



LUND
UNIVERSITY

An Economic Assessment of Legal and Institutional Barriers to Foreign Bank Establishment in China

Author: Erik Lindblad

Bachelor's Thesis
Lund University
Department of Economics
January 2012

Supervisor: Professor Fredrik Sjöholm

Abstract

This study estimates the effects of legal and institutional barriers to foreign bank establishment in China. Provincial corruption data is compiled from official Chinese procuratorial work reports and analyzed together with economic indicators and measures of legislative liberalization in a multiple regression analysis. The analysis uses panel data for 18 Chinese cities in 11 provinces over 8 years (1998-2005). While there are certain indications that provinces with fewer corruption cases attract more foreign banks, no robust statistically significant effect of corruption on foreign bank establishment is found. Legal restrictions on local currency are shown to have a considerable impact on the establishment of foreign banks. Cities where such legislation was liberalized in early stages are found to attract more foreign branch offices. Lastly, a strong link is found suggesting that foreign banks have been prone to follow vertical investment strategies in China caused by oligopolistic reactions.

Keywords: China, FDI, foreign banks, corruption, legislation, panel data

Table of Contents

1 INTRODUCTION	3
2 THEORY	5
2.1 THE ECLECTIC PARADIGM	5
2.1.1 OWNERSHIP AND INTERNALIZATION ADVANTAGES	6
2.1.2 LOCATION ADVANTAGES	8
2.1.2.1 HORIZONTAL LOCATION STRATEGIES	8
2.1.2.2 VERTICAL LOCATION STRATEGIES	9
2.1.2.3 LEGAL ENVIRONMENT AND CORRUPTION	10
2.1.2.4 FDI POLICY AND DISCRIMINATORY REGULATION	13
2.1.3 SUMMARY OF THE OLI FRAMEWORK	14
3 THE CHINESE CONTEXT	16
3.1 BANKING REFORM IN CHINA	16
3.1.1 LEGISLATIVE RESTRICTIONS ON FOREIGN BANKING IN CHINA	17
3.2 CORRUPTION IN TRANSITIONAL CHINA	20
3.2.1 ANTI-CORRUPTION POLICIES IN CHINA	23
4 EMPIRICAL TESTING	26
4.1 VARIABLES AND DATA	26
4.1.1 RELIABILITY OF DATA	28
4.2 METHOD	29
4.3 RESULTS AND ANALYSIS	31
4.3.1 CORRELATION AND MULTICOLLINEARITY	31
4.3.2 HETEROSKEDASTICITY	32
4.3.3 REGRESSIONS	33
5 SUMMARY AND CONCLUSIONS	44
REFERENCES IN ENGLISH	46
REFERENCES IN CHINESE	50

1. Introduction

China is in transition. In 1978, two years after the death of Mao Zedong, Deng Xiaoping initiated the immense economic policy package to reform and open the Chinese economy that would be dubbed “*Gǎigé kāifàng*” – literally “*Reform and Opening*”. Since then, China has undergone profound structural changes and opened up to the rest of the world. The country’s economy has grown to become the second largest in the world after the United States. A vast number of foreign firms have been integrated in the Chinese economy as it has developed into one of the most interconnected and powerful economies of the 21st century.

China’s economic growth as well as its increasing interconnectivity has made it a prime destination for multinational banks (MNBs). Foreign banking in China, which was nonexistent pre-reform, consisted of over 500 banking institutions in 2006. Domestic policies as well as WTO (World Trade Organization) commitments have made the market more accessible. Foreign banks play an important role in China as they provide international banking services needed to facilitate international trade and foreign direct investment (FDI) in one of the fastest growing economies in the world. Nevertheless, the banking sector is one of the most regulated parts of the Chinese economy. This holds especially true for foreign banks. In addition to being subject to discriminatory regulation on capital sufficiency ratios and asset holdings, foreign banks have been geographically restricted. They have also regulated by the Chinese government’s legislative stronghold on local currency business.

The Chinese banking sector is dominated by the power of the “Big Four” state-owned banks. This group controls over half of all banking assets in China but are troubled by the legacy of an old monopolistic system. In addition to owning an unwieldy volume of nonperforming loans, domestic banks are burdened by their political subordination to government officials. Informal insider networks play an enormous role in a financial sector that is beset by corruption. Foreign banks are naturally confronted by this sector characteristic as well.

Therefore, foreign banks entering the Chinese market have had to deal with legal barriers along with institutional barriers such as corruption. The question of how Chinese corruption affects foreign bank establishment is not only of domestic policy interest. It is also of great concern to the international financial community and consequently to foreign policymakers.

U.S. foreign policy argumentation by observers such as Pei (2007, pp. 6-7) is a case in point. Given the trade opportunities associated with an advanced integrated international banking system, the issue is important to address. Economic theory suggests that investors are expected to shy away from corruption. However, the empirical research on how foreign banks respond to corruption in China is limited.

The contribution of this study is twofold. Firstly, while the link between corruption and FDI in China has been studied before, this is the first study to focus on foreign bank establishment. Secondly, this study explores differences on regional levels in China while many previous studies on FDI flows tend to focus on country-level differences. I have been able to compile provincial data on corruption cases for the years 1998-2005. This data has, to the best of my knowledge, not been used in any other existing research. I will use the new data together with economic indicators and measures of regional legislative liberalization to carry out the main objective of this thesis, which is to investigate how corruption levels and legal restrictions have influenced the establishment of foreign banks in China.

This introduction is the first of the study's five chapters. A background of economic theory on FDI, corruption and legal barriers is presented in chapter 2. Chapter 3 outlines the current Chinese context regarding banking, relevant legislation and corruption. All empirical testing is included in chapter 4, where I also discuss the reliability of data. Chapter 5 contains a summary and conclusions drawn from the analysis.

2. Theory

2.1 The Eclectic Paradigm

There are several costs associated with establishing a firm in a foreign market. Firstly, all multinational corporations (MNCs) face fixed costs in the form of establishing new business facilities and overcoming barriers of regulatory nature. Additional costs are often associated with asymmetric information of less tangible form given that firms enter unknown business environments. MNCs will face institutional, linguistic and cultural differences when engaging in cross-border activities. Firms may have to relocate managers and engineers, which will induce higher wage costs. The process of overcoming these barriers often bears a high price and is time consuming. Domestic firms are at advantage contra foreign firms since they do not face these entry costs. Given this predicament, foreign firms must be able to utilize some competitive factor not available to their domestic counterparts in order to successfully compete on their market.

Economic theory suggests that MNCs will invest in a foreign market if they own certain advantages over domestic firms. The eclectic paradigm (Dunning, 1979, 1980, 1981, 2001) explains FDI by using a combination of three sources of advantages: ownership advantages, location advantages and internalization advantages. An MNC will invest in a foreign market if it owns a combination of ownership advantages, location advantages and internalization advantages such that it can overcome the costs of operating in a new market. This approach is commonly referred to as the OLI framework and was introduced by the British economist John H. Dunning (1980). The OLI framework focuses on the incentives facing individual firms. This is a key characteristic of the framework and differentiates it from e.g. the Heckscher-Ohlin way of thinking about FDI as return-seeking international movement of physical capital. The eclectic paradigm has proved to be a useful framework to think about FDI. Gray and Gray (1981) were among the first to apply the OLI framework to international banking. Their original study, and a large amount of following empirical research, has reached a number of conclusions regarding determinants of MNB locations that will be discussed in the following sections. The OLI model and the framework provided by the eclectic paradigm will be used throughout this thesis to explain the driving forces behind FDI and foreign bank establishment.

2.1.1 Ownership and Internalization Advantages

In the eclectic paradigm, ownership advantages constitute the first source of factors explaining the existence of MNCs. Ownership advantages are internal firm-specific factors that allow foreign firms to compete with domestic firms in host countries. It is argued that firm-specific advantages of this nature give MNCs a competitive edge that is key, or even a prerequisite, in being able to outperform indigenous firms on their own turf. Common ownership advantages of MNCs include technical knowledge, financing, advanced research and development, managerial skills or economies of scale (Gray and Gray, 1981). Ownership advantages can also stem from owning an internationally established reputable brand (Chung, 1997, p. 167).

Applying this framework onto MNBs, specifically, ownership advantages may include specialized banking services, creditworthiness, managerial skills, and so on (Miller and Parkhe, 1998). In addition, if a bank already engages in multinational activities, it will have the ability to reap potential gains from international differences in factor markets. These differences in factor markets can consist of accessibility of information or capital, for example. Furthermore, the more international experience a bank has the more likely it is to be successful in new international endeavors. Large international banks are expected to have much greater overall commercial knowledge than their geographically confined counterparts (Gray and Gray, 1981). They will therefore, rather exclusively, be able to provide various services that banks with less international scope cannot offer. It has also been indicated that the established code of conduct and corporate culture could be part of ownership advantages of MNBs in host countries (He and Yeung, 2010).

Economies of scale, which have been shown to influence FDI positively in general, appear to be maximized at relatively small firm sizes in the banking sector (Gray and Gray, 1981). Achieving economies of scale is therefore assumed not to be a significant ownership advantage to financial multinational corporations. It is assumed that all MNBs have reached the critical size. However, significant ownership advantages (e.g. creditworthiness and managerial skills) are a prerequisite to compete on foreign markets for the reasons discussed above. Advantages of that nature are therefore assumed to exist for any bank with international activities.

Internalization advantages are factors that make MNCs conduct transactions within their own organizations rather than on the free market. For this to happen, the transaction costs on the free market must be higher than the internal transaction cost (Dunning, 1979, 1981, 2001). If this were not the case, it would make more sense for firms to export or license their brand rather than make a direct investment. In the case of foreign banks, the main motivation to internalize activities stems from cognitive imperfections.

Over time, banks will derive substantial knowledge about their clients by working in close corporate-client relationships. Banks will be able to use this detailed knowledge to customize their services to meet their clients' specific needs. When clients relocate or expand abroad, the quality of required banking services and product knowledge might not be available from domestic banks. In this sense, foreign banks have an ownership advantage through the asymmetric ownership of information. This can be referred to as a 'cognitive imperfection', which can be viewed as an imperfection in factor markets so far as information can be viewed as a factor of production in the financial sector. In the likely case that domestic banks in the host market are relatively unfamiliar with problems facing a newly established MNC, banks will have to acquire information in a costly process to meet the needs of the foreign firm.

Meanwhile, domestic banks have an information advantage in the familiarity of their own market. The competing values of market-specific information and firm-specific information can therefore be a highly determinant factor of the success of an MNB over its domestic competitors on a foreign market. Given that MNBs can utilize their knowledge-specific advantage to outperform domestic banks' market-specific knowledge, MNBs will be able to supply financial services that are of higher quality or of lower cost and thereby have an incentive to 'follow the customer' and compete successfully in a market (Gray and Gray, 1981). For foreign banks, it would be costly to supply such services at an arm's length (on the free market) since it would increase transaction costs in a sector characterized by the importance of close monitoring and face-to-face interactions. This constitutes a reason for banks to internalize their expansions (Miller and Parkhe, 1998; Yannopoulos, 1983).

Moreover, if an MNB does not follow their clients abroad, it may impede their ability to monitor the full scope of their clients' business activities. This may lead to a loss of cognitive advantage on all markets, including the home market, and thereby constitutes an additional

incentive for banks to strategize by ‘following the customer’ in order to internalize their knowledge-specific advantage, something they would not be able to do at an arm’s length.

2.1.2 Location Advantages

Dunning (2001) defines location-specific advantages as non-transferable characteristics of a host economy. This category of FDI determinants stresses, for example, the importance of transportation costs and other barriers to trade. It also points to the influence of familiarity of foreign cultures and knowledge of business standards in foreign markets. Using the eclectic paradigm to think about MNCs in general, the most apparent location-specific advantages are caused by differences in immobile factors of production. Combining a mobile ownership advantage (e.g. superior technology) with an immobile factor of production (e.g. cheap labor) can heavily improve efficiency and lower overall production costs and thus be a driving force of the cross-border activities of an MNC. FDI that primarily seeks lower production costs in a host country, and is not necessarily concerned with sales in the foreign market, is commonly referred to as vertical FDI. Horizontal FDI, on the other hand, is driven by improved access to consumers in a foreign market. Horizontal FDI is driven by demand factors such as potential consumption growth in a specific region or market rather than lowering production costs. In other words, vertical FDI can be explained by supply side factors while horizontal FDI is driven by demand side determinants.

