an exchange focused on SMEs.

Second, in terms of geographical attributes, there has been a change from explicit locational preferences of Beijing-, Shanghai- and Shenzhen-based firms in the pre-SL period towards a less predetermined geographical pattern in the post-SL period. The only exceptions are firms headquartered in the Shenzhen region, which display a persistent home bias in both periods. The finding that geographical distance remains important has two implications. On the one hand, it may signal improved corporate governance of Beijing- and Shanghai-based firms in terms of information disclosure, decreasing the information asymmetry problem. On the other hand, and in line with the previous

argument, when these firms are more informationally transparent, they are less location bound. This alleviates the need to decide where to list and enhances the probability that these firms will list where they prefer to be listed: on the same exchange as their peers.

Overall, the findings show that geographical attributes have become less influential in choosing the exchange on which to offer an IPO, while financial characteristics of IPO firms have become more important. This shift implies increasing segregation of firms in their listing choices, indicating that the financial centres of mainland China and Hong Kong are becoming more specialised. Hong Kong's prominence as a well-developed international financial centre is currently attracting the best and largest mainland Chinese SOEs. While there is less differentiation in attractiveness between Shenzhen and Shanghai, Shenzhen has clearly refocused its strategy towards SMEs. As Lai (2009) rightfully argues, this strengthens the possibilities for specialised collaborative efforts, whereby functional coordination may enhance the competitiveness of each financial centre (Shi and Hamnett, 2002). This finding also underlines the fact that new research should be directed towards understanding how the interplay between competition and cooperation shapes the success of the financial centres in mainland China and Hong Kong.

Appendix: Results additional robustness checks

Table 5.6: MNP estimates of listing choice between SSE, SZSE and HKEX.

| | (10) MNP TOTAL | | (11) MNP PRE-SL | | (12) MNP POST-SL | |
	SZSE	*HKEX*	*SZSE*	*HKEX*	*SZSE*	*HKEX*
Total Assets	-0.332***	0.882***	-0.090	1.128***	-0.631***	1.204***
	(0.078)	(0.124)	(0.095)	(0.162)	(0.177)	(0.254)
ROA	0.007	0.025	0.000	-0.024	0.023	0.153**
	(0.010)	(0.023)	(0.012)	(0.020)	(0.028)	(0.044)
Block	0.223	0.187	0.080	-0.321	0.485†	1.057*
	(0.160)	(0.262)	(0.213)	(0.322)	(0.269)	(0.483)
Geographical Distance	0.195**	0.485***	0.117	0.426***	0.239*	0.763**
	(0.066)	(0.089)	(0.088)	(0.097)	(0.116)	(0.258)
Beijing	-0.389†	1.233***	-0.506†	1.261***	0.018	1.444**
	(0.224)	(0.263)	(0.295)	(0.359)	(0.369)	(0.444)
Shanghai	-1.022**	-0.143	-2.353**	-0.140	0.330	-0.075
	(0.356)	(0.442)	(0.743)	(0.465)	(0.522)	(0.951)
Shenzhen	2.035***	2.640***	1.597**	2.768***	2.591***	1.973†
	(0.444)	(0.505)	(0.553)	(0.632)	(0.741)	(1.079)
Industry Dummies	Yes	Yes**	Yes	Yes**	Yes	Yes
Year Dummies	Yes***	Yes***	Yes	Yes	Yes***	Yes***
Log pseudo-likelihood	-737.476		-471.777		-226.070	
Obs.	1084		651		433	

†p<0.1; *p<0.05; **p<0.01; ***p<0.001

Notes: Base exchange is the SSE. Standard errors in parentheses. Industry and year dummies significance based on joint test.

Table 5.7: Outlier analysis: MNL estimates of listing choice between SSE, SZSE and HKEX.

