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Subsequent FDI in China: An empirical analysis

Chang Liu

A dissertation submitted in fulfilment of the requirements for the Degree of
Doctor of Philosophy in Business Studies
Declaration

I declare that:

- This thesis has not been submitted as an exercise for a degree at this or any other university;
- It is entirely my own work; and
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Chang Liu

Student ID: 04166302
Thesis Summary

The Objectives:
This dissertation has two major objectives. One is to find out what factors influence the intensity of foreign investors’ subsequent investment in China. The other is to find out what factors influence MNEs location determinants in China’s hinterland.

The Methodology:
Three sets of data are collected to analyze the research objectives; one is the cross section data in Chapter 4, with the intensity of investment contributed by the foreign party as the dependent variable and some explaining variables as divided by three levels (firm, location and international level). A cross section multiple linear regression analysis was conducted to find out what factors influence the intensity of foreign investors’ subsequent investment in China. The second set of data use 16 socioeconomic variables that were classified into three aspects: economic, infrastructure and labour quality (data of 2005) to ascertain 18 hinterland provinces’ strength and weakness in each of the three socioeconomic aspects and overall evaluation. The quantitative method used is the principal component analysis (PCA). The third set of data is a panel data set at the city level. It uses the actually FDI flows to 98 hinterland cities from 1999 to 2005 as the dependent variable and a group of FDI related variables as the explaining variables to ascertain factors that contribute to attract more FDI flows into China’s hinterland regions. The econometric method used is the general least squares (GLS) panel data analysis.
Findings:

Analysis in Chapter 4 revealed that the following factors proved to contribute to attract more FDI endowments: earlier entry, a high level of past investment, and a higher share of foreign employees.

Principal component analysis in Chapter 5 suggested that MNEs tend to favor hinterland regions that are geographically close to the developed south-eastern coastal belt; transportation infrastructure is not likely to be correlated with hinterland regions’ FDI attractiveness.

The panel data analysis in Chapter 6 confirmed findings in Chapter 5. It also suggested that the curse of natural resources might also be applicable in China’s hinterland; local labor quality is significantly correlated with FDI flows; the most important factors affecting FDI flows to hinterland regions are policy preferences and the effect of local industrial agglomeration.

Conclusions:

This study contributes to previous literature on FDI into China in two ways. The study focused on analyzing FDI in China after China’s WTO accession in 2001, and the study focused on inland China, the less developed region in an emerging economy, which has rarely been attempted in this field in the past.
Acknowledgements

Firstly, I would like to thank my supervisor at Trinity College, Dublin, Dr Louis Brennan, for his endless academic help and support. He introduced me to academic research on international business. I would like to thank him for his precious guidance and advice at every stage of my work.

Sincere thanks go to Professor Colm Kearney and Professor Paul Coughlan.

Finally, I would like to thank my mum and my wife for their continuous encouragement and support.
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List of Abbreviations

BRIC: Brazil, Russia, India and China
CCRS: Central China Rising Strategy
CJV: Contractual Joint Venture
EJV: Equity Joint Venture
ETDZ: Economic and Technology Development Zone
FDI: Foreign Direct Investment
FE: Fixed Effects
FEMs: Foreign Entry Modes
FIE: Foreign Invested Enterprise
GLS: Generalised Least Squares
GWDS: Great Western Development Strategy
ICT: Information and Communication Technology
LM: Lagrangian Multiplier
MNEs: Multinational Enterprises
MOFCOM: Ministry of Commerce
NEG: New Economic Geography
NRS: Northeast Revival Strategy
OCC: Open Coastal City
OECD: Organisation for Economic Co-operation and Development
OLI: Ownership, Location and Internalization
PCA: Principal Component Analysis
POLs: Pooled Ordinary Least Squares
RE: Random Effects
SEZ: Special Economic Zones
SOE: State Owned Enterprise
TVE: Township and Village Enterprise
WFOE: Wholly Foreign Owned Enterprise
Chapter 1: Subsequent FDI in China: Introduction

1.1. Introduction

Since the start of economic reform and opening up in 1978, China has experienced phenomenal growth in foreign direct investment, with cumulative FDI reaching US$ 68.54 billion by the end of 2006. China has been the biggest FDI recipient among developing countries during the past 16 years (MOFCOM, 2007). It has been proven that FDI played a significant role in stimulating Chinese economic development. For example, positive findings of FDI in contributing to GDP growth at both the national or mega-regional level were reported (e.g., Chow, 1993; Liu et al., 2002; Zhang, 2001 and Sylvie, 2000).

A significant portion of FDI comes from subsequent investments, from retained earnings or additional capital contribution by early entry MNEs, or from the first generation of foreign investors. A significant number of MNEs have increased, or are about to increase their rate of investment in China (Luo, 1999; Guillen, 2002). They are looking for new strategies to establish competitive advantages in the Chinese market. As China is a transitional, fast growing economy, the investment environment has changed dramatically in past decades. As a result of its unique and changing institutional and social background (Beamish, 1993), both initial FDI and subsequent investment take on unique characteristics in China. The determinants of entry mode choice in initial investment may not be appropriate for subsequent investment, so the characteristics of MNEs’ subsequent investment may be significantly different from their initial entry strategies. In fact, since the late 1990s, most veteran MNEs in China have made fundamental changes in their
business strategies and operational policies in order to cope with the drastic changes in market conditions and the regulatory environment (Luo, 2007). Therefore, understanding the characteristics of subsequent FDI in China has both academic and practical importance. Studies of subsequent investments will enrich the understanding of FDI beyond the initial investment decision. Practically, as China has a relatively unique economic system and business environment, understanding the important factors in both initial and subsequent FDI will be helpful to foreign firms seeking to expand their interests in China.

There has been considerable research on the patterns and the determinants of foreign entry modes. Researchers have focused on transaction cost and control issues of various modes of entry (Gomes-Casseres, 1989; Contractor, 1990; Erramilli, 1993; Agarwal and Ramaswami, 1992; Anderson and Gatignon, 1986; Hennart, 1991; Hennart and Reddy, 1997), the effects of cultural distance (Kogut and Singh, 1988), country-specific institutional environment (Anderson and Gatignon 1986; Tse et al., 1997) and international strategies developed by multinational firms (Harzing, 2002). (For a good review, see Buckley and Casson, 1998). Although these studies have resulted in rich explanations of the determinants of MNE’s entry mode choice, a gap still remains in the investment mode literature: most existing studies have limited their focus to the first entry of MNEs into new foreign markets and neglected subsequent investment, or they did not distinguish between the initial investment model and operational investment model. Foreign direct investment is always a continuous process and the choice of entry mode in later operations may differ significantly from earlier choices, due to acquired experience in, and greater knowledge of, the foreign market (Kogut and Singh, 1988).
Another fact is that the majority of FDI to China is concentrated in its south-eastern coastal belt, while FDI received by hinterland regions is small. FDI flows to eastern China occupies a share of around 87% during the past ten years. However, this figure in central China is lower than 10% and only around 3% in western China.

Past studies on FDI’s location determinants, encompassing all Chinese regions as one unit of analysis, have explicitly discussed the advantages possessed by the coastal belt over the hinterland in terms of FDI attractiveness (e.g., Yeung and Li, 2000; Yeung 2001; Cartier, 2001). However, academic studies on FDI’s activities in China’s interior is lacking, with only a few journalists’ reports addressing the topic (e.g., Eckert, 2000; Ogutcu and Taube, 2002). I suggest that with the Chinese government’s Great Western Development Strategy (GWDS), Northeast Revival Strategy (NRS) and Central China Rising Strategy (CCRS) launched in 2000, 2003 and 2004 respectively, the hinterland of China is emerging as a ‘new’ Chinese market. To gain a better understanding on FDI’s location preference in China’s hinterland is important to both MNEs and policy makers in the host country.

For example, from the MNEs’ perspective, the over-concentration of FDI in the coastal belt has caused the increase of congestion costs such as land and labour costs in the coastal belt. In order to retain their cost advantage, MNEs need to explore extra production plants in China’s hinterland. From the Chinese government’s view, the over concentration of FDI in the coastal belt had accelerated, increasing regional inequality between the coast and the hinterland, as well as the deterioration of the environment in
the coastal belt. Therefore, it is also the Chinese policy makers’ intention to attract more FDI flows to the hinterland regions.

1.2. Research objectives

The meaning of the term ‘subsequent’ in this study is twofold. Firstly, I treat the period from late 1990s to the early 21st century as the transition period of FDI in China. FDI flows to China before the late 1990s was treated as the initial FDI. The characteristics of the initial FDI are: the majority of them are from large MNCs who are among the first group of foreign firms invested in China; spatially the initial FDI are concentrated in China’s early opened south-eastern coastal belt rather than the hinterland regions. After the transition period, those initial foreign investors had saved valuable experience in the Chinese market and their market strategy also changed according to the evolution of local and international markets. Therefore, I treat the FDI flows to China after the transition period as the subsequent FDI in China. Empirically, I use one chapter to explore the probable factors that might affect foreign investors’ intensity of subsequent investments in China followed by their initial and transition period of investments in China. Secondly, from the proportion point of view, FDI flows to China continue to concentrate in the south-eastern coastal belt. However, it is anticipated that due to the increase of land and labour costs in the coastal belt as well as the deterioration of the environment in the coastal belt, the FDI will shift from the coastal belt to the hinterland region in China. Thus another empirical study of this dissertation is to find out what factors can really affect FDI’s location determinants in China’s hinterland regions1.

1 Including 16 hinterland provinces: Shanxi, Neimenggu, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, Hunan, Guangxi, Sichuan, Guizhou, Shaanxi, Qinghai, Ningxia and Xinjiang.
1.3. Methodology

Three sets of data are collected to complete the research objectives. One is the cross section data in Chapter 3, with the intensity of investment contributed by the foreign party as the dependent variable and some explaining variables as divided by three levels (firm, location and international level). A cross section multiple linear regression analysis was conducted to find out what factors influence the intensity of foreign investors’ subsequent investment in China. The choice of the cross section multiple linear regression is based on the nature of the data (data in one single year - 2002).

The second set of data use 16 socioeconomic variables that were classified into three aspects: economic, infrastructure and labour quality aspect (data of 2005) to ascertain 18 hinterland provinces’ strength and weakness in each of the three socioeconomic aspects and overall evaluation. The quantitative method used is the principal component analysis (PCA). The advantages of PCA lies in it can find out the relative better one.

The third set of data is a panel data set at the city level. It uses the actual FDI flows to 98 hinterland cities from 1999 to 2005 as the dependent variable and a group of FDI related variables as the explaining variables to ascertain factors that contribute to attract more FDI flows into China’s hinterland regions. The econometric method used is the general least squares (GLS) panel data analysis.
1.4. Structure

The remainder of this study is organized as follows: in chapter 2, I review issues around FDI in China (entry modes, major investors, sectorial and spatial distribution), and China’s ‘open door policies’ started in the late 1970s. I also discuss the impact on the Chinese economy brought by FDI flows. I review theories of FDI and their implications on location determination in Chapter 3.

Chapter 4 is an empirical analysis on ‘subsequent’ FDI in China based on multilevel determinants, focusing on examining factors that influence the intensity of foreign investors’ subsequent investment in China. Chapter 5 is an exploratory study of FDI related socioeconomic competitiveness in China’s hinterland provinces. Chapter 6 is an empirical analysis focusing on examining FDI’s location determinants in China’s hinterland, based on a panel data set with data from the city level. Chapter 7 is the summary and conclusion.

1.5. Conclusions

In this chapter, I explained my dissertation topic and why I believe this is an important topic to research. I briefly introduced the empirical methods that were used in this dissertation and the structure of this dissertation. This research is different to past relating studies on FDI in China for two reasons: firstly, it focuses on identifying multinationals’ subsequent strategy in China after the initial and transition period of FDI flows to China, Secondly, my study focuses on the previously ignored hinterland regions of China. Most past studies focus on the previously opened coastal regions of China while ignoring the
under-developed Chinese hinterland regions. With the increasing costs of labour and land in the coastal belt and the increasing purchasing power in the hinterland, it is now the time for multinationals to further examine the potential of the vast hinterland market. I hope my study can shed light for future studies in this field.
Chapter 2: Foreign Entry Modes & FDI in China

2.1. Introduction

The purpose of this chapter is to review multinationals’ foreign entry modes (FEMs) and the ‘open door policy’ that has occurred in China since the late 1970s, and to outline the development and the impacts of foreign direct investments on national and regional economies. This chapter is composed of two parts. The first part reviews theories on FEMs and major entry modes in China; the second part is an overview of China’s open door policy and related economic policies. This is followed by descriptions on source, sectoral and spatial distribution of FDI in China. At the end of this chapter, I review the effects brought by the ‘open door policy’. Section 2.2 reviews transitional phases in the movement toward an open and market-oriented economy. Section 2.3 presents an overview of foreign direct investments, focusing on the development stages, entry modes, major investors, and sectoral and spatial distributions. Sections 2.4, 2.5 and 2.6 discuss the impacts of foreign direct investments on the Chinese economy and central government’s policy adjustments from ‘get rich first’ to ‘common prosperity’.

2.2. Foreign entry modes

2.2.1. Introduction: Entry modes in emerging economies

MNEs now paying attention to developed market economies may gain fewer benefits from the markets. However, they can foresee more opportunities in emerging economies because these economies not only supply cheap labour and more abundant raw materials but also provide enormous and prosperous product markets. On the other hand, although
emerging economies were often characterized by dynamism, complexity and hostility in the past (Luo and Peng, 1999; Luo and Park, 2001), the situation is changing rapidly. By continuously participating in international business, emerging economies greatly improve their market environments, in which political, social, and economic uncertainties are gradually being diminished. Consequently, entering emerging economy markets now has significant implications for MNEs seeking global strategies. Implementation of international market diversification strategy involves the development of a comprehensive product/market plan that involves choosing a foreign market entry mode (Root, 1987). A foreign entry mode (FEM) is an institutional arrangement facilitating the entry of a company’s products, technology, human skills, management, or other resources into a foreign market (Root, 1994). The FEM plays a significant role in a firms’ overseas expansion. The selection of an appropriate entry mode in a foreign market can have significant and far-reaching consequences on a firm’s performance and survival (Worrell, 2001; Root, 1994).

2.2.2. A review of major theories on selection of FEM

Three main schools of thought have been put forward to explain the choice of entry modes. The first one views business operation in an overseas market as inherently risky because of the different political, cultural, and market systems to which the firm must adapt. This view advocates a gradual involvement in the foreign market (Johanson, 1977; Root, 1987). The second school of thought derives from the perspective of transaction costs (Anderson and Gatignon, 1986; Caves, 1982; Erramilli and Rao, 1993). The basic premise is that firms will internalize those activities that they can perform at a lower cost, but will subcontract those activities externally if other providers have a cost advantage.
The third school of thought highlights the importance of location specific factors (Dunning, 1988; Hill et al., 1990). In Dunning’s Eclectic Paradigm, apart from ownership-specific factors and internalisation factors, he emphasizes that location-specific factors are becoming more significant in affecting firms’ international operations, and that these factors have an increasing impact on the non-production costs (Dunning, 1988). This perspective on location-specific factors is important in today’s global competition where non-production costs are rising faster than production costs (Pan and Tse, 2000). Table 1 lists the factors that affect FEM decisions.

**Table 1 Factors Affecting Foreign Entry Mode Decisions**

<table>
<thead>
<tr>
<th>External Environment Factors</th>
<th>Internal Environment Factors</th>
<th>Strategic Goals &amp; Objects</th>
<th>Relationship Factors</th>
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<tbody>
<tr>
<td>2. Political instability</td>
<td>2. Export intensity</td>
<td>2. Global economics</td>
<td>2. Social knowledge</td>
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<td>5. FDI penetration in local economy</td>
<td>5. International experience</td>
<td>5. Global strategic motivations</td>
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<tr>
<td>7. Location advantages</td>
<td>7. Uncertainty avoidance</td>
<td>7. Transfer knowledge exploitation</td>
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<td>8. Demand uncertainty</td>
<td>8. Individualism/collectivism</td>
<td>8. Exploitation of market potential</td>
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<td>11. Intensity of competition</td>
<td>11. Ownership advantages</td>
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<td>12. Competitor’s modes</td>
<td>12. Internalization advantages</td>
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<td>13. Host nation investment policies</td>
<td>13. Sales growth</td>
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<td>15. Adequacy of infrastructure</td>
<td>15. Value of firm specific know-how</td>
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<td>18. Product classification</td>
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<td>21. Scarcity of resources</td>
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Based on the degree of control, the above FEMs can be divided as the following three types: higher control modes, medium control modes and lower control modes (Anderson and Gatignon, 1986). From the managerial angle, FEMs could be treated as export entry modes, contractual entry modes and investment entry modes (Root, 1987). Some researchers discussed the FEMs by equity-based and non-equity based criteria. Within equity based modes, the choice is between WFOE and equity joint venture (EJV), while within non-equity based modes, the choice is between contractual agreements and export (Pan and Tse, 2000). Woodcock et al. (1994) discussed the costs in relation to new venture (WFOE), JVs and acquisitions based on the equity point of view.

The contingency relationships delineated above not only influence the selection of the entry modes, but also their profitability. In particular, firms that already have the appropriate resources incur minimal resource-based costs during market entry. However, firms that do not have the required resources must procure them using a joint venture or acquisition. Such a transaction will have associated costs.

A firm using an acquisition entry mode will have several costs associated with procuring the necessary resources for market entry, particularly in the inefficient market situation that an acquisition (a single and unique transaction) represents. First, the firm incurs the cost of searching for an appropriate acquisition target. Second, the acquiring firm has a cost associated with the risk of paying too much for the target firm, and therefore, the resources being procured. The cost of this risk is associated with the asymmetric
information problem confronting the acquiring firm due to the firm's inferior knowledge of the resources being purchased. The firm to be acquired, on the other hand, has an information advantage because of its superior knowledge about its industry, its internal resources, and the market for these resources. This puts the acquiring firm at a disadvantage for evaluating the resources being purchased. The seller may ask a price in excess of the value of the business and resources, or the acquirer may overbid for them.

An additional problem makes the economic transaction even more risky for the acquiring company. This problem is related to the singular nature of the transaction, which allows the sellers to cheat an acquirer, and provides the acquirer with little or no recourse to exact retribution from the sellers. Such a situation puts the seller at an advantage relative to the acquirer. Therefore, acquisitional risk or premium costs are associated with information asymmetry combined with the singular nature of the acquisition transaction process. Risk or premium costs can be lowered by increasing initial search costs, but this again is an added cost that is associated with an inefficient market.

Teece (1982) makes a similar argument for a firm that selects the acquisition mode compared to the new venture mode by suggesting that the new venture firm has excess or slack resources that can be expended on the creation of a new venture. Utilizing these slack resources more fully improves the overall effectiveness and efficiency of the firm. Furthermore, Teece's thesis is applicable to the whole firm while the theoretical argument in this paper is focused only on the entry mode itself. Other researchers have made similar information asymmetry arguments specific to the acquisition entry mode (Yip, 1982).
New joint ventures, on the other hand, have minimal risks associated with resource overpayment because of the symmetrical and ongoing nature of the transaction process. The risk of paying too much for these resources is limited because all partners face the same potential information asymmetry problem. Therefore, neither partner has a clear ability to induce the other partner to overpay or over-commit without incurring the same problem themselves. This situation leads to a situation where neither party wants to induce the other to retaliate. For instance, the other firm(s) can retaliate if one firm attempts to cheat because of the ongoing relationship or multiple transactions present in a joint venture. In such an economic transactional dilemma (called a prisoner's dilemma), all parties can hold the other parties in line with the threat of reciprocal retaliatory action in future transactions.

In addition to the above retaliatory or negative motivational game, a positive motivational economic game is also present. Given that firms in a joint venture are benefiting from either sharing resources or sharing remuneration, all parties will be reticent to cheat for fear they will lose these benefits. Therefore, all parties attempt to actively support the joint venture and do not cheat. This positive economic game dilemma (called a stag hunt) produces a non-cheating environment based on the accruing benefits to all parties. These two economic dilemmas or games tend to discourage cheating in joint ventures.

The only situation where cheating becomes advantageous is when an asymmetric retaliatory position exists between two partnering firms. In this situation, one firm can cheat and the other cannot retaliate in an equal and reciprocal manner. It is assumed, however, that joint venture partners have appropriately selected their partners to avoid
such a position. This argument highlights the one resource-based cost that joint ventures incur. This cost is the search and examination cost related to selecting a partner with the required resources, as well as a partner with a symmetrical retaliatory position, so that cheating is minimized. It should be noted that a symmetrical retaliatory position not only includes considerations such as strategic position, but also organizational culture, and managerial values and attitudes.

Hill et al. (1990) argued the relationship between controls, resource commitment, technology leakage, and licensing, EJV & WFOE, as listed in Table 2.

Pan and Tse (2000) argued that the choice of entry modes can be examined from a hierarchical perspective. Based on the above researchers’ and other institutions’ studies, I listed the advantages and disadvantages of five frequently adopted entry modes in the Chinese market, as shown in Table 3.

<table>
<thead>
<tr>
<th>Entry mode</th>
<th>Control</th>
<th>Resource commitment</th>
<th>Dissemination risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensing</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Joint venture</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Wholly owned subsidiary</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>

Table 3 Advantages & Disadvantages on Five Major Foreign Entry Modes (FEMs) in China

<table>
<thead>
<tr>
<th></th>
<th>Export</th>
<th>Licensing (or Franchising)</th>
<th>Contract Joint Venture</th>
<th>Equity Joint Venture</th>
<th>Wholly Foreign Owned Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td>Low investment; low risk; high flexibility</td>
<td>Low investment; low risk; high flexibility</td>
<td>Flexibility</td>
<td>Share risk &amp; profit; a short cut to familiar with local customs</td>
<td>Highly controlled of technology &amp; management</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>High cost of transport; high tax barrier; lower control</td>
<td>Might lose control over technology &amp; quality</td>
<td>Conflicts with local partners</td>
<td>Might lose control over technology; conflicts with local partners</td>
<td>High investment; high risk; low flexibility</td>
</tr>
</tbody>
</table>

Source: The authors' classification and analyzing.

2.2.3 Major entry modes in China

Generally speaking, foreign entry modes into China can be classified into 6 types:

1. Equity joint ventures (EJVs).

Equity joint ventures are also known as share-holding corporations. They are formed in China with joint capitals by foreign companies, enterprises, other economic organizations and individuals with Chinese companies, enterprises, other economic organizations and individuals. The main feature is that the joint parties invest together, operate together, take risk according to the ratio of their capitals and take responsibility of losses and profits. The capitals from different parties are translated
into the ratios of capitals, and in general the capital from foreign party should not be lower than 25%.

The EJVs are among the first forms of China's absorption of foreign direct investment and they account for the biggest part. At present they are still a great part of the absorption of foreign investments.

2. Cooperative joint ventures (CJVs).

Cooperative joint ventures are formed in China with joint capitals or terms of cooperation by foreign companies, enterprises, other economic organizations and individuals with Chinese companies, enterprises, other economic organizations and individuals. The rights and obligations of different parties are embedded in the contract. To establish a cooperative business, the foreign party, generally speaking, supplies all or most of the capital while the Chinese party supplies land, factory buildings, and useful facilities, and some also supply a certain amount of capital.

3. Wholly foreign-owned enterprises (WFOEs).

Wholly foreign-owned enterprises, which are totally invested by foreign parties in China by foreign companies, enterprises, other economic organizations and individuals in accordance with laws of China. According to the law of foreign-funded enterprises, the establishment of foreign enterprises should benefit the development of the national economy and agree with at least one of the following criteria: the enterprises must adopt an international advanced technology and facility, and all or most of the products must be export-oriented. The foreign funded enterprises often take the form of limited liability.

Joint exploitation is the abbreviation of maritime and overland oil joint exploitation. It is a widely adopted measure of economic cooperation in the international natural resources field. The striking features are high risk, high investment and high reward. The joint development is often divided into three steps: exploitation, development and production. Compared with the other three means mentioned above, MNEs entering China with the form of joint exploitation account for a small ratio.

