

Locational Determinants and Equity-Based Entry Mode Choice in the Forest Sector: the Case of China

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Tiivistelmä — Referat — Abstract Abstract: The main purpose of this Master's thesis was to examine the impacts of distance factors on the equity-based entry mode choice of forest multinational companies (MNCs) by testing the distances (both in cultural and geographical terms) combined with corporate and local factors. China was chosen as the case host country in this study, and the collected data followed the top global forest MNCs that made investments in China at the subsidiary level. Based on a series of internationalization theories and previous studies, 8 hypotheses were proposed. These hypotheses were suppositions of selected factors having positive or negative impacts on the preference of MNCs for wholly owned subsidiaries (WOS) rather than the joint venture (JV) mode. Logistic regression was utilized as the methodology to test these hypotheses. The dependent variables were defined as WOS vs. JV, and the selected independent variables were cultural and geographical distance, experience of the host country, investment size, resource commitment and geographic concentration. The development and status quo of forest foreign investment in China were given by a descriptive statistical analysis. The results demonstrated that the most popular home countries of the forest corporations in this case were the US, Japan, Hong Kong and Singapore, and the most common investment locations in China were the east coastal regions. Furthermore, foreign investment in the forest industry showed differences between historical stages and economic regions. The statistical results indicate that a greater geographical distance, experience of the host country, and geographical concentration have positive impacts on the preference for WOS, while the CDI has a negative impact on it. However, investment size and resource commitment showed no impact on the equity-based entry mode choice in this study. The conclusions at the end of this thesis describe the future trend in and potential for forest foreign investment in China.			
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1. Introduction

During the past two decades, the internationalization of the forest industry has gone through a rapid expansion with global relocation and consolidation (Toppinen et al., 2010). In the process of relocation, the production capacity has been shifted to developing and transition economies mainly through foreign direct investment (FDI) and merger & acquisition projects (Zhang et al., 2013). The reason for this change is based on the fact that forest corporations have derived benefit from the lower production costs and favorable investment policies in developing countries. Also, sufficient raw materials and growing consumer demand continuously promote the progress of this phenomenon. Apparently, China, as one of the highly anticipated developing countries, is receiving a great deal of attention from investors in the forest industry.

In late 1978, the Chinese government adopted the "Open Door" policy and economic reform project, which changed the highly centralized planned economy into a socialist market economic system. All trading nations have been given access to the Chinese market, which has enabled China to achieve dramatic economic growth and emerge as one of the world's leading economies over the past three decades. The abundant resources, large domestic population and preferential policy have made China an ideal destination for the internationalization of multinational companies (MNCs). China continues to attract the world's top MNCs seeking to establish their own presence, expand footprints, gain market share and build competitive advantages in the world's second largest economy (KPMG Study, 2012).

In recent years, foreign investment in the forest industry in China has followed an overall increasing trend. Moreover, the FDI was the most important mode of investment during the past 10 years. Figure 1.1 illustrates the foreign investment flows of the forest industry in China during the past 15 years. The investments have undergone fluctuating development, but have rapidly grown. For instance, the amount of FDI in 2012 totaled 400 million USD, which was more than triple the figure a decade previously. Although the investment in 2012 showed a slight decrease, the considerable growth potential in the future cannot be ignored.

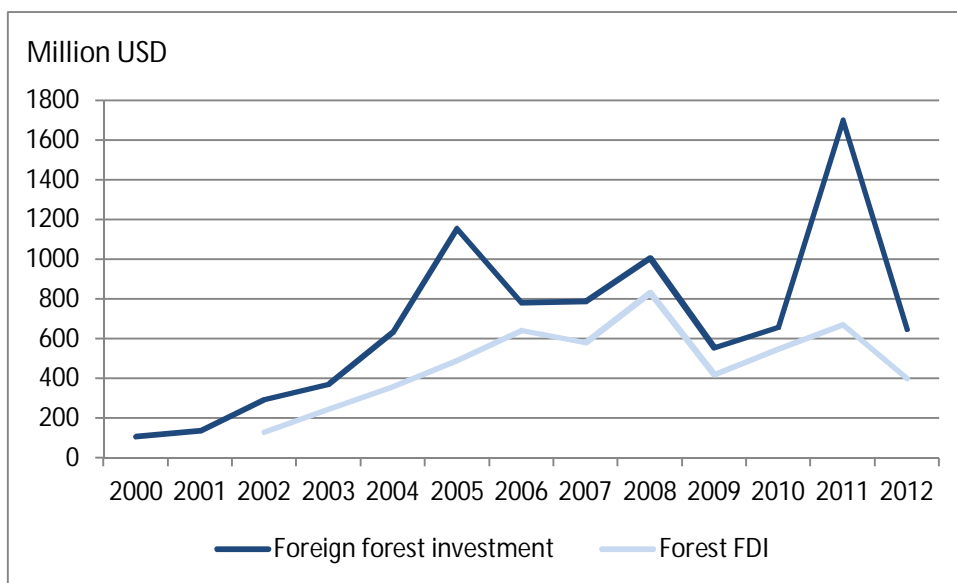


Figure 1.1. The foreign investment of forest sector in China.
Source: State Forestry administration, P. R. China. (1998-2012)

This thesis analyzes the mode of investment by forest MNCs in China. A relatively general description of foreign investment in China and exploratory research evaluating determinant factors for equity-based entry mode selection in the forest industry are presented in the ensuing paragraphs. The following section discusses the ideas and aims of this thesis and presents the research questions. The research background of this paper, including the history and development of foreign investment, the three large economic regions and the forest investment structure in China, are introduced in section 3. After that, the 4th section of this thesis provides a theoretical basis, reviews previous studies, and proposes the hypotheses and a

framework for this thesis. The data and relevant statistical methods, the logistic distribution of the model, and the variables are explained in section 5. Then, the statistical outcomes of the data are presented in section 5 and discussed in section 6. The final section concludes on the findings of this thesis, presents the limitations, and discusses the trend in and prospects for forest MNC investment in China.