	(13) MNL TOTAL		(14) MNL PRE-SL		(15) MNL POST-SL	
	SZSE	HKEX	SZSE	HKEX	SZSE	HKEX
Total Assets	-0.329**	1.618***	-0.104	1.628***	-0.712**	3.234***
	(0.101)	(0.226)	(0.114)	(0.253)	(0.244)	(0.634)
ROA	0.010	0.054†	0.001	-0.043	0.048	0.321***
	(0.013)	(0.032)	(0.014)	(0.034)	(0.044)	(0.088)
Block	0.253	0.485	0.069	-0.265	0.579	1.785
	(0.195)	(0.454)	(0.256)	(0.515)	(0.353)	(1.404)
Geographical Distance	0.355**	0.896***	0.255	0.729**	0.369†	2.395†
	(0.132)	(0.182)	(0.176)	(0.210)	(0.190)	(1.256)
Beijing	-0.513†	1.498***	-0.642†	1.821**	-0.129	1.694*
	(0.275)	(0.397)	(0.366)	(0.529)	(0.463)	(0.762)
Shanghai	-0.860	0.037	-2.734†	0.463	0.515	0.398
	(0.591)	(0.619)	(1.410)	(0.650)	(0.720)	(1.229)
Shenzhen	3.411**	4.681***	2.780*	4.629**	3.712**	4.515
	(1.024)	(1.225)	(1.299)	(1.534)	(1.372)	(3.706)
Industry Dummies	Yes	Yes***	Yes	Yes**	Yes	Yes***
Year Dummies	Yes***	Yes***	Yes	Yes	Yes***	Yes**
Pseudo R²	0.281		0.236		0.452	
Log pseudo-likelihood	-714.333		-467.681		-206.375	
Obs.	1068		650		418	

†p<0.1; *p<0.05; **p<0.01; ***p<0.001

Notes: Base exchange is the SSE. Standard errors in parentheses. Industry and year dummies significance based on joint test.

Chapter 6:

Summary and conclusions

6.1 Introduction

While there is a burgeoning body of literature on firm strategy in emerging markets, little work in this field is conducted in an explicit financial services context. This lack of research is surprising, given the importance of sound financial services for a well-functioning financial system and, accordingly, the economic growth of emerging economies. Therefore, understanding the organization and strategy of firms contributing to the development of the financial system appears of utmost importance. The general aim of this study is to address these issues and to examine how firms build strategies to organize their activities and enhance their operations in these particular markets. This is done by distinguishing the two main providers of financial services, namely banks and stock markets, and addressing both topics in the emerging market context of Central and Eastern Europe (CEE) and China, respectively. For banking, the general focus is on the adopted strategies of multinational banks (MNBs) originating from developed countries to expand across the CEE region. In addition, for stock markets, the central question is how the decision of mainland Chinese firms of where to list their shares reflects the attractiveness of the stock markets within the financial centers of Shanghai, Shenzhen and Hong Kong. In Chapter 1 a general research question was formulated for each topic:

> *Research question 1: What strategy should multinational banks from developed countries adopt when expanding their firm network across Central and Eastern Europe?*

> *Research question 2: What is the role of mainland Chinese firms' strategy of where to list their shares in the alleged competition between the financial centers in mainland China and Hong Kong?*

The remainder of this concluding chapter will summarize the most important empirical results of this study. After that, the research findings are discussed in relation to the general research questions stated above, and final conclusions are drawn.

6.2 Summary and findings

The first general research question is addressed in Chapter 2 and Chapter 3. In Chapter 2, the pace with which MNBs establish a presence across unexplored host markets in CEE is

examined. This process of cross-country expansion is analyzed with a particular emphasis on the level of host country uncertainty and competition as factors that might affect the speed with which MNBs enter these markets. The main findings from the empirical analysis suggest that high levels of host country uncertainty make MNBs reluctant to commit considerable resources quickly. Instead, these banks prefer to adopt a slow and incremental expansion strategy and expand across countries in a cascading fashion. In line with the literature on investment under uncertainty, this result can be explained by the preference of MNBs to delay their investments and to wait until new information arises, which can be used to make less risky expansions at a later date. In addition, with a high level of competition in a particular CEE host country, MNBs are more likely to adopt a strategy of rapid expansion or even enter multiple markets simultaneously. When new investment opportunities arise, MNBs try to move quickly to lock in potential gains or to preempt rival banks. Overall, the findings of this study indicate that MNBs adopt different strategies regarding the pace and location of investment based on the degree of host country uncertainty and competition. As such, the results are generally consistent with traditional views on the internationalization of the firm as well as new strategic approaches.