5. Foreign-funded share-holding companies.

Foreign companies, enterprises, other economic organizations and individuals can form foreign funded share-holding companies in China with Chinese companies, enterprises, and other economic organizations. The total capital of the share-holding company is formed by equal shares. Shareholders will take due responsibility for the company according to shares purchased; the company will assume responsibility for all its debts through all its assets and the Chinese and foreign shareholders will hold the shares of the company. Among them, the shares purchased and held by foreign investors account for more than 25% of the total registered capital of the company. A limited company can be founded either by means of starting-up or raising, and the limited liability company invested by the foreigners can also apply to turn into share-holding companies. The qualified enterprises can also apply to issue A & B share and list abroad.
6. New types of foreign investment.

While expanding areas and opening-up the domestic market, China is also exploring and expanding actively its new ways of utilizing foreign investment such as BOT, investment company, acquisition and merger. Since multinational merger and acquisition has become the major type of international direct investment, Chinese government is now researching and enacting related policies so as to facilitate the foreigners to invest in China by means of merger and acquisition.

2.2.4. Trends of Foreign Entry Modes in China

Exports entail fewer involvements in foreign market expansion in terms of required resources commitment and market knowledge. Contracts, based on mutual trust, result in possible leakages of intellectual properties. By contrast, FDI calls for higher levels of resource commitment, control and market knowledge (Dunning, 1988).

In the course of foreign direct investment (FDI) into China, the modes of FDI have witnessed some systematic changes. Apart from the traditional ‘three plus one’, entry modes selected by foreign investors to China varied from the contractual joint venture (CJV) and joint exploration to equity joint venture (EJV) and wholly foreign owned enterprises (WFOE). In general, in the early period of reform, CJV and joint exploration investment played a dominant role; after 1986, equity joint venture and wholly foreign-owned enterprise investment replaced contractual investment to become the main forms of FDI. For most of the period of time since 1990s, EJVs occupied a dominant position;

2 Three means materials for processing, parts for assembly, sample for further processing. One means compensation trade.
however, since the 1990s the share of wholly foreign invested enterprises gradually increased, and, furthermore, the foreign control in joint ventures also increased. (Luo, 2007).

According to statistics from the Ministry of Commerce of China (2001), both contractual joint venture and joint exploration accounted for over 60% of the total contractual investment in 1985. The WFOEs only contributed a share of less than 1 percent. After 1986, FDI became a normal commercial activity, which led the EJVs and WFOEs to become the main forms of investment. By 1990, in both contractual and actual investment, the shares of contractual joint ventures and wholly foreign-owned enterprises exceeded that of contractual joint ventures and joint exploration. From 1998 on, the share of wholly foreign owned enterprises in contractual investment exceeded that of equity joint ventures. By 2000, the actual investment share of wholly foreign-owned enterprises also exceeded that of joint ventures. Altogether, contractual joint ventures and wholly foreign-owned enterprises contributed nearly 80% of both total contractual and actual investment (MOFCOM, 2001).

The reasons behind these changes included: at the initial stage of their investment in China, foreign investors are unfamiliar with the Chinese investment environment and thus they tend to enter China by working with local partners by the forms of CJV (Joint exploration is a form of CJV); later on, after the mid-1990s, the fund-raising difficulty encountered by the Chinese firms enabled foreign partners to increase their equity shares through increasing reinvestment. A related fact is that, except for a few sectors, the Chinese government gave up the restrictions on foreign control in joint ventures. (Lai, 2001)

\footnote{Foreign firms using part or all their profits made in China to invest in China again.}
This caused the increasing of EJVs in China, especially the majority EJVs. Recently, as foreign investors become more familiar with the Chinese investment environment, they are more willing to do business independently. This is reflected by the fact that the form of WFOE became the first choice by foreign firms after 2000. Besides, as more and more foreign companies bring their research and development (R & D) activity to China, the WFOE entry form can best protect their technology monopoly and protect technology leakage.

Compared with joint ventures, crucial advantages of WFOEs are the protection of property assets and managerial autonomy. Joint exploration of oil or coal is another mode of foreign investments in China. A shift in foreign entry modes accompanies the rapid growth of foreign direct investments in China. Early investors favoured CJVs. After 1987, EJVs became the dominant entry mode. However, with the passage of the Law of the People's Republic of China on Enterprises Operational Exclusively with Foreign Capital in 1986, WFOEs have become increasingly popular. WFOEs replaced CJVs as the second most important entry mode in 1990s.

Later investors gained experience and knowledge from early entrants, and are willing to maintain total control of their investments (Luo and O'Connor, 1998). WFOEs face high operational hazards, greater financial costs, and require more organizational commitments (Beamish and Banks, 1987). The hazards and costs of WFOEs are magnified in China because foreign investors encounter contextual uncertainties, some institutional hostility and contractual hazards (Shan, 1991). The steady and incremental increase in WFOE investments implies that foreign investors have improved their ability to reduce contextual hazards, and mitigate operational uncertainties as a result of learning
and experience over time (Luo and O’Connor, 1998). A WFOE is a superior mode because it can enhance organizational control over local operations, avoid partner’s opportunism, and protect the company’s tacit knowledge in an environment where an intellectual property rights system is not well established. Over time, as China’s policies change, and multinationals gain business experience and become familiar with the transitional economic environments, multinationals’ entry modes have evolved from risk-averse forms such as joint ventures to more aggressive who

2.3. The ‘open door policy’

2.3.1. What is the ‘open door policy’

The Open Door Policy has been carried out for 30 years since the late 1970s by Deng Xiaoping. Before Deng's era, China was ruled under the radical politics-oriented and self-sustained policy by Mao Zedong, which had China's door closed to foreign countries. Learning from the failure experiences from Mao's regime, Deng realized that in order to let China be modernized, reforms should be taken initially in the economic sector. Deng started his goal by advocating China to open her door to the rest of the world, which was the ‘Open Door Policy’.

2.3.2. Special economic zones & other opened coastal cities

Deng announced the Open Door Policy of China in 1978. It included earmarking four southern cities as Special Economic Zones (SEZs), which were Shenzhen, Zhuhai,
Shantou and Xiamen, to take advantage of their geographic proximity to overseas Chinese communities such as Hong Kong, Taiwan and Macau, and for their vast overseas connections. Later on, Hainan Island was designated by Chinese central government to be a special economic province, enjoying more or less the same preferential treatments as the 4 SEZs. The objectives of SEZs were to experiment with the development of market-oriented economic systems and to serve as a ‘window’ and ‘base’ for profound economic transitions. The experiments covered a wide range, including utilizing foreign capital to finance private investments, encouraging an influx of foreign production and managerial skills, and promoting international trade in accordance with the comparative advantages of each region. For example, Shenzhen was the first SEZ in 1980 mainly because of its geographical advantage: its central location between Hong Kong and Guangzhou made it an ideal place to locate light industry, especially the production of arts and crafts, textiles, footwear, clothing, medicines and building materials. The Chinese government developed special economic policies in these zones, policies that differed radically from the economic systems of other regions in the following manner: (1) building an economic structure with foreign investments playing the major part; (2) mainly relying on market forces; (3) provincial-level power decentralized to local governments, especially in economic matters; (4) favorable financial policies; (5) elimination of tariffs on materials needed for construction within the zones.

To attract foreign capital, the SEZs have organized various investment incentives in a flexible and innovative manner. Those incentives included duty-free privileges on inputs, concessionary tax rates, preferential fees for land or facility use, and more flexible labour, managerial relations and contracts (Wang, 1997; Fu, 2000). Foreign enterprises were
granted lower corporate income tax rates, and exemptions from value added tax on exports, and exemptions from import tariffs on the imports of equipment or raw materials needed to produce exports (Wang, 1997). Those investment incentives significantly reduced the production costs of foreign enterprises.

Besides SEZs, many coastal cities were also designated as areas open to foreign investments. In 1984, the Chinese government assigned 14 coastal port cities as the Open Coastal Cities (OCCs). These cities were given autonomy in their foreign economic and trade activities, and encouraged to provide favourable investing environments for foreign investors. Foreign enterprises in the OCCs were entitled to lower corporate income tax rates and exemptions from tariffs and value added tax.

Thirty additional economic and technological development zones were established in the period of 1984-1992. Open coastal economic zones including the Pearl River Delta, Yangtze River Delta and Fuzhou-Xiamen-Zhangzhou-Quanzhou Delta were established in 1985. The state further approved Eastern Liaoning Peninsula and Shandong Peninsula as open coastal economic zones in 1988. Investment incentives entitled to the open coastal economic zones are similar to those in the OCCs (Wang, 1997). In order to develop Shanghai as an international economic, trade, financial and shipping centre, the State council decided to build the Pudong New Area of Shanghai in 1990, which aims to make Shanghai an international stock exchange market which is competitive with one of the greatest financial centres in the world - Hong Kong. Since 1988, China has further promoted the development of more than 50 new and high-technology industrial development zones in major cities which I will discuss in detail in Chapter 5. The above
policy activities enabled all coastal provinces to gain more benefits compared with inland provinces in terms of fiscal priority, technologies, foreign capital, and access to international markets (Sun and Tipton, 1998) and strengthened the leading position of south eastern coastal belt in the development of Chinese economy.

2.3.3. Towards a market-oriented economy

China’s economic reform towards a market-oriented economy is best described as an evolutionary reform or a gradualist approach toward a new regulatory framework (McMillan and Naughton, 1992; Harvie, 1999; Zhang, 2000). This approach encourages free markets to grow, while at the same time maintaining state control in critical industrial sectors.

Economic reform began with the agriculture sector and in rural areas in the late 1970s. Key measures taken to reform agriculture included: the leasing of land to farmers, increasing prices for key crops, and introducing a dual price system for agricultural produce which means that farmers have to sell part of their produce to the central government under the planning price system, and can sell the surplus of their produce under the market price system. Restrictions on rural commodity markets were relaxed (Zhang, 2000). Expanded household farming, state policy support, and market forces together led to major gains in agricultural production and productivity, higher rural savings, and investments. These policies also released rural labour for employment in emerging township and village non-agricultural enterprises (Harvie, 1999). Several reasons contributed to the rapid development of township and village enterprises (TVE). (1) They are small scale, flexible operations and market-driven; (2) they absorb increasing rural savings and surplus rural labour; (3) they encourage decentralization of
decision-making; (4) they face lower market entry barrier and competitive environments; (5) they foster an international orientation (Chen and Chen, 1998; Harvie 1999; Sun 1999). The township and village enterprises act as competition for state-owned enterprises, assisting in the increased marketization process of the entire national economic system.

By 1984, the initial success of agricultural and rural reforms encouraged the Chinese government to broaden reforms to include the urban-industrial sectors, and to gradually dismantle the central planning system (Perkins, 1994; Harvie, 1999). The initial objective of this reform was to transform state-owned enterprises from executors of state orders without financial autonomy to independent economic actors with all the rights and responsibilities for their own economic performance. This allowed the government to focus on macroeconomic controls, and on the creation and development of market systems (Zhang, 2000). Without undertaking large-scale privatization, the central government gradually transformed state-owned enterprises from plan producers to market entities. The central government first reduced, and then lifted plan controls on production process and output levels. State-owned enterprises are now allowed to keep a large portion of their profits, and trade goods and inputs in free markets. In short, production decisions have been decentralized from the central government to the enterprises (McMillan and Naughton, 1992).

Restrictions on non-state owned sectors were gradually relaxed and the state material allocation system was liberalized. This permitted the non-state owned enterprises to secure supplies of necessary factor inputs (Bell, 1997). The government further liberalized the trading and exchange systems by increasing the number and scope of open
economics zones (Cerra and Dayal-Gulati, 1999). The reforms during the period of 1984-1992 led to the emergence of a large, dynamic, non-state owned industrial production. The ownership of industrial enterprises became more diverse, including state-owned, collectively-owned, individually-owned and others. Employment in non-state owned urban sectors is increasing while in the state and collectively-owned urban sectors employment is decreasing.

The decline in state-owned economy is much more profound when measured as output compared with employment. Non-state owned enterprises largely have become governed by market forces (Harvie, 1999). The pace of economic reforms has accelerated since the early 1990s. The Chinese government in 1992 declared a goal of establishing a 'socialist market economy'. Principal characteristics of this socialist market economy include: considerable decentralization of economic decision-making from the state to enterprises, the state-controlled resource allocation systems, greater privatization of agriculture and service sectors, public ownership of critical sectors, and strong linkages with the world economy (Harvie, 1999). In short, a distinctive market-oriented economy is gradually coming into being in China.

2.4. FDI in China: an overview

2.4.1. Development of FDI in China
Foreign direct investment (FDI) has occurred in China for three decades and has experienced fundamental structural changes in investment level, entry mode, sector, and location choice. These changes suggest that foreign investors in China have followed an evolutionary path by gradually increasing their investments (Luo and O'Connor, 1998).
An evolutionary approach to investment commitment conforms to a key notion in international business theory that the position of foreign direct investment improves as investors become more knowledgeable about local conditions (Johanson and Vahlne, 1977). Knowledge is accumulated through a process of ‘learning by doing’, which is a positive function of the length of presence in the host economy. The development of knowledge about a foreign market is a sequential and evolutionary process (Chang, 1995). Both foreign investors and local governments take time to learn to deal with foreign business in transitional economies (Child and Markóczy, 1993).

China’s policy toward FDI has been remarkably successful. China has been the second largest recipient of FDI in the world since 1993, second only to the United States. Before 1983, foreign direct investment in China was modest. As foreign investors became more knowledgeable of China’s open-door policy and as the regulatory framework for FDI improved, FDI gained momentum in the second half of the 1980s. Since 1991, realized FDI in China has increased exponentially. By the end of 2006, China had approved 590,000 foreign enterprises, with a realized FDI value of US$ 685.4 billion. Over the past two decades there are four stages in the development of foreign direct investment in China in terms of volume of FDI inflow, its spatial distribution and policy. The initial stage (1979-1982) began with the promulgation of the Chinese-Foreign Equity Joint Venture Law in 1979 and the establishment of four SEZs in Guangdong and Fujian provinces. Small foreign enterprises were established in the SEZs and some other coastal cities. This period was characterized by a slow pace of FDI growth, small volume of FDI, and a predominance of cooperative joint ventures. During the period 1979-1982, less than 1,000 foreign investment projects were approved by the Chinese government, with the
contractual and actual amount of FDI approximately US$ 6 billion and US$ 1.2 billion respectively. Potential foreign investors were risk-averse, seeking more business and political information before investing in China. Hong Kong investors dominated the early FDI flows. Geographic and cultural proximity encouraged these capital flows. Early FDI was concentrated in small-scale assembly and processing sectors for export (Sun, 1998).

During the second stage (1983-1985), the Chinese government made an attempt to open its economy to the world by opening fourteen OCCs and three economic development zones of the Yangtze River Delta, Pearl River Delta and Minnan Delta (Qu and Green, 1997; Sun, 1998) as discussed above. FDI accelerated in the time period 1984-1985. The number of newly added foreign enterprises more than doubled between 1983 and 1985. Owing to high inflation and a lack of legal clarity about FDI, the initial boom ended in 1985 (Sun, 1998). Several other provinces gained importance as destinations for foreign direct investments, including Fujian, Shanghai, Tianjin, Jiangsu, and Liaoning provinces.

The third stage (1986-1991) was characterized by intensive legislation and policy changes to stimulate FDI. In response to the 1980s’ decline in FDI flows, the Chinese government published the Provision of the State Council of the People’s Republic of China for the Encouragement of Foreign Investment in 1986, which was followed by a set of implementation regulations and a flurry of provincial-level legal regulatory reforms. These provinces and reforms clarified in 1986, included reductions in land use fees and taxes, price cuts for some inputs, improved access to state controlled inputs, and attempts to improve bureaucratic efficiency and flexibility (Chen, 1997). The improved investment climates led to a quick recovery of foreign direct investments into China. Between 1986 and 1991, FDI flows into China grew by 44% per year in value terms. Realized FDI
inflows reached $ 4.7 billion in 1991 (State Statistical Bureau, 1992). Over 70% of foreign investment projects were in manufacturing industries. More regions granted favourable treatment to foreign investors, which encouraged the spatial diffusion of foreign direct investments, particularly Guangdong, Jiangsu, Shandong, Liaoning, and Fujian provinces.

In the fourth stage (1992-present), a series of legal measures accelerated the reforms. Key measures included further decentralization of decision-making power to enterprises, experiments in the shareholding systems for ownership of state-owned enterprises, and a large reduction of state mandated plans for production. More inland cities and more sectors were opened to foreign investors (Chen, 1997). Furthermore, a set of commercial laws and regulations were passed to improve the legal framework and policy settings in which foreign enterprises operate. As a result, foreign direct investments surged in the 1990s. Foreign direct investment diffused inland and from the principal cities to their surrounding regions.

Most foreign investors in China began with a very low level of commitment. Their major objective was to establish a small local presence, to learn how to operate and manage business in the Chinese market, and to assess the risks and potential rewards in making additional investments (Luo and O'Connor, 1998). With increased familiarity with the Chinese business environments, foreign investors increased their commitment to the local economy and built a broader multi-regional presence. This was followed by a step towards becoming 'dominant local players'. Some well-known early mover multinationals such Siemens, Motorola, and Sony entered in this phase. They showed an extremely high level of commitment to investment and operations in China. With
accumulated learning concerning the host economic environments, foreign investors gradually increased their investments in less-developed, more uncertain regions where market potential was largely unexplored.

2.4.2. Major foreign investors

Although investors from nearly 200 countries have made direct investments in China, a few major investors dominate. Major investors are from Hong Kong, Taiwan, Japan, United States, Singapore, South Korea, United Kingdom and Germany. In this study, Hong Kong and Taiwan are treated as ‘foreign’ in accordance with Chinese FDI statistics. Hong Kong (including Macao) has been the largest investor since 1979. By the end of 2005, the cumulative value of realized direct investments from Hong Kong accounted for some 46.42% of total FDI in China. Taiwan ranks second among all investors, far behind Hong Kong, with 9.98% of total FDI. The United States and Japan are the third and fourth largest investors in China, accounting for 8.74% and 8.59% respectively. Investments from other developed countries including the United Kingdom, Germany and France remain small, but the volume of foreign direct investments from the newly industrialized economies in Asia including Singapore and South Korea have become increasingly significant since the late 1980s (Table 4).

Table 4 The Top Ten Countries Invested in China (cumulative figures) by the end of 2005

<table>
<thead>
<tr>
<th>Country</th>
<th>Amount (100 million US$)</th>
<th>Share of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>2889.48</td>
<td>46.42%</td>
</tr>
<tr>
<td>Taiwan</td>
<td>621.19</td>
<td>9.98%</td>
</tr>
<tr>
<td>United States</td>
<td>543.85</td>
<td>8.74%</td>
</tr>
</tbody>
</table>
The special role of Hong Kong investors in foreign direct investments in China deserves more detailed discussion. First, 'round tripping' may contribute to increasing Hong Kong investments in China (Fu, 2000; Lemoine, 2000). Chinese firms illegally transfer money to Hong Kong and reinvest in the mainland to take advantage of the preferential treatments granted to foreign investors. Second, a part of Hong Kong investments are made by affiliation with Chinese firms, which are incorporated in Hong Kong, and listed on the Hong Kong stock exchange.

Third, Hong Kong serves as an intermediary between China and the rest of the world. This is particularly the case with Taiwanese investors, who were not allowed by their government to directly invest in the mainland in the 1980s. They establish subsidiaries in Hong Kong to conduct business with the mainland. Some western multinationals also invest in China through their subsidiaries in Hong Kong. They take advantage of experience and knowledge of Hong Kong managers when doing business in China (Chen,
1997; Lemoine 2000). However, as the Chinese economy became integrated with the global economic system, 'unusual investments' from Hong Kong become less necessary. In the period 1990-2005, Hong Kong investment as a percentage of total investment declined from more than 70% to 46%.

Transaction cost theory of foreign direct investments argues that the greater the socio-cultural distance between foreign investors and host economies, the lower the degree of equity participation that multinationals have. Socio-cultural distance increases the need for information, and the costs of operating in a foreign culture with business uncertainty and unpredictability (Shan, 1991; Sun, 1999). Hong Kong and Taiwanese investors are ethnically Chinese, and share close cultural ties with the mainland Chinese society. They enjoy advantages in language, cultural traits, and ethnic links, and in access to the Chinese social network. These advantages allow them easily to enter the Chinese domestic market with less reliance on local firms. Investors from the ASEAN region (including Singapore, Malaysia, Indonesia, Thailand, and the Philippines) and South Korea are China's neighbours, and have close cultural and business ties to China due to geographical proximity and historical business links. Some investors from Singapore, Indonesia, and Malaysia are mainly overseas Chinese with close cultural and family ties to the mainland. American and Canadian investors lack the cultural ties with China, and face substantial socio-cultural distance. They rely more on local firms and favour equity joint ventures. Japanese investors understand the Chinese culture, but historical and political mistrust discounts the socio-cultural advantages of their geographical proximity and cultural linkages. In addition, Japanese businesses are often risk-averse. They favour equity joint ventures over wholly foreign-owned subsidiaries (Deng, 2001). In addition,
foreign investments in labour-intensive sectors and export-oriented production are more likely to choose wholly foreign-owned ventures, while those targeting the host markets prefer joint ventures (Park and Lee, 2001). Projects from Hong Kong, Taiwan, South Korea, and the ASEAN region are more export-oriented and favour labour intensive sectors including textiles, clothing, food, and leather products. In contrast, investments from industrialized economies including the United States and Europe target Chinese markets.

2.4.3. Sectoral distribution of FDI in China

Foreign direct investments concentrate on the manufacturing sectors and real estate in China. By the end of 2005, the number of foreign enterprises invested in the manufacturing sector in China was 72.03% of total foreign enterprises invested in China and the contractual foreign investment was 65.14% of total foreign investment. However, the sectoral distribution has changed in the last two decades. In the early 1980s, a large part of FDI was directed to geological prospecting, real estate, tourism, and related services. FDI in geological prospecting corresponded to the participation of Western firms in the exploration of China’s petroleum resources. FDI in real estate and services was largely driven by infrastructure needs created by the Open Door Policy. Foreign investors demanded offices, accommodation, and eating facilities that met Western standards. These projects generated quick returns on investments. Early foreign projects in manufacturing sectors stressed labour-intensive production of food, electronics, construction materials, textiles, toys, and other light goods. These were viewed as less hazardous and required lower commitments to local production and marketing (Luo and O’Connor, 1998).
Since the middle of 1980s, the Chinese government has adopted a series of measures to guide foreign direct investments in favour of export-oriented and high technology manufacturing sectors. In the period 1988-1991, FDI inflows significantly shifted toward these sectors. Foreign manufacturing investments have increased rapidly, and account for the major part of total FDI inflows since 1993. With increased experience in the market, and accumulated knowledge about the industrial structures, foreign firms have extended their scope of business into physical infrastructure facilities including construction, energy, and transportation, and capital and technologically intensive machinery and equipment, and other Chinese critical industries.

Manufacturing dominates foreign direct investments in China. While the value of foreign direct investment by sector is not available, the number of enterprises, gross output, and total assets, and associated concentration indices reveal valuable information on sectoral distributions of foreign manufacturing investments (State Statistical Bureau, 1996). Ownership-specific advantages possessed by Japanese and North American multinationals help to explain their sectoral distributions. Multinationals based in developed economies seek to exploit advantages derived from their distinctive human resources, and organizational capabilities including advanced technology, product and process innovation, economies of scale and scope, and internalization advantages when investing abroad (Dunning, 1981). United States and Canadian investments are concentrated in capital and technology intensive industries. They focus on electronics and telecommunication equipment, instrument and meters, medical and pharmaceutical products, non-ferrous metal smelting and pressing, chemicals, beverage, and electrical machinery and equipment. North American investors also emphasized some new labour
intensive sectors such as cultural, education and sporting goods, leather and fur, clothing, and miscellaneous manufacturing. Japanese investors invest heavily in capital and technologically intensive sectors including electronics and telecommunication equipment, instruments and meters, chemistry fibres, and electrical machinery and equipment. Japanese investments are also diversifying into labour-intensive and resource-based sectors, including food, textile, clothing, leather and fur, timber processing, cultural, education and sporting goods, and miscellaneous manufacturing.