2.1.2.1 Horizontal Location Strategies

The market size for international banking is quite simply measured by the demand for international banking services and products in a region. This demand can come from a number of different sources. One of the factors to take into account when measuring demand is the level of economic development. Countries and regions with large-scale development programs demand higher levels of sophisticated loan packages and thus raise the demand for the services and products of MNBs (Weller and Scher, 2001). The fact that more industrialized regions can be expected to have higher demand for international banking services should therefore provide an incentive for market entry for MNBs. Local demand for international banking products has also been found to increase with real economic growth (Sabi, 1988). In other words, economic development and real economic growth can be expected to indicate market potential for market-seeking FDI from MNBs.

In addition, regional trade volumes and FDI inflows are expected to be two of the most significant economic indicators of market potential from a multinational banking perspective. Regions with higher levels of FDI inflows are expected to attract more MNBs since these markets will have a higher demand of financial services that require international knowledge and know-how. This hypothesis has been tested repeatedly in a number of studies and has been confirmed empirically.

In a study of US foreign banking activity, Goldberg and Johnson (1990) found that positive economic determinants of US foreign banking location patterns included foreign trade levels. Brealey and Kaplanis (1996) have analyzed the location of nearly 2000 overseas bank offices from 82 host countries across 37 parent countries. Their study finds that there is a significant relationship between the pattern of bank location, trade and FDI. Goldberg and Grosse (1994) found similar results when examining the entry of foreign banks in the United States during the 1980s and reached the conclusion that the amount of FDI in a state was significant for attracting foreign bank assets.

These location strategies are horizontal since they are driven by demand side determinants, in contrast to vertical supply-driven strategies.

2.1.2.2 Vertical Location Strategies

Vertical supply-driven FDI flows can, in international banking particularly, be explained by the existence of oligopolistic reactions. MNCs have been found to match each other's investment decisions and can be predicted to imitate each other's behavior to a certain extent (Knickerbocker, 1973). The level of FDI in a country is a good indicator of how likely more FDI is to follow. There is ample evidence that this imitative behavior applies to the location patterns of MNBs as well. A study of the internationalization efforts of Swedish banks found a strong tendency to concentrate on important financial centers when expanding internationally. Banks were found to establish themselves in regions where many MNBs were already present and had created intensive financial activity (Engwall and Wallenstål, 1998). In their study, the authors even found that competitors often chose the same mode of entry.

This 'tit-for-tat' pattern can largely be attributed to positive effects of economies of agglomeration in the financial sector. Production of various financial services is facilitated in

clusters – international financial centers (IFCs) – where it benefits from various spillover effects and capital is relatively accessible. Furthermore, close contacts reduce information costs and encourage external economies. Firms are able to draw benefits from labor market pooling, input sharing, and knowledge spillovers. Bourgain and Pieretti (2006), for example, have tested this hypothesis empirically to conclude that there are endogenous forces that trigger the growth of financial centers. This leads to the expectation that the extent of existing financial activity in a region will be a positive determinant of attracting MNBs. This supply-side explanation of location patterns of foreign banks contrasts with the demand-driven ‘follow the customer’ strategy described above.

Lastly, locations with high levels of human capital are expected to attract FDI. Accessibility to human capital can ease the production of technologically advanced products. MNBs can be expected to seek high levels of human capital in their labor force as product quality and reliability is often a crucial competitive advantage. If human capital is not readily available it will induce high costs for firms. A large base of accessible human capital is expected to lower transaction costs, improve efficiency and facilitate vertical expansion of financial firms.

2.1.2.3 Legal Environment and Corruption

A location factor that is being increasingly explored as an investment determinant is corruption. The effects of corruption levels and legal environments on FDI inflows have been subject to investigation in a number of research papers in recent years. There are various ways to define corruption. First of all, corruption can be of public as well as of private form. Private corruption usually refers to illegal activities practiced by organized crime. This analysis, however, will exclusively address public corruption as practiced by government officials.

In general, public corruption refers to illegal acts of officeholders in direct relation to their official duties. There are many ways government officials can put their powers into misuse. It is of importance, however, to remember that certain usages of power may differ in legality vis-à-vis national legal systems and definitions. A discussion on legal norms, and how corruption is defined in Chinese law specifically, will therefore follow in chapter 3. For the time being, and for the sake of laying out a theoretical economic framework on corruption, it seems useful to employ the definition of corruption used by Transparency International

(2010). Transparency International defines corruption as the abuse of entrusted power for private gain. Abusive activities may include embezzlement, bribery and extortion.

The payments of bribes in order to seek permits, licenses, police protection and so on constitute additional costs of doing business. These costs may come in different forms and be fixed or variable. Corruption costs can be particularly high in regard to new market entries given the susceptibility of licensing and similar processes to illicit rent-seeking. In that regard, corruption should be viewed as a fixed cost and thus constitutes a market entry barrier (Campos et al, 2010). Corrupt activities may also be regarded as non-fixed costs to firms. A good example of such a cost is extortion, which may progress over longer periods of time. Such a cost should be viewed as a tax on profits from a theoretical perspective. Indeed, that is generally how corruption is treated in an economic framework (Al-Sadig, 2009, p. 269). For these reasons, avoiding high corruption levels should be of great significance to any investor regardless of whether a vertical or horizontal strategy is implemented.

However, it should be mentioned that the corruption-as-taxation view has been criticized by a number of economists. The major point that this group makes is that corruption can improve welfare by letting market participants avoid overly complicated regulations (Ades and Di Tella, 1997, p. 500). By this rationale, corruption could function as a stimulant in economies characterized by high levels of red tape. Some would also argue that corruption fosters development by functioning as substitute compensation for underpaid officeholders (Leff, 1964). The consensus in modern economic theory, however, is that corruption generally has negative effects on inward FDI (Al-Sadig, 2007, p. 267; Mauro, 1997, pp. 3-4).

In addition to the direct costs of corruption described in the preceding paragraph, it is often associated with various types of risk and uncertainty. Given its malicious and illicit nature, corrupt activities require secrecy and informal agreements. This introduces various types of insecurity into contracts through asymmetry of information. A principal-agent problem arises where public officials are to be regarded as agents of the state serving private enterprise principals. Laws and regulations are adopted to manage this relationship but may be inefficient due to lack of enforcement or abuse of trust, sometimes from the same agents who promulgated regulations in the first place.

If abuse of power is widespread and informal contracts are common, principals may be forced to interact with the government by resorting to illicit measures or through prohibited channels, consequently putting the legal control system of contracts out of place. Operating without a functioning legal system, or outside of a legal system altogether, greatly increases a principal's uncertainty whether or not an agent will fulfill his undertakings due to the lack of a system to manage their relationship. In other words, corruption increases uncertainty in contracts and thereby diminishes the principal's incentives to invest (Mauro, 1997, p. 6).

Corruption is implicitly linked to political instability since it undermines the political system by circumventing conventional channels. There are empirical studies available that clarify the relationship between these two factors further (Mauro, 1998, p. 13). FDI integrates a firm relatively deep into a foreign market and requires a high degree of commitment from a firm in terms of abiding to laws, standards and politics of the host country. Once a firm has invested in a market, it cannot prevent the host government from changing the environment in which the investment was made. There are certain risks involved in making such commitments depending on uncertainty of political developments.

Political instability generally indicates high rates of expropriation (Azzimonte and Sartre, 2007, pp. 287-315). Direct expropriation refers to the risks of nationalization of foreign-owned firms, where the capital stock of a foreign firm is taken over by the host government. Indirect expropriation, on the other hand, refers to excessive taxation, capital controls, and bribes and permits demanded by government officials. Dunning (2002) stresses the importance of efficient institutions in attracting FDI. If the regulatory environment is unstable, ill functioning or characterized by corruption it can be expected to destabilize the political system and scare off risk-averse investors.

Corruption can also be expected to affect domestic savings and investment negatively. People will be discouraged from placing assets in an environment where there is a perceived risk of inefficiency caused by illicit behavior since it will lead to redundant risk and inferior returns. Moreover, as corruption tends to weaken the domestic banking system, it also tends to stimulate capital flight (Wolf and Gürgen, 2000). This would have a negative effect on banks since it would diminish the demand for their services. In the case of foreign banks, which may not be corrupt per se, the mere perception of a corrupt banking system intertwined with an inefficient government could be enough to eradicate demand for their services.

Swedish Nobel laureate Gunnar Myrdal once called corruption “almost taboo as a research topic” (Myrdal, 1970). Fortunately, economic research on corruption has taken a turn for the better and arguably been more deeply explored since Myrdal commented on the state of affairs in 1970. Specifically, a number of empirical studies on corruption and international investment are of particular interest as a background to analyzing corruption and the investment climate in China.

Quantifying political factors and corruption can be difficult, but a number of empirical studies have been able to show a strong link between corruption and FDI flows. Habib and Zurawicki (2002) found that the level of corruption in a host country is negatively related to the level of FDI. In their study, the authors examine the absolute difference in the corruption level in seven source countries and 89 host countries. They found that MNCs tend to avoid countries where corruption is visible because it is considered immoral and causes operational inefficiencies. Further empirical studies have shown a negative effect of corruption on FDI inflow in both transition economies (Smarzynska and Wei, 2002) and developing countries (Brunetti et al., 1997). Wei (2000) uses a double-log linear model to examine the causality between corruption and FDI. By combining different corruption indexes she found a strong negative impact of corruption on FDI flows between 12 source countries and 45 host countries.

Meanwhile, several studies have failed to find any significant relationship between corruption and FDI inflows. Akçay (2001), for example, failed to find such a relationship in her analysis of FDI in 52 developing countries. Another example is Abed and Davoodi (2000) who found that corruption was insignificant to FDI when controlling for structural reform factors in their study of transition economies.

It can be concluded that, while the consensus in economic theory is that a high level of corruption is expected to influence inward FDI negatively, the empirical evidence is somewhat ambiguous as to how strong this effect might be.

2.1.2.4 FDI Policy and Discriminatory Regulation

Governments can use various policies and laws to promote and restrict FDI. It is not uncommon that certain business regulations discriminate against foreign firms to protect

domestic markets or facilitate foreign business activity in a host economy. Discriminatory regulations in regard to foreign firms may occur in terms of specific sector restrictions, capital restrictions, nationality requirements of senior management, equity ownership restrictions, and so on. Some of these regulations may be extremely blunt – some may not allow foreign firms in a market at all. Other policies may allow access but still complicate establishment. Furthermore, foreign firms may be subject to review and approval procedures before they can enter a market. This may force foreign firms to engage in lengthy administrative procedures that delay the realization of FDI.

There is ample evidence that the extent of FDI liberalization in a country affects the inflow of FDI. Sin and Leung (2010, pp. 253-256) employ panel data analysis to show that developing economies with more liberal FDI policies are more successful in attracting foreign capital inflows. More liberalized approval procedures and lighter mode of entry requirements have also been shown to facilitate the inflow of FDI (Agosin and Machado, 2007). It is also interesting to note that, in its 2010 report *Investing Across Borders*, The World Bank Group (2010) observes that countries that have more liberal restrictions on foreign participation in a wide range of sectors are likely to attract higher levels of FDI.

FDI liberalization commitments may be more or less credible. This credibility problem is similar to the principal-agent problem discussed in the previous section. A firm's investment is subject to how FDI policies might develop in the future. If there is a perceived risk that liberalization commitment is low the firm is likely to refrain from investing (Bond et al., 1995). It is likely that the 'true colors' of liberalization commitment becomes clearer the longer a certain policy has been in effect since this provides a track record for evaluation of the true preferences of governments. From this viewpoint, the more recently a region has been liberalized the more difficult it would be to assess its commitment to liberalization.

2.1.3 Summary of the OLI Framework

To conclude the OLI framework, a firm will invest directly in a market if it owns all three types of advantages described above. If it does not, it can engage in a foreign market through less cost-intensive activities such as licensing or exports. If a firm lacks both internalization and location advantages, it will be best off by utilizing licensing to conduct business at arms-length in a foreign market. Likewise, if there are internalization advantages but no location

advantages, the firm can be expected to export its goods. My main proposition is that the regulatory environment and the level of corruption in a region should belong to the most important determinants of FDI flows in the financial sector. Favorable regulatory environments and low corruption levels should constitute strong location advantages in the OLI framework regardless of whether horizontal or vertical strategies are applied.