The main premise of Chapter 3 is that the existing network of foreign subsidiaries in CEE, as well as the specific (spatial) configuration thereof, provides a source of competitive advantage for the MNB and contributes to the performance of newly established subsidiaries throughout the region. The empirical evidence covers three main issues. First, the results show that MNBs with considerable investment experience in CEE, as measured by the size of the subsidiary network in the region, are better able to overcome the inherent difficulties of the liability of foreignness with which new subsidiaries are confronted in their initial development phase. To be precise, the effect of experience on subsidiary performance in the first full year of operation of the new subsidiary is sizeable. This finding indicates that MNBs with large subsidiary networks in CEE are better and more rapidly able to eliminate the barriers to expand throughout the region. Second, the effect of CEE operational experience on the performance of newly established subsidiaries only holds when the CEE network of the MNB extends over adjacent countries. A densely configured MNB subsidiary network, that is, a network spanning across adjacent countries, is likely to facilitate an effective exchange of firm-specific experiential knowledge and thus provides a clear competitive advantage for the MNB. Third, there is some weak evidence that an acquired subsidiary benefits from an

experienced MNB, while newly established greenfield subsidiaries do not. In sum, the results of the analysis in Chapter 3 suggest that the size of the MNB foreign subsidiary network in CEE has a short-run positive effect on the performance of newly established subsidiaries extending over adjacent countries in the region.

Chapters 4 and 5 focus on the second general research question of this study. Because the assessment of financial center competition from the perspective of firms and their strategic decisions of where to list their shares has received only very limited attention in the past, Chapter 4 is predominantly explorative. The aim of Chapter 4 is to examine financial center competition from a stock market perspective and to show how financial centers create competitive advantage in line with current market conditions. In general, the findings imply that the financial centers in mainland China and Hong Kong try to outperform their rivals in those geographical areas and sectors in which they have a competitive advantage. The empirical outcomes show that small mainland Chinese firms with a local focus prefer to list on the often nearby Shanghai stock exchange (SSE) or the Shenzhen stock exchange (SZSE), while large, internationally oriented and mainly Beijing-based firms are attracted to the Hong Kong stock exchange (HKEX). Furthermore, each stock market shows strong sectoral dependencies: the SSE has an overrepresentation of traditional industries such as mining, utilities and construction, the SZSE has a focus on consumer goods, and the HKEX is largely dependent on information- and knowledge-intensive industries such as financials, telecommunications, and computer hardware and software. Based on the strategic choices made by mainland Chinese firms on where to list their shares, it can be concluded that the financial centers of Shanghai, Shenzhen and Hong Kong reveal a considerable amount of complementarity.

Chapter 5 is an extension of Chapter 4 and analyzes, again from a stock market perspective, whether the competitiveness of financial centers in mainland China and Hong Kong has changed over time. This analysis is done by distinguishing between two main periods of stock market development: the periods before and after the introduction of the Securities Law (SL). The main findings indicate that mainland Chinese firms make more distinct listing choices in the post-SL period compared to the pre-SL period. The results show that in the post-SL period, larger and more profitable (majority-owned) mainland Chinese firms prefer to list in Hong Kong, while in the pre-SL period, only larger firms were more likely to list on the HKEX. Smaller mainland Chinese firms are more likely to list on the SZSE. In addition, the explicit locational preferences of Beijing-, Shanghai- and Shenzhen-based firms in the pre-SL period have become less predetermined in the post-SL

period, except for firms headquartered in the Shenzhen region. However, geographical distance remains important. In sum, the findings suggest an increasing segregation in the strategic listing decisions that mainland Chinese firms make, which indicates that the financial centers of mainland China and Hong Kong have become more specialized over time.