The concentration in labour-intensive industries by investors from the newly industrialized economies in Asia is tied to their structural transformations from labour-intensive to capital and technology intensive sectors. The transfer of labour-intensive sectors to China helps them to maintain competitive advantages in the world market by exploring cheap labour and subsidies in China (Sun, 1998; Sun and Tipton, 1998). The ASEAN region, South Korea, Hong Kong and Taiwanese investors have similar sectoral distributions. Foreign investment projects from those economies are heavily concentrated in textiles, clothing, leather and fur, cultural, education, and sporting goods, plastics, and miscellaneous manufacturing. They have strongly developed technologies and established international market networks for those products. Some capital and technologies and established international market networks for those products. Some capital and technologically intensive sectors also attract investments from those Asian economies, such as medical and pharmaceutical products, chemistry fibre, electronics and telecommunication equipment, and instruments and meters.
2.4.4. Spatial distribution of FDI in China

FDI has a very unbalanced geographical distribution in China, as shown in Figure 1.1. For the period from 1997 to 2006, the coastal region attracted around 87% of the national total FDI, while the central region received around 10% and western region 3%. Foreign investors continue favour south-eastern coastal belt over hinterland regions.

Several reasons explain the coastal concentration of foreign direct investments in China. First, since its inception, the open door policy has explicitly encouraged foreign direct investments in the coastal region. Second, the coastal provinces have better geographical proximity to international markets, developed transport infrastructure, and more skilled labour. Third, many coastal provinces have advanced rapidly in economic liberalization, and have developed a dynamic non-state owned economy and market system. These institutional structures provide foreign investors more favourable environments for generating profits.

The geographic distribution of FDI is characterized by its concentration in coastal areas (Buckley et al., 2002). Within the coastal region, Guangdong has been the largest recipient of foreign direct investments since the start of the open door policy. Guangdong accounted for more than 30 percent of total cumulative FDI. Shanghai, Jiangsu and Fujian were also scored in FDI flows. More than 60% of total FDI has been located in these four provinces. In addition, Shangdong, Liaoning, Hainan, Beijing, Tianjin and Zhejiang received a notable portion of foreign direct investment in China. Figure 1 showed FDI’s spatial distribution in China in 1994 and Figure 2 showed the changing pattern of FDI’s spatial distribution in China in 2005.
FDI's spatial distribution in China in 1994

Figure 1 FDI's spatial distribution in China of 1994 (Unit: 100 million US$)
FDI's spatial distribution in China in 2005

Figure 2 FDI’s spatial distribution in China of 2005 (Unit: 100 million US$)
As shown in Figure 1, in 1994, the top 4 Chinese regions received the most FDI flows are: Guangdong, Jiangsu, Fujian and Shanghai. All these four regions are located in China’s south-eastern coastal belt. However, in 2005, the top 4 places changed to: Guangdong, Jiangsu, Shanghai and Liaoning. This indicates that FDI’s began to expand from the traditional south-eastern coastal belt to the east of China. However, they still favour those coastal locations like Liaoning province in the north-east of China. On the other hand, FDI flows to hinterland regions like Xinjiang, Yunan, Qinghai, Gansu and Ningxia only increased slightly from 1994 to 2005.

2.5. FDI and the Chinese economy

Foreign direct investments (FDI) have played a significant role in the Chinese economy (Sun, 1998; Lemoine, 2000). The share of FDI in the gross capital formation increased steadily, reaching 12% of gross capital formation in 1997. The number of employees in foreign enterprises was some 6 million in 1997 in urban areas, and this number increased to around 7 million in 2005. Furthermore, as He (2003) indicated, once jobs created in rural areas at township and village levels are included, the number of people directly employed by foreign enterprises totalled some 20 million - 10% of China’s non-agricultural employment in 1997 (He, 2003). Foreign firms are more efficient in labour utilization in production. They also employ higher skilled personnel compared with domestic firms and pay higher wages and salaries (Zhang and Zheng, 1998).

FDI has modified China’s industrial structure. In 1995, foreign enterprises accounted for 11% of the total number of enterprises, 18% of total output value, 20% of total value-added, 19% of the total assets, and 18% of the total net value of fixed capital of China’s
manufacturing sectors (State Statistical Bureau, 1996). FDI has also increased industrial performance. A positive relationship can be observed at the sectoral level between the share of foreign capital in total capital and the growth rate of industrial production (Zhang and Zheng, 1998).

Since the early 1980s, China's international trade has registered impressive growth. Between 1980-1997 its share in world trade tripled, from 1% to more than 3%. The ratio of foreign trade to GDP increased from 12% to 34%. Exporting has been highly successful, increasing from 18 billion US dollars in 1980 to 83 billion US dollars in 1997 with an average annual growth rate of 15% (State Statistical Bureau 1998). Foreign enterprises have been the core of China's foreign trade expansion. Foreign enterprises accounted for 153 billion US dollars in 1997, with an average annual growth rate of 62% since 1980. Foreign enterprises accounted for 47% of China's total trade value in 1997. Their imports constituted 55% of total Chinese imports in 1997. Their exports accounted for 41% of China's total export, with an annual growth rate of 71% since 1980 (State Statistical Bureau, 1998). Clearly, foreign enterprises have become an increasingly important contributor to China's international trade growth.

The direct contribution of foreign enterprises to exports varies across provinces. The export contribution of foreign enterprises in the coastal region is much more significant than in the inland provinces. In 1997, exports by foreign enterprises in Tianjin, Liaoning, Shanghai, Jiangsu, Fujian, and Guangdong accounted for over 40% of total exports, while foreign enterprises contributed less than 5% of exports in most inland provinces.

By the end of 2005, foreign enterprises account for 27209.4 billion US$, directly creating 25 million jobs. In 2005, the total revenue from foreign enterprises was 63913.4 billion
Chinese RMB, a 19.35% increase compared with 2004. In 2005, the total imports and exports from foreign enterprises was 83172.6 US$, occupying 58.48% of China’s total value of imports and exports.

Several reasons account for the positive contribution of foreign direct investments to China’s export performance. (1) Foreign direct investments boost China’s export competitiveness. Foreign direct investments in medium and high technology sectors help China to diversify its exports and penetrate the world markets for technologically advanced products. (2) Multinationals have potentially large advantages in accessing foreign markets due to their international networks, brand names, and capacity to organize production on a global basis. (3) Foreign direct investments have indirect impacts on domestic firms through information spill-over effects. Local firms are induced to imitate foreign enterprises’ strategies and use services created by or for foreign investors. Foreign direct investments create backward and forward linkages with the rest of the economy as domestic firms supplying inputs to foreign enterprises and benefitting from information spill-overs. Moreover, the presence of foreign enterprises increases competition, stimulating the adoption of new technologies and efficient management practice.

2.6. Consequences of the ‘open door policy’

The Open Door Policy in China was an important stepping stone for China to enter the world economic market. With the attractive low production costs and a huge local market, foreign investments dramatically increased in the last number of decades in China. Many transnational corporations from the rest of the world had their assembly lines established in China. New advanced technology was introduced from the other
countries and many new jobs were created. But meanwhile, negative impacts such as serious environmental problems were caused by the rapid economic developments in China. Industrial waste caused severe environmental pollution in the city areas. Water was polluted by industries such as the textile industry. Air pollution was even worse. However, the most important consequence of this open door policy is the increasing regional inequality among Chinese regions which might threaten the regime of the Chinese communist party. Foreign direct investments have contributed to an increasing gap in the economic development and income levels of both major parts of the country (Sun, 1998; Sun and Chai, 1998).

FDI inflows have contributed enormously to economic growth in general and to the export industry in particular. However, FDI has been highly concentrated in the south eastern coastal belt with little investment received by the central and western regions. The Deng Xiaoping leadership expected that by supporting the growth centres in the south-eastern belt first, these centres would ultimately lead to the rest of the economy expanding. However, the spill-over effect from growth centres in the coastal provinces to inland areas has not happened as expected. The coastal areas of eastern China have markedly outstripped central and western China in the rate of economic growth since the late 1970s.

According to the nation’s administrative divisions, east China includes 12 coastal regions at the provincial level, that is, Liaoning, Hebei, Shandong, Jiangsu, Zhejiang, Fujian, Guangdong, Beijing, Tianjin, Shanghai, Guangxi, and Hainan. Central China refers to the nine provinces of Shania, Inner Mongolia, Jilin, Heilongjiang, Anhui, Jiangxi, Henan,
Hubei and Hunan. West China consists of 10 regions, including Sichuan, Guizhou, Yunnan, Shaanxi, Gansu, Qinghai, Tibet, Ningxia, Xinjiang and Chongqing.

This administrative division of eastern, central and western China has been in effect for many years. The GWDS recently adopted by the authorities, however, also includes the Guangxi Zhuang Autonomous Region and the Inner Mongolia Autonomous Region. To maintain consistency of information and statistics, the original division has been followed.

Figure 3 Changing pattern of GDP per capita in Eastern, Central and Western China
Sources: China Statistical Year Books (various issues).
As shown in Figure 3, the gap between eastern, central and western China in terms of GDP per capita has been widening over the last two decades. From 1978 to the early 1990s, GDP per capita in the eastern region is slightly higher than in central and western China. From early 1990s to 2005, the gap of GDP per capita between the eastern region and the two hinterland regions increased dramatically. For example, the GDP per capita in eastern, central and western China was 483, 311 and 255 Yuan in 1978. The eastern region is 1.55 and 1.89 times higher than the central and western regions. In 1990, GDP per capita in the three regions was 2080, 1268 and 1060, in the eastern region it was 1.64 and 1.96 times higher than central and western regions. In 2005, the GDP per capita was 22076, 11390 and 8822 for the three regions and the eastern region was 1.94 and 2.52 times higher than the central and western regions. The gap of regional inequality is increasing rather than diminishing.

2.7. Policy adjustments from ‘get rich first’ to ‘common prosperity’.

Since 1997, the Chinese government has formulated a series of preferential policies to encourage development in central and western China. The first attempt is the GWDS. In June 1999, at a meeting on the reform and development of state-owned enterprises (SOEs), Jiang Zemin, General Secretary of the Central Committee of the Communist Party of China and President of China, formally put forward the concept of the development of the western region. The participants of the Central Economic Working Conference held in November of the same year determined the strategy for the
development of the western region. In January 2000, a leading group for western
development was set up, with Premier Zhu Rongji as the leader, Vice-Premier Wen
Jiabao as the deputy, and 19 senior officials. This group produced the report ‘Some
Policies and Measures Concerning the Launch of the GWDS’ in October 2000. This
document has been regarded as the formal commencement of the implementation of the
strategy of western development. According to the State Council (2001) and Wang (2001)
the following policies were assigned to develop western regions: (1) infrastructure
development: the plan also calls for building more railway track, airports, and gas trunk
pipelines. Electric power grids and telecommunications, radio, and television facilities
will be expanded, as will support infrastructure in large and medium-sized cities. The
plan also calls for "rational" exploitation of water resources and water conservation in
general; (2) The environment: The strategy encourages projects to protect natural forests
along the upper reaches of the Yangzi River and the upper and middle reaches of the
Yellow River; (3) Local industry: Rather than forcing a "cookie-cutter" approach to
development, the government is encouraging different regions to develop industries that
maximize local comparative advantages in geography, climate, resources, and other
conditions. Where possible, these regions are also urged to capitalize on high- and new-
technology industries; (4) Science, technology, and education: The GWDS states that
regions should develop different levels of expertise in the workforce, as well as improve
its overall quality. The strategy also recommends that the regions accelerate product
development from scientific research; (5) Investment environment: The government
hopes western provinces will take steps to attract more foreign investment, capital,
technology and managerial expertise by improving the industrial structure and reforming
state-owned enterprises (SOEs). The wealthier and more developed eastern and coastal provinces are also being asked to play a major role. The central government expects the developed eastern region to develop new markets and bring advanced management and innovative production styles to less-developed western enterprises. In turn, the western provinces will provide markets, energy, and a supply of raw and semi-finished materials that will contribute to the east’s own economic restructuring.

The central government launched the ‘Northeast Revival Strategy’ in 2003 and the ‘Central China Rising Strategy’ in 2004. According to State Council (2004), the central government assigned five policies to speed up development in central China: (1) step up support for grain production; (2) assist in the development of agglomeration of cities, especially around Wuhan, Zhengzhou and Nanchang-Jiujiang; (3) encourage central China to restructure its old key industrial bases; (4) grant the region more authority in opening up to the outside world; and (5) aid the development of basic education in the region.

As discussed earlier, FDI’s uneven distribution is the major force behind China’s regional inequality. Thus policies of encouraging FDI into the hinterland are a common theme of the above policies. For example, to encourage projects in western China, the central government will reduce income tax on foreign enterprises to 15% for the next ten years. Newly established transportation, power, water conservancy, post and broadcasting enterprises in the west will benefit from a "two-year exemption and three-year reduction" in income tax.

For the detailed policy instruments on developing central China consult State Council (2004) and Lai (2007).
The above policies illustrate the gradual shift in China’s economic policies from ‘get rich first’ to ‘common prosperity’.

2.8. Conclusions

In this chapter, I reviewed China’s open door policy since the late 1970s and issues around FDI into China (e.g., entry mode, sectoral and location distribution). I found that since the middle 1980s, equity joint ventures were the favoured entry mode, while wholly foreign owned entry mode became increasingly important in the 1990s. The majority of foreign investors were from Hong Kong, followed by Taiwan, the United States, and Japan. Manufacturing sectors dominated foreign direct investments. Foreign projects concentrated in labour-intensive sectors. Based on the south eastern coastal belt’s geographical proximity to Hong Kong, Macao and the outside world as well as ethnic ties between the south eastern coastal belt with overseas Chinese, central government’s initial open door policy was to give preference to the south eastern coastal belt. During this period, the policy orientation was to allow some to ‘get rich first’. Since 1978, the south eastern coastal belt received over 80% of total FDI flow to China which has been proven to have greatly contributed to the economic development in the coastal belt. However, with the over concentration of FDI in the south eastern coastal belt, land and labour costs have increased dramatically, environmental pollution also emerged as a critical issue, and most importantly, studies have identified the increasing regional inequality between China’s coastal belt and its hinterland is mainly due to FDI’s uneven distribution. Since the late 1990s, the Chinese government has launched the GWDS in 2000, the NRS in 2003 and the CCRS in 2004 with the purpose of decreasing the regional inequality between the coastal belt and hinterland regions. In general, these policies encouraged
domestic enterprises to invest in those cities and permitted the establishment of border economic cooperation zones (Chen, 1997; Wang, 1997). However, in terms of attracting foreign investments, the achievement is not as good as expected: FDI continues to concentrate in the south eastern coastal belt rather than the hinterland regions. In the following chapters, I am going to focus on two issues around the ‘subsequent’ FDI in China. One is to find out what factors influence the choice of subsequent investment mode by MNEs in China (Chapter 4); another is to find out what are the location determinants of MNEs investing in the previously ignored Chinese hinterland (Chapter 6).
Chapter 3: Theories of FDI and their implications on Location determination

3.1. Introduction

In this chapter, I review major theories of FDI and their implications for location determination. These theories including: Product Cycle Theory, Internalization Theory, Eclectic Paradigm and other important theories. The purpose of this work is to build a theoretical framework for the follow on empirical analyses on subsequent FDI in China (Chapter 4); the hinterland’s FDI related socioeconomic competitiveness (Chapter 5) & FDI’s location determinants in China’s hinterland (Chapter 6).

3.2. Theories of FDI and their implications on Location determination

3.2.1. Product cycle theory

Vernon’s product cycle model is an integrated model for international trade and investment (1966, 1974). Three basic assumptions are made in Vernon’s product cycle hypothesis. First, it is monopolistic advantages that enable MNEs to take on the special costs and uncertainties of direct production abroad. Second, there are marked differences between the markets and factor conditions of home and host countries. Third, a new product or innovation possessed by an MNE is stimulated by the promises of its home market.

Once a product is created through innovation, it is destined to go through a process of several stages from new product to mature product to standardized product. Along this sequence, the specific aspects of monopolistic advantages that a MNE possesses change. The market demand, market structure, and the scale of production also change with it.
Most importantly, in response to these changes and the differences in the factor conditions between host and home markets, the modes for the MNE to exploit its profits change from export from home market to direct production in host countries. There have been tremendous changes in the landscapes of international trade and investment, especially when it comes to the FDI from developed to developing countries.

Product cycle theory distinguishes itself from other theories in two aspects: its dynamic nature and its explicit locational dimension. The driving force in this dynamic process is innovation and technological progress. Yet, depending on their positions in the product cycle, MNEs adopt different strategies. Later, this was explicitly explored within a framework of three kinds of oligopolies: innovation-based, mature, and senescent oligopolies (Vernon, 1974). For the innovation-oriented industries, the oligopolistic strength of MNEs came from the development and introduction of new products and the differentiation of existing ones as results of high expenditure on R&D. The location of R&D facilities and production both would remain at home market.

As for MNEs in mature oligopolies, the basis for the oligopoly shifts to the barriers to entry generated by economies of scale in production, marketing and other factors. The major locational concern is simply the location of production units, which can be affected by the pricing conventions among oligopolists, aggressive behavior of some competitors, or external factors. While pricing conventions, such as basing point systems, strengthen the existing location patterns of MNEs' production, the aggressive behavior of some competitors is more likely to change them. In the case of a leading firm moving into a new market for reasons like tariff and market potential, the 'following the leader' spatial implication, in whichever case, would be the spread of production internationally.
For senescent oligopolies, however, MNEs can no longer hold on to the advantages of either innovation or scale economies. Instead they depend on competitive costs and prices to stay in power. MNEs tend to move their production to low costs areas, such as developing countries. Then the locational behavior of MNEs within a given developing country is more relevant to the classical locational model with one exception - that the availabilities of some production factors such as capital are not restricted to local markets. Again, the product cycle theory provides the timing of FDI outflows, especially from developed countries to developing countries, or more precisely from more developed countries to relatively less developed countries. It introduces some of the key factors that MNEs consider while making FDI decisions, such as market potentials and labor costs. These factors are relevant and therefore used in my study as they are also the key variables for locational attraction of FDI inflow.

3.2.2. Internalization theory

The internalization approach (Buckley and Casson, 1976) represents a distinct shift from the market imperfection approach in that MNEs are approached within the context of the theory of firms, the economics of internal organization. As a limiting case FDI will disappear with the removal of the market imperfections which generate it. In a world of perfect markets and no externalities, that is, where knowledge can be price on a regular market and no government-imposed imperfections exist, then there is no logical reason for the MNE, indeed the free trade in all that occurs in such a first best world. It is a fact that the modern business sector carries out a series of interrelated economic activities which form a value added chain. Between the two modes of transaction, market and hierarchy, it is often found that the latter is superior to the former in organization the
intermediate products due to market imperfections. The cost efficiency of exchange and transaction through hierarchy urges firms to bypass the market and create an internal one which brings the related intermediate product markets and production under a common ownership and control. As such, MNEs are the result of the process of internationalization of markets across national boundaries.

Clearly, the internalization theory of MNEs explains why MNEs chose to take joint ownership of both domestic and foreign value-added activities. However, it has yet to explain clearly why MNEs participate in international production in the first place. In this respect, the explanation had to rely on the assumptions of the market imperfection approach. As will become clear later in the discussion of the eclectic paradigm, this still is not sufficient. The locational advantages only refer to characteristics of a nation, but sub-national differences are not discussed in the approach that I intend to analyze.

3.2.3. Market imperfection Approach

The market imperfections approach (Hymer, 1976; Kindleberger, 1969; Caves 1982) starts with the basic assumption that without market imperfections FDI would never occur. Market imperfections can be caused by both goods and factor markets, scale economies, and government imposed regulations that prevent efficient allocation of resources and distribution of products. In a perfect market, the only vehicle that is needed to serve a foreign market is international trade.

It was also recognized that FDI is far different from portfolio investment. In the first place, FDI is more than just the transfer of capital; it is also the transfer of a package of assets which includes technology, managerial skills, and access to international markets.
Secondly, there is no change of ownership in the process. MNEs actually internalize the market by directly controlling the resources acquired through FDI.

If an MNE intends to pursue foreign value-added activities, it is perceived to face some disadvantages in comparison with indigenous firms. For example, there is an information cost for firms who operate within a foreign social, institutional and political system. In order to overcome the inherited disadvantages of owning international production, MNEs must own some kind of ownership advantages. These perceived ownership advantages can be expressed as technology, cost effectiveness, established markets, as well as financial strength. Clearly, this assumption falls in line with the reasoning of the theory of industrial organization where firm behavior is affected by market structure.

Although this approach to FDI does not have a spatial dimension and is most useful for FDI decision-making, it is helpful to understand the characteristics of FDI. This theory further aids in understanding the locational mechanism of FDI because any locational decision made by an MNE will be within the dynamic environment of its own ownership specific advantages and competitive strategies.

3.2.4. Macroeconomic Approach

This line of approach is usually identified with Kojima (1982). It is stated that the flow of FDI originates from the comparative disadvantages of home countries and the potential comparative advantages of host countries regarding certain industries.

Kojima’s macroeconomic approach can be distinguished from other approaches in several aspects.

First, it intends to integrate international trade and foreign direct investment.
Second, due to its foundation from comparative advantage, it is more flexible. While other approaches discuss most issues in absolute terms, the macroeconomic theory of FDI approaches relevant issues in a comparative fashion between one country and another. Third, the industries of FDI identified by macroeconomic approach are trade-oriented and complement rather than hinder international trade, at least theoretically. As these industries are usually marginal industries in home countries, the production of these industries in host countries will increase the export of new products of host countries. The macroeconomic approach to FDI is more appropriate than any other ones in explaining the characteristics of the outflow of FDI when it comes to the FDI from home countries that are experiencing structural transformation. However, in this study, the focus is given to host country characteristics, and factors relating to the home country are not included in this work.

3.2.5. Eclectic Paradigm

Dunning’s eclectic approach (1977; 1981; 1988;1993) is an important academic stream in explaining international production. Alternative theories of FDI look into FDI from different perspectives. For example, the market imperfections approach explains why international production happens and what ownership specific advantages MNEs possess. The internalization approach, based on the theory of the firm, explains the ownership characteristics of international production. The eclectic approach, however, represents the most recent theoretical endeavor to bring these alternative perspectives together within one framework. Yet, the eclectic paradigm is not just a simple compiling of different

5 As it depends on the source-of-origin of FDI.
theories. Rather, each alternative theory is brought in for the purpose of explaining both the location and ownership characteristics of international productions.

The basic hypothesis of the eclectic paradigm is that international production only occurs when there is an existence of three types of advantages related to a specific firm: ownership-specific advantage (O), market internalization advantage (I), and location specific advantages (L). This gives rise to ‘OLI’ as an abbreviation to the eclectic paradigm.

The first condition for international production obviously is adopted from the market imperfection approach. It asserts that an MNE must possess some ownership advantages. These advantages largely take the form of intangible assets that can be manifested in technology, product differentiation, managerial skills, and others. As for the source of these advantages, Dunning borrows the idea first used by Vernon in 1966, that is, firm specific advantages originate from the process of serving home country markets. In other words, it is the home country’s endowments and market characteristics that give rise to firm-specific advantages. Although these firm-specific advantages were linked to location-specific endowments during the process of their creation, they are not confined to a specific location or to a specific user once they are created. However, they may still be exclusive and specific to the firm that creates them. With this kind of impact that country-specific characteristics can exert on MNEs in mind, Dunning cautions against the generalization of international production from one country to another.

A second necessary condition for international production is the presence of location specific advantages in host countries. International production will not occur if it is not profitable to use at least one factor input in conjunction with the firms’ ownership
advantages. Here, the relevance of location theory in international production is acknowledged, as is the pervasiveness of uneven distribution of both resources and markets.

Even with O and L advantages, international production still will not occur if it were not for the advantages of internalization approach to international production which come into play in Dunning’s OLI paradigm. MNEs enter foreign production only when it is beneficial to exploit the O advantages themselves rather than leave them to the markets. Dunning’s OLI paradigm is especially relevant to this dissertation because it has an explicit locational dimension (L) which explains international production in host countries. However, again, it stops at the country level, and spatial dimension within a country is not mentioned in his theory. For today’s MNEs, locational decisions of FDI are not just concerning country selection anymore, they are becoming a much more detailed procedure of sub-national analysis. Thus, my study can provide meaningful and more detailed information for those MNEs that are thinking of investing or trying to expand their investments in China’s hinterland, which, at the same time, provide empirical evidence to the eclectic paradigm under the sub-national context.