3. The Chinese Context

3.1 Banking Reform in China

One of the most important characteristics of the Chinese banking sector is that it has been, and still is, heavily dominated by state-owned banks. Four large state-owned banks make up the largest financial group in the sector in terms of assets. These banks – the “Big Four” – are the Industrial Bank of China (ICBC), the Agricultural Bank of China (ABC), the China Construction Bank (CCB) and the Bank of China (BOC). All four banks were broken out from the People’s Bank of China in the 1980s. The People’s Bank of China was a monobank that had a virtual monopoly on all financial activity in China. It acted as a central bank while simultaneously performing commercial banking services. When the monobank was broken up, a central bank was established along with the “Big Four” state-owned banks. Other financial institutions were established shortly after as well. These included trust and investment companies, local investment banks, and even experimental private banks (Keidel, 2009). However, the lasting dominance of the state-owned banks could hardly be overstated. In 2005, they owned 52.5% of all banking assets in China (Naughton, 2007).

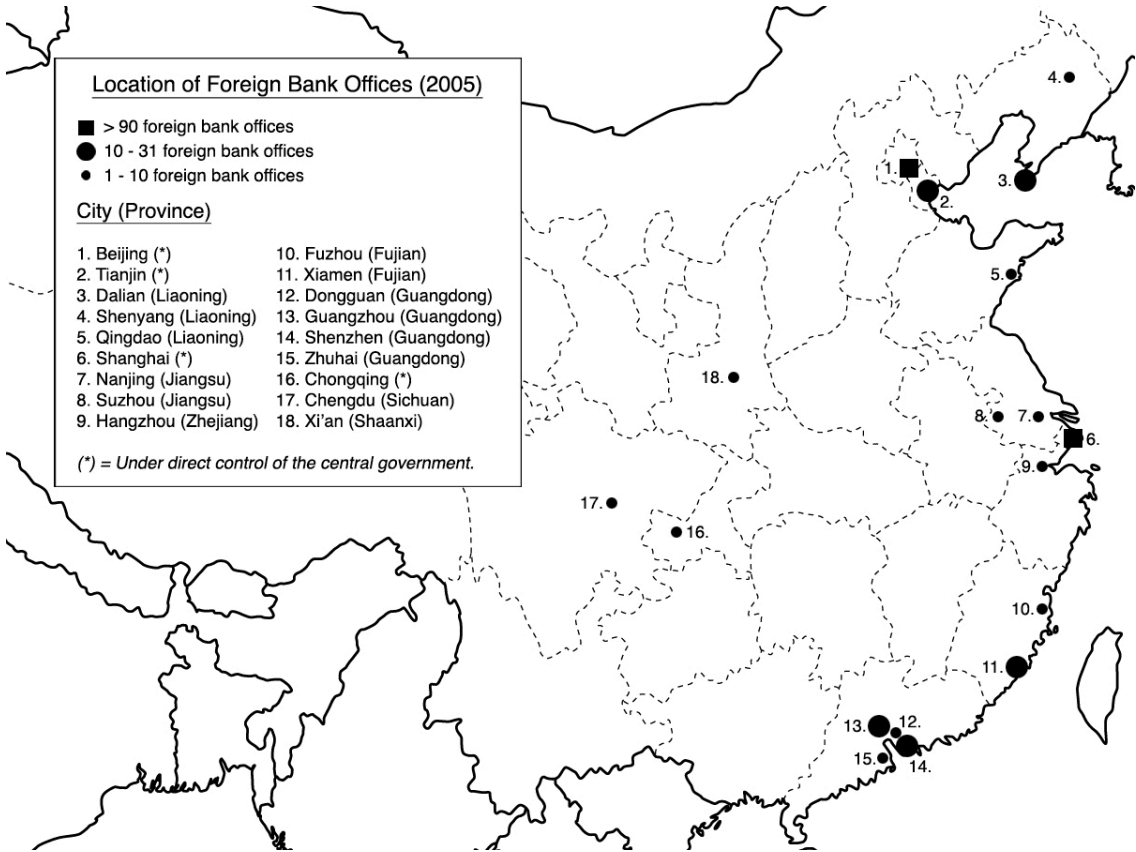
Even though the “Big Four” dominate the banking sector, they are heavily burdened by the legacies of the old system. They are to a large extent characterized by overstaffing, lack of skills, and absence of business orientation (Ibid). In other words, they are highly inefficient in a wide range of aspects. Most importantly, the state-owned banks have been burdened by their political subordination to government officials. Given the history of the banking sector and the political climate in China, it became common practice for Chinese financial institutions to provide credit on demand to government officials and state-owned enterprises in the 1980s. This development led to an enormous accumulation of nonperforming loans. The large stock of nonperforming loans has been a huge burden for the state-owned banks and various strategies have been sought to cope with the problem. Chinese policy makers have initiated massive efforts of recapitalization and established asset-management companies to deal with the stock problem. Meanwhile, poor lending decisions are still made and the system is regarded to be ineffective in channeling funds to high-return projects (Ibid). Policy efforts to improve the flow of new lending have had mixed results.

To conclude, the large Chinese state-owned banks generally face a series of disadvantages in comparison with foreign banking institutions. These include diversification of income sources, internal oversight, incentive systems, and skills in business appraisal. These are expected to be the main sources of ownership advantages in favor of foreign banks in China.

3.1.1 Legislative Restrictions on Foreign Banking in China

The banking sector has been one of the most protected industries in transitional China. For a very long time it has been overregulated and protected from international firms. The banking market is still regulated relatively heavily and largely inefficient. Nevertheless, the number of foreign banks in China has soared over the past decades. In 2005 there was a total of 464 foreign bank offices operational in mainland China (Almanac of China’s Finance and Banking, 2007). Figure 1 shows the location of foreign bank offices in 2005.

Figure 1



Data: Almanac of China’s Finance and Banking (2007)

The Chinese banking sector opened up to foreign participation in connection with the economy-wide reforms in 1978. Since then, the banking sector's liberalization of foreign participation can be divided into three separate stages of reform. Details about historical liberalization have been collected from the China Banking Regulatory Commission (2007).

The main objective of allowing foreign participation in the first stage of liberalization (1980-1993) was to facilitate better financial services to foreign corporations in China. The presence of foreign banks was first allowed in the coastal cities and major cities in the previously opened Special Economic Zones (SEZs). A total of 76 foreign-owned banking entities were operational in China as of year-end 1993. The scope of their business covered foreign exchange services to foreign corporations and private persons.

Both the number of foreign banks and the scope of their business activities increased during the second stage of reform (1993-2001). Foreign direct investment was encouraged in a range of sectors through various policies from the central government. This spurred the demand for foreign banking services. The most important change to the financial environment was arguably the first comprehensive law governing the nation-wide activities of foreign-funded banks in China - *Regulations of the PRC on the Administration of Foreign-funded Financial Institutions*. This new piece of legislation, which was promulgated in 1994, provided legislative guidance while eliminating geographical restrictions on foreign banking. Business in local currency (RMB) was still limited on a national scale but permitted on a local trial-basis level in the Pudong Area of Shanghai.

At the beginning of 1998, where the formal analysis of this study takes its start, the number of foreign-owned banks in China was 175 (China Society for Finance & Banking, 2007). In the following years, as a consequence of the Asian financial crisis, the Chinese government adopted a series of policies to attract hesitant European and North American banks. One of these policies was to expand the trial of RMB business to Shenzhen. Foreign banks based in Shanghai were allowed to provide RMB business in Jiangsu and Zhejiang. Foreign-owned banks were also allowed to join the inter-bank market for funds denominated in local currency.

One of the most important new pieces of legislation in the third period of reform (2002-2006) was "*Regulation Governing Foreign-funded Financial Institutions of the People's Republic*

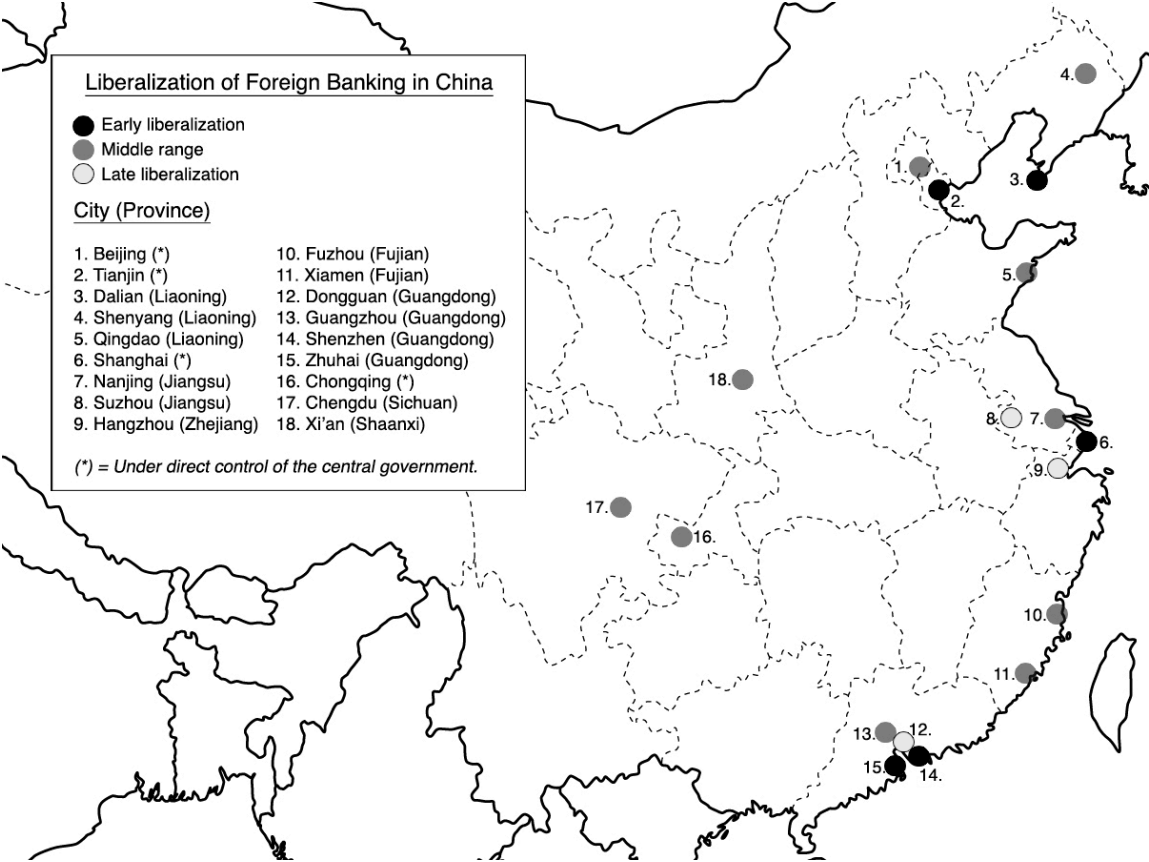
of China”, which was promulgated in December 2001 and effective as of February 2002. The new law included a set of various new regulations on the establishment and operation of foreign banks in China. Without becoming too detailed or technical, a general oversight of relevant restrictions included therein is useful as a background to further analysis.

Foreign banks were still obliged to meet relatively strict regulations regarding capital requirements and permission to conduct business in local currency. Article 7 of the law states that foreign banks must have had a representative office in China for more than two years, have total assets of at least 20 billion USD and a capital sufficiency rate of 8% to establish a new branch office. Moreover, a foreign bank branch must have working capital of at least 100 million RMB yuan (Article 5). Foreign-funded financial institutions applying for RMB business must have operated in mainland China for more than three years, been profitable in the two consecutive years prior to their application and satisfy any other prudential conditions specified by the People’s Bank of China (Article 20).

The third period of reform was largely characterized by fulfillment of WTO commitments in accordance with the WTO General Agreement on Trade in Services (GATS). Geographic restrictions on business in local currency were gradually phased out as China committed itself to abstain from any such restrictions before December 2006. Specifically, commitments were made to drop restrictions on the supply of local currency products to i) Chinese enterprises within two years of accession and ii) Chinese nationals within five years of accession. All non-prudential restrictions regarding ownership, operation and establishment of foreign banks were to be eliminated within five years of accession in accordance with the national treatment rule of GATS Article XVII (Bhattasali, 2004, p. 186).

In order to reflect regulatory changes and liberalization commitments in the formal analysis of this paper, I will take into account both the number of years foreign banks have had the legal right to do business in a city as well as the number of years they have been allowed to conduct business in local currency. These two legislative restrictions have arguably been two of the most important legal barriers to foreign banks in China.