6.3   Final conclusions

Overall, some final conclusions can be drawn from this study in relation to the two general research questions. To start with the first research question, the idiosyncrasies of the host country environment in emerging markets appear to be of vital importance for the expansion strategy of foreign MNBs. The rapid changes in the immediate business environment and the substantial differences between the CEE countries in terms of macroeconomic uncertainty and political risks make MNBs reluctant to invest in a particular host country. MNBs expand most effectively across CEE by establishing new subsidiaries in countries adjacent to a country where the bank already has a presence. A densely configured subsidiary network is likely to facilitate the effective exchange of experiential knowledge and information, which reduces the uncertainty of conducting business in the new host country. However, in an increasingly competitive and globalized banking industry, it is often not possible to be hesitant and to deliberate over investment decisions. When the degree of rival presence in a host country increases, MNBs are more likely to adopt rapid expansion strategies to secure those investment opportunities that may be potentially beneficial.

With regard to the second general research question, the environment is also an important factor in the strategy design of mainland Chinese firms on where to list their shares. The heterogeneity in the institutional and regulatory environments between the financial centers in mainland China and Hong Kong clearly affects the attractiveness and thus the competitive position of their corresponding stock markets. In contrast to the relatively immature and underdeveloped stock markets in Shanghai and Shenzhen, the HKEX is embedded in an internationally competitive institutional and regulatory environment. Hence, it is easier and less costly for investors to make well-informed investment decisions about the firms listed on the HKEX relative to those listed on the SSE and the SZSE. To exploit the advantages of a large pool of (foreign) investors, mainland China's largest and recently also most-profitable firms generally make the

strategic decision to list in Hong Kong. On the contrary, Shanghai and Shenzhen mainly attract locally oriented firms. However, the recent rapid development of the mainland Chinese stock exchanges, combined with structural regulatory reform, is gradually changing the competitive position of each financial center. In the period after the introduction of the SL, mainland Chinese firms make more explicit listing choices, which indicates that the financial centers of mainland China and Hong Kong are becoming more specialized over time.

To put it very succinctly, this study emphasizes that the understanding of the organization of the supply of capital by banks and the organization of the demand for capital by firms in an emerging market context, largely depends on how these firms cope with the idiosyncrasies of the environments in which they operate and are embedded.

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Samenvatting (Summary in Dutch)

Ondanks een groeiende hoeveelheid literatuur met betrekking tot de strategie van ondernemingen in opkomende markten, is er slechts weinig onderzoek uitgevoerd naar de context van financiële diensten. Dit gebrek aan onderzoek is opmerkelijk gezien het belang van financiële diensten voor een goed functionerend financieel systeem en, evenzeer, bij de economische groei van opkomende economieën. Het is daarom van groot belang om inzicht te krijgen in het vraagstuk hoe de organisatie en strategie van ondernemingen bijdragen aan de ontwikkeling van het financiële systeem. Het algemene doel van deze studie is om deze kwesties te belichten en te onderzoeken hoe bedrijven strategieën ontwikkelen om hun activiteiten te organiseren en te versterken in deze markten. Als uitgangspunt wordt er voor gekozen om een onderscheid te maken tussen de twee belangrijkste aanbieders van financiële diensten, namelijk banken en beurzen, en deze aanbieders voorts te bestuderen in de context van Centraal- en Oost-Europa, respectievelijk China. Vanuit het perspectief van de banken ligt de nadruk op het centrale vraagstuk welke strategieën multinationale banken afkomstig uit ontwikkelde landen, het best kunnen implementeren om te expanderen in de Centraal- en Oost-Europese regio. Vanuit het perspectief van de beurzen is het centrale vraagstuk hoe de beslissing van Chinese ondernemingen in welke locatie ze hun aandelen zullen emitteren, de concurrentiepositie van de aandelenbeurzen in de financiële centra van Shanghai, Shenzhen en Hong Kong weergeeft. De algemene onderzoeksvragen in deze studie zijn dan ook gerelateerd aan beide perspectieven:

Onderzoeksvraag 1: Welke strategie zouden multinationale banken uit ontwikkelde landen moeten implementeren wanneer zij hun netwerk willen uitbreiden in Centraal- en Oost-Europa?

Onderzoeksvraag 2: Welke rol speelt locatiestrategie met betrekking tot aandelenemissies van Chinese ondernemingen, in de vermeende concurrentie tussen de financiële centra in China en Hong Kong?