3.2.6. Other important theories

Uwe Walz (1995)

Walz looked at the impact of FDI with private production knowledge as a specific asset in a dynamic general equilibrium model with endogenous technology change. He feels that FDI allows less developed host countries to learn the production skills of MNEs from developed countries, which improves the well being of the low-wage countries.
Walz’s model uses a system with international technology transfer. He finds that cost differences give a large incentive for MNCs to separate R&D and production activities. Production activities are set up in a low-wage country and the R&D activities stay in the developed home country. The research labs efficiency increases in the home country and, as a result, innovation becomes more profitable.

Walz shows that any policy causing an inflow of FDI speeds up the growth process. However, anything from investment controls to specific taxes on the profit repatriation of a MNE hurts the international growth process and also consumers in low-wage countries. Policies that promote top-quality producers, such as MNEs, to locate in low-wage countries have a positive growth effect on that country.

Walz’s article identifies wage as an important variable for FDI outflows. It is also an important variable for FDI inflows, especially for developing countries to attract export-oriented FDI from developed countries. At a city level, differences in the nominal wage of employees are studies as a key factor to affect MNEs’ location preference in China’s hinterland.

Dunning and Bansal (1997)

They look at the extent to which variables of the eclectic paradigm are affected by home and host country cultures. They base most of their findings on their opinions and findings from other papers.

First, they explain the way in which country specific cultural variables may affect the foreign value added activities of firms by their impact on the main determinants of the OLI advantages of the eclectic paradigm. They give several examples of how the culture of a country can influence any of these advantages. Second, they hypothesize about the
sensitivity of each of these variables and give each variable a ranking from one to three based on their opinion. Third, they look at how the increasing importance of culture has caused many firms to consider alliance capitalism as a way to maintain OLI advantages. Finally, they look specifically how the cultures of home countries may affect the industrial composition of Japanese and US FDI in Europe.

Since the cultural differences among most provinces in China are not significant, this point is not emphasized in this study.

Kojima and Ozawa (1985)

The two authors argue that the market cannot efficiently handle industrial adjustments in a global marketplace. They suggest that government intervention be used to ensure successful adjustment. This implies that a nation’s government should take action to encourage trade and FDI.

Government policies are an important factor that I am going to examine in this study: since 2000, the central government assigned around 20 ETDZs and most of them located in hinterland; will this effectively attract more FDI flow to those regions? The panel data analysis in Chapter 5 will tackle this question.

3.3. Conclusions

In this chapter, I reviewed FDI theories and their implication to location determinants. I reviewed those major FDI theories and discussed their probable applications to serve as the theoretical foundation of this study. Among them, I found Dunning’s Eclectic Paradigm is a better choice to serve as the theoretical framework of the follow-on
analysis: especially the ‘L’ from the ‘OLI’ theory as discussed above. In Chapters 5 & 6, the theoretical frame work and hypotheses development are based on the ‘L’.
Chapter 4: Multilevel determinants of ‘Subsequent’ FDI in China

4.1. Introduction
The process of FDI is dynamic and continuous, yet most studies on FDI entry modes have not looked at subsequent commitments after initial entry. As Buckley and Carson (2001) pointed out, the theories needed in international business today are more complex than what we know. This chapter sets out to explore subsequent FDI in a continuous and sequential context, which are overlooked in the extant literatures. Unlike previous studies, I regard foreign direct investment as a sequential process, where former investments affect the nature and behavior of subsequent investments. This more comprehensive understanding of subsequent investment modes in foreign markets is more likely to reflect the strategic intentions of the MNEs. Specifically, the subsequent entry strategies will reflect the firm’s strategic intentions more precisely than the first entry, because most firms regard the first entry as a trial in the new foreign market.

The purpose of this chapter is thus to develop and test a conceptual framework that will highlight factors that are relevant to subsequent investment mode choices in China: focus on the intensity of subsequent investment. The research question we seek to answer is “What factors influence the intensity of subsequent investment by MNEs in China?”

Based on the evolutionary perspective, this chapter focuses on three levels of factors that may influence the intensity of subsequent investments in China. First, the firm level, including the capital requirement size and the strategic span of the project, and the experience of MNEs in investing in China is considered. Second, the location level, concerning regional differences in the level of economic development, resource endowments and social and policy environments is examined. Finally, there is the international level, particularly cultural and geographical distance between origin
countries and host countries.

The remainder of this Chapter is organized as follows: Section 2 offers a brief review of the extant literature on foreign entry modes and subsequent FDI in China (3.2). Section 3 discusses the theoretical framework and research hypotheses (3.3). Data and empirical methodology are described in Section 4 (3.4). Section 5 presents the empirical results and discussion (3.5).

4.2. A discussion on foreign entry modes & subsequent FDI in China

As noted by Kogut (1983), FDI decisions are not a single, final decision, but are best understood as part of a series of decisions that determine the volume and direction of resources flowing among countries. Johanson and Vahlne (1977) developed an international expansion model to show that international expansion is a process involving a series of step-by-step decisions, and transnational investors increase investment in foreign territories as they gain knowledge and experience in the host market. Chang (1995) showed that MNEs often began foreign investment with lines of business where they have the strongest competitive advantages over local firms, and over time expanding to business with which they are comparatively unfamiliar.

This evolutionary perspective of FDI implies that with the accumulation of knowledge and experience in the host country, the characteristics of MNEs' subsequent investment may substantially differ from their initial entry strategies. Expansion modes that were appropriate in the initial circumstance may be inappropriate for subsequent investments. Drawing on the knowledge-based theory of the firm, Chang (2001) analyzed the choice of entry mode of MNEs in their dynamic investment and the influence of the previous entry mode choice of a MNE on the sequential entry made by the same firm. He found
that some factors have a persistent importance in shaping subsequent investment mode, while others tell a different story. Entry intensity of subsequent investment is strongly influenced by the previous investment. Based on a staged expansion theory, Guillen (2002) also found that the intensity of MNEs' subsequent investment is influenced by the entry type of the firm's previous investment and the entry type of other firms in the same sector.

The knowledge-based view of subsequent investment choice mentioned above offers a dynamic analysis of the FDI decision, but was limited to experience and strategy factors, leaving other important factors such as location specific factors unexplained. Furthermore, they did not provide a framework of FDI that highlights the factors which are particularly important in subsequent investment.

4.3. Conceptual framework and Hypotheses Development

The theoretical foundations underlying previous frameworks of entry mode choice are also relevant for studies on subsequent entry intensity choice, because in both cases the level of entry intensity relates to the level of control a MNC will take and the risks that it will encounter. The differences lie in the changed roles caused by various environments, and the MNEs' knowledge and experience accumulated in the host country. According to Phatak et al. (1996), variables identified in previous frameworks of entry mode determinants can generally be classified into three levels: country-level factors, such as culture difference and country risk; industry-level factors, such as global concentration and industry growth; and firm-level factors, such as firm capability and strategic consideration. In subsequent FDI, factors such as country risks and culture distance may
be less important to those MNEs who are from the same source countries and invest in the same regions in the host countries, as a result of MNEs familiarity with the host country’s environment. Instead, new factors, especially firm-level factors such as operating experience in China and strategic function of the target investment program are more important in MNEs’ subsequent entries (Chang, 2001; Guillen, 2002).

In addition, while location choice at the sub-national level is not as important in subsequent investments as it is in the initial entry, the initial location choice does play an important role. In China, there are substantially different policy environments, social environments and resource endowments in different regions. These regional differences have important implications for subsequent investment decisions. Moreover, the impact of experience factors (such as previous entries of the same firm and other similar firms), and strategic factors (such as competent advantages), on entry intensity choice in subsequent investment may be weakened once location specific factors are considered (Chang, 2001).

Previous studies on subsequent investment introduced experience factors or strategic factors to existing paradigms on entry mode adaptation, but did not consider the impact of intra-country location factors on the adaptation mechanism, nor did they provide a framework to explain entry intensity choice in subsequent investment. Based on the existing theories of entry mode and subsequent investments, we develop a framework to highlight the impacts of origin, experience factors, strategic factors and location factors. The elements of the framework are shown in Figure 4.
This theoretical framework is largely based on a comprehensive synthesis of the existing theoretical work on entry mode choice in first entry and subsequent investment. The experience factors are based on evolutionary theory and knowledge-based theory, while the strategic factors are based on the strategic planning theory, and the location-specific factors are drawn from an extension of location advantages in Dunning's eclectic framework. Culture and geographical theories are embodied in the international level factors. The purpose of this study is to distinguish which factors significantly affect subsequent investment. In the following sections we will explore how these three levels of factors affect subsequent investment and develop appropriate hypotheses.
4.3.1 Firm-level Factors

Previous empirical work has shown that experience in foreign investment is positively related to wholly owned subsidiaries (Gomes-Casseres, 1989; Agarwal & Ramaswami, 1992). Experience can be measured both by the length of presence in China and the scope of operation. Two important theoretical strands, the international expansion process model and knowledge-based theory, suggest that country-specific knowledge and experience are acquired from the business activities over time. The development of knowledge about a foreign market is a sequential, evolutionary process (Chang, 1995; Welch & Luostarinen, 1988) that relates both to the age of the MNC, and the depth of their involvement. Greater initial investment may qualify the MNC for further business opportunities, and so contribute to their accumulation of knowledge and experience. Although higher stockholdings in JVs may lead to more challenges, they may also contribute to the process “learning by doing”. By making full use of the first mover advantages and benefits resulting from the higher level of investment the MNC may become more skillful in dealing with the local government and in turn develop a better relationship. Moreover, the business management style will also be more assimilative than that of those who enter later. Following this logic, we can expect that:

Hypothesis 4-1a: The earlier a MNE entered China, the greater the proportion of subsequent investment is likely to be made by the MNE.

Hypothesis 4-1b: The higher the level of past investment a MNE has invested in China, the higher proportion of subsequent investment is likely to be made by the MNE.
The choice of entry intensity in the subsequent investment may be genetically affected by the firm’s initial entry mode (Chang, 2001), which is often referred to as path dependency. The initial choice is more likely to adapt moderately rather than changed drastically. Why does such path dependency happen? Higher initial equity not only means more control and more opportunities to learn, but also indicates that the MNC attaches more importance to the sub-business. So we can hypothesize:

Hypothesis 4-2: The higher the initial equity level invested by an MNC as it enters the host country, the higher the proportion of subsequent investment.

Human capital is also an important factor that affects the subsequent investment choices of MNEs. MNEs not only depend on their staff to bring techniques and management skills to the newly entered market, but also use them as the guardians of their overseas asset. MNEs with a higher proportion of foreign employees tend to have better performance in their overseas subsidiaries, so more resources may be allocated to the host country. Moreover, a higher proportion of foreign employees can be helpful in protecting investment from being transferred and then alleviate the trust problem. We hypothesize the following relationship between the proportion of foreign employees and MNEs’ subsequent investment:

Hypothesis 4-3: The higher the proportion of foreign employees in the subsidiary on entry, the higher the proportion of subsequent investment.

The level of project risk and the uncertainty of environment are also important factors in subsequent investment decisions. Larger capital requirements are associated with
higher loss if the project fails. Moreover, it is very difficult for foreign investors to control and operate a large scale business in a host country. MNEs choose to invest huge capital requirement project in order to gain a larger share of the revenue rather than to acquire the control rights. So we suggest the bigger the initial project, the less the subsequent investment.

The duration of the contract is another element to consider. As the MNC becomes more familiar with the business environment of the host country, they may be able to lessen the operational risks, and the desire for more control becomes stronger with longer strategic spans. Foreign investors increase corporate commitments to the local market by subsequent investment in the same line of business or diversification into other lines of business (Chang, 1995). The motivation of FDI is no longer simply transaction cost-oriented, but become much more strategically oriented. As Luo (1999) had demonstrated, MNEs increasingly see China as a strategic unit in its global production system, and make subsequent investment as steps in a systematically strategic process (Luo, 1999). A MNC will tend to allocate their resources in the way that will best fit its strategic network in China. To achieve their strategic objectives requires more control rights, and the value of control rights are increases with contract duration. Long-term contracts usually mean important strategic effects. Based on these arguments, we expect that capital requirements and strategic spans are related to subsequent investment. Specifically:

Hypothesis 4-4a: The capital requirement is negatively related to subsequent investment;
Hypothesis 4-4b: The contract duration shows positive relationship to subsequent investment.

4.3.2 Location-level factors
Following Dunning (1977)'s work, subsequent studies have identified the important roles of location factors to FDI. Svedberg (1981) identified a list of location factors that influence FDI decisions: psychic proximity, host government policy and investment incentives, infrastructure adequacy and the cost of acquiring resources. Phatak et al. (1996) cited location specific factors as country risk, cultural distance, market potential, and market knowledge. To a large extent, these factors focus on the national level and relate largely to the first entry choice of the first foreign investment in a foreign country by a MNC. In their subsequent investments, however, MNEs may be less concerned about regional choice, because of their familiarity with the regions in which they have entered, but become more concerned about how to support the companies' expansion strategy. As Dunning (1998) argued, profit-seeking companies will explore the location-endowed assets from a variety of locations. That is, to make full use of their knowledge of the host country and take full advantage of local resources and market, MNEs will choose to sequentially invest in different regions within the boundary of the country, but it is important to note that such expansion is often based on consolidating previously entered regions.

China is a large country with uneven levels of economic development. These differences, as well as geographical differences and different government policies between the provinces are intrinsic to China. Compared to the developed coastal regions, the inland provinces, are considered to be more hostile, unstable, and risky investment locations.
Several studies on FDI in China have found that these sub-national location-specific factors have significant impact on the entry mode choice of MNEs (Pan, 1996; Luo, 1998; Zhang, 2001; Zhao and Zhu, 2000). These studies, however, did not distinguish between the first entry and subsequent investment.

The location-specific factors are core determinants of MNEs’ location choice. Once the location is decided, regional differences on sequential investment act in the same way that differences between source country and host country influence the entry mode. Location in different regions will contribute differently in making subsequent investment decision. To a MNE, uncertainty and unfamiliarity vary with the different regions in China and they are likely to choose to emphasize control rights in those projects located in comparatively familiar regions in order to minimize risks caused by regional variations.

Furthermore, some benefits are enjoyed exclusively by first movers: Farrell et al. (2004) pointed out that MNEs that undertake investments that are fundamental to local economic development (e.g., infrastructure investment, high-tech development, foreign exchange creation and a large pool of employment) will have more bargaining power in negotiating with local government authorities for better regulatory treatment, especially in financial areas. By maintaining a cooperative relationship with regional authorities and benefiting from the associated stronger bargaining power, MNEs are more likely to secure longer taxation breaks or lower rates and other benefits (Luo, 2007). In some extremely competitive sectors, it is necessary to increase the scale of the commitment and investment in order to pave the way for sustainable and superior returns, but late-arriving MNEs may have already missed the boat (Chen & Penhirin, 2004; Luo, 2007).

Based on the above discussions, we predict that:
Hypothesis 4-5: Subsequent investment is more intensive in the regions that opened earlier compared to those that opened later (hinterland regions).

4.3.3 International level factors
Many studies have shown that the country of origin has a substantial impact on the choice of entry mode. Kogut (1988) found significant effects of culture distance between host and source countries and different attitudes towards uncertainty avoidance on entry mode choice of MNEs. Pan (1996) found several significant differences among the U.S., European and Japanese investors in terms of entry mode preference and attitudes towards risk in China. Schroath et al. (1993) also found significant differences in FDI activities among MNEs from Hong Kong, Japan, the United States and European countries. As MNEs become more familiar with the Chinese business environment, the effect of cultural distance may be weakened but still have some influence on subsequent investment. On the other hand, different attitudes toward risk of MNEs from different source countries will result in different preferences in sequential entry choice. When geographic distance and cultural gaps between the source country and host country are close (which generally also means lower transportation and communication costs), MNEs from these countries or zones often are more familiar with business environments and principles than entrants from other countries or zones.

Gao (2005) found that distance is consistently a significant barrier to FDI. Transport costs aside, distance is also a proxy for familiarity of source-country investors with the host economy's business, legal and regulatory environment. Coastal China is geographically close to the second largest economy in the world, Japan, and the four newly industrialized economies (NIEs)-Hong Kong, Singapore, Taiwan, and South Korea. These five regions
have already emerged as major FDI sources, so it is not surprising that the majority of FDI to China is from these regions. In addition to geographic proximity, cultural ties are also important in explaining the bilateral pattern of FDI in the world. By some accounts, sharing a common language raises bilateral FDI. China's cultural link with Hong Kong, Taiwan, and Singapore goes beyond sharing a common language: the majority of the populations in these three NIEs are ethnic Chinese. Generally speaking, those with geographical proximity and cultural links would also tend to deepen their subsequent investments after their initial investments in China.

Foreign partners with greater levels of trust will choose equity, as they would in their own countries, so the resulting investment may be higher or lower. For those with lower trust, though they may be familiar with business environment of the host country, to lower investment and operational risks, they may prefer higher control rights. The classification of countries with higher trust or lower trust is based on historical and culture factors. For example, Hong Kong, Macao and Formosa are kin zones of mainland China, thus they were treated as neighboring countries with higher trust; while due to the wars between China and Korea / Japan in the past, these two countries were treated as neighboring countries with lower trust. Similarly, since the United States and Canada are among the first group of foreign investors investing in China, they are more familiar with the Chinese market, thus they were treated as non-neighboring areas but with higher trust; while foreign investors from other areas were treated as non-neighboring countries with lower trust.

Therefore we propose the following hypothesis:
Hypothesis 4-6a: MNEs from neighboring areas with higher trust will prefer moderate control right and so choose moderate subsequent investment.

Hypothesis 4-6b: MNEs from neighboring areas but with lower trust will prefer high control right and accordingly choose more intensive subsequent investment.

Hypothesis 4-6c: MNEs from non-neighboring areas with higher trust will prefer low control right and then choose lower subsequent investment.

Hypothesis 4-6d: MNEs from non-neighboring areas with lower trust will prefer low or high control right and the subsequent investment decision is uncertain.

4.4. Data and methods

Data on MNEs in China was obtained from the 2003 Chinese industrial census, which was conducted by the State Statistical Bureau of China. In China, all firms, local or foreign are required by law to complete the census survey. For each firm, the database contains the following information: identity code, the name of foreign party, the duration of the contract, age, number and organizational structure of employees, amount and form of registered capital, fixed assets, current assets, revenues, profit, geographic location, exports, cumulative subsequent investment prior to 2002 and subsequent investment in 2002. Due to the lack of a complete set of variables prior to 2002, we have used only the data for 2002. Other studies have used this database for 1995 (e.g., Pan, 1999) and the reliability of the information provided by the State Statistical Bureau has been checked by previous users (Chow, 1993).
There are 133,327 registered foreign-invested firms in the 2003 Census, 19,366 of which reported subsequent investment in 2002. Firms that have since closed their operations and firms with incomplete data were removed from the data set, leaving a final sample of 1,943 firms. Table 5 gives a sample description with specific information about firms' geographic distribution in host country and origins of their foreign parties. Loc1 includes five special economic zones, fourteen coastal cities and Beijing, accounting for 44.4%. The southern and eastern provinces, excluding the cities involved in Loc1, accounts for 44.3%. The remaining regions make up the remaining 11.3%. The regional distribution of the sample is consistent with that of data source: a standard deviation of 2.3% for the sample versus a standard deviation of 2.55% for the database as a whole. The source distribution of the sample is also consistent with that of the data source, with Source1, Source2, Source3 and Source4 at respectively 36.7%, 15.6%, 13.9% and 33.8%.
Table 5 The firms’ Geographic Distribution in Host country and the Origins of their Foreign Parties*

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Observers</th>
<th>Distribution in the sample</th>
<th>Distribution in the data source</th>
<th>Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loc1 5 special economic zones; 14 coastal cities, and Beijing</td>
<td>863</td>
<td>44.4%</td>
<td>46.9%</td>
<td>-2.5%</td>
</tr>
<tr>
<td>Loc2 7 eastern and southern coastal provinces, excluding cities opened early</td>
<td>861</td>
<td>44.3%</td>
<td>44.4%</td>
<td>-0.1%</td>
</tr>
<tr>
<td>Loc3 Remainder of provinces</td>
<td>219</td>
<td>11.3%</td>
<td>8.7%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Total</td>
<td>1943</td>
<td>100%</td>
<td>100%</td>
<td>2.55%**</td>
</tr>
<tr>
<td><strong>Sources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source1 Hong Kong, Macao and Formosa</td>
<td>713</td>
<td>36.7%</td>
<td>39.1%</td>
<td>-2.4%</td>
</tr>
<tr>
<td>Source2 Korea and Japan</td>
<td>303</td>
<td>15.6%</td>
<td>13.7%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Source3 U.S.A. and Canada</td>
<td>270</td>
<td>13.9%</td>
<td>11.8%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Source4 Others</td>
<td>957</td>
<td>33.8%</td>
<td>35.4%</td>
<td>-1.6%</td>
</tr>
<tr>
<td>Total</td>
<td>1943</td>
<td>100%</td>
<td>100%</td>
<td>2.3%**</td>
</tr>
</tbody>
</table>

* Detailed explanation in Locations (LOCs) and Source countries (SOURCEs).

**Standard deviation of Deviations.

Another frequently adopted dummy variable on product sector (industry dummy) was also tested in this study. However, this dummy variable could not pass the significance test and thus it was excluded from the analysis.

**Measurement**

4.4.1. Dependent variable: Share of Subsequent Foreign Direct Investment (SSFDI)

The SSFD measures the intensity with which foreign firms assert their control rights. It is similar to the definition of the level of foreign ownership, but not exactly the same. It is a
dynamic conception and can be viewed as a continuous variable. Here we define it as the proportion contributed by the foreign partner to the total subsequent investment in 2002.

4.4.2. Explanatory variable: Share of Entry Investment (SEI)

There are two ways to define SEI. Hu and Chen (1993) and Pan (1996) distinguish minority shareholders as holding less than 50% of the equity ownership, and majority shareholders as holding more than 50% of the equity ownership; 50/50% ownership is categorized as equal partners. The second method of defining share of ownership is based on the proportion contributed by the foreign partner relative to the total cost of the project. This method is more consistent with the definition of the dependent variable, so it is the definition used in this paper.

Locations (LOCs)

As discussed previously, for the purposes of investigating the effects of legal and policy frameworks and institutional arrangements on subsequent investment decision making, we introduced three location variables: LOC1, as the earlier open areas, including five SEZs and fourteen coastal cities, in addition, as a metropolitan city, Beijing having been the prime locations for foreign investment for many years (Beamish and Wang, 1989), so they were classified into one group; LOC2, as the early open areas including seven southeastern coastal provinces excluding those earlier open cities; LOC3, as the latest open region, including the rest of China.

6 Hebei, Shandong, Liaoning, Jiangsu, Zhejiang, Guangdong, Fujian
Source countries (SOURCEs)

In order to capture the cultural and geographic disparity between origin countries, researchers often use source country as a surrogate for socio-cultural distance (Ueno and Sekaran, 1992). In this chapter, we follow the previous research and use a surrogate to capture the source country effect. Without losing the ability to generalise, three regional categories that together account for approximately 70% of all subsequent FDI undertaken in China in 2002 were used to capture the source country effect. The first group (SOURCE1) mainly consists of three kin regions of China-Hong Kong, Macao, and Formosa with approximately 40% of subsequent FDI in 2002. The second group (SOURCE2) consists of two neighboring countries: Korea and Japan with about 14% of the total amount of subsequent investment in 2002. The third group (SOURCE3) includes U.S.A. and Canada, together account for about 12% of the total amount. Countries excluded in the three regions accounting for 35% of all subsequent FDI are classified into a fourth category (SOURCE4).

Contract Duration (CDUR)

Contract duration is an important factor when researchers study the economic issues of developing countries (Shan, 1991; Beamish, 1993). Though the length of the duration of the project is predetermined in the first entry negotiation, it does have continuous effects, especially on bargaining position and the value of experience. Contract duration also indicates the relative strategic importance of the venture. We use years as the unit to measure the length of contractual duration.
Project Operating Age (POA)

Project operating age measures how long a MNC has been operating in China, and is a surrogate for the cumulative experience of foreign investors. Before investors making subsequent investment in 2002, the last operating day for all projects operating in China is December 31, 2001. For this research, we subtracted the date with the date of beginning production and then converted the difference into years to get project operating age.

Project Size (PS)

Previous research has shown that foreign firms usually seek a smaller share of equity in entering into markets when capital requirement is high (Anderson and Gatignon, 1986; Pan, 1996). For the purpose of investigating whether a similar rule applies to subsequent FDI we include this variable also, and expect to find a similar relationship.