Figure 2



Data: China Banking Regulatory Commission (2007)

Figure 2 maps different stages of liberalization to provide a general idea of how liberal legislation has been for foreign banks in the 18 cities where foreign bank offices were established 1998-2005. Cities where foreign banks were allowed to do business before 1993 and were permitted to conduct business in local currency before 2002 are included in the group “Early liberalization”. Cities in the group “Late liberalization” did not allow foreign banks before the “Regulations of the PRC on the Administration of Foreign-funded Financial Institutions” law was promulgated in 1994 and permitted access to local currency no earlier than upon the deadline of key WTO commitments in 2006.

3.2 Corruption in Transitional China

1978 is widely seen as a major turning point in Chinese society. Two years after the death of Mao Zedong, Deng Xiaoping started to open up the country to foreign investment and created

the special economic zones along the east coast that quickly became important engines of growth for the Chinese economy. These policy changes and the new stance toward the rest of the world brought about a wide number of implications for China. While the reforms facilitated economic growth and ignited vast possibilities, corruption has actually worsened in the post-reform era. Many observers attribute this development to the rapid pace at which reform has taken place (Pei, 2007; White, 1996). The broad extent of corruption throughout the country is rooted in the traditional power of government officials combined with the enormous increase in private sector opportunities.

Figure 3

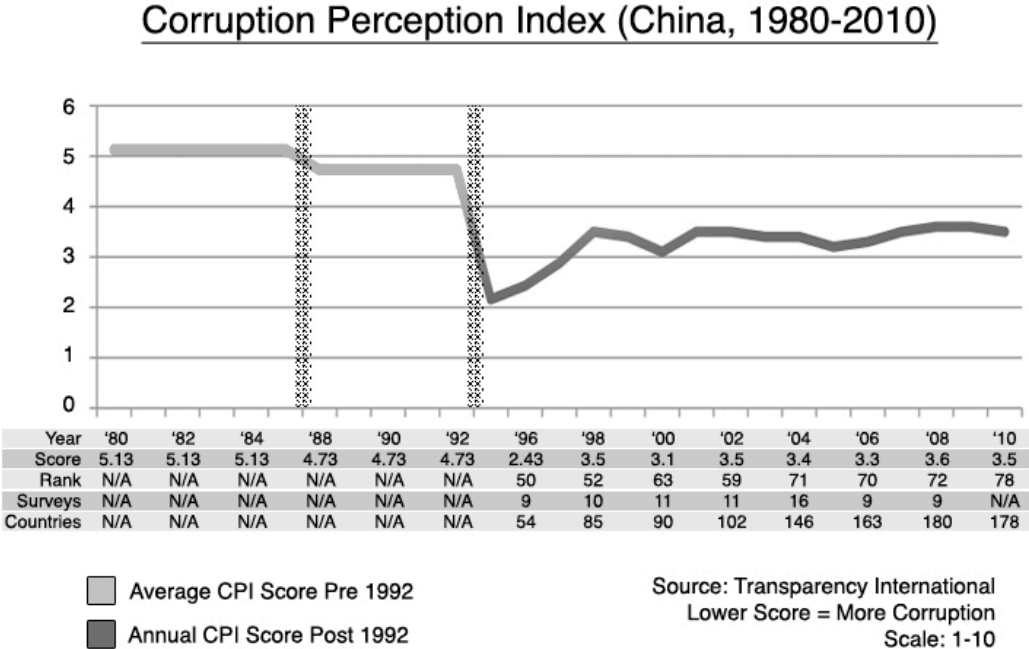


Figure 3 shows the development of corruption in China 1985-2010 using the Corruption Perceptions Index (CPI) from Transparency International (various years). The index is on a scale from 1-10 and higher scores indicate lower levels of perceived corruption. Only averages are available for the periods 1980-1985 and 1988-1992 (marked in light grey) and no international rankings are available. These years are included in the figure to give a general idea of trends in the 1980s. For the years following 1992, however, specific annual scores and rankings relative to other countries are available.

Corruption has become a major social and political issue in China post 1978. While corruption existed in Mao's government as well, it became much more widespread after the economic reforms of 1978. Figure 3 shows that the level of perceived corruption has improved after a low point in the mid-90s. This improvement can feasibly be attributed to the intensification of anti-corruption efforts by the government. It could be argued that China shows a lower level of individual corruption than would be expected given its per capita income at \$4,393 (The World Bank, 2011). Nevertheless, at a score of 3.5 out of 10.0 in 2010, corruption in China is still widespread and remains a serious threat to the country's economy.

Some observers argue that civil outrage over corruption was a crucial trigger of the 1989 Tiananmen Square event (He, 2000). China entered the 21st century with corruption seen as the second greatest public concern after unemployment (Ibid). Not only has it been of civil concern, but also of serious concern to government leaders. This was exemplified, for example, by the uncommon 40% vote against General Procurators Zhang Siqing's annual work report at the 1997 National People's Congress. Anti-corruption efforts have been declared a priority of the Chinese government by the president of China, Hu Jintao and many Chinese citizens still view corruption within the party and government institutions as one of the greatest challenges to stability in the country (Cole et al., 2009).

He (2000) explores the characteristics of corruption in China. While corruption can take many forms and characteristics, the core element in Chinese terminology is the "use of public authority and public resources for private interests". It is interesting to note the strictness of this definition. As opposed to limiting the definition to "abuse" or "misuse" of public powers, it counts any kind of *use* of public power for private interests as corruption. Ibid (2000, pp. 244-245) makes a clear distinction between three different classes of corruption. "Black corruption" involves clearly illegal economic crimes such as tax evasion, bribery, fraud, etc. "Grey corruption" refers to leaders of public institutions using their institutional power to increase the revenue of their institutions and improve the welfare of their staffs through various legal, semi-legal, and illegal ways. "White corruption", finally, is a sort of "common practice" of social life. This mainly refers to preferential treatment of members of special networks.

Corporate governance is deeply impacted by corruption in China. Out of the three types of corruption discussed above, "white corruption" seems to have the largest impact on the

corporate climate overall. Some argue that the real danger to the Chinese business climate seems to be coming less from individual corruption and more from large and interconnected groups of insiders with the power to divert resources from the broader public interest to their own collective and institutional interests (Naughton, 2007).

China's financial sector has not been spared from corruption. According to Pei (2007), kickbacks for loan approval, insider theft, and fraud are all common in Chinese financial institutions. On average, borrowers pay bribes that equal 9% of the loan amount. The existence of a large network of corrupt government officials, bank insiders and criminal businesses pose a serious problem to the Chinese financial sector (Cheng and Ma, 2009). For example, private entrepreneurs who are members of the Communist Party of China have better access to loans from domestic banks and other state institutions than non-members (Li et al., 2008). There is arguably convincing evidence that "white corruption" has a heavy influence on the financial sector.

In regard to corruption, Chinese law makes a clear distinction between economic crimes (*jingji zuixing*) and disciplinary crimes (*faji zuixing*) (Wedeman, 2004, p. 898). Economic crimes include – for example – bribery, extortion and embezzlement. Disciplinary crimes, on the other hand, are wrongdoings of the negligent kind and include criminal negligence and dereliction of duty. In this paper I will use data on registered direct investigations of public officials from the China Superior People's Procuratorate (CSPP). Cases under investigation include both economic crimes and disciplinary crimes. The definition of corruption in the remainder of this text will therefore be activities that would be registered by the CSPP as corruption cases. These activities include bribery, graft, misappropriation of public funds, collective illegal possession of public funds, unstated source of large property, abuse of power, dereliction of duty and fraudulent practices (Cole et al., 2009, p. 7).

3.2.1 Anti-Corruption Policies in China

The Central Commission for Discipline Inspection, established in 1978, is the government body responsible for fighting corruption within the CPC. Since its establishment, corruption has become more and more of a concern to Chinese policy makers. In 1989, four months after the Tiananmen Square event, the government's determination to severely punish corrupt officials was stated in a joint government circular by China's Supreme People's Court and

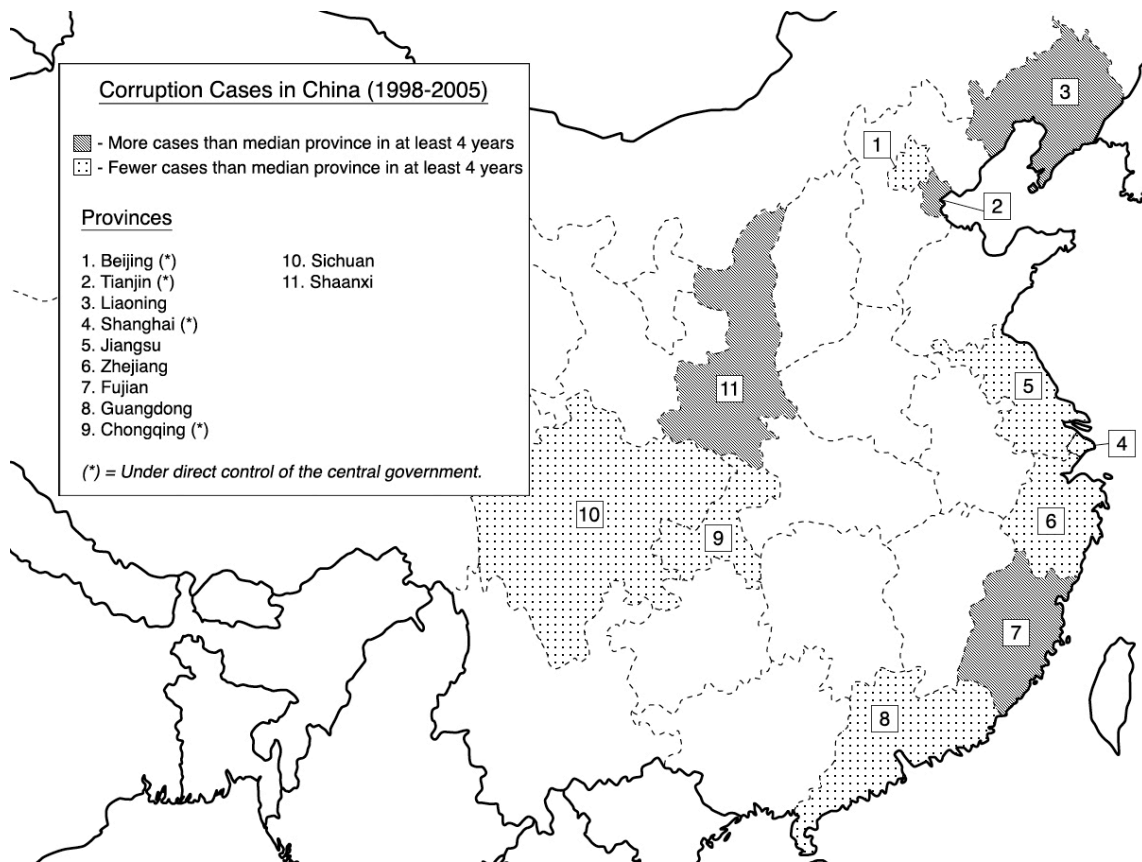
China's Supreme People's Procuratorate (CSPP). An anti-corruption general bureau was established shortly thereafter, followed by anti-corruption units at three other levels of procuratorates: the provincial people's procuratorates, municipal people's procuratorates and county people's procuratorates. These offices are responsible for investigating and leading preliminary hearings of cases involving corruption, bribery, misappropriation, etc.

Naturally, promulgating laws and setting up government bodies have little significance if anti-corruption policies are not enforced in practice. Since the establishment of the Central Commission for Discipline Inspection there have been four major anti-corruption campaigns in China (He, 2000, pp. 267-268). The campaigns have targeted different types of corruption – economic crimes, CCP discipline violations, self-regulating senior officials, etc – including both white, grey and black corruption activities. Campaigns have been relatively successful in prosecuting corrupt officials but the situation remains serious with widespread illicit behavior.

To measure corruption quantitatively is difficult but not impossible. The most common indices of corruption use cross-country surveys measuring perceptions of corruption. One of the most commonly used indices is the Corruption Perceptions Index (CPI) by Transparency International referred to above. The CPI offers a good measure of corruption for the purposes of comparing countries and analyzing historical corruption developments on an individual-country level. None of the indices available offer corruption data on a regional level for China. However, statistics over corruption investigations and prosecutions are reported annually in provincial work reports in the China Procuratorial Yearbook (*Zhongguo jiancha nianjian*) by the CSPP.