Op basis van het uitgevoerde onderzoek in de verschillende hoofdstukken van deze studie is het mogelijk om meerdere conclusies te trekken met betrekking tot de bovengenoemde twee onderzoeksvragen. Wat betreft de eerste onderzoeksvraag lijken de karakteristieken van de algehele bedrijfsomgeving in opkomende markten van vitaal belang te zijn voor de expansiestrategie van buitenlandse multinationale banken. De snelle veranderingen in de directe bedrijfsomgeving en de aanzienlijke verschillen tussen de landen in Centraal- en Oost-Europa in termen van macro-economische onzekerheid en politieke risico's, maken dat multinationale banken terughoudend zijn om te investeren in specifieke gastlanden. Om het meest effectief uit te breiden is het aangewezen dat multinationale banken dochterondernemingen opzetten in landen aangrenzend aan die landen waar de bank reeds een dochteronderneming bezit. Het opbouwen van een dergelijk compact geconfigureerd netwerk van dochterondernemingen heeft waarschijnlijk als voordeel dat informatie en kennis gebaseerd op ervaring beter uitgewisseld kunnen worden, waardoor de onzekerheid in de bedrijfsomgeving kan worden verminderd. Echter, door de toenemende concurrentie en globalisering van de bankensector is het vaak niet mogelijk om een expansiestrategie te volgen die gebaseerd is op terughoudendheid. Wanneer de mate van concurrentie in een gastland in Centraal- en Oost-Europa toeneemt, is te verwachten dat multinationale banken snelle expansiestrategieën implementeren om potentiële waardevolle investerings-mogelijkheden veilig te stellen.

Met betrekking tot de tweede onderzoeksvraag kan worden gesteld dat de omgeving ook een belangrijke rol speelt in de locatiestrategie van Chinese ondernemingen betreffende het emitteren van aandelen. De heterogeniteit van de institutionele omgeving en regelgeving van de financiële centra in China en Hong Kong, heeft een duidelijk effect op de aantrekkingskracht en concurrentiepositie van de aandelenbeurzen in de verschillende centra. In tegenstelling tot de relatief onderontwikkelde aandelenbeurzen in Shanghai en Shenzhen, is de aandelenbeurs van Hong Kong ingebed in een internationaal concurrerende, institutionele en regulerende omgeving. Dit maakt het, in vergelijking tot de aandelenmarkten in Shanghai en Shenzhen, gemakkelijker en goedkoper voor beleggers om goed geïnformeerde beslissingen te nemen over het investeren in ondernemingen genoteerd op de aandelenmarkt van Hong Kong. Om te profiteren van de overvloedige

aanwezigheid van buitenlandse beleggers, maken talrijke grote, winstgevende Chinese ondernemingen recentelijk de strategische beslissing om hun aandelen te emitteren in Hong Kong. In tegenstelling tot Hong Kong, trekken de aandelenmarkten in Shanghai en Shenzhen voornamelijk lokaal georiënteerde en kleinere ondernemingen aan. De recente snelle ontwikkeling van de aandelenbeurzen in China, gecombineerd met structurele hervorming van de regelgeving, heeft echter een positieve invloed op de concurrentiepositie van de financiële centra. In de periode na de invoering van de nieuwe wetgeving omtrent de effectenhandel is dan ook gebleken dat Chinese bedrijven explicietere keuzes maken wat betreft de locatie waar zij hun aandelen emitteren. Dit geeft aan dat de aandelenmarkten zich beter profileren en door de tijd heen gespecialiseerder zijn geworden.

De onderzoeksresultaten in deze studie benadrukken al met al dat de organisatie van het aanbod van extern kapitaal door banken en de organisatie van de vraag naar extern kapitaal door ondernemingen in de context van opkomende economieën, grotendeels afhankelijk is van de vraag hoe deze ondernemingen omgaan met de karakteristieken van de omgeving waarin ze moeten opereren of zijn ingebed.

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Bas Karreman was born on November 6, 1978 in Heenvliet, the Netherlands. He obtained his Master of Science in business economics from the Erasmus University Rotterdam in 2005, after which he started his academic career at the same university. The year prior to the start of his PhD project in September 2006, he was involved in organizing and teaching the new course 'Organization and Strategy' for bachelor 1 students at the Erasmus School of Economics.

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