Entry Investment Undertaken by Foreigners (EIUF)

Previous studies have often focused on the share of equity contributed by foreign party while neglecting the amount they invest. In fact, the entry investment has an important and different effect on the following investment decision. As discussed earlier, greater control rights reduce the possibility of asset erosion. Gaining more control rights through subsequent investment should reduce the risk of erosion. So we expect that EIUF will have a positive effect on subsequent FDI.

The Proportion of Foreign Employees (PFE)

This variable was calculated by using the number of foreign employees divided by total number of employees in each project.
The Quantity of Past Subsequent Investment (QPSI)

The QPSI is measured as the accumulated subsequent investment made prior to 2002, scaled by registered capital.

Model Specification

Drawing on the above discussion, the share of subsequent foreign direct investment in China is specified as:

$$
SSFDI = \alpha + \delta_1(LOC1) + \delta_2(LOC2) + \gamma_1(SOURCE1) + \gamma_2(SOURCE2) + \gamma_3(SOURCE3) \\
+ \beta_1(CDUR) + \beta_2(POA) + \beta_3(PS) + \beta_4(EIUF) + \beta_5(PFE) + \beta_6(QPSI) + \beta_7(SEI) + \epsilon
$$

LOC1 is 1 if the project is located in five SEZs, fourteen coastal cities or Beijing, and 0 otherwise;

LOC2 is 1 if the project is located in the eastern or southern coastal province excluding cities involved in LOC1, and 0 otherwise;

SOURCE1 is 1 if the foreign partner is from Hong Kong, Macao, and 0 otherwise;

SOURCE2 is 1 if the foreign partner is from Korea or Japan and 0 otherwise;

SOURCE3 is 1 if the foreign partner is from U.S.A or Canada and 0 otherwise.

$\alpha, \delta, \gamma, \beta$ are the regression coefficients to be estimated. Following the dummy variable rule, where there are n categories, only n-1 dummy variables should be included (Gujarati, 1988), so we omit LOC3 and SOURCE4.
### Table 6: Summary of Pearson Correlation Coefficient: P-value < 0.05, N=1943

<table>
<thead>
<tr>
<th>Variables</th>
<th>Notes for Variables</th>
<th>LOC1</th>
<th>LOC2</th>
<th>SOURCE 1</th>
<th>SOURCE 2</th>
<th>SOURCE 3</th>
<th>CDU R</th>
<th>POA</th>
<th>PS</th>
<th>EIUF</th>
<th>PFE</th>
<th>QPSI</th>
<th>SEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOC1</td>
<td>Five special economic zones and fourteen coastal cities</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOC2</td>
<td>Seven eastern and southern coastal provinces excluding those earlier open cities</td>
<td>-0.302*</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOURCE 1</td>
<td>Hong, Macao and Formosa</td>
<td>-0.132*</td>
<td>0.093*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOURCE 2</td>
<td>Korea and Japan</td>
<td>-0.089*</td>
<td>0.139*</td>
<td>-0.327*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOURCE 3</td>
<td>U.S.A. and Canada</td>
<td>0.115*</td>
<td>-0.098*</td>
<td>-0.305*</td>
<td>-0.173*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDUR</td>
<td>Contractual Duration</td>
<td>0.019</td>
<td>-0.007</td>
<td>-0.099*</td>
<td>0.026</td>
<td>0.011</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POA</td>
<td>Project Operating Age</td>
<td>-0.135*</td>
<td>0.140*</td>
<td>0.164*</td>
<td>-0.027</td>
<td>-0.054*</td>
<td>0.024</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS</td>
<td>Project Size</td>
<td>-0.001</td>
<td>-0.017</td>
<td>-0.008</td>
<td>-0.047*</td>
<td>-0.009</td>
<td>0.071*</td>
<td>0.079*</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EIUF</td>
<td>Entry Investment Undertaken by Foreigners</td>
<td>-0.003</td>
<td>-0.013</td>
<td>-0.004</td>
<td>-0.044</td>
<td>-0.013</td>
<td>0.091*</td>
<td>0.105*</td>
<td>0.467*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PFE</td>
<td>The Proportion of Foreign Employee</td>
<td>0.139*</td>
<td>-0.118*</td>
<td>-0.082*</td>
<td>0.038</td>
<td>-0.006</td>
<td>0.058*</td>
<td>0.019</td>
<td>0.002</td>
<td>0.017</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QPSI</td>
<td>The Quantity of Past Subsequent Investment</td>
<td>0.058*</td>
<td>-0.001</td>
<td>0.005</td>
<td>0.015</td>
<td>-0.036</td>
<td>0.008</td>
<td>0.017</td>
<td>-0.041</td>
<td>-0.021</td>
<td>0.067*</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>SEI</td>
<td>Share of Entry Investment</td>
<td>0.139*</td>
<td>-0.055*</td>
<td>-0.028</td>
<td>0.111*</td>
<td>-0.074*</td>
<td>0.138*</td>
<td>-0.022</td>
<td>-0.029</td>
<td>0.539*</td>
<td>0.131*</td>
<td>0.869*</td>
<td>1.00</td>
</tr>
</tbody>
</table>
The correlation between the independent variables was tested for any serious multi-co-linearity (the results are summarized in Table 6). The only significant finding was for the variable SEI, which showed higher correlation coefficients with variables EIUF and QPSI. Therefore, SEI was omitted as a variable. In fact, PS and EIUF can be combined to investigate the genetic effect. After pre-testing for multi-co-linearity, a multiple linear regression analysis using SAS REG, was conducted to estimate the effects on subsequent investment.

Heterogeneity is a potential problem in econometric analysis using cross-section data set. To test for this, we sorted the observations by the variable PS, omitted the middle third of observers, and divided the remaining 1290 observers into two groups. The results of this test are shown in Table 7. $F(645,645) = 1.03$ and $P-value = 0.6628$ indicated that the null hypothesis could not be rejected, so we can safely conclude that heterogeneity is not a problem in the sample.

<table>
<thead>
<tr>
<th>Table 7 Heterogeneity Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

**Hypothesis Test**

Null hypothesis: Variance 1 / Variance 2 = 1

Alternative: Variance 1 / Variance 2 $\neq$ 1

**Goldfeld-Quant Statistic**

<table>
<thead>
<tr>
<th>Degrees of Freedom</th>
<th><strong>F</strong></th>
<th><strong>Num.</strong></th>
<th><strong>Denom.</strong></th>
<th><strong>Pr &gt; F</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.03</td>
<td>644</td>
<td>644</td>
<td>0.6628</td>
</tr>
</tbody>
</table>
4.5. Empirical results & discussion

Table 8 shows the results of the regression analysis, which indicates that the regression estimation is highly significant (F-Stat and P-Value), with satisfactory goodness-of-fit (R-squared) and the expected signs. VIF values are all less than 10, indicating that multi-co-linearity does not exist among the predicting variables.
### Table 8 Results of the OLS regression on the share of subsequent FDI (N=1,943)

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Share of subsequent foreign direct investment (SSFID)</th>
<th>Regression results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parameter estimates</strong></td>
<td><strong>Std. Err.</strong></td>
<td><strong>T</strong></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.6231**</td>
<td>0.0575</td>
</tr>
<tr>
<td><strong>Firm-level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDUR Contractual Duration</td>
<td>0.0010**</td>
<td>0.0002</td>
</tr>
<tr>
<td>POA Project Operating Age</td>
<td>0.0065*</td>
<td>0.0033</td>
</tr>
<tr>
<td>PS Project Size</td>
<td>-0.0001**</td>
<td>0.0000</td>
</tr>
<tr>
<td>EIUF Entry Investment Undertaken by Foreigners</td>
<td>0.0002**</td>
<td>0.0001</td>
</tr>
<tr>
<td>PFE Proportion of Foreign Employees</td>
<td>0.1022**</td>
<td>0.0343</td>
</tr>
<tr>
<td>QPSI Quantity of Past Subsequent Investment</td>
<td>0.1869**</td>
<td>0.0311</td>
</tr>
<tr>
<td><strong>Location-level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOC1 Five special economic zones and fourteen coastal cities</td>
<td>0.0809**</td>
<td>0.0149</td>
</tr>
<tr>
<td>LOC2 Seven eastern and southern coastal provinces excluding those earlier open cities</td>
<td>0.0660**</td>
<td>0.0175</td>
</tr>
<tr>
<td><strong>International-level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOURCE1 Hong, Macao and Formosa</td>
<td>0.0185</td>
<td>0.0141</td>
</tr>
<tr>
<td>SOURCE2 Korea and Japan</td>
<td>0.0608**</td>
<td>0.0161</td>
</tr>
<tr>
<td>SOURCE3 U.S.A. and Canada</td>
<td>-0.0182</td>
<td>0.0160</td>
</tr>
<tr>
<td><strong>F-stat</strong></td>
<td>38.25</td>
<td></td>
</tr>
<tr>
<td><strong>Prob &gt; F</strong></td>
<td>&lt;0.0001</td>
<td></td>
</tr>
<tr>
<td><strong>R-squared</strong></td>
<td>0.793</td>
<td></td>
</tr>
<tr>
<td><strong>Adj R-squared</strong></td>
<td>0.654</td>
<td></td>
</tr>
</tbody>
</table>

Notes: ** and * represent statistical significance at P<0.01, P<0.05, respectively.
Hypothesis 4-la and Hypothesis 4-lb are accepted decisively, because POA and QPSI are both statistically significantly different from zero in the regression analysis, and as expected, the parameter estimates are both positive, indicating that the time that a MNE has operated in China and the size of the investment both contribute to the learning. In order to avoid multi-co-linearity, we omitted the direct surrogate SEI, while EIUF has an opposite significant effect on subsequent FDI. So we can conclude that a higher initial level of equity leads to a higher proportion of subsequent FDI, thus confirming Hypothesis 4-2.

The parameter of Proportion of Foreign Employees is found to have a positive coefficient of 0.1022, which is highly statistically significant, with a p-value of 0.0017. These results can be regarded as strong empirical evidence in favor of Hypothesis 4-3.

Project Size is a surrogate for the capital requirement associated with foreign direct investment, while the contract duration is used to indicate the strategic span in the time dimension. The variable of PS is significantly negative, which indicates that MNEs become increasingly conservative in subsequent investment decisions as the scale of the project increases. On the other hand, the duration of the contract has a positive and statistically significant relationship to subsequent FDI. So, we accept Hypothesis 4-4.

Location has been an important explanatory variable in recent studies on initial FDI decision making (e.g., Coughlin et al., 1991; Head and Ries, 1996; Broadman and Sun, 1997; Li and Park, 2006), and its importance in subsequent investment is confirmed in this study. Two location indicators are statistically significant, and, as predicted by
Hypothesis 4-5, the proportion of subsequent FDI tends to be higher in the regions that were opened earlier.

Three of the five original country variables used were not statistically significant, with only one correlating with the share of subsequent FDI. Thus, we cannot confirm Hypothesis 4-6 from the regression analysis. However, the results are consistent with our assumptions about Hypothesis 4-6 at a certain level. Korea and Japan are China's neighboring countries, but the level of trust is relatively low, so (as predicted by Hypothesis 4-6b) they chose a higher share of subsequent FDI. Hong Kong, Macao and Formosa are kin zones with higher trust, and they choose moderate level of subsequent FDI, so we can conclude that Hypothesis 4-6a is also supported. The results for Hypothesis 4-6c and Hypothesis 4-6d are not statistically significant, so we cannot confirm them using this data set.

The results also indicate that factors from different levels have different effects: the firm level and the location level variables generally have a more statistically significant impact than those of the international level.

The conceptual and empirical findings of this chapter provide some lessons for practitioners, especially those expanding, or interested in expanding, their subsequent investments in emerging economies such as China. The most important and meaningful element for executives and practitioners is how to make decisions on subsequent investment, given the continuum and dynamism of FDI and the complexity and evolution of the environment.
4.6. Conclusions

This chapter attempts to examine the issue of subsequent FDI conceptually and empirically. Firstly, I developed a conceptual model of three levels of determinants: firm, location and international. Next, I identified the determinants of subsequent FDI, based on a cross-sectional data set from China. The model and determinants this chapter highlights will help facilitate decisions on subsequent FDI made by MNEs and other foreign investors. Further, some of the conceptual development and empirical assessment is consistent with evolutionary and knowledge-based theory, thus further augmenting these theories with theoretical analysis and practical evidence from the Chinese context. However, the analysis in this chapter has its limitations. For example, the cross section data base does not allow me to consider previous subsequent investment, also, a measure that reflects only the years and the quantity of accumulative foreign investments as the measurement of the firm’s experiences in FDI is somewhat simplistic. To overcome these shortcomings, I used panel data set in Chapter 6 to further ascertain foreign investors’ location preference in China, focus on the previously ignored China’s hinterland regions.
Chapter 5: An explorative analysis of FDI’s attractiveness in China’s hinterland

5.1. Introduction

As discussed in the previous chapters, the Chinese government realized and began to introduce policy preferences to attract more FDI flow to China’s hinterland. However, the outcome is not optimistic: FDI continues to flow to the south eastern coastal belt instead of the hinterland regions. In this chapter, I conduct an explorative analysis on the FDI related socioeconomic competitiveness of hinterland regions. The purpose is to discover hinterland regions’ (at the provincial level) FDI related socioeconomic competitiveness. The result of this explorative analysis will serve as the cornerstone for further more micro level analysis in Chapter 6.

I firstly provide basic information on China’s hinterland: western China and central China, followed by a discussion on why hinterland is lagging behind in FDI flows. The empirical analysis is based on a principal component analysis (PCA) model. Results, discussion and summary are based on results of a further cluster analysis.

5.2. China’s hinterland Regions - an overview

China’s hinterland can be divided into two: Western China and Central China. The western part of China includes 12 regions, both administrative provinces and autonomous zones. It has an area of 5.4 million square kilometers which is 71.4 % of China’s land

\footnote{Which refers to socioeconomic factors that can contribute to a region’s FDI attractiveness.}
area and has a combined population of over 280 million; it also possesses over 80% of the nation’s water reserves; over 70% of the natural gas reserves and around 60% of the coal reserves*. The region used to be described as "barren, remote, poor, large, valuable and beautiful." It lacks transportation facilities, and lags behind other parts of the country in terms of development and economy. The GNP per capita here accounts for just half of the average national level. But the west boasts vast stretches of land, abundant resources and beautiful scenery.

Central China accounted for 10.7 % of the nation’s land area, 28 % of the population. The region is a key grain, fertilizer and coal production base. Shanxi province alone supplies half of the coal that is allocated to other provinces. Coal accounts for about two-thirds of China’s energy sources. The central region is also an important mineral producer with reserves of 45 % of the nation’s mineral industrial output values.9

5.3. Reasons why hinterland is lagging behind in FDI flow

There are several reasons why the hinterland is lagging behind eastern China in attracting FDI. The first one is due to central government’s coastal preference opening policy as discussed in the last chapter. The second one is about the location. As most investors in China are engaged in export-oriented processing industries, the coastal areas are convenient outlets for their products. Additionally, most investors from Hong Kong, Macao and Taiwan, and overseas Chinese, have their ancestral roots in Guangdong,

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9 China Statistical Year Book; “Background Information on Renewable Resources”, Zhongguo guojia dili (China’s National Geography) (Dec, 2004): 86.
Fujian and other Chinese coastal areas, and they have the desire to do business in their native places. The third reason is about the natural geographical conditions. Central and western China are harsher areas than those of coastal eastern China. Western China in particular is covered by too many highlands, deserts and snow-clad mountains that are uninhabitable and too many lands that are not arable, and the farming conditions there are very harsh as compared with eastern China. This is also the case with regard to development of transportation, telecommunication and other branches of the infrastructure. Therefore, from a historical point of view, central and western China has all along been trailing behind eastern China in economic growth. The fourth reason is due to the overweighed state sector. The bulk of the industrial area in hinterland is built after the founding of new China and under central planning, and that is why the state sector in this region held a higher portion than in the eastern coastal belt. In 1980, the state sector made up 80 percent of the industry of the nine provinces and autonomous regions in central and western China (Heilongjiang, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang) in terms of total industrial output value; the figure ran as high as 92.2% in Heilongjiang, which means that the state owned almost the entire economy of that province.

5.4. Variables Description

Dunning (1993) pointed out that market-related factors, labour cost, transportation infrastructure and government policy are the four sets of factors as the locational determinants of FDI. Based on data availability, we propose examining the western
provinces’ socioeconomic competitiveness in terms of their performance in three aspects:
economic aspect, infrastructure aspect and labor quality aspect as shown in Figure 5.

Figure 5 Three Socioeconomic Aspects and Variables Selected

GRP: gross regional product; PPGRP: GRP per capita; PPINCOM: disposable income per capita in urban areas; SALES: total retail sales per capita; SOES: output of state owned industrial enterprises / total industrial output; SHUPOP: share of urban population in total: length of navigable inland waterway / 10 thousand squared population; EXPRESS: length of expressway / 10 thousand squared kilometer; RAIL: length of railway / 10 thousand squared kilometer; WATER kilometer; POST: number of post offices every 10 thousand people; PHONE: number of landlines per capita; SECOND: number of students enrolled in secondary level education every 10 thousand people; THIRD: number of students enrolled in third level education every 10 thousand people; VOCAT: number of graduates from secondary level vocational schools every 10 thousand people; PATENT: number of patents application ated every 10 thousand people; EDU: education investment per capita.
Past studies on FDI location determinants tend to measure the area’s economic size (e.g., Head & Ries, 1996; Broadman & Sun, 1997), suggesting that larger economies attract more investment because there is greater potential market demand. One of the frequently used variables to measure local economic scale is the local GDP. The GDP reflects the potential demand in a region and gives an estimate of the regional market size that is especially important for firms serving regional markets. In this paper, we use gross regional product (GRP) at the provincial level to measure the local market size.

Webber (1972) suggested that uncertainties in a foreign market will give rise to agglomeration economies, as a means of reducing risk and availing of external linkages. New investors will tend to choose FDI locations close to existing investors. Past studies tend to use the current level of FDI to measure a region’s level of agglomeration economies since new investors can learn from previous investors thus reducing the information cost. Since Western China is experiencing an economic transition period, economic clustering and information cost are major factors to be considered by foreign investors. Since the share (and amount) of FDI to western China is much smaller than to the eastern region, instead of using cumulative FDI to measure the level of agglomeration economies in western provinces, we propose that the level of fixed asset investment (FAI) at the provincial level can better explain the level of agglomeration economies in western China. The amount of FAI in a province represents investments in fixed assets from all interested parties and it mainly reflects central government’s intention to accelerate an area’s economic development. An area with higher FAI suggests that government as well as other private parties have a commitment to the development of the local economy.
Thus we choose the amount of FAI to measure the agglomeration economies in each western region.

Head and Ries (1996) argued that China’s economic transition from planned economy to market economy is the key issue that attracted huge amount of FDI to China. Firstly, foreign investment has a positive effect on China’s market economy process while a market oriented economy also attracts foreign investment. The state planned economy still occupies a major share of today’s Chinese economy, and this is especially true in Western China. The dominance of the state planned economy as a factor discouraging foreign investments to China has been identified (e.g., Wei et al., 2002). We propose that the degree of transition from a planned economy to a market economy is a better approach to measure the level of local economic freedom in western China. We employ the share of state owned industrial enterprises in total industrial output (SOESH) to measure the degree of transition of western provinces to a market economy. Since this is a negative influence on FDI, we make it positive by transforming it to its reciprocal. We use disposable income per capita (PPINCO) and total retail sales every 10 thousand people (SALESHPINCO) to measure market potential. Past studies have tended to examine China’s comparative advantage in labour cost though the results have varied. Coughlin (2000) and Cheng & Kwan (2000) found a negative effect between wage cost and FDI inflow while Head and Ries (1996), Chen (1996) and Broadman and Sun (1997) found the relation between the wage cost and FDI to be insignificant and negligible. In Western China, both the level of labour qualification and skill and the wage cost are lower than in Eastern China. We propose that productivity is a factor that is more likely to attract FDI.
flows to western provinces rather than low cost labour. In this study, we use GRP per person (PPGRP) to measure labour productivity\textsuperscript{10}.

Past studies have found that the urbanization level is positively related to FDI inflows (Glickman and Woodward, 1988; Coughlin and Segev, 2000). In the case of western China, Zhang (2003) found the majority of FDI to western China went to urban areas rather than rural areas. We use the share of urban population (SHUPOP) to measure western areas’ urbanization level.

\textit{Infrastructure Aspect:}

Infrastructure covers many aspects including transportation, telecommunication, and healthcare. Many studies show that regions with poorly developed infrastructure have low productivity levels and that the low return on private investments discourages both domestic and foreign investors. For example, Wheeler and Mody (1992) found that the road transport system is a key element in attracting American FDI to developing countries. In terms of FDI to China, the status of transport infrastructure is also a major factor in FDI location choice (Gong, 1995; Chen, 1996; Broadman and Sun, 1997). He and Liang (1999) point out that the poor transport infrastructure in Western China seriously affects FDI flow to the area. The road system is the main transport infrastructure in Western China; the development of inland waterway also plays a key role in Western China as it can greatly save on transportation cost. A better telecommunication infrastructure in an area is also an important FDI location determinant. Regions with a higher density of telecommunications network can attract FDI inflows

\textsuperscript{10} We checked the Pearson correlation between the PPGRP and FDI flows in 2005. The result is consistent with our proposition that regions with higher PPGRP attract more FDI in western provinces.
since it can decrease coordination costs. Accordingly the Chinese government had spent hugely on improving the poor transport and telecommunications conditions in the Western regions. In this study, we focus on the transport and telecommunication infrastructure in the western provinces. We employ the density of expressway, railway, navigable inland waterways ($km/10\text{thousand} km^2$), number of post offices possessed by every 10 thousand people and number of landlines per capita to measure each western province’s infrastructure condition.

**Labour Quality Aspect:**

One aspect of transnational corporations’ localization strategy relates to the ability to harness local human resources. Thus the level of local labour quality becomes a key determinant of FDI. Past studies have found a positive relationship between the level of qualification of workers and the volume of foreign investment (e.g., Glickman and Woodward, 1988; Coughlin and Segev, 2000). Broadman and Sun (1997) found provincial illiteracy to be a negative statistically significant determinant of FDI. In this paper, we use the number of students enrolled in secondary level education per 10 thousand people (SEC), the number of people enrolled in third level education per 10 thousand people (THIRD) and the number of graduates from secondary vocational schools per 10 thousand people (VOCA) to measure the average education level of residents in each western province. We use the number of patent applications granted per 10 thousand people (PATENT) and the local allocation of educational funds per capita (EDU) to measure the R & D level and the average education investment respectively.
5.5. Methodology: Principal component analysis & Cluster analysis

I employed a cross-section data analysis utilising principal component analysis (PCA) and cluster analysis to evaluate hinterland regions’ socioeconomic competitiveness at the provincial level. The main advantage of PCA compared to regression analysis lies in the following: firstly, the regression analysis requiring the explanatory variables to be kept to the minimum, while the PCA can extract the major information from the many explaining variables and exclude the less important information. In this chapter, I have 16 variables. The number is far beyond the requirement of a regression analysis, so by using PCA I can find out the main information attached with the 16 variables and what information is less important.