Figure 4 (p. 25) maps the number of government officials under direct investigation for corruption per 100 000 inhabitants in the 11 Chinese provinces where foreign banks were established 1998-2005. This gives a good indication of how provinces differ in corruption levels. Roughly one third of the included provinces stand out in terms of corruption levels. These regions (Tianjin, Liaoning, Fujian and Shaanxi) had above-median corruption cases in at least half of the years surveyed. Corruption is expected to have seriously negative effects for foreign banks for the reasons discussed in the previous chapter. Chinese provinces with lower corruption levels are therefore expected to attract more foreign banks because they offer a healthier institutional environment and more leveled competition from domestic firms.

Figure 4



Data: Procuratorial Yearbook of China Editorial Board (various years)

4. Empirical Testing

4.1 Variables and Data

I will use data from China Society for Finance & Banking (2007) to calculate foreign bank entries in 18 Chinese cities in 11 provinces during 1998-2005. 132 separate banking entities were established in 18 cities during the given time period. This data will be used for the dependent variables in two separate regressions where I will distinguish between two types of entry - establishment of foreign representative offices and of foreign branch offices. Representative offices mainly engage in monitoring markets, looking for business opportunities and advisory activities. They do not, in contrast to branches and sub-branches, engage in local and foreign currency business and should therefore be expected to make entry decisions based on different factors. I will use data from the same source to calculate existing foreign banking activity in any given year by summing historic entries from 1978 onwards. This measure is included in the regression to account for oligopolistic reactions and circular causation of agglomerated financial centers.

Data from the National Bureau of Statistics of China is used to measure regional FDI inflows. FDI inflows are measured by registered capital invested by foreign partners in foreign-funded enterprises. Foreign-funded enterprises include all Sino-foreign joint ventures, Sino-foreign cooperative enterprises, ventures with exclusively foreign investment, Sino-foreign shareholding companies, foreign enterprises and enterprises of Hong Kong, Macao and Taiwan engaged in commercial activities and branch offices of foreign companies, which have received state approval and registration to set up in the People's Republic of China. This provides a good measure of how FDI volumes are distributed across regions. It should therefore indicate how deeply integrated foreign banks' existing customers are in a region and how much market potential there is for international banking.

GDP data is collected from the National Bureau of Statistics of China and scaled over population to calculate economic development on regional levels, which is expected to indicate how large domestic demand is for foreign banking services. GDP per capita is adjusted for inflation so that all values reflect the 1997 local currency (RMB) value.

Human capital levels are measured by the total ratio of a province's population that has completed college education in any given year. This data is also collected from the National Bureau of Statistics of China and is taken to measure the availability of human capital across regions.

Further, the regressions take into account legislative restrictions on foreign banks' market access and access to local currency. The independent market access variable (ACCESS) calculates the number of years foreign banks have been allowed market access in a Chinese city in any given year. By using this measure, the model can account for first-mover cities and regions where the central government has implemented policies so to as explicitly facilitate foreign banking activity in early stages of the reform process. As previously discussed, foreign banks have been heavily restricted to conduct business in local currency in China. This is accounted for by the variable (RMB) that measures how many years foreign banks have been legally able to conduct business in local currency in a city. By using these measures the model can account for the two major regulations that have affected foreign banks in transitional China. All legislative data is collected from the China Banking Regulatory Commission (2007).

Since there is no provincial corruption index available for China I will use data from Chinese regional procuratorial work reports. The procurator's offices report the number of public officials under direct investigation in annual work reports in the China Procuratorial Yearbook (*Zhongguo jiancha nianjian*). The number of registered cases gathers, for example, those charged with corruption, bribery, misappropriation of public funds, collective illegal possession of public funds, unstated source of large property, abuse of power, dereliction of duty and fraudulent practices. I will scale these values over provincial populations.

I will use the data compiled by Cole, et al. (2009) for the years available (1998-2003). For the remaining years, however, I have compiled data on my own from official provincial work reports. This new data has, to my best knowledge, never been used for research before. The CSPP reported that some 500 000 corruption cases were investigated during 1998-2005. Approximately half of these cases went to court. Ni and Wang (2003) estimate that only 10% of corruption cases are investigated which would mean that the actual level of corruption is substantially higher than what is published by the government. Nevertheless, the number of

investigated government officials scaled by population is a good proxy for measuring provincial differences in corruption levels.

Table 1

Variable	Abbreviation	Data source	Expected sign
<i>New foreign bank offices per year</i>	<i>NEW_REP NEW_BRANCH</i>	China Society for Finance & Banking	Dependent variables
<i>Historical entries</i> (Sum of foreign offices established in a city)	<i>OLD_TOT</i>	China Society for Finance & Banking	+
<i>FDI</i> (Log of registered capital in USD 10 000)	<i>FDI</i>	National Bureau of Statistics of China	+
<i>GDP per capita</i> (100 million yuan, over provincial population)	<i>GDPPC</i>	National Bureau of Statistics of China	+
<i>Access to RMB</i> (Years since RMB became accessible)	<i>RMB</i>	China Banking Regulatory Commission	+
<i>Market access</i> (Years since city's market opening)	<i>ACCESS</i>	China Banking Regulatory Commission	+
<i>Corruption</i> (Public officials under direct investigation for corruption per 100 000 persons)	<i>CORRUPTION</i>	Procuratorial Yearbook of China Editorial Board	-
<i>Education</i> (Log percentage of population who have graduated college)	<i>EDU</i>	National Bureau of Statistics of China	+

4.1.1 Reliability of Data

All the data used in this thesis are from official Chinese sources. Following the ongoing debate on the reliability of Chinese official statistics, it is appropriate to comment on the choice of data sources. The Chinese National Bureau of Statistics (NBS) *has published the China Statistical Yearbook* annually since 1981. The NBS staff is required by law to provide accurate statistics. Assuming that its staff is law-abiding the yearbook should provide reliable data. Nevertheless, the yearbook, and other official Chinese sources have been criticized for inaccuracy stemming from incentives to report overly positive developments. The critique often centers on the proposition that, given the current political climate in China, the NBS is

under political pressure from the central government to overstate certain figures. The idea that local officials have incentives to inflate or distort statistics is addressed, for example, by Naughton (2007).

It is difficult to argue that such incentives do not exist in China. However, it stands clear that most economists believe that the reliability of official Chinese data is good enough to draw conclusions about the Chinese economy from. This is asserted by the large number of scholars using official data in econometric analyses subject to peer review in professional journals. This is one of the main arguments used by Chow (2006) in favor of considering official data accurate. Moreover, Chow argues that since Chinese official statistics would be hard to manipulate because discrepancies would become instantly apparent to the numerous observers and economists analyzing Chinese data. Lastly, it is worth remembering that what Chinese official sources report is what is used at the People's Congress in policy-making and economic planning. If the data were skewed the central government would be forced to knowingly make economic decisions based on false information. The debate over reliability of official Chinese data is important and it is unlikely to end soon. However, the data sources used in this thesis are the best available and should be considered reliable for the purposes of the analysis.

4.2 Method

I have been able to compile data on corruption investigations for the years 1998-2005. This therefore defines the time period for which it is possible to analyze the effect of corruption levels on foreign bank establishment. 132 foreign bank offices were established in 18 Chinese cities in the eight years that corruption data is available. I will use the data to construct a model for multiple regression analysis. The final panel contains 8 time periods and 18 cross-sections (cities).

There are a number of advantages to draw from using panel data analysis. As opposed to using either a cross-sectional or a time series analysis exclusively, panel data combines the two in a two-dimensional structure. This means that it can deal with heterogeneity in cross-sections. In any given city there will be a large number of unmeasured explanatory variables affecting the decisions of foreign banks. One of the main attributes of panel data is that it can deal with this omitted variable bias. This is not an uncommon problem when fitting one-

dimensional cross-sectional data sets. Moreover, panel data increases the degrees of freedom and thereby potentially alleviates multicollinearity problems. The gap between the information given by data and the information requirements of a model can thereby be reduced (Hsiao, 2003, p. 312).

Panel data can be described as being either balanced or unbalanced depending on the level of observations for which data is included. The data set used in my analysis is balanced as it includes an observation for every unit of observation for every year included in the study.

Given the differences between representative and branch offices discussed above, I will construct two separate regressions to examine whether foreign banks react to a given investment environment differently depending on the organizational form of the entity to be established.

The initial regression equations are:

$$NEW_REP_{it} = \beta_0 + \beta_1 OLD_TOT_{it} + \beta_2 FDI_{it} + \beta_3 GDPPC_{it} + \beta_4 RMB_{it} + \beta_5 ACCESS_{it} + \beta_6 CORRUPTION_{it} + \beta_7 EDU_{it} + \varepsilon_{it}$$

$$NEW_BRANCH_{it} = \beta_0 + \beta_1 OLD_TOT_{it} + \beta_2 FDI_{it} + \beta_3 GDPPC_{it} + \beta_4 RMB_{it} + \beta_5 ACCESS_{it} + \beta_6 CORRUPTION_{it} + \beta_7 EDU_{it} + \varepsilon_{it}$$

Where NEW_REP_{it} and NEW_BRANCH_{it} are the dependent variables and β_0 is the intercept. $\beta_1 - \beta_7$ are coefficients for the independent variables and ε_{it} is a stochastic error term. Cities are denoted by the index i , where $i=1, \dots, 18$. Years are denoted by the index t , where $t=1998, \dots, 2005$. I have conducted all regressions and statistical tests in the statistical software STATA.

The purpose of the multiple regression analysis is to estimate how the independent factors affect the dependent variable. It shows how strong the relationship is and whether or not it is statistically significant. First of all, the coefficient values reflect how strongly an independent factor affects the number of newly established bank offices in any given region any given year. The p-value denotes whether or not a result is statistically significant. A p-value below 0.1, 0.05 or 0.01 reflects if a result is significant to a 90%, 95% or 99% degree, respectively.

By using this method it is possible to consider the effect and importance of the various investment determinants included in the model on the establishment of foreign bank offices.

The coefficient of determination, R^2 , measures how much of the variability in the data set is accounted for by the model. In other words, its value measures how likely the model is to predict future outcomes and gives some information about the goodness of fit of a model. Its value spans from 0 – 1.0, where an R^2 value of 1.0 means that the estimated regression line fits the data set perfectly and a value of 0 means that none of the dependent variables can be used to explain the variability in the data set. Meanwhile, the adjusted R^2 value is a modification of the R^2 value that accounts for the number of explanatory variables included in the regression. It attempts to give a more “honest” measure and alleviates R^2 improvements that are simply due to chance.

4.3 Results and Analysis

4.3.1 Correlation and Multicollinearity

Table 2

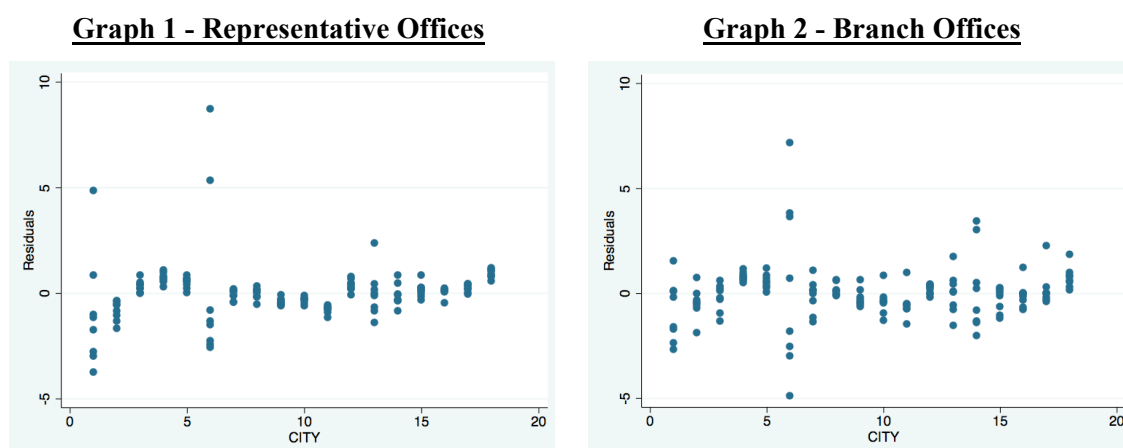
	new_rep	new_br~h	old_tot	gdppc	fdi	rmb	access	corrup~n	edu
new_rep	1.0000								
new_branch	0.7640	1.0000							
old_tot	0.7983	0.6792	1.0000						
gdppc	0.6742	0.6220	0.7210	1.0000					
fdi	0.1712	0.1957	0.1762	0.5249	1.0000				
rmb	-0.0266	0.2007	0.0132	0.2398	0.2802	1.0000			
access	0.1258	0.2568	0.1580	0.3505	0.5286	0.6207	1.0000		
corruption	-0.1943	-0.1573	-0.1206	-0.0613	-0.1607	0.1713	-0.0066	1.0000	
edu	-0.5325	-0.4514	-0.7067	-0.7421	-0.1854	-0.1822	-0.0902	-0.1605	1.0000

Table 2 shows the correlation matrix of the variables included in the regression. All the correlation coefficients are < 80%. The most notable levels of correlation between independent variables are observed in $\text{Corr}(\text{GDPPC};\text{EDU}) = -.7421$, $\text{Corr}(\text{OLD_TOT};\text{GDPPC}) = .7210$ and $\text{Corr}(\text{EDU};\text{OLD_TOT}) = -.7067$. These values can be regarded as fairly high and indicate that cautiousness for signs of multicollinearity is warranted in the rest of the analysis. However, they are not substantial enough to prompt the formalization of a special relationship among the regressors, dropping a variable or otherwise altering the regression to deal with multicollinearity.