As shown in Figure 3, we divided the 16 variables into three aspects. We then apply PCA to each aspect. Since PCA is a dimension reduction method it can use fewer \( p \) variables to represent the majority of the information contained within the \( m \) original variables \( (p < m) \). In detail, the original variables were transformed to a set of principal components that are pair wise uncorrelated and of which the first has the maximum possible variance, the second the maximum possible variance among those uncorrelated with the first, and so on.

\[
PC_i = \sum_{j=1}^{m} a_{ij} X_j \quad i = 1, 2, \ldots, p
\]

(5-1)

where \( a_{ij} \) represents the coefficients, and \( PC_i \) are selected to capture as much of the variation in the original variables with as few principal components as possible. The above equation means each principal component is a linear combination of the original
variables and thus the total information will not be changed. In this study, we only retain principal components with eigenvalues greater than 1 as suggested by Kaiser (1960). Next, we calculate each region's principal component score using the principal component loading on each variable as the weight:

$$PC_i\, \text{score} = \sum_{j=1}^{m} a_{ij}zx_j \quad i = 1,2,\ldots, p \quad (5-2)$$

where $zx_j$ stands for the standardized (z-score) value of the original variable $x_j$. For aspects with two or more principal components extracted, the weight used to compute the composite score was calculated by using the share (contribution rate) of each eigenvalue relative to all the eigenvalues extracted. In this study, we have a maximum of two principal components extracted (from the economic aspect and the infrastructure aspect with one from the labour quality aspect), thus we have:

$$\text{Composite PC Score} = \sum_{i=1}^{2} \left[ (\lambda_i / \sum_{i=1}^{2} \lambda_i)PC_i \right] \quad (5-3)$$

Finally, since all three first principal components in the three aspects captured the majority of the variance of the original variables, we use the three first principal components as the measuring variables to conduct a cluster analysis to classify the eleven provinces into clusters that can then be used to investigate the similarities within each cluster as well as the difference between clusters. The statistical software we used is SPSS 14.0 and all the original data has been standardized (Z-score) as shown in Table 2. A cluster analysis will be introduced in the next section to classify hinterland regions
according to the similarities and differences based on the three first principal components.\textsuperscript{11}

\textsuperscript{11} Discussed in detail in the next section.
5.6. Results Discussion

Economic Aspect

Table 9 Estimated Coefficients $a_{ij}$ and Correlation Coefficients between $PC_i$ and $X_j$ (Economic Aspect)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated Coefficients</th>
<th>Corr ($PC_i, X_j$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$PC_1$</td>
<td>$PC_2$</td>
</tr>
<tr>
<td>X1: GRP</td>
<td>.2739</td>
<td>-.5485</td>
</tr>
<tr>
<td>X2: PCGRP</td>
<td>.4977</td>
<td>.2548</td>
</tr>
<tr>
<td>X3: PCINCOM</td>
<td>.3969</td>
<td>-.2856</td>
</tr>
<tr>
<td>X4: SOESH</td>
<td>-.1577</td>
<td>.6144</td>
</tr>
<tr>
<td>X5: SHUPOP</td>
<td>.2739</td>
<td>.4071</td>
</tr>
<tr>
<td>X6: SALES</td>
<td>.5478</td>
<td>.0989</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>3.084</td>
<td>1.865</td>
</tr>
</tbody>
</table>

Source: Compiled and computed by author based on SPSS 14.0 output.

As shown in Table 9, in the economic dimension, apart from SOESH, all other variables are positively correlated with the first principal component ($PC_{1,\text{economic}}$). Total local retail sales per 10 thousand people (SALES) has the highest correlation (0.962) as well as the
highest loading 0.5478, thus $PC_{1\text{economic}}$ can be considered as an index of overall market size with a focus on market potential. The final results are shown in Table 12. Neimenggu, Jilin and Heilongjiang occupy the top three places (Table 9) suggesting they have the biggest market in hinterland. The data for FDI flows in 2005 reveal that they are among the top four FDI recipients in Western China. This means market size plays a key role in measuring a region’s economic strength. The second principal component ($PC_{2\text{economic}}$) are highly positively correlated with SOESH, SHUPOP and PCGRP, while highly negatively correlated with GRP and PCINCOM. This means that provinces that achieve higher scores in $PC_{2\text{economic}}$ have the following characteristics: firstly, these provinces have a higher marketisation level and a higher urbanization level; secondly, smaller economies with smaller market size (GRP) and lower per capita disposable income (PCINCOM) tend to achieve higher scores in $PC_{2\text{economic}}$ than regions that have bigger market and higher urban population share. The ranking of $PC_{2\text{economic}}$ demonstrates these characteristics. For example, Qinghai and Ningxia rank 2nd and 3rd (higher ranking) in $PC_{2\text{economic}}$ and they rank 8th and 9th (lower ranking) at the $PC_{1\text{economic}}$ rank. Thus $PC_{2\text{economic}}$ can be considered as an index that distinguishes between marketization level and market size. Provinces that score higher in $PC_{2\text{economic}}$ tend to be smaller economies (especially smaller in SALES and FAI) with higher marketization level (lower SOESH) and higher urbanization level (SHUPOP). Using the contribution rate of each eigenvalue in the total extracted eigenvalues as the weight, we calculated the composite score of the eleven western provinces relating their socioeconomic competitiveness in the economic dimension (Table 9). Similarly to Qinghai, Ningxia ranks fifth in the composite ranking contributed by its higher score in $PC_{2\text{economic}}$; on the other hand, though Sichuan’s lower score in $PC_{2\text{economic}}$ does not affect its composite ranking (3rd ), it does make Sichuan’s composite score much lower than Neimenggu and Congqing. Thus $PC_{2\text{economic}}$ has exaggerated the importance of urbanization. Accordingly, we should treat $PC_{2\text{economic}}$ as an index that can help us to identify the special characteristics of different regions.
In Table 10, RAIL and EXPRESS are highly positively correlated with the first principal component in the infrastructure dimension ($PC_{\text{inf}_{\text{ra}}}$). Thus $PC_{\text{inf}_{\text{ra}}}$ can be considered as an index of the level of basic transport infrastructure (rail, expressway). Provinces achieving high scores in $PC_{\text{inf}_{\text{ra}}}$ have good local transport infrastructure which as
previously noted is an important determinant of FDI flows. Henan, Anhui and Shanxi have the top three rankings in $PC_{inf,ra}$ while Xinjiang, Qinghai and Neimenggu are at the bottom due to their geographical disadvantage (complex terrain and extreme weather) that has deterred the improvement of transport infrastructure. The PHONE is highly correlated with $PC_{2,inf,ra}$ suggesting that it is an index of local telecommunication infrastructure. Provinces scoring high in $PC_{2,inf,ra}$ have a higher proportion of landline users. Shanxi, Jilin and Xinjiang are ranked in the top three of $PC_{2,inf,ra}$. Guizhou, Yunnan and Qinghai have the lowest scores in $PC_{2,inf,ra}$.

**Labour Quality Aspect**
Table 11. Estimated Coefficients $a_{ij}$ and Correlation Coefficients between $PC_i$ and $X_j$ (Labour Quality Aspect)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Principal Components</th>
<th>Corr ($PC_i, X_j$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$PC_1$</td>
<td>$PC_2$</td>
</tr>
<tr>
<td>X1: THIRD</td>
<td>.5184</td>
<td>.1048</td>
</tr>
<tr>
<td>X2: SECOND</td>
<td>.4978</td>
<td>-.2851</td>
</tr>
<tr>
<td>X3: VOCAT</td>
<td>.4827</td>
<td>.2531</td>
</tr>
<tr>
<td>X4: PATENT</td>
<td>.2323</td>
<td>.7788</td>
</tr>
<tr>
<td>X5: EDUINVE</td>
<td>.4434</td>
<td>-.4867</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>2.733</td>
<td>1.268</td>
</tr>
</tbody>
</table>

Source: Compiled and computed by author based on SPSS 14.0 output.

In table 11, all five variables (THIRD, SECOND, VOCAT, PATENT and EDUINVE) are highly correlated with the first principal component ($PC_{1_{edu}}$). This suggests that $PC_{1_{edu}}$ is an index of the overall local labour quality. Sanxi, Hubei and Jiangxi are ranked the top three as a result of their better performance in almost all the five indicators.
Guizhou, Qinghai and Yunnan are at the bottom. PATENT has the highest correlation with $PC_{2_{edu}}$, and the other variables have lower correlation or negative correlation with $PC_{2_{edu}}$, indicating $PC_{2_{edu}}$ mainly represents local R & D level as measured by number of patents applications granted per every 10 thousand people.

Based on results of Tables 9 to 11, I computed the 18 hinterland regions’ principal component scores according to the three socioeconomic aspects respectively. The final output is shown in Table 12.
# Table 12 Social economic competitiveness of hinterland regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Economic Aspect</th>
<th>Infrastructure Aspect</th>
<th>Labour Quality Aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PC 1 Rank</td>
<td>PC 2 Rank</td>
<td>Composite Score</td>
</tr>
<tr>
<td>Shanxi</td>
<td>9.778</td>
<td>6</td>
<td>.1779</td>
</tr>
<tr>
<td>Inner Mongolia</td>
<td>2.7882</td>
<td>1</td>
<td>.9884</td>
</tr>
<tr>
<td>Jilin</td>
<td>1.9691</td>
<td>2</td>
<td>1.1977</td>
</tr>
<tr>
<td>Heilongjiang</td>
<td>1.7626</td>
<td>3</td>
<td>.9177</td>
</tr>
<tr>
<td>Anhui</td>
<td>-.6858</td>
<td>13</td>
<td>-.9418</td>
</tr>
<tr>
<td>Jiangxi</td>
<td>-.5624</td>
<td>12</td>
<td>-.4803</td>
</tr>
<tr>
<td>Henan</td>
<td>.7177</td>
<td>7</td>
<td>-2.2151</td>
</tr>
<tr>
<td>Hubei</td>
<td>1.6238</td>
<td>4</td>
<td>-.4440</td>
</tr>
<tr>
<td>Hunan</td>
<td>1.0600</td>
<td>5</td>
<td>1.3791</td>
</tr>
<tr>
<td>Guangxi</td>
<td>-.5434</td>
<td>11</td>
<td>-.8768</td>
</tr>
<tr>
<td>Sichuan</td>
<td>-.1479</td>
<td>8</td>
<td>1.4312</td>
</tr>
<tr>
<td>Province</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>-------------</td>
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<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Guizhou</td>
<td>-2.9539</td>
<td>18</td>
<td>-0.8370</td>
</tr>
<tr>
<td>Yunnan</td>
<td>-1.9226</td>
<td>16</td>
<td>-0.6485</td>
</tr>
<tr>
<td>Sanxi</td>
<td>-0.4147</td>
<td>10</td>
<td>-0.0578</td>
</tr>
<tr>
<td>Gansu</td>
<td>-2.0618</td>
<td>17</td>
<td>-0.1632</td>
</tr>
<tr>
<td>Qinghai</td>
<td>1.6390</td>
<td>15</td>
<td>2.8602</td>
</tr>
<tr>
<td>Ningxia</td>
<td>1.3746</td>
<td>14</td>
<td>2.6174</td>
</tr>
<tr>
<td>Xinjiang</td>
<td>-3.161</td>
<td>9</td>
<td>0.8094</td>
</tr>
</tbody>
</table>

Source: Computed by authors based on results of Table 9 to Table 11.
Cluster Analysis

After applying PCA to each of the three socioeconomic aspects, we found that $PC_{1_{\text{economic}}}$, $PC_{1_{\text{infra}}}$ and $PC_{1_{\text{edu}}}$ are better indices to understand a region's overall socioeconomic competitiveness, while the second principal component scores help to identify the 'shape' of different regions. This is important because the principal components are orthogonal to each other

$$Corr(P_{C_i}, P_{C_j})=0 \quad i \neq j$$

so the information associated with PC2 is the total information minus the information attached with PC1. Thus it can tell us the special 'shape' of each observation without the loss of any major information, because

$$Var(PC_1) > Var(PC_2) > \ldots > Var(PC_m)$$

Accordingly, we only use the three first principal components associated with the eleven provinces as the measuring variables in the following cluster analysis. The method used is within group linkage with squared Euclidean distance: Distance

$$(x, y) = \sum_{i=1}^{k} (x_i - y_i)^2$$

Results are shown in Table 13
Table 13 Cluster Membership according to the three first principal components (Vertical Icicle).  

<table>
<thead>
<tr>
<th></th>
<th>Xi' an</th>
<th>Qing hai</th>
<th>Yun nan</th>
<th>Guizhou</th>
<th>Gans u</th>
<th>Shic hu an</th>
<th>Guang xi</th>
<th>Ning xia</th>
<th>An hui</th>
<th>Hu nan</th>
<th>He ilin</th>
<th>Nmn er M o</th>
<th>Hu be</th>
<th>San xi</th>
<th>J i an g xi</th>
<th>He na n</th>
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<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

Icicle plots are usually horizontal, showing cases as rows and number of clusters in the solution as columns. If there are few cases, vertical icicle plots may be plotted, with cases as columns. Reading from the last column right to left (horizontal icicle plots) or last row bottom to top (vertical icicle plots), the researcher can see how agglomeration proceeded. The last/bottom row will show all the cases in separate one-case clusters. This is the (n - 1) solution. The next-to-last/bottom column/row will show the (n-2) solution, with two cases combined into one cluster. Subsequent columns/rows show further clustering steps. Row 1 (vertical icicle plots) or column 1 (horizontal icicle plots) will show all cases in a single cluster. This is a visual way of representing information on the agglomeration schedule, but without the proximity coefficient information.
As shown in Table 13, the results of clustering the provinces into four clusters, result in Guizhou, Yunnan, Qinghai and Sichuan, Guangxi forming part of the same cluster. This is not convincing since Sichuan and Guangxi has an overwhelming advantage over those three provinces. With a five cluster classification, Guizhou, Yunnan and Qinghai are in one cluster and Sichuan, Guangxi, Gansu, Ningxia and Anhui in another. This, compared with results from the PCA, delivers a more acceptable classification. After examining all of the other regions, we conclude that the 5 clusters' classification better explains the socio-economic differences among the 18 hinterland provinces. Xinjiang was classified with itself in one cluster as it is a strange case: it has the worst transportation infrastructure and labour force while achieving a middle ranking economic condition.

Qinghai, Yunnan and Guizhou were classified into one cluster due to their disadvantage in almost all three aspects; Gansu, Sichuan, Guangxi, Ningxia and Anhui were classified in one cluster because their average performance in transportation infrastructure and labour quality while lower ranking in the market potential index as reflected by $PC_{1 \text{economic}}$; Hunan, Heilongjiang, Jilin and Inner Mongol were classified into one cluster because they have advantage in market potential with average performance in transportation infrastructure and labour quality; finally, Shanxi, Hubei, Jiangxi, Henan and Shanxi were classified into one cluster because they top the list in terms of transportation infrastructure and labour quality while average performance in market size and potential.

The conclusion of the cluster analysis is presented in Table 14.

By comparing with the FDI flow to each hinterland provinces (Table 15) in 2005, we draw the following conclusions:
Table 14 Hinterland Regions’ Socioeconomic Competitiveness based on PCA & Cluster Analysis

<table>
<thead>
<tr>
<th>Socioeconomic Level</th>
<th>Region</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Xinjiang</td>
<td>Extremely poor in transportation and labor quality while middle level economic performance.</td>
</tr>
<tr>
<td>2</td>
<td>Qinghai, Yunnan, Guizhou</td>
<td>Unsatisfied performance in all three aspects</td>
</tr>
<tr>
<td>3</td>
<td>Gansu, Sichuan, Guangxi, Ningxia, Anhui</td>
<td>Middle performance in transportation infrastructure and labor quality, lower middle to poor performance in economic condition.</td>
</tr>
<tr>
<td>4</td>
<td>Hunan, Heilongjiang, Jilin, Inner Mongalia</td>
<td>Superior advantage in economic performance, middle performance in labor quality with poor transportation infrastructure.</td>
</tr>
<tr>
<td>5</td>
<td>Sanxi, Hubei, Jiangxi, Henan, Shanxi</td>
<td>Superior advantage in transportation infrastructure and labor quality aspects, middle performance in economic aspect.</td>
</tr>
</tbody>
</table>

Source: Concluded by author based on results of Table 5.5.

Firstly, remote regions like Qinghai, Yunnan and Guizhou are those regions with the poorest socioeconomic competitiveness in the hinterland, and they are also the provinces that received the least FDI flows in the year 2005; Hunan, Jiangxi and Hubei are the top three regions that received the most FDI flows in 2005, compared with Table 16. We found these regions are those with overall superior socioeconomic competitiveness. Those hinterland regions that are geographically close to coastal belt tend to have better socioeconomic competitiveness and receive more FDI flows. However, those regions that are geographically far away from the developed coastal belt tend to have poorer socioeconomic competitiveness and also received less FDI flows. Finally, Hunan received the most FDI flows in 2005, however, this province does not have a superior transportation infrastructure, this raises a concern that whether superior transportation infrastructure can successfully contribute to a hinterland region’s FDI attractiveness.

Refers to hinterland regions that are far away from China’s developed south-eastern coastal belt.
Table 15 FDI flow to hinterland provinces in 2005
(Unit: 10 thousand US$)

<table>
<thead>
<tr>
<th>Region</th>
<th>Cumulative FDI by 2005</th>
<th>Share of China in total</th>
<th>Realized FDI in 2005</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunan</td>
<td>1053650</td>
<td>1.69</td>
<td>114639</td>
<td>1</td>
</tr>
<tr>
<td>Jiangxi</td>
<td>887997</td>
<td>1.43</td>
<td>103249</td>
<td>2</td>
</tr>
<tr>
<td>Hubei</td>
<td>1311135</td>
<td>2.11</td>
<td>75327</td>
<td>3</td>
</tr>
<tr>
<td>Anhui</td>
<td>508932</td>
<td>0.82</td>
<td>53885</td>
<td>5</td>
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<td>Henan</td>
<td>665920</td>
<td>1.07</td>
<td>51871</td>
<td>6</td>
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<tr>
<td>Heilongjiang</td>
<td>542686</td>
<td>0.87</td>
<td>40572</td>
<td>7</td>
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<td>Jilin</td>
<td>421936</td>
<td>0.68</td>
<td>33239</td>
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<td>Shanxi</td>
<td>237333</td>
<td>0.38</td>
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<td>Sichuan</td>
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<td>Guangxi</td>
<td>19.39</td>
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<td>Inner mongolia</td>
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<td>Shaanxi</td>
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<td>0.71</td>
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<tr>
<td>Yunnan</td>
<td>8.40</td>
<td>0.25</td>
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<td>Ningxia</td>
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<td>0.05</td>
<td>4214</td>
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<tr>
<td>Guizhou</td>
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<td>Gansu</td>
<td>1.82</td>
<td>0.11</td>
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<tr>
<td>Xinjiang</td>
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<td>0.08</td>
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<td>17</td>
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<tr>
<td>Qinghai</td>
<td>1.60</td>
<td>0.02</td>
<td>478</td>
<td>18</td>
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</table>

Source: China Statistical Year Book of 2006.

5.7. Conclusions

In this chapter, by using principal component analysis and cluster analysis, I analyzed 18 hinterland regions’ FDI related socioeconomic competitiveness. I identified the following points that need to be further examined: MNEs tend to favor hinterland regions that are geographically close to the developed south-eastern coastal belt; transportation infrastructure is not likely to be correlated with the hinterland regions’ FDI attractiveness. However, due to the size of the data and its cross-sectional nature,
deeper analysis relying on larger data size and data that can consider both cross section and time series (panel data) is required to further examine these questions. In the next chapter, I am going to use a panel data set with data at the city level to further address these concerns.
Chapter 6: Location determinants of FDI in China's hinterland: A city level analysis

6.1. Introduction

The objective of this chapter is to explore the relative importance of various location determinants in an MNE's assessment of China's hinterland regions for FDI. This analysis uses a more micro level data set with more cross sectional observations. It thus provides deeper understanding on FDI's location preferences in China's hinterland.

This chapter is organized as follows: Section 2 reviews the relevant literature, and develops hypotheses around factors that might affect FDI location determinants in China's hinterland. Following Dunning (1993), we focus on three types of FDI location determinants: (1) natural resources seeking (reserves of natural resources, related transport and communications infrastructure, interaction effect between natural resource reserves and industrial agglomeration, policy incentives\textsuperscript{14}), (2) market seeking (GDP, GDP per capita, policy incentives), and (3) efficiency seeking (industrial agglomeration, wage level, labour quality, location proximity to industrial core regions and interaction effect between industrial agglomeration and reserves of natural resources, policy incentives). Section 3 describes the data used in the study and the empirical analysis undertaken. It also presents the results of the analysis. Section 4 is the results discussion. Section 5 is the summary.

\textsuperscript{14} According to Dunning (1993), all three types of motivations are influenced by local policy incentives.
6.2. Literature review & hypotheses development

This chapter uses the location element of the Ownership, Location and Internalization aspects of Dunning’s (1993) eclectic paradigm. This classified MNEs’ international production location decision factors into six types: natural resources seeking; market seeking; efficiency seeking of (a) products and (b) processes; strategic asset seeking; trade and distribution (import and export merchanting); and support services. Using data relating to host country factors (rather than firm specific factors) we examine whether natural resources, market, efficiency, or some combination of these variables, have the strongest effect on location choice in FDI in China’s hinterland.

According to Dunning (1993), natural resources seeking FDI is attracted to foreign locations that possess natural resources, related transport and communications infrastructure, or tax and other incentives. In the next section, 6.2.1, we discuss the reserves of natural resources and levels of local transportation and communication infrastructure and their correlation between natural resources and FDI flow to the hinterlands, while in section 6.2.2, we use market size and policy incentives to test for a link between FDI in the hinterlands and market potential and policy incentives. In section 6.2.3, we use variables related to industrial agglomeration, wage cost, labour quality and location proximity to industrial core regions to test if FDI is driven by efficiency in China’s hinterland, and if so, whether it is related to efficiencies in product industries or processing industries. The literature underpinning the hypotheses is also discussed.
6.2.1. Natural resources seeking FDI

6.2.1.1. Natural resources advantage

Dunning (1993) has suggested that natural resources seeking FDI looks for foreign locations that possess natural resources and related transport and communications infrastructure, tax and other incentives. Natural resources include oil, minerals, raw materials, and agricultural products. Historically, the availability of natural resources has been the most important host country factor in attracting FDI. Until World War II, about 60% of the world FDI stock was in natural resources. China’s hinterland has richer reserves of natural resources compared to the coastal belt and it is argued that this is an advantage for the hinterland in attracting FDI (Zhang, 2001).

In a paper exploring FDI’s regional determinants in mainland China, Chen (1996) found the allocation efficiency of the regional economy, as measured by the ratio of profits and taxes to the gross output of national independent accounting industrial enterprise in each province (PTOR) has a negative relationship with FDI flows to western China, which is contrary to his proposition\(^\text{15}\). In explaining this unexpected result, he argued that foreign investments into western China have been undertaken to take advantage of the abundance of mineral and energy resources in the western region regardless of allocation efficiency. In a chapter of an OECD publication titled ‘Foreign Direct Investment in China: Challenges and Prospects for Regional Development’ (OECD, 2002), Markus and Mehmet (2002) argued the potential for the integration of western China into the value chains of the eastern coast’s (export) business due to the abundant natural resources reserves in western China. However, there has been an absence of studies testing this conclusion. In this chapter, I attempt

\(^{15}\)In Chen’s work, the sign of PTOR is positively correlated with FDI flow in the eastern and central region, though without statistical significance.
to test whether China’s hinterland’s rich reserves of natural resources are positively correlated with FDI flow. I firstly rank hinterland regions’ natural resources reserves. I expect a positive sign for this variable (RESOURCE), as the availability of abundant natural resources is expected to enhance the locations’ attractiveness for FDI. Thus we have:

**Hypothesis 6-1a:** Hinterland cities that have richer natural resources reserves tend to receive more FDI than other hinterland cities.

It is also argued that a hinterland region with a more established industrial base will be more attractive to MNEs. I suggest regions with a better industrial base plus rich natural resources reserves provide both agglomeration effects and easy access to natural resources and thus would be attractive to MNEs. In this situation I hypothesize that MNEs will prefer to target a hinterland site that possesses both natural resources and a better industrial base.

To test whether a region possessing advantages in both natural resources and industrial agglomeration is more attractive to foreign investors, I generated a new variable based on the product of industrial agglomeration and natural resources advantage. Thus I have:

**Hypothesis 6-1b:** Hinterland cities that have advantages in both industrial agglomeration and natural resources tend to receive more FDI than other hinterland cities.

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16 Based on data from 2003, we calculated each province’s share of raw oil, natural gas and coal in China’s total reserves respectively. I then totaled the three figures as the share of natural resources reserve in China’s total. The top 7 provinces for resources were identified as: Xinjiang, Inner Mongolia, Shanxi, Sanxi, Heilongjiang, Shandong and Sichuan. Apart from Shandong, the other six provinces are all in the hinterland. Thus I assign value 1 to cities located in the six provinces and 0 elsewhere.

17 Discussed in a later section.
6.2.1.2. Infrastructure

6.2.1.2.1. Transportation infrastructure

Porter (1990) explicitly highlighted the important role of infrastructure in attracting foreign investments. Adequate infrastructure is required for MNEs in order to allow them to move production materials and products more easily to designated areas. Empirical studies have confirmed the positive correlation between better transportation and FDI flows in both developed countries such as the United States (Head et al., 1995; Shaver, 1998) and developing countries like China. In the case of China, both at the city level (Gong, 1995; Qu and Green, 1997; Zhao and Zhu, 2000) and the provincial level (Broadman and Sun, 1997; Wei et al., 1999; Fu, 2000; Fung et al., 2002; Sun et al., 2002), better transportation infrastructure is proven to be positively correlated with FDI flows. But some authors such as Coughlin and Segev (2000a) have found an insignificant correlation between transportation infrastructure and FDI flows.

In terms of FDI flows to China’s hinterland, an empirical study by He and Liang (1999) suggests that poor transport infrastructure in western China seriously deters FDI flows into that region. During the ‘Tenth Five Year Plan’ (2000-2005), a huge amount of capital was spent on the development of local infrastructure in China’s hinterland. Past studies have used the density of railway or highway per square kilometre to measure transportation infrastructure (e.g., Chen, 1996; Broadman and Sun, 1997). However, this data is not available at the city level. Instead, we use the area of paved road per capita in the city level to test the correlation between

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18 Central government budget for central and western China rose from 41.5% to 51.5% of total budget from central government during the 1993-1998 period; in 2000, the percentage of investment in western China rose to 23.74% as against 18.7% in 1996. Projects included transport, telecommunication and education (State Council 2001, 2004).
transportation infrastructure and FDI's location choice in hinterland cities. Thus we have:

**Hypothesis 6-2a:** Better transportation infrastructure tends to be positively correlated with FDI's location choice in hinterland cities.

### 6.2.1.2.2 Communication infrastructure

Information and communication technology (ICT) has been an integral part of the globalization process. Reduced transport costs, improved marketing information and increased efficiency of industrial production are among the main benefits of ICT. It is argued that the global economy has undergone massive change over the last 20 years. ICT has reduced many of the transaction costs of participating in sub-contracting through business-to-business (B2B) interaction (Addison and Heshmati, 2003). It is facilitating the operations of low-cost suppliers of IT services based in developing countries (Matambalya and Wolf, 2001). ICT increases the inflows of FDI to developing countries, primarily because ICT lowers the transaction and production costs for foreign investors, while improving their access to information on alternative investment opportunities in less developed economies (Clemons and Row, 1991; Gurbaxani and Whang, 1991; Hitt, 1999; Jorgenson, 2001; Addison and Heshmati, 2003). Based on a panel dataset of 23 major countries with heterogeneous economic development for the period 1976–99, Gholami *et al.* (2006) found a causal relationship between ICT investment and FDI in developed countries, suggesting a higher level of ICT investment leads to an increase inflow of FDI. ICT may contribute to economic growth indirectly by attracting more FDI. But the researchers did not find any evidence of this causality between ICT and FDI existed in developing
countries. However, they found some evidence of a reverse causality relationship that the inflow of FDI generates increases in ICT investment and production capacity.

In the case of China, empirical findings provide evidence that improvements in ICT infrastructure lead to an increase in FDI flows. For example, scholars using different measurements of ICT infrastructure, such as the proportion of output of telecommunication in total local output (Gong, 1995) and landline phone users in total population (Wei et al., 1999; He, 2002; Hsiao and Shen, 2003), have found that improvements in ICT infrastructure lead to an increase in FDI flows. In this study, we use land phone users per ten thousand people to test the relationship between ICT infrastructure and FDI's location choice in China's hinterland. I suggest that this relationship is positive. Thus I have:

**Hypothesis 6-2b**: Hinterland cities with better ICT infrastructure tend to receive a greater share of FDI flows than other hinterland cities.

### 6.2.2 Market seeking FDI

#### 6.2.2.1 Market size

One major motivation for FDI is to look for new markets (Dunning, 1993). Therefore, the larger the market size of a particular region, the more FDI the region should attract, all other factors being equal. GDP is frequently used as a proxy for market size, as it gives a good idea of the size and capacity of a national or sub-national economy. A larger economy would attract more FDI than a smaller one, as a larger economy is more likely to provide more opportunities for industries and enterprises to develop as a result of external economies of scale and spill-over effects. Studies have demonstrated that Chinese provinces with larger GDP, GDP per capita, and GDP growth rate receive more FDI (e.g., Head and Ries, 1996; Broadman and Sun, 1997;
Wei et al., 1999). In this paper, we use GDP and GDP per capita to represent market size and expect a positive correlation. Thus we have:

Hypothesis 6-3: Hinterland cities with higher GDP (CGDP) and GDP per capita (PCGDP) are likely to receive more FDI flow than other hinterland cities.

6.2.2.2. Policy Incentives

There is controversy over the role played by investment incentives in attracting FDI. McAleese (1985) concludes that incentives offered by the local governments are positively related to inward FDI in Ireland. Lim (1983) finds a negative relationship between investment incentives and the presence of FDI in 27 developing countries. He suggested that generous fiscal incentives could be interpreted by potential foreign investors as a signal that the fundamental advantages offered by the country are weak. For FDI in China, Gong (1995) uses a dummy variable to capture the spatially uneven distribution of special economic zones (SEZs). Head and Ries (1996), Wei et al. (1999) also use dummy variables to measure the effect of economic and technology development zones (ETDZs). These studies all demonstrated that policy preferences have a positive effect in attracting FDI. However, before 2000, most of the ETDZs were located in the coastal belt rather than the hinterlands. The level of economic development and stages of reform in China’s hinterland are not the same in different regions across China (Luo and O’Connor, 1998). MNEs typically consider the central and western regions more complex and uncertain than the eastern region, due to higher levels of governmental interference and cultural distance. The significant differences between investment in the coastal region and those in the central and

19 From 1984 to 2002, the Chinese government set up 49 national level ETDZs, plus 5 industrial parks with the same policy preferences. Of these, 37 were set up before 2000, primarily in the south-eastern coastal belt and 17 were set up after 2000, mainly distributed across the central and western regions of China. Overall, 32 are located in the south-eastern coastal belt, and 22 are located in central and western China. (‘2006 Report of Development Zones’, the central people’s government of the people’s republic of China, January 2007)
western regions show that the degree of openness in China has an important effect on foreign investment (Zhang, 2004).

After 2000, with the launch of the GWDS, and the Central China Rising Strategy, the central government established 17 national ETDZs, primarily distributed in central and western China. These newly assigned ETDZs provided similar policy incentives for foreign investors as those in the coastal belt. The goal was to instantly produce an FDI friendly environment within a region that was generally not seen as attractive to FDI. We suggest this policy initiative will be effective in attracting FDI flow. A dummy variable with value 1 is given to those hinterland cities that host at least one national level ETDZ after the year 2000 (16 out of 98 hinterland cities in our sample match this requirement) and 0 elsewhere.

Furthermore, I want to find out if China’s WTO accession can contribute to FDI flows to China’s hinterland. Thus I introduce another dummy variable WTO. For years after (also including) 2002 were assigned value 1, while for years before (also including 2001) have value 0. I suggest this correlation is positive.

Hypothesis 6-4a: Hinterland cities hosting at least one national ETDZ will tend to receive more FDI than other hinterland cities.

Hypothesis 6-4b: China’s WTO accession in 2001 may contribute to more FDI flows to China’s hinterland.

These 16 ETDZs are mainly the capital cities from the following 16 provinces: Shanxi, Neimenggu, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, Hunan, Guangxi, Sichuan, Guizhou, Shaanxi, Qinghai, Ningxia and Xinjiang.
6.2.3 Efficiency seeking FDI

6.2.3.1. Industrial agglomeration

Dunning (1993) suggested that efficiency seeking FDI can be classified two ways: (a) efficiency seeking of products, which look for locations that possess economies of product specialization and concentration or (b) efficiency seeking of processes, which looks for locations that offer low labour costs and incentives to local production by host governments. Sectors that are more influenced by product efficiency seeking include motor vehicles, electrical appliances, business services and some R & D, while sectors such as consumer electronics, textiles and clothing, cameras and pharmaceuticals are more influenced by efficiency seeking of processes. Since the 1990s, agglomeration economies and economic clusters have emerged as influential factors affecting FDI's location determinants. Dunning (1998) pointed out that FDI has favoured the spatial clusters of firms engaged in related activities, because mutual benefit occurs from shared access to localised support facilities, shared service centres, distribution networks, customised demand patterns and specialised factor inputs. The World Investment Report (1998) also documents agglomeration economies which arise from the clustering of economic activities, infrastructure facilities and access to regional markets as important factors determining the location of FDI. Recently, scholars have re-examined FDI's location determinants with a new school of thought called 'New Economic Geography' (NEG) which again emphasizes the effect of agglomeration economies, suggesting that agglomeration economies and transportation costs facilitate the concentration of manufacturing activities in a few large markets (Krugman, 1991). According to NEG, the manufacturing core area tends to be found where the market is large, and the market tends to be large where the manufacturing production is concentrated (Arthur, 1990; Krugman 1991).
Empirical studies have confirmed that foreign firms are attracted to clusters of economic activity and to closely-related industries (e.g., Wheeler and Mody, 1992; Gong, 1995; Head and Ries, 1996; Dunning, 1998; Ford and Strange 1999; Coughlin and Segev, 2000a, b; He, 2003). In the case of China, the Chinese government adopted the export oriented open door policy in 1978. This led to the designation of four special economic zones (SEZs) in 1980, the opening of 14 coastal cities (OCCs) in 1984 along with the many economic development and technology zones (EDTZs) within the OCCs and the assignment of three open delta economic zones (ODEZs) in 1985. Based on the geographical advantage and the ethnic ties with overseas Chinese (Leung, 1993; Hsing, 1996), significant levels of FDI flowed into the coastal belt. This inflow in turn encouraged Chinese industries to concentrate in China’s southeastern coastal belt. Thus, the agglomeration effects ensued. By contrast, the average market size in China’s hinterland regions is smaller than the coastal belt and no agglomeration effects developed.

Past studies have used variables such as previous stock of FDI, output of previous FDI, or number of foreign firms to measure the agglomeration effects. However, the level of past FDI investment in China’s hinterland is small, so the use of the above variables is less relevant, and may be distorted by the potentially opportunistic nature of some foreign investments. Thus, we argue that hinterland cities with a better industrial base will be attractive to foreign investors. Wen (2004) found that the regional share in industrial GDP should be positively related to regional GDP per capita, its population size and the concentration effect of transaction conditions. This suggests that industrial agglomeration can be represented by the share of local industrial output in China’s total industrial output. Therefore, we suggest that
hinterland cities will attract more FDI if they have a higher share of industrial output in China’s total industrial output. Thus I have:

**Hypothesis 6-5:** Hinterland cities with a higher share of industrial output in China’s total industrial output (INDUSH) are likely to receive more FDI flow than other hinterland cities.

### 6.2.3.2. Wage cost

Results of past empirical studies on wage costs and FDI’s location determinants in China have varied. Some have found that higher labor costs deterred FDI flow (Cheng and Kwan, 2000; Coughlin and Segev, 2000a; Belderbos and Carree, 2002); while others have found a statistically insignificant correlation between the geographic distribution of FDI and labour cost (Chen, 1996; Head and Ries, 1996; Broadman and Sun, 1997). Zhao and Zhu (2000) found a positive correlation between high labour costs and the attraction of FDI. They argue that absolute wage levels can be a misleading indicator of labour costs because they can be associated with varying levels of labour productivity. Li and Park (2006) also found provincial wage levels to be positively related to FDI location choice, and argue that high wages are a proxy for high levels of labour skills. To further explore the relationship between wage cost and location choice for FDI in China, scholars introduced the effective wage construct, in which the average wage is divided by labour productivity, creating a unit labour price that is normalized by labour productivity. Even with the effective wage concept the correlation between wages and FDI is variable: Cassidy (2002), Wei *et al.* (1999) and Fu (2000) found a negative correlation between effective wage and FDI flow; while Cheng (2006) found a positive correlation between the effective wage and FDI flow in China. It is argued that regions with lower labour costs plus higher productivity will attract FDI while regions with lower labour cost as well as lower productivity will not
Dunning (1993) suggested that MNEs that are motivated by efficiency seeking of products require an experienced labour force, which tend to be associated with higher wage levels. By contrast, MNEs that are motivated by efficiency seeking of processes tend to require lower cost labour. In this study, based on data availability, we use the average nominal wage rate per employee to measure the wage cost. Thus I have:

**Hypotheses 6a:** A positive sign between wage costs and FDI flows suggests that FDI flows to China’s hinterland are efficiency seeking of products; whereas a negative sign between wage costs and FDI flows suggests that FDI flows to China’s hinterland are efficiency seeking of processes.

### 6.2.3.3. Labour quality

It has been hypothesised that human capital in host countries is a determinant of foreign investment in developing countries. For example, Lucas (1990) conjectures that the lack of human capital discourages foreign investment in less-developed countries. Zhang and Markusen (1999) present a model where the availability of skilled labour in the host country is a direct requirement of MNCs and affects the volume of FDI inflows. Pfeffermann and Madarassy (1992) argue that, as a result of new technological advances and the concomitant shift of FDI toward more capital-knowledge and skill-intensive industries, low labour cost alone is not sufficient to attract FDI. A well-educated labour pool is required. Dunning (1988) maintains that the skill and education level of labour can influence both the volume of FDI inflows and the activities that MNEs undertake in a country.

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21 Human capital refers to the stock of knowledge and skill, embodied in an individual as a result of education, training, and experience, that makes him or her more productive (Deardorf's Glossary of International Economics).
Empirical studies have found a positive relationship between the level of qualification of workers and the volume of foreign investment (e.g., Glickman and Woodward, 1988; Coughlin and Segev, 2000a; Sun et al., 2002; Mody and Srinivasan, 1998, Fan and Dickie, 2000; Akinlo, 2004). Broadman and Sun (1997) used Chinese provincial data and found provincial illiteracy to be a statistically significant negative determinant of FDI. In this study, we use the number of students enrolled in third level education per 10 thousand people (THIRD) to measure the average education level of residents’ in hinterland cities. Thus I have:

**Hypothesis 6-7:** Hinterland cities with better educated workforces tend to receive more FDI than other hinterland cities.

### 6.2.3.4. Location proximity to industrial core-regions.

Past studies on FDI location determinants tend to use dummy variables such as coastal location to detect the location advantage of some coastal provinces. For example, coastal provinces have proved to have an advantage in attracting FDI over hinterland provinces (Leung, 1990; Broadman and Sun, 1997; Coughlin et al 2000a). Noting coastal provinces’ location advantages from a cultural and historical perspective, Zhang (2001) found that Guangdong and Fujian provinces’ cultural and historical connections with overseas Chinese make a significant contribution to greater FDI flows to these two regions. China’s hinterland regions do not share the coastal location advantage and cultural ties with overseas Chinese. However, Coughlin and Segev (2000b) found geographical proximity to metropolitan locations to be an advantage in attracting foreign owned manufacturing plants in the United States. Applying this work to China, Coughlin and Segev (2000a) estimated that FDI into neighbouring provinces increases FDI into a Chinese province. They assign this as
evidence of agglomeration externalities. Head and Mayer (2004) focus exclusively on the impact of neighbouring regions’ GDP on Japanese FDI into Europe and find it has a significant positive correlation with FDI.

In this study, we further explore this location proximity advantage by adopting theories of the core-periphery assumption from development economics. We suggest that hinterland regions that are geographically close to industrialized coastal provinces tend to receive more FDI than more remote regions. Myrdal (1957) suggests that there is a tendency inherent in the free play of market forces to create regional inequalities. Firms select production sites that enable them to maximize profits and once the initial site is selected, the forces of the market tend to reinforce themselves. Hirschman (1958) also noted that the momentum of growth in the ‘regional centres of economic strength’ is fuelled by the ability of entrepreneurs to take advantage of agglomeration economies and the dynamic growth atmosphere that develops within the poles. Once growth takes a firm hold in one part of the national territory, it will set in motion forces that act on the remaining part. However, Hirschman also argued that although initially the concentration of manufacturing activities will have polarizing effects and increase regional economic disparities, the benefits will then trickle down to poor regions naturally with the growth of the economy. It is possible, therefore, in the long run, that the immediate and wholesale pursuit of aggregate efficiency will hasten interregional equity. Krugman (1991) further argued that the deterioration of the environment and the increasing utilization of land and labour in the core area, together with the relatively immobile labour force between regions, will act as a centrifugal force and move some firms out of the core

22 From Golley (2002), the industrial core regions are the five coastal provinces: Guangdong, Fujian, Zhejiang, Shandong, Jiangsu. The four hinterland provinces that border the above core regions are: Guangxi, Hunan, Jiangxi and Anhui.
and into the periphery. In this study, we introduce a dummy variable REGION: value 1 given to those cities located in the four provinces that bordered with the five industrial core provinces and 0 elsewhere. A positive correlation is expected between REGION and FDI flows. Furthermore, we also want to find out the effect of the interaction between the industrial agglomeration and the dummy variable REGION: is a region that has a better industrial base as measured by local industrial output in China’s total industrial output and shares borders with core industrial regions more attractive to FDI? Thus I have:

**Hypothesis 6-8a:** Cities that are geographically bordered with the industrial core-regions tend to receive more FDI over regions that are further away from those core-regions.

**Hypothesis 6-8b:** Hinterland cities that are bordered with the industrial core-regions as well as possessing a higher share of industrial output tend to receive more FDI flows than other cities.

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23 These cities are those located in the following provinces: Guangxi, Hunan, Jiangxi, Anhui, which are geographically border the industrialized south-eastern coastal provinces.
6.3. Data and Method

All data was obtained from China City Statistical Yearbooks (2000-2006), which provides data from 1999 – 2005. The data covers 98 cities in 16 hinterland provinces. Thus I have a pooled time series and cross sectional data set for this study. Compared to using OLS to estimate a single period cross section data, the use of pooled time series and cross sectional data set can increase degrees of freedom and improve efficiency of estimation. It can also reduce the possibility of biased and inconsistent estimates due to the endogeneity of some of the regressors or omitted variable bias (Baltagi, 2002).

There are three statistical models for analysing a pooled time series and cross-sectional data set: pooled ordinary least squares (POLS) model, fixed effects (FE) model, error components or random effects (RE) model. A FE model is not appropriate since we included dummy variables in the regression, so the choice is between the POLS model and the RE model. The POLS model assumes that any two country-years can be compared, whether across time or across space. The pooled estimator is just a weighted average of the between estimator. The random effects model is basically a way to squeeze a bit more precision out of the data. By taking account the correlation among disturbances, the random effects estimator offers more

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24 The 2005 data is the latest data as of June 2007.
25 There are 20 regions (provinces or autonomous zones) in China's hinterland. Among these 20 regions, the data for Tibet, Gansu and Yunnan provinces was incomplete. These three regions were excluded from this study. Furthermore, Chongqing as the only autonomous city in the hinterland has received additional financial support from the central government compared to other hinterland cities. As a result, it was also excluded from our data analysis. For the remaining 16 regions, there are 164 cities registered for the year 2005 compared to 132 for the year 1999. Since we use a panel data set covering the time periods from 1999 to 2005, the maximum number of cross sectional observations we can target is 132. Taking account of missing data for some of the variables led to the exclusion of 34 cities, leaving a final data set covering 98 cities. These are from the following 16 regions: Shanxi, Neimenggu, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, Hunan, Guangxi, Sichuan, Guizhou, Shaanxi, Qinghai, Ningxia and Xinjiang.
efficient estimates than pooled regression. Mundlak (1978) suggested that individual
effects should be considered as random in general, especially for those panel data
having larger cross section numbers. By using a Lagrangian multiplier (LM) test, I
confirmed that the RE models are superior to the POLS models for this analysis. The
dependent variable is the realized FDI at the city level\textsuperscript{26}. A description of the
explanatory variables and their expected signs are shown in Table 16.

\textsuperscript{26} The term 'city' in this paper represents urban area and suburbs, not including sub-counties.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Proxy</th>
<th>Expected sign</th>
<th>Theoretical justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNFDI</td>
<td>Realized FDI flow at the city level</td>
<td>+</td>
<td>Market seeking</td>
</tr>
<tr>
<td>LNCGDP</td>
<td>GDP at the city level</td>
<td>+</td>
<td>Market seeking</td>
</tr>
<tr>
<td>LNPCGDP</td>
<td>GDP per capita at the city level</td>
<td>+</td>
<td>Efficiency seeking</td>
</tr>
<tr>
<td>LNINDU</td>
<td>Share of city industrial output in China’s total industrial output</td>
<td>+</td>
<td>Efficiency seeking</td>
</tr>
<tr>
<td>LNWAGE</td>
<td>Average annual nominal wage per employee</td>
<td>+</td>
<td>Efficiency seeking (a) of products</td>
</tr>
<tr>
<td>LNPROAD</td>
<td>Area of paved road per person in the city</td>
<td>-</td>
<td>Efficiency seeking (b) of processes</td>
</tr>
<tr>
<td>LNEDU</td>
<td>Share of registered third level students every 10 thousand population</td>
<td>+</td>
<td>Infrastructure adequacy (accompany natural resource seeking: Dunning 1993)</td>
</tr>
<tr>
<td>LNICT</td>
<td>Share of land phone users every 10 thousand population at the city level</td>
<td>+</td>
<td>Infrastructure adequacy (accompany natural resource seeking: Dunning 1993)</td>
</tr>
<tr>
<td>POLICY</td>
<td>Hinterland cities that hosting at least one national level ETDZ having</td>
<td>+</td>
<td>Policy incentives (accompany market seeking: Dunning 1993)</td>
</tr>
<tr>
<td>REGION</td>
<td>the value of 1 and others of 0.</td>
<td></td>
<td>Trickling down effect (efficiency seeking)</td>
</tr>
<tr>
<td>RESOURCE</td>
<td>Hinterland cities that are located in the provinces that are bordered</td>
<td>+</td>
<td>Natural resource seeking</td>
</tr>
<tr>
<td></td>
<td>with the industrialized coastal provinces having the value of 1 and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>others of 0.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESIDU_REGION</td>
<td>The interaction effect of industrial agglomeration and dummy variable</td>
<td>+</td>
<td>Efficiency seeking</td>
</tr>
<tr>
<td>RESIDU_RESOURCE</td>
<td>The interaction effect of industrial agglomeration and dummy variable</td>
<td>+</td>
<td>Efficiency seeking + natural resource seeking</td>
</tr>
<tr>
<td>WTO</td>
<td>The effect brought by WTO accession.</td>
<td>+</td>
<td>Policy incentives (accompany market seeking: Dunning 1993)</td>
</tr>
</tbody>
</table>
Our empirical analysis is thus based on a panel data set, with the model specified as:

\[ 
\text{LnFDI} = \alpha + \beta_1 \text{LnCGDP} + \beta_2 \text{LnPCGDP} + \beta_3 \text{LnINDU} + \beta_4 \text{LnWAGE} + \beta_5 \text{LnPROAD} \\
+ \beta_6 \text{LnEDU} + \beta_7 \text{LnICT} + \beta_8 \text{POLICY} + \beta_9 \text{REGION} + \beta_{10} \text{RESOURCE} + \beta_{11} \text{LnINDU} \times \text{REGION} \\
+ \beta_{12} \text{LnINDU} \times \text{RESOURCE} + \text{WTO} + \epsilon_{it} 
\]

(Equation 6-1)

In Equation 1, a log-linear functional form is adopted with the purpose of transforming a likely non-linear relationship between the realized FDI flows and the explanatory variables into a linear relationship. In addition, the logarithm transformation enables me to directly obtain FDI elasticities with respect to various explanatory variables. The results of two POLS and four RE GLS analyses are presented in Table 17 and Table 18. The columns labelled Model 1 in the above two tables give the results of POLS with all the independent variables from Equation 1. The columns labelled Model 2 in the two tables show the results of POLS after deleting the two variables (LNINDU_REGION and RESOURCE) with the highest variance inflation factors as indicated in Tables 17/18 & Tables 19/20.

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27 Detailed descriptions of the variables are given in Table 16.
28 The FDI value in Table 6.4.2 is the lag one year value, which means the explaining variables from 1999-2004 against the FDI values from 2000 - 2005, thus the total observation reduced from 686 to 588, and the time period from 7 years to 6 years. As revealed in the latter part: Table 21 vs. Table 22, there are no major difference between the original analysis and the lag one year analysis.
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Table 18: Correlation Matrix (6 years data)
Table 19 Variance inflation factor test\textsuperscript{29} (7 years panel)

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\*After deleting LNINDU_REGION, and RESOURCE.