4.3.2 Heteroskedasticity

Heteroskedasticity arises when there are sub-populations in a dataset that display non-constant variance. One of the assumptions of ordinary least squares (OLS) is homoskedasticity (constant variance). Violating this assumption does not cause bias in OLS coefficient estimates but may produce biased standard errors.

Graphs 1 and 2 show the residuals for representative offices and foreign branch offices in China. These graphs indicate that the residuals vary significantly between different cities in both regressions. The residuals for cities like Shenyang (no. 4) and Qingdao (no. 5) are fairly concentrated around zero, while cities like Beijing (no. 1) and Shanghai (no. 6) display residual intervals on a much larger scale. There is reason to believe that the dataset is heteroskedastic.



I will perform a White test to obtain more formal results on the residual variance in the dataset. It uses the Breusch-Pagan test to examine whether any of the regressors, their squares or their cross products affect the error variance. Table 3 shows the main results from the White tests. The null-hypothesis in the test is that all error variances are equal while the alternative hypothesis is that the error variances vary with the value of the dependent variable. The tests return p-values of less than 0.001, which means that the null-hypothesis is rejected at a 99% confidence level. I can therefore formally conclude that there is an absence of homoskedasticity – or in other words, the estimates suffer from heteroskedasticity.

Table 3 – White Tests

<u>Representative Offices</u>				<u>Branch Offices</u>					
White's test for Ho: homoskedasticity against Ha: unrestricted heteroskedasticity				White's test for Ho: homoskedasticity against Ha: unrestricted heteroskedasticity					
chi2(35)	=	130.72		chi2(35)	=	117.82			
Prob > chi2	=	0.0000		Prob > chi2	=	0.0000			
Cameron & Trivedi's decomposition of IM-test				Cameron & Trivedi's decomposition of IM-test					
-----				-----					
	Source	chi2	df	p		Source	chi2	df	p
-----				-----					
Heteroskedasticity		130.72	35	0.0000	Heteroskedasticity		117.82	35	0.0000
Skewness		40.56	7	0.0000	Skewness		26.21	7	0.0005
Kurtosis		1.65	1	0.1989	Kurtosis		1.98	1	0.1595
-----				-----					
Total		172.93	43	0.0000	Total		146.01	43	0.0000
-----				-----					

STATA allows for the adjustment of heteroskedasticity by using an ordinary least squares (OLS) model and applying the Huber-White sandwich estimates of variance. The variance estimates are also robust to any type of correlation within the observations.

4.3.3 Regressions

Table 4 – Regression Results for Representative Offices (OLS, Huber-White)

	Number of obs =	144
	F(7, 136) =	6.29
	Prob > F =	0.0000
	R-squared =	0.6920
	Adj. R.sq. =	0.6762
	Root MSE =	1.3096

	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	

new_rep						
old_tot		.0565651	.0122648	4.61	0.000	.0323107 .08008194
gdppc		1.461599	.6950328	2.10	0.037	.0871297 2.836069
fdi		-.5792757	.3013702	-1.92	0.057	-1.175253 .0167022
rmb		-.0657489	.0731062	-0.90	0.370	-.210321 .0788231
access		-.0093795	.0244135	-0.38	0.701	-.0576587 .0388997
corruption		-.1435877	.0793515	-1.81	0.073	-.3005102 .0133348
edu		1.920854	1.55431	1.24	0.219	-1.152889 4.994597
_cons		-.4469415	2.046811	-0.22	0.827	-4.494634 3.600751

Table 5 – Regression Results for Branch Offices (OLS, Huber-White)

Number of obs = 144
 F(7, 136) = 5.81
 Prob > F = 0.0000
 R-squared = 0.5595
 Adj. R.sq. = 0.5369
 Root MSE = 1.3053

new_branch	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
old_tot	.0417913	.0110747	3.77	0.000	.0198904	.0636922
gdppc	1.240955	.5460028	2.27	0.025	.1612014	2.320709
fdi	-.5888049	.2681103	-2.20	0.030	-1.119009	-.0586005
rmb	.2348301	.1165787	2.01	0.046	.0042886	.4653716
access	-.00321	.0241102	-0.13	0.894	-.0508893	.0444694
corruption	-.128279	.0817227	-1.57	0.119	-.2898906	.0333326
edu	2.187628	1.223055	1.79	0.076	-.2310362	4.606293
_cons	-.5462046	1.890559	-0.29	0.773	-4.2849	3.192491

The adjusted R^2 is higher for the representative office regression than for the branch office regression. When taking into account the number of explanatory variables included, the model explains 67% of the variance in the establishment of foreign representative offices and 53% of the variance in the establishment of foreign branch offices. The difference of fit indicates that the model used has a significantly better fit for foreign representative offices than for foreign branch offices. In other words, it seems that foreign banks use different investment strategies depending on the organizational form of the office being established and that the variables used in my model replicate the investment strategy of a foreign representative office slightly better.

The amount of existing foreign banking activity in a city, as measured by OLD_TOT_{it} , has a statistically significant positive effect for both representative and branch offices at a 99% confidence level. This confirms the expectation that foreign banks locate in proximity of other banks and financial centers to reap benefits from agglomeration economies and spillover effects. The coefficient for representative offices (0.056) is somewhat larger than for branch offices (0.041), which indicates that representative offices are more attracted to financial centers than branch offices.

GDP per capita has an equivalent statistically significant positive effect at a 95% confidence level for both representative offices and branch offices. While the coefficient is somewhat

larger for representative offices (1.4161) than for branch offices (1.2409), the variable has a higher statistical significance in the branch office regression ($p=0.025$) than in the representative office regression ($p=0.037$). These results indicate, as expected, that economic development is an important determinant of investment location for foreign banks in China regardless of organizational form. However, the effect is slightly stronger when establishing representative offices compared to branch offices. The differences in coefficient values could perhaps convey something about the differences in activities conducted by representative offices and branch offices as representative offices seem to prospect more economically developed areas in comparison to branches.

The FDI variable turned out to have an unexpected negative coefficient with similar values for both representative offices (-0.5792) and branch offices (-0.5888). These results are statistically significant at a 90% confidence level for representative offices ($p=0.057$) and at a 95% confidence level for branch offices ($p=0.030$). These results are highly unexpected as the level of FDI, as measured by registered foreign capital, was expected to be one of the most important determinants of foreign banking demand for the reasons previously discussed. This seemingly negative effect does not necessarily mean that foreign banks shy away from cities with high levels of registered foreign capital. It is difficult to argue that Chinese cities could attract more foreign banks by restricting inflows of foreign capital. The province that has the highest levels of registered foreign capital in the data is Guangdong, which includes the four cities Dongguan, Guangzhou, Shenzhen and Zhuhai. The data shows that Guangzhou and Shenzhen were the third and fourth largest centers for foreign banking (after Shanghai and Beijing) in 1998. Establishment of foreign banking entities then stagnated somewhat in the two cities around 2000 and then took up speed again in 2004 and 2005. Meanwhile, Dongguan and Zhuhai had fairly low levels of foreign banking initially and attracted few banks during the whole period. It is possible that this provincial ambiguity has skewed the regression results to make the FDI coefficient negative.

As expected, liberalization of restrictions on local currency has a statistically significant (95% confidence) positive effect on the establishment on branch offices. The p-value is 0.046 and the coefficient is 0.2348. In practice this means that for every year a city has allowed foreign bank branches to conduct business in RMB, the average number of new offices increases by 0.2348 at a 95% confidence level. This should be considered a strong effect and confirms the hypothesis that foreign branches are more likely to invest in a city when they are provided a

track record of commitments. There is no statistically significant effect on representative offices, which is expected since they do not directly engage in currency business.

The variable $ACCESS_{it}$, which measures how many years a city has been open to foreign banking, does not have a statistically significant effect for either representative offices or branch offices ($0.701 \leq p \leq 0.894$). The last geographical restrictions on foreign banking in China were removed in 1994; four years before the data in this analysis starts. The fact that the number of years after such liberalization took place cannot be shown to have a significant effect indicates that four years were enough to alleviate foreign banks of hesitation about liberalization commitments.

The number of government officials investigated for corruption is measured by the variable $CORRUPTION_{it}$. The regression results indicate that corruption levels have an overall negative effect on foreign bank establishment. The coefficients are negative for both representative offices (-0.1435) and branch offices (-0.1282). However, these results are only statistically significant for representative offices. The confidence level for representative offices is 90% ($p=0.073$) while the statistical significance for branch offices is just outside of the 90% limit ($p=1.119$). It is still worth noting that the variable has a negative coefficient in the branch regression as well, however the effect is not as strong as for representative offices. These results are according to expectations and give some confirmation that foreign banks tend to invest in regions characterized by lower corruption levels.

The last variable in the model, EDU_{it} , measures the level of available human capital in Chinese provinces. As expected, the regression shows that locations with higher levels of human capital attract more foreign banks. The variable coefficient for branch offices has a value of 2.1876 and is statistically significant at a 90% level. The coefficient for representative offices is also positive yet slightly lower, however it is not statistically significant ($p=0.219$). A reasonable explanation of this result is that branch offices are larger investments than representative offices and generally employ more human and physical capital. It is therefore not surprising that the amount of available human capital should matter slightly more in the case of branch offices.

There are a few more considerations to make in order to construct a slightly stricter model and produce more robust results. It might be the case that there are time independent effects present for each city that are correlated with the independent variables. This can be adjusted for by using a fixed effects model. Furthermore, it seems appropriate to use a fixed effects model over a random effects model since the data exhausts the population (every city where a foreign bank office was established in the given time period is included in the panel data). Formally, a Hausman test can be conducted to test whether a fixed or random effects model is appropriate (Table 6 and Table 7).

The fixed effects model estimates a linear relationship between the establishment of new foreign bank offices and the independent variables included in the regression. The model functions like an Ordinary Least Squares (OLS) regression that takes into account time independent effects for each city that might be correlated with the regressors. By including dummy variables for each city, the model eliminates city-specific effects and controls for effects of omitted variables on the estimated coefficients.

Table 6 (Hausman Test for Branch Offices)

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	FE	RE	Difference	S.E.
old_tot	.1448824	.0429051	.1019773	.0249507
gdppc	.285474	1.270888	-.9854143	1.033385
fdi	1.511532	-.6040718	2.115604	1.559003
rmb	.3108947	.2327301	.0781646	.0994152
access	-.1986254	-.0006773	-.1979481	.1475503
corruption	-.3237518	-.1539059	-.1698459	.1595551
edu	-.9948321	2.211803	-3.206635	1.730731

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 23.64
 Prob>chi2 = 0.0013
 (V_b-V_B is not positive definite)

Table 7 (Hausman Test for Representative Offices)

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	FE	RE	Difference	S.E.
old_tot	.1818889	.0623846	.1195043	.02088
gdppc	2.187662	1.736685	.450977	.850089
fdi	-.8994371	-.7216874	-.1777497	1.32619
rmb	.0025152	-.0856513	.0881665	.0608321
access	-.3543651	.0034844	-.3578495	.1249812
corruption	.1069824	-.1142621	.2212445	.1105828
edu	-2.381341	2.393115	-4.774456	1.375894

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(7) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 62.37 \\ \text{Prob}>\text{chi2} &= 0.0000 \\ & (V_b-V_B \text{ is not positive definite}) \end{aligned}$$

The Hausman tests show, as expected, that the random effects estimate is insignificantly different from the unbiased fixed effects estimate and that a fixed effects model is appropriate to analyze the dataset. With the background and adjustments discussed above, my final regression will be a fixed effects feasible generalized least squares model (FGLS) applying the Huber-White sandwich estimators.