\textsuperscript{29} VIF value bigger than 10 suggesting serious multi-co-linearity exist among explaining variables.
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*After deleting LNINDU_REGION, and RESOURCE.
The columns labelled Model 3 in Table 21 and Table 22 show the results of an RE GLS regression with the same variables as contained in Model 2. The columns labelled Model 4 to Model 6 represent the results of RE GLS regressions by using different variable sets. As shown in Table 21 and Table 22, these sets differ as a result of variables such as LNPCGDP, LNCGDP having higher correlation between themselves as well as with other variables (which might produce potential multi-collinearity problems).

In detail, serious multi-collinearity problems were found when all of the proposed explanatory variables were included in the POLS regression (column labelled Model 1 in Table 21 and Table 22), and some variables are wrongly negatively signed (e.g., LNPCGDP is negatively signed). After deleting variables with the highest variance inflator (LNINDU_REGION and RESOURCE), the results of a POLS and RE GLS with eleven explanatory variables are given in the columns labelled Model 2 and Model 3.

Using different explanatory variables to deal with the potential multi-collinearity problems among some important explanatory variables, notably GDP (LNCGDP), GDP per capita (LNPCGDP) and industrial agglomeration (LNINDU), we test three additional models (Models 4 to 6).

In Table 21 and Table 22, the difference between Model 3 and Model 4 is we remove LNPCGDP (because it has high correlation with LNCGDP) from Model 4. Comparing Model 3 to Model 5, I remove LNCGDP while keeping LNPCGDP. This is because LNCGDP has high correlation with the other explanatory variables. The results from Model 5 indicate that LNPCGDP is negatively correlated with FDI and without statistical significance. Apart from multi-collinearity, another possible explanation is the significant variation in population among China's regions. Thus I
delete the variable LNPCGDP. The results of the ensuing model are given in the column labelled Model 6 in Table 21 and Table 22. I found the value of R squared to be essentially unchanged between Model 5 and Model 6, while the signs of the remaining variables\textsuperscript{30} were unchanged from Models 4 and 5.

In conclusion, the LM tests in both Table 21 and Table 22 indicate that an RE model is superior to the POLS model. The results from Model 3 tend to be biased by potential multi-co-linearity problems due to the presence of high correlation variables. Accordingly, the following discussion of results is mainly focused on Models 4, 5 and 6 in Table 21 and Table 22.

\textsuperscript{30} LNWAGE, LNPROAD, LNEDU, LNICT, POLICY, REGION, RESOURCE and LNINDU RESOURCE
Table 21: Panel data results for the location determinants of FDI in China’s hinterland (7 years panel).

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<td>-0.2091</td>
<td>0.1174</td>
<td>0.0415</td>
<td>0.4043*</td>
<td>0.3752*</td>
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</table>

Standard errors are in parentheses.

***, ** and * indicate that the coefficient is significant at the 1, 5 and 10% levels, respectively.
Table 22 Panel data results for the location determinants of FDI in China’s hinterland (lag one year panel: 6 years panel).

<table>
<thead>
<tr>
<th></th>
<th>Model 1 (POLS)</th>
<th>Model 2 (POLS)</th>
<th>Model 3 (RE GLS)</th>
<th>Model 4 (RE GLS)</th>
<th>Model 5 (RE GLS)</th>
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<td>(0.1080)</td>
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<td>0.3007***</td>
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<td>(0.170)</td>
<td>(0.0301)</td>
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<td>0.5185</td>
<td>0.5186</td>
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</tbody>
</table>

Standard errors are in parentheses.

***, ** and * indicate that the coefficient is significant at the 1, 5 and 10% levels, respectively.
6.4. Results Discussion

Basic Results

As shown in Models 4, 5 and 6 in both Table 21 and Table 22, POLICY has the highest contribution to FDI flows to China’s hinterland cities, followed by LNCGDP, LOCATION, LNINDU, REGION, LNWAGE and LNINDURESOURCE. LNPROAD is positively correlated with FDI flows but lacking statistical significance. LNICT is positively signed in the seven years panel analysis while negatively signed in the lag one year panel, both without statistical significance. The dummy variable WTO slightly positively correlated with FDI flows, however, without statistical significance.

Further Results Discussion:

The results indicate that POLICY is significantly correlated with FDI flows. According to Dunning (1993), all three types of international production require local policy incentives. To further ascertain MNEs’ motivations in investing in China’s hinterland, we investigate the other explanatory variables.

In relation to natural resources, Dunning (1993) suggested that natural resources seeking FDI tends to locate in sites that possess natural resources plus good transportation and communications infrastructure. In this study, natural resources are negatively related with FDI flows. The positive contribution from the interaction effect between industrial agglomeration and natural resources is around 10% which is far less than the 50% contribution of industrial agglomeration itself. The positive contributions of road
transportation and communication infrastructure lack statistical significance. Thus we cannot conclude that FDI to China’s hinterland regions is driven by natural resources. This is different to the current argument that abundant natural resources in China’s interior are an advantage in attracting FDI (Chen, 1996; Graham, 2001; Mehmet and Markus, 2002). However, the result is consistent with ‘the curse of natural resources’\(^{31}\). For example, Sachs and Warner (1995) examined a sample of 97 developing countries from 1970 to 1989 and found a significant negative correlation between GDP growth and the ratio of natural resources exports to GDP. Gylfason (2001) found a negative relationship between the share of natural capital in total capital and economic growth. Hamilton (2001) found that many resource abundant countries fail to invest the resource rents in productive assets like human capital, and instead are simply consuming them. Kronenberg (2004) concluded that the prime reasons for the curse of natural resources in transition economies were corruption and a neglect of basic education. He suggested that resource abundant transition countries overcome the curse of natural resources and move to a sustainable path of development by fighting corruption and ensuring that their resource revenues are invested in human capital or the preservation of natural capital\(^{32}\). In the case of China’s hinterland, we suggest that there are two explanations for this negative correlation between natural resources endowments and FDI flows. Firstly, we suggest that the infrastructure facilities needed for shipping raw materials to their final destination were not in place in the hinterland regions. Secondly there are the problems of corruption and neglect of basic education, as discussed by Kronenberg (2004). Since there is no

\(^{31}\) The curse of natural resources is a well-documented phenomenon for developing countries: economies that are richly endowed with natural resources tend to grow slowly.

\(^{32}\) See Tobias Kronenberg (2004), for a review of literature on natural resources endowments and economic growth.
measure of corruption available, it has not been possible to test the impact of corruption. However, in terms of the positive correlation between labour quality and FDI flows, the results of this study find this correlation to be statistically significant. This indicates that MNEs prefer hinterland cities with a better educated workforce. Furthermore, evidence of over-extraction of natural resources in China’s hinterland has also been reported (e.g., Deng et al., 2002). Thus, the relatively poor investment in education and the over-extraction of natural resources are also potential depressors that lead to the negative correlation between natural resources and FDI flows in hinterland.

In relation to market size and potential, GDP per capita was negatively signed and without statistical significance, while GDP is positively signed and statistically significant. With regard to the earlier discussion around the variable GDP per capita, we conclude that FDI to China’s interior has a market seeking nature.

Next, industrial agglomeration is statistically significant at the 0.01 level in most of the regressions with different explanatory variables. The results from Models 5 and 6 in Table 4 indicate this contribution is around 50%. As noted above, we found that FDI favoured cities with higher labour quality. While different from some past studies (such as Cheng and Kwan, 2000; Coughlin and Segev, 2000a; Belderbos and Carree 2002; and Fung et al., 2002), our finding is consistent with others (Zhao and Zhu, 2000; Li and Park, 2006). This suggests that foreign investors expanding to China’s hinterland weigh a relatively qualified workforce more heavily than the cost of labour as reflected in the

33 Further discussion on this presented below.
34 This might be due to the potential multi-co-linearity between GDP per capita and other explanatory variables.
positively signed relationship between the average wage cost and FDI flows. One explanation that has been offered is that most workers in the coastal belt come from the hinterland regions and thus there is no significant difference in the wage costs for low cost labour between coastal and interior regions (Zhang, 2001). More importantly, we argue that foreign investors in the hinterland are in industries looking for efficiency of product (rather than processing) industries. Industries that seek efficiency of processing industries include consumer electronics, textiles and clothing and cameras (Dunning, 1993). Agglomeration effects have attracted processing industries to the coastal belt (Golley, 2002). For example, the hosiery cluster in Zhejiang province includes more than 10,000 village households in 120 villages in and near Datong city. It has become China’s biggest centre for the production of socks and stockings and cluster development is now strongly under way (Wang, 2001). Similarly, a complete computer can be assembled from parts made entirely in factories located within 50 kilometres of one another in Dongguan city, Guangdong province (Tong and Wang, 2002)\(^{35}\). This, together with the abundant low cost labour that flows from the hinterland, has given the coastal belt unbeatable advantages over the hinterland regions in export oriented processing industries has up to the present. Thus, it is not surprising that MNEs looking for production sites for product industries in the hinterland focus on serving the local market. In turn, hinterland cities with higher wage levels attract more FDI because higher wages indicate the presence of the higher quality labour that is needed for product industries like motor vehicles, business services and some R& D (Dunning, 1993).

Next, most studies have found transportation and communication infrastructure a key

\(^{35}\) Please consult Fan & Scott (2003) for a review.
determinant in attracting FDI flows to China both at the city level (Gong, 1995; Head and Ries, 1996; Qu and Green, 1997; Zhou & Zhu, 2000) and the provincial level (Broadman and Sun, 1997; Sun et al., 2002; Wei et al., 1999). In this study both of the infrastructure variables lack statistical significance (though they are positively signed). Demurger et al. (2001) obtained a similar finding and attribute the weak statistical support to estimating too many parameters for the number of observations, rather than any irrelevance of their importance to growth. In this study, with a panel data set containing 686 observations at the city level, we believe our finding is reliable but we do agree with Demurger et al. (2001) that this does not mean improvement in infrastructure is unrelated to attracting FDI. Instead, we argue that at the current stage, factors such as a better industrial base and associated agglomeration effects, and policy incentives are more important concerns for foreign investors’ FDI decision choices with respect to China’s hinterland. Moreover, the coastal belt can successfully attract the bulk of FDI flows to China, not only because of the good infrastructure but because of the export oriented nature of the initial FDI investments in China and the cultural ties with overseas Chinese\textsuperscript{36} (Leung, 1993; Hsing, 1996; Zhang, 2004; Gao, 2005). This is not the case for the hinterland, which was unaided by China’s ‘coastal preference’ opening policy during the past two decades. A further discussion on transportation infrastructure and local economic development is beyond the scope of this study, but it is worth mentioning that past studies on regional economics & planning did pose similar arguments about the limited effects of improving transportation infrastructure in stimulating local economic development\textsuperscript{37}. The statistical

\textsuperscript{36} In addition, the importance of cultural ties has also been demonstrated in the context of Chinese outward direct investment to other countries; see Buckley et al. (2007).

\textsuperscript{37} For example: SACTRA (Standing Advisory Committee on Trunk Road Assessment). (1977) Report of the Advisory
insignificance of the communication variable is unexpected though it is consistent with Gholami et al. (2006), who found that ICT investment can not lead to FDI flows in developing countries38. This aspect relating to the impact of infrastructure requires further investigation, preferably based on a longer time period.

Finally, the dummy variable WTO is slightly positively signed but lacking statistical significance. This indicates the effect brought by China’s WTO accession (in 2001) to FDI flows to China’s hinterland is little and negligible. Another reason is although China’s WTO accession is in late 2001, the signal and information around China’s probable WTO accession had spread around the world in the late 1990s, which caused the statistical insignificance of the WTO dummy in this analysis.

6.5. Conclusions

In this chapter, I examined socioeconomic factors that might affect FDI’s location choice in China’s hinterland regions. The characteristics of the panel data entitled me to examine this issue from a dynamic perspective. The city level data greatly enlarged the sample size compared to past studies that used provincial level data. Results from the empirical analysis suggest the following points: ‘the curse of natural resources’ might also applicable in China’s hinterland; investment in infrastructure might not successfully contribute to FDI flows; local labour quality is significantly correlated with FDI flows; by now, the most important factors that affect FDI flows to hinterland regions are policy preferences and the effect of local industrial agglomeration.


38 However, they did find improvement in ICT led to FDI flows in developed countries.
Chapter 7: Summary and Conclusion

7.1. Introduction

After three empirical analyses that focus on entry mode, socioeconomic competitiveness and location determinants around MNEs activities in China’s hinterland. I conclude this dissertation by identifying the implications for both MNEs and host country policy makers. The limitation and suggestions for future studies also discussed in this Chapter.

7.2. Implications for MNEs

Subsequent investment choices made by MNEs is a very complicated issue, affected by a variety of firm level, location level and international level factors. Using a cross-section data set from China, I tested the effects of several key factors that are suggested by a number of hypotheses proposed in Chapter 4.

I found earlier entry results in greater knowledge accumulation and experience, so earlier foreign investors may choose more intensive subsequent investment to make full use of first mover advantages. A high level of past investment endows the investor with greater business opportunities, and accordingly requires more investment, thus higher subsequent investment proportion is expected. Higher initial equity means a higher stake and reflects more important roles in the whole strategy of MNEs, thus taking higher proportion of subsequent investment is easily understood. Human capital is also an important factor affecting the subsequent investment behavior and a higher proportion of foreign employees can protect investment transfer, and also alleviate trust problems while accelerating the process of learning and satisfying the human capital requirement needed
for business expansion. Therefore, those international joint ventures with more foreign employees tend to choose more intensive subsequent investment.

The longer the duration of the contract the more familiar the foreign investors become with the business environment, and the more revenue can be acquired through increased control rights. Thus, increasing equity via more intensive subsequent investment is appropriate. In the regions that opened earlier MNEs became more familiar with the business environments through learning-by-doing and knowledge spillovers among firms, so that in turn the Chinese partners' knowledge became less important. Over time, the MNE's begin to prefer more control rights, which can be achieved by increasing subsequent investments.

Geographic distances and cultural gaps are also important influencing factors. Results of Chapter 4 revealed that investors from neighboring countries with low trust choose a more intensive subsequent investment, while those from kin zones choose a moderate subsequent investment scale.

These conclusions would be helpful for both managers and firms involved with decision-making on subsequent investment. According to Andersen (1993) and Johanson & Vahlne (1977), decisions to commit current resources to foreign operations will depend on experience and are related to the operations currently performed in the market. Moreover, Johanson and Vahlne (1990) describe the internationalization process as causal cycles, i.e., market knowledge and market commitment are assumed to affect commitment decisions and current activities, which, in turn, are affected by market knowledge and market commitment. When deciding whether or not to make subsequent investments in foreign markets, MNEs should take into account several of the factors that
I have addressed in this research: entry time, quantity of past investment, equity level, human capital, capital requirement, contract duration, openness of regions, geographic distance and cultural gap. This will optimize the decision-making process and underpin the foundation of the day-to-day operations.

As discussed in Chapter 6, the setting up of 17 ETDZs and many preferential policies produced opportunities for MNEs in China’s hinterland, just as they had in the coastal belt over the previous three decades. Also, increasing land, labour and other congestion costs in the coastal belt drive MNEs to identify suitable industrial bases in China’s hinterland. Though the hinterland regions do not have the same advantages as the coastal regions for export oriented production, MNEs who develop suitable industry plants in the hinterland regions (especially those with better industrial bases) have the opportunity to move into a potentially huge market as part of their overall China strategy. The sites have the potential to develop as industrial cores, and the MNE’s will be able to benefit from increasing agglomeration effects. This in turn will attract more experienced workers to these emerging industrial cores and the market size will enlarge naturally.

Also, as the average level of transportation infrastructure is relatively low in the hinterland, MNEs should consider focusing on industry sectors that do not demand high quality transportation infrastructure. For MNEs considering investments in China’s hinterland regions, questions such as the following are of paramount importance: e.g., are the local infrastructure facilities adequate for shipping raw materials to the proposed
destination? How sustainable are the targeted natural resources? What is the level of local corruption?

7.3. Implications for host country policy makers

Based on results of Hypothesis 6-8a in Chapter 6 (positive correlation between REGION and FDI flows). I found that proximity to industrialized regions (in this case, the south-eastern coastal provinces of China) makes a region more attractive to MNE’s considering FDI in China’s hinterland. This suggests that regions that border core industrial areas tend to benefit from the spill-over of experienced labour, technology and advanced management skills from the core regions. Thus it would be more effective to prioritize the development of those cities that are geographically close to the industrial core regions. Improvements in infrastructure and supporting service sectors are likely to make these cities more attractive to foreign investors, and therefore more likely to be the destination choice for FDI. Once firms begin to locate in these focal sites, the positive agglomeration effects will begin and make these sites more attractive to follow on investors. As the process continues more remote cities will in turn naturally benefit from the spill-over effect (Hirschman, 1958; Friedmann, 1966; Krugman, 1991).

The same principle applies to those cities that are not geographically close to industrial cores but have a better industrial base: more FDI will flow to these cities. This will strengthen their relative advantage in certain sectors and allow them to develop as leaders in certain sectors, according to the availability of specialized local resources (for example, Mianyang’s color TV production or Shanxi’s coal related industries, etc.). Thus, instead of randomly allocating fiscal support to infrastructure in hinterland regions, giving
preferences to focal cities that have the potential to develop as regional or national industrial cores could be more effective in attracting FDI in the long run.

Wage costs are positively correlated with FDI flows, suggesting that FDI flows to China’s hinterland tend to be product industry oriented rather than processing based as in the coastal belt. This is acceptable, as given their long distance from the coast the promotion of direct export-oriented processing industries is not a viable option for China’s hinterland. This is true not only because of the competition from the coastal regions of China, but because of competition from nearby countries such as Russia, India and Pakistan, which have both proximity to the coast and low labour costs. The local government should endeavour to develop product industries (such as motor vehicles, electrical appliances, business services, and R&D (Dunning, 1993), and focus on serving the domestic market rather than export industries.

In this study, I found that policy incentives measured by a dummy variable (in which 1 was assigned to cities with a national ETDZ and 0 elsewhere) had the highest positive correlation with FDI flows. This indicates that the setting up of national level ETDZs in hinterland regions effectively attracts FDI. The ETDZs are able to mobilize and concentrate limited resources and to immediately nurture an attractive business and economic climate on a much smaller scale. It should be noted that the continuing endeavour to improve the hinterland regions' overall FDI friendly environment is a long term strategy. ETDZs’ positive effect in attracting FDI can only be sustained with the continued improvement of the overall local economic environment.
Finally, I found the ‘curse of natural resources’ might also applicable to China’s hinterland regions. The empirical results in Chapter 6 indicated that hinterland cities with better natural resources reserves attract less FDI flows compared to other cities. Though I do not have a complete data set to further discuss whether fewer investments in education and more corruption exist in those natural resources abundant cities. However, there is no harm in the central government paying attention to problems such as corruption, lower investment in education in the hinterland regions (In 2003, the per capita education in western China is 6.5992 years, while this figure is 7.3663 years in eastern China and 7.2383 years in central China) and the over-extraction of natural resources in the hinterland.

7.4. Limitation and future research

It is neither realistic nor necessary to generalize a new repertoire of broadly-applicable theories based on any single country (Luo, 2007), but emerging economies, such as China and India, share some fundamental commonalities. Therefore, some of the findings from the Chinese context should be able to be generalized to some extent to other emerging economies. However, these findings will not apply to all MNEs, and MNEs operating in different emerging economies should be prepared to adapt these findings in other markets. Only part of Hypothesis 4-6 in Chapter 4 was able to be examined: without further investigation we can not assess whether foreign investors from the USA or Canada belong to the high or low trust type.

We also only examined subsequent FDI into one host country, China. The database used in Chapter 4 therefore does not include a company’s prior experiences in other similar countries. This is important, because a firm that has undertaken considerable investment
into other similar countries before coming to China may not exhibit the same choice of subsequent investment as those without similar international experiences.

Also, the database in Chapter 4 does not allow me to consider previous subsequent investment. Whereas the results of Chapter 4 provide an important contribution by showing the effects of experience and other determinants across China, I have not been able to capture these effects sequentially. Also, a measure that reflects only the years and the quantity of accumulative foreign investments as the measurement of the firm’s experiences in FDI is somewhat simplistic. Thus it would be important for future research to find more appropriate surrogate variables and test the effects of those determinants over time. Future studies should show whether these effects for a single joint venture vary depending on the length of time that a MNE operates in China.

Second, the data from Chapter 4 does not include measures of performance, whether at the firm level or industry level. Though we can identify the incidence of previous investment, we can not tell whether it is ‘successful’ or not. The findings indicate that firms benefit from early investment and operation experience, but it would be more informative if we could also discern whether previous performance is important. We suggest the success of previous investment and operation will affect the subsequent investment decision. Future research should include performance data to enrich the framework of strategic decisions of subsequent FDI.

After concentrating FDI in the south-eastern coastal belt for the past three decades, the GWDS in 2000 and Central China Rising Strategy in 2004 suggest that the hinterland of China will emerge as a new market providing great potential for MNEs’ subsequent...
investment in China. Past studies on FDI location determinants in China tend to include all Chinese regions in a single analysis. However, since more than 80% of FDI flows to China go to the south-eastern coastal belt (rather than being evenly distributed across the regions), these studies mainly reflect the experience of the coastal belt. Factors such as policy incentives, transportation or telecommunication infrastructure, agglomeration economies effect, market size, etc., have all been found to significantly affect FDI’s location choice across China. The question is: to what extent are these findings applicable in explaining FDI’s location preference within the hinterland of China? Our empirical findings demonstrate that some of these factors explain FDI location choice in China’s hinterland while others do not. These findings contribute to the literature on FDI into the less developed regions within a host country, and also have implications for local policy makers on how to effectively attract FDI.

Firstly, we found that the presence of natural resources was not sufficient to attract FDI to certain hinterland regions more than others. This finding is a reminder of the need to further explore the role of natural resources endowment in stimulating local economic growth and attracting FDI in under-developed regions. While our data does not allow us to examine if the negative correlation between FDI and hinterland regions’ natural resources endowments is due to the curse of natural resources for developing countries, this is an important question and warrants future research. For example, can more investment in education, reductions in local corruption, and sustainable extraction of local natural resources make hinterland regions with natural resources endowments more attractive to MNEs?
Secondly, we found that MNEs preferentially choose locations that are capable of supporting high value activities rather than production sites requiring abundant low cost labour. This suggests that governments in hinterland regions should endeavour to improve local labour quality and encourage industries that focus on local markets instead of trying to compete with the coastal belt for low skilled and low cost export oriented processing industries.

Thirdly, the empirical analysis in Chapter 6 focused on the location element of the OLI eclectic paradigm as a factor in FDI location choice in China’s hinterland. Thus, we did not include any variables to measure firm specific factors such as firm size, technology, managerial skills, etc. This data is unavailable, so it is difficult to further explore elements of FDI motivation such as strategic asset seeking, trade & distribution or support services (Dunning, 1993). Answers to these questions are important to MNEs that are interested in expanding to the periphery of larger economies such as the BRICs (Brazil, Russia, India and China). Testing these hypotheses is difficult because the firm-specific factors leading FDI decisions are inherently unobservable. R&D intensity and advertising intensity can be used as proxies for the presence of intangible assets and thus can be used as explanatory variables for further exploration of FDI motives in peripheral regions.

Another limitation, as we had mentioned earlier, is that we did not include any variables to measure the ‘soft’ environment of the host country as it impacts FDI flow (such as local government’s working efficiency, the local legal environment, or the correlation between the level of environmental pollution and FDI location choice). These factors are important especially in the Chinese market context. Finally, with the unlocking of
previously forbidden sectors (e.g., banking and insurance), and the central government’s
decision to give preference to foreign banking firms investing in central and western
China (Report on the opening of China’s banking sector, 2007), MNEs will have more
freedom and choice on how and where to invest in China. Therefore, future studies
should examine these factors and their impact on hinterland attractiveness to MNEs
rather than limiting their focus to the manufacturing sector.
Data Appendix:

Chapter 4:
2003 Chinese Industrial Census (data of 2002 at the firm level), conducted by the State Statistical Bureau of China.

Chapter 5:
2006 China Statistical Yearbook (data of 2005 at the Provincial Level), conducted by the State Statistical Bureau of China. Data accessed on line at:
http://www.stats.gov.cn/english/

Chapter 6:
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