The regression equations in this model are:

$$NEW_REP_{it} = \beta_0 + \beta_1 OLD_TOT_{it} + \beta_2 FDI_{it} + \beta_3 GDPPC_{it} + \beta_4 RMB_{it} + \beta_5 ACCESS_{it} + \beta_6 CORRUPTION_{it} + \beta_7 EDU_{it} + \gamma_1 D_1 + \gamma_2 D_2 + \dots + \gamma_{18} D_{18} + u_{it}$$

$$NEW_BRANCH_{it} = \beta_0 + \beta_1 OLD_TOT_{it} + \beta_2 FDI_{it} + \beta_3 GDPPC_{it} + \beta_4 RMB_{it} + \beta_5 ACCESS_{it} + \beta_6 CORRUPTION_{it} + \beta_7 EDU_{it} + \gamma_1 D_1 + \gamma_2 D_2 + \dots + \gamma_{18} D_{18} + u_{it}$$

Where NEW_REP_{it} and NEW_BRANCH_{it} are the dependent variables, β_0 is the intercept and $\beta_1 - \beta_7$ are coefficients of the independent variables. D_k is a dummy (binary) variable for each of the 18 cities (cross-sections) included in the panel data ($k = 1, 2, \dots, 18$) and γ_n is the coefficient for the binary repressors. u_{it} is the error term. The results from these regressions are shown in Table 8 (foreign branch offices) and Table 9 (foreign representative offices).

Table 8 - Branch offices (FGLS, Huber-White, fixed effects)

Fixed-effects (within) regression	Number of obs	=	144
Group variable: city	Number of groups	=	18
R-sq: within = 0.4319	Obs per group: min	=	8
between = 0.7837	avg	=	8.0
overall = 0.4597	max	=	8
Adj. R-sq = 0.4026	F(7,17)	=	33.51
corr(u_i, Xb) = -0.9567	Prob > F	=	0.0000

(Std. Err. adjusted for 18 clusters in city)

new_branch	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
old_tot	.1448824	.0223655	6.48	0.000	.0976953	.1920694
gdppc	.285474	.9128523	0.31	0.758	-1.640476	2.211424
fdi	1.511532	1.566003	0.97	0.348	-1.792445	4.815508
rmb	.3108947	.1680593	1.85	0.082	-.0436794	.6654689
access	-.1986254	.1695807	-1.17	0.258	-.5564094	.1591586
corruption	-.3237518	.2050577	-1.58	0.133	-.7563856	.108882
edu	-.9948321	1.067278	-0.93	0.364	-3.246591	1.256927
_cons	-7.505611	9.086441	-0.83	0.420	-26.67633	11.6651
sigma_u	3.1520654					
sigma_e	1.1942402					
rho	.87447245	(fraction of variance due to u_i)				

Table 9 - Representative offices (FGLS, Huber-White, fixed effects)

Fixed-effects (within) regression	Number of obs	=	144
Group variable: city	Number of groups	=	18
R-sq: within = 0.5846	Obs per group: min	=	8
between = 0.8387	avg	=	8.0
overall = 0.6070	max	=	8
Adj. R-sq = 0.5632	F(7,17)	=	9.85
corr(u_i, Xb) = -0.9711	Prob > F	=	0.0001

(Std. Err. adjusted for 18 clusters in city)

new_rep	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
old_tot	.1818889	.0652363	2.79	0.013	.0442523	.3195255
gdppc	2.187662	1.627254	1.34	0.196	-1.245543	5.620866
fdi	-.8994371	1.003014	-0.90	0.382	-3.015612	1.216737
rmb	.0025152	.1002822	0.03	0.980	-.2090618	.2140921
access	-.3543651	.3028795	-1.17	0.258	-.9933851	.2846548
corruption	.1069824	.166345	0.64	0.529	-.2439749	.4579398
edu	-2.381341	2.596029	-0.92	0.372	-7.858482	3.095801
_cons	6.886046	9.071406	0.76	0.458	-12.25295	26.02504
sigma_u	4.6477401					
sigma_e	1.0462641					
rho	.95176855	(fraction of variance due to u_i)				

As was the case in the initial regression, the adjusted R^2 is higher for representative offices than for branch offices when using the fixed effects model. The model explains 40% of the variance in the establishment of foreign branch offices when taking the number of explanatory variables into account and adjusting for time independent effects correlated with the independent variables. The adjusted R^2 value for foreign representative offices in the fixed effects model is 56%.

The 16 percentage point difference indicates that the model used has a significantly better fit for foreign representative offices than for foreign branch offices. In other words, the notion that foreign banks use different investment strategies depending on the organizational form of the office being established is confirmed. My model seems to fit the investment strategies of foreign representative offices slightly better. This confirms the results from the initial regression at a more robust level.

For foreign representative offices, the only statistically significant variable in the fixed effects model is OLD_TOT_{it} , which measures the total amount of foreign banking activity established in a city. The variable has a positive coefficient, as expected, and a p-value of 0.013. From these values it is possible to conclude that foreign representative offices are drawn to financial centers and areas where there is a heavy presence of other foreign bank offices. This is statistically significant at a 95% confidence level when taking time independent effects into account.

As expected, there is a similar relation between existing foreign banking activity and establishment of new foreign branch offices as well. The effect is somewhat smaller than for representative offices as the coefficients for $ACCESS_{it}$ are smaller in all regressions. However, the variable has a stronger statistical significance for branch offices ($p < 0.001$) in the fixed effects model than it has for representative offices ($p = 0.013$). The coefficient value is 0.1818 for representative offices and 0.1448 for branch offices. In practice this means that, on average, for every bank office already established in a city, the average number of new foreign offices increases by 0.1818 - 0.1448, depending on organizational form.

The economic development of a province, as measured by GDP per capita ($GDPPC_{it}$), turned out to be statistically insignificant for both representative offices and branch offices in the

fixed effects model. This result is somewhat surprising as it was expected to be one of the fundamental indicators of demand. In the branch office model, GDP per capita has a relatively small positive coefficient and a very low statistical significance ($p=0.758$). The statistical significance of GDP per capita is considerably stronger in the representative office model, but is still too low to enable any assertive conclusions about its effects ($p=0.196$). It is worth noting, however, that the coefficient is also considerably larger (nearly 8 times).

The other purely economic indicator in my model, FDI inflows in terms of registered foreign capital, gave somewhat ambiguous results. The size of FDI inflows does not display any statistical significance in either of the fixed effects regressions. Furthermore, while keeping in mind that it is pointless to draw any scientific conclusions due to the high p-values, it is worth noting that the β_2 -coefficient for representative offices is negative, as is the case for both representative offices and branch offices in the initial regressions ($\beta_2 < 0$ in both regressions). Possible reasons for this effect are discussed above.

Moving on to legislative measures, the fixed effects regressions show that restrictions on foreign banks to conduct business in local currency had a statistically significant impact (90% confidence level) on the establishment of new foreign branch offices. The coefficient for representative offices is also positive but its effect is less than 1% of the effect on branches and has an extremely large p-value at 0.980. It can therefore not be attributed any significance whatsoever.

The RMB-results are completely in line with expectations. It would have been surprising if restrictions on local currency had a significant effect on the establishment of representative offices since they do not engage in local currency business. The number of years foreign banks have been able to conduct services in local currency has a positive effect on foreign bank branches at a 90% confidence level ($p=0.082$) in the fixed effects model. These results are also in line with expectations. The ability to serve clients in local currency broadens the scope of business opportunities. From the robust regression results I can therefore assert that liberalization of currency regulation has had a significant impact on the establishment of foreign bank branches in China. The coefficient for RMB legislation in the fixed effects branch office model is 0.3108. The interpretation of its value is that for every year foreign banks have been allowed to conduct business in local currency in a city, the average number of new branch offices increases by 0.3108.

The number of years a Chinese city has been open to foreign banking (the variable $ACCESS_{it}$) cannot be shown to have any statistical significance on the establishment of either foreign representative offices or branch offices. $P=0.258$ in both of the fixed effects regressions. These results are rooted in the fact that the last geographical restrictions on foreign banking in China were removed in 1994, four years prior to when my data starts. Drawing from the regression results and the previous theoretical discussion on uncertainty about liberalization commitments, the results signal that four years were sufficient to alleviate foreign banks from uncertainty about liberalization commitments. In other words, it seems likely that a panel data analysis of foreign bank establishment in an earlier time period might assign larger significance to legislative liberalization of market access.

As shown above, corruption levels have a negative effect on the establishment of foreign representative offices in the initial regression at a significance level of 90% ($p=0.073$) while the significance level for branch offices is slightly too low to allow for any meaningful further analysis ($p=0.119$). However, the significance for representative offices is lost when adjusting for time independent factors ($p=0.529$) in the fixed effects model while the p-value for branch offices remains relatively stable ($p=0.133$).

It is not possible to use the corruption coefficient to make any firm assertions due to its lack of statistical significance in the final regression. The fact remains that the coefficient values are negative in the most statistically significant regressions and that the variable is significant at a 90% confidence level for representative offices in the initial regression. While these results imply that foreign banks avoid provinces with higher corruption levels, it is not possible to draw any confident conclusions from the most robust results in the final regression.

The final variable included in the model (EDU_{it}) attempts to measure the impact of human capital on foreign bank establishment. The variable cannot be attributed any statistical significance in the more robust fixed effects model. In this model, human capital levels as measured by education seem to be irrelevant to foreign banks when investing in new offices. One possible explanation is that personnel can be transferred rather easily from other branches of a bank if a province is attractive but lacks human capital. Another feasible interpretation is that foreign banks are able to train new personnel at low costs.

The independent variables in the initial regression have fairly high significance. However, most of this significance is lost when using the fixed effects model. While the most statistical confident conclusions can be drawn from the fixed effects model, since it adjusts the regression for time independent effects, the strictness of the model is fairly high considering the number of observations available. The panel data has 144 observations with 18 groups holding 8 observations each. It is likely that a larger data set with more time periods per group would make the analysis of the strict model easier.

5. Summary and Conclusions

In this study I have made an economic assessment of legal and institutional barriers to foreign establishment in one of the most protected parts of the Chinese economy – the banking sector. I have conducted a multiple regression analysis that examines the effects of seven separate factors on the establishment of foreign bank offices in eighteen Chinese cities between 1998-2005. The model includes four economic indicators to capture geographical economic differences (registered foreign capital, GDP per capita, human capital and established foreign banking activity). The remaining three variables measure legal barriers (legislative restrictions on market access and legislative restrictions on access to local currency) and finally corruption as an institutional barrier (provincial corruption levels).

It was apparent that the initial OLS regression needed to be adjusted for certain special characteristics of the panel data. First of all, I had to adjust the model for heteroskedasticity. Furthermore, the independent variables were likely to be correlated with time independent effects in the panel groups. Therefore, a fixed effects model was constructed – an adjustment that was somewhat difficult to impose due to the relatively small number of observations. The final model, a feasible generalized square fixed effects model using the Huber-White sandwich estimators to adjust for heteroskedasticity, should therefore be regarded as fairly strict given the relatively narrow data.

The main objective of this thesis is to examine how corruption and legal restrictions have influenced the establishment of foreign banks in China. As expected, the analysis shows that foreign banks take different factors into account depending on the organizational form of the entity being established. I have separated the effects to distinguish between foreign representative offices and foreign branch offices. The most important difference between representative offices and branch offices is the significance of legislation restricting foreign banks' access to local currency (RMB) in China. While liberalization of RMB restrictions is highly significant to the establishment of foreign bank branches, it cannot be shown to affect representative offices at all. The conclusion that branch offices, but not representative offices, are attracted to regions where local currency is liberalized is in line with expectations since branch offices are more engaged in activities where local currency plays a significant role.

Out of the purely economic indicators, the amount of previously established foreign banks has the largest influence on the establishment of foreign banks. There are some indications that this effect is stronger for representative offices than branch offices. However, the branch office effect is more statistically significant in the robust fixed effects model. It is possible to conclude that foreign banks are generally prone to follow vertical investment strategies and likely look for agglomeration advantages in financial centers when establishing new offices in mainland China. While the market-seeking indicator GDP per capita has a significant positive effect on establishment of foreign banks in the initial regression, the more robust results show a positive effect with weak statistical significance. The statistical significance of registered foreign capital and human capital in the robust results is also too low to allow for any assertive conclusions about their effect on foreign bank establishment.

The last geographical restrictions on foreign banking in China were removed in 1994. My analysis shows that, if uncertainty about commitments to market access liberalization ever existed in China, four years were enough to alleviate any such hesitation for foreign banks. A proposal for further research on this topic is to investigate how market access liberalization affected foreign bank entry in earlier time periods. An analysis of the 1990s might assign larger significance to such legislation. It seems that other entry barriers were more central during the period of study herein, such as high corruption levels.

The main contribution of this study to the existing literature is the analysis of how provincial corruption levels affect foreign bank establishment. This part of the study uses new data derived from official Chinese procuratorial work reports. There are certain indications that provinces with lower corruption levels attract a larger number of foreign bank offices. Indeed, this is what was expected from the analysis due to transaction costs and uncertainty associated with corruption. The corruption coefficient is negative in both of the initial regressions and statistically significant for representative offices. This indicates some confirmation of the hypothesis. However, after adjusting for time independent effects the statistical significance is too low to enable any definite scientific conclusions about the effects of corruption on foreign bank establishment. It should be noted again, however, that this model is fairly strict in regard to the data. The corruption issue is a good candidate for further research where, ideally, a city-level corruption index should be used over a longer time period to ease the implementation of stricter econometric models.

References in English

Ades, Albert, Di Tella, Rafael, 1997. The New Economics of Corruption: a Survey and some New Results, *Political Studies*, XLV, pp. 496-515.

Akçay, Selçuk, 2001. Is Corruption an Obstacle for Foreign Investors in developing Countries? Cross Country Evidence, *Yapi Kredi Economic Review*, Vol. 12(2), pp. 27-34.

Agosin, Manuel, Machado, Roberto, 2007. Openness and the International Allocation of Foreign Direct Investment, *Journal of Development Studies*, Vol. 43(7), pp. 1234-1247.

Abed, George, Davoodi, Hamid, 2000. Corruption, Structural Reforms and Economic Performance in the Transition Economies, IMF Working Paper No. 132. International Monetary Fund, Washington D.C.

Al-Sadig, Ali, 2009. The Effects of Corruption on FDI Inflows, *Cato Journal*, Vol. 29(2), pp. 267-294.

Azzimonti, Marina, Sarte, Pierre-Daniel G., 2007. Barriers to Foreign Direct Investment Under Political Instability, *Economic Quarterly-Federal Reserve Bank of Richmond*, Vol 93, pp. 287-315.

Bhattachali, Deepak, 2004. Accelerating Financial Market Restructuring in China. In Bhattachali, Deepak, Li, Shantong, Martin, Will (Eds.), *China and the WTO – Accession, Policy Reform and Poverty Reduction Strategies*, p. 186. World Bank and Oxford University Press, Oxford.

Bond, Eric, Chiu, Steve, Estache, Antonio, 1995. Trade reform design as a signal to foreign investors: lessons for economies in transition, *Policy Research Working Paper Series 1490*, The World Bank.

Bourgain, Arnaud, Pieretti, Patrice, 2006. Measuring Agglomeration Forces in a Financial Center, *Economics Bulletin*, Vol. 18(3), pp. 1-9.

Brealey, R. A., Kaplanis, E. C., 1996. The determination of foreign banking location, *Journal of International Money and Finance* 15, pp. 577-597.

Brunetti, Ayamo, Kisunko, Gregory, Weder, Beatrice, 1997. Institutions in transition: reliability of rules and economic performance in former Socialist countries, *World Bank Policy Research Working Paper No. 1809*.

Campos, Nauro F., Estrin, Saul, Proto, Eugenio, 2010. Corruption as a Barrier to Entry: Theory and Evidence, IZA DP No. 5243, Institute for the Study of Labor, Bonn.

Cheng Hongming, Ma, Ling, 2009. White collar crime and the criminal justice system: Government response to bank fraud and corruption in China, *Journal of Financial Crime*, Vol. 16(2), pp. 166-179.

Chow, Gregory C., 2006. Are Chinese Official Statistics Reliable?, *CESifo Economic Studies*, Vol. 52(2), pp. 396-414.

Chung, Chin, 1997. Division of Labor across the Taiwan Strait: Macro Overview and Analysis of the Electronics Industry. In Naughton, Barry (Ed.), *The China Circle*, p. 164. Brookings Institution Press, Washington D.C.

China Banking Regulatory Commission, 2007. Report on the Opening-Up of the Chinese Banking Sector. Available online: <http://www.cbrc.gov.cn/chinese/home/docView/200703220DEB2435789A50E9FF2A1732C43BBA00.html>. (Downloaded on December 15, 2011).

Cole, Matthew A., Elliott, Robert, Zhang, Jing, 2009. Corruption, Governance and FDI Location in China: A Province-Level Analysis, Discussion Papers 09-14, Department of Economics, University of Birmingham. Available Online: <ftp://ftp.bham.ac.uk/pub/RePEc/pdf/09-14.pdf>. (Downloaded on November 18, 2011).

Dunning, John H., 1979. Explaining changing patterns of international production: in defence of the eclectic theory, *Oxford Bulletin of Economics and Statistics*, Vol. 41(4), 269-295.

Dunning, John H., 1980. Toward an eclectic theory of international production: some empirical tests. *Journal of International Business Studies* 11(1), pp. 9-31.

Dunning, John H., 1981. *International Production and the Multinational Enterprises*, Allen and Unwin, London.

Dunning, John H., 2001. The eclectic (OLI) paradigm of international production: past, present and future, *International Journal of the Economics of Business*, Vol. 8(2), pp. 173-190.

Dunning, John H., 2002. Relational assets, networks and international business activities. In Contractor, Forak J., Lorange, Peter (Eds.) *Cooperative Strategies and Alliances*, pp: 569-595, Elsevier, Oxford.

Engwall, Lars, Wallenstål, Maria, 1998. Tit for tat in small steps: the internationalization of Swedish Banks, *Scandinavian Journal of Management*, Vol. 4, pp. 479-501.

Goldberg, Lawrence G., Grosse, Robert, 1994. Location choice of foreign banks in the United States, *Journal of Economics and Business*, Vol. 46, pp. 367-379.

Goldberg, Lawrence G., Johnson, Denice, 1990. The determinants of US banking activity abroad, *Journal of International Money and Finance*, Vol. 9, pp. 123-137.

Gray, Jean M., Gray, Peter H., 1981. The multinational bank: A financial MNC?, *Journal of Banking and Finance*, Vol. 5, 33-63.

Habib, Moshin, Zurawicki, Leon, 2002. Corruption and Foreign Direct Investment, *Journal of International Business Studies*, Vol. 33(2), pp. 291-307

He, Canfei, Yeung, Godfrey, 2010. The Locational Distribution of Foreign Banks in China: A Disaggregated Analysis, *Regional Studies Journal*, Vol. 45 (6), pp. 733-754.

He, Zengke, 2000. Corruption and anti-corruption in reform China, *Communist and Post-Communist Studies*, Vol. 33, pp. 243–270.

Hsiao, Cheng, 2003. *Analysis of Panel Data*, Second Edition, Cambridge University Press, Cambridge.

Keidel, Albert, 2009. China's Financial Sector: Contributions to Growth and Downside Risks. In Barth, James R., Tatom, John A., Yago, Glenn (Eds.), *China's Emerging Financial Markets: Challenges and Opportunities*, p. 111-129, Springer, New York.

Knickerbocker, Frederick T., 1973. Oligopolistic Reaction and Multinational Enterprise, *The International Executive*, Vol. 15(2), pp. 7-9.

Leff, Nathaniel H., 1964. Economic Development through Bureaucratic Corruption, *The American Behavioral Scientist*, Vol. 8(2), pp. 8-14.

Li, Hongbin, Meng, Lingsheng, Wang, Qian, Zhou, Li-An, 2008. Political connections, financing and firm performance: Evidence from Chinese private firms, *Journal of Development Economics*, Vol. 87(2), pp. 283-299.

Mauro, Paulo, 1997. Why Worry About Corruption?, *Economic Issues* Vol. 6, International Monetary Fund, Washington D.C.

Mauro, Paolo, 1998. *Corruption: Causes, Consequences, and Agenda for Further Research*, Finance & Development, International Monetary Fund, Washington D.C.

Miller, Stewart R., Parkhe, Arvind, 1998. Patterns in the expansion of U.S. banks' foreign operations, *Journal of International Business Studies*, Vol. 29, pp. 359-388.

Myrdal, Gunnar, 1970. Corruption as a Hindrance to Modernization in South Asia. In Heidenheimer, Arnold J. (Ed.), *Political Corruption: Readings in Comparative Analysis*, pp. 229-239. Transaction Books, New Brunswick.

Naughton, Barry, 2007. *The Chinese Economy: Transitions and Growth*, MIT Press, Cambridge MA.

Pei, Minxin, 2007. *Corruption Threatens China's Future*, Policy Brief 55, Carnegie Endowment for International Peace, Washington D.C.

Sabi, Manijeh, 1988. An Application of the Theory of Foreign Direct Investment to Multinational Banking in LDCs, *Journal of International Business Studies*. Vol. 19, pp. 443-447.

Sin, C., Leung, W., 2001. Impacts of FDI liberalization on investment flows, *Applied Economic Letters*, Vol. 8(4).

Smarzynska, Beata, Wei, Shang-Jin, 2002. Corruption and the Composition of Foreign Direct Investment: Firm-level Evidence, NBER Working Paper No. 7969.

The World Bank, 2011. GDP per capita (current US\$). Available online: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>. (Downloaded December 10, 2011).

The World Bank Group, 2010. Investing Across Borders 2010. Available online: <http://iab.worldbank.org/~media/FDKM/IAB/Documents/IAB-report.pdf>. (Downloaded December 20, 2011).

Transparency International, various years. Corruption Perceptions Index. Available Online: http://www.transparency.org/policy_research/surveys_indices/cpi. (Downloaded December 10, 2011).

Transparency International, 2011. About Transparency International. Available online: http://www.transparency.org/about_us. (Downloaded December 27, 2011).

Wedeman, Andrew, 2004. The Intensification of Corruption in China, *The China Quarterly*, No. 186, pp. 895-921.

Wei, Shang-Jin, 2000. How Taxing is Corruption on International Investors?, *The Review of Economics and Statistics*, Vol. 82(1), pp. 1-11.

Weller, Christian E., Scher, Mark, 2001. Multinational bank credit in less industrialized economies, *Journal of International Business Studies*, Vol. 32(4), pp. 833-851.

White, Gordon, 1996. Corruption and Market Reform in China, *IDS Bulletin*, Vol. 27(2), pp. 40-47.

Wolf, Thomas, Gürgen, Emine, 2000. Improving Governance and Fighting Corruption in the Baltic and CIS Countries: The Role of the IMF, IMF Working Paper No. 00/1.

Yannopoulos, George N., 1983. The Growth of Transnational Banking, in Casson, M. (Ed.), *The Growth of International Business*, pp: 236-57, George Allen & Unwin, London.

References in Chinese

China Society for Finance & Banking, 2007. Almanac of China's Finance and Banking (中国金融出版社) 2007, Press of Almanac of China's Finance and Banking, Beijing.

National Bureau of Statistics of China, various years. China Statistical Yearbook (中国统计年鉴) 1999, 2000, 2001, 2003, 2004, 2005 and 2006. China Statistical Press, Beijing.

Ni, Xing, (倪星), Wang, Jingni, (王京立), 2003. The Measurement of Corruption and the Estimation of Its Consequences in China (中国腐败现状的测量与腐败后果的估算), Jiangnan Tribune (江汉论坛), Vol. 10(1), pp. 10-12.

Procuratorial Yearbook of China Editorial Board, various years. Procuratorial Yearbook of China (中国检察年鉴) 2000, 2001, 2003, 2004, 2005, 2006 and 2007. Chinese Procuratorial Press, Beijing.