2. Motivation and Research Questions

2.1 Motivation

Entry mode studies rank as the third most popular topic in international research, just behind foreign direct investment and internationalization (Werner, 2002). Canabal and White (2008) reviewed the entry mode studies from 1980 to 2006 and indicated that the most prevalent topic (dependent variable) is the equity-based entry mode choice (especially WOS vs. JV), while the cultural distance is a common independent variable. However, few studies have tested entry mode choice with factors which defined the distance both at cultural distance and geographical distance levels. Moreover, according to a literature review of past studies on forest investment in China, most of those studies were noted to have focused on forest policy issues (Wang et al., 2004; Chen and Innes, 2013; Li et al., 2013; Xu et al., 2004), international trade (Li and Zhang 2008 – see list of references) and product markets (Qu et al., 2010; Zhang and Li, 2009; Söderbom and Weng, 2012; Qu et al., 2012; Zhang and Gan, 2007), but no study had concerned the investment entry mode of forest MNCs.

The aim of this study was to fill this research gap by examining the distance factor (both as cultural distance and geographical distance) in line with gravity model (Bergstrand, 1989) to identify its impacts on the equity-based entry mode choice of forest MNCs that have expanded their business in China. Meanwhile, since other corporate and local level factors may affect the entry mode choice of forest MNCs, they are also discussed in this paper.

2.2 Research questions

The specific research questions addressed in this thesis are as follows:

- 1) Does distance (both cultural and geographical) have a significant impact on the entry mode choice of forest MNCs in China?
- 2) Do other factors (experience of the corporation, investment size, and industrial environment) affect the entry mode choice?
- 3) How has foreign forest investment in China differed among investment stages and economic regions?

3. Background

3.1 Chinese Market and Foreign Investment Development

Compared with other developing countries, a conspicuous feature of China is the rapid growth of foreign direct investment (FDI) flowing, as Figure 3.1 shows. During the beginning years, the investment scale was miniature as the average annual investments were less than 40 billion USD. But as the reform and opening-up progresses, the scale of FDI sprang up and grew rapidly. In 1993, China has already proved to be the biggest developing host country in the world by the annual FDI flow to 300 billion USD. Corresponding to the modification of shifting the development goal from a GDP growth emphasized mode to a more stable and balanced economy, China made a radical commitment to serve the liberalization by the accession of World Trade Organization (WTO), in 2001. The effect was remarkable: further improvement resulted in the foreign investment environment, which caused thousands of MNCs invested in China. By 2003, China ranked the 4th of the world international trade chart, which showed a remarkable improvement compared to its 32nd rank 20 years ago.

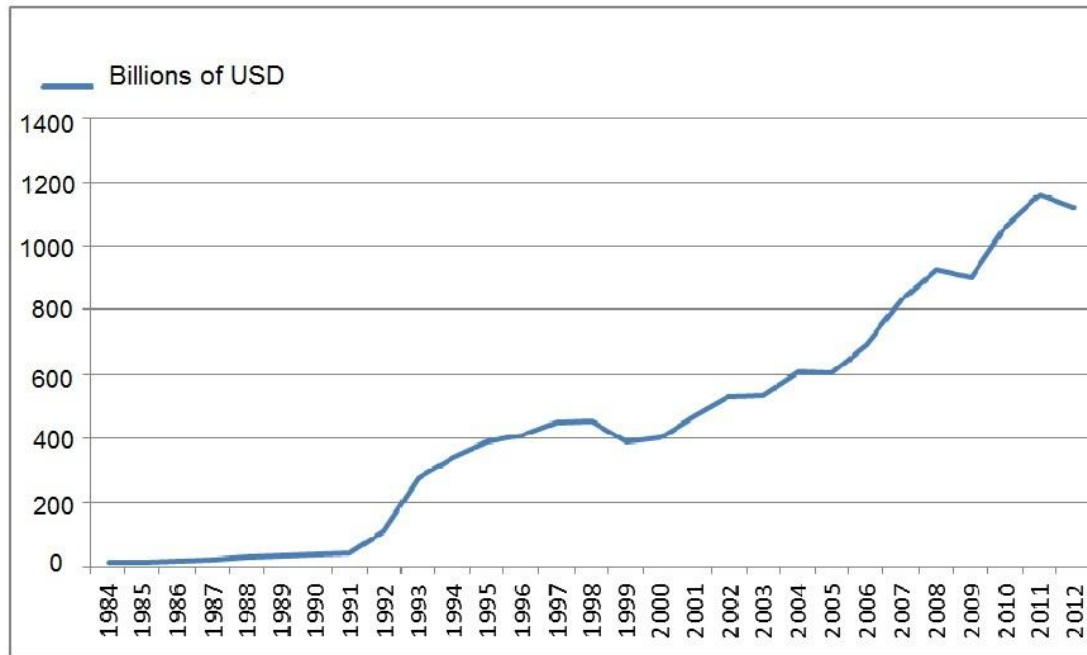


Figure 3.1. The historical growth of FDI flows.

Source: Ministry of Commerce of the People's Republic of China 1984-2012.

The unprecedented global financial crisis in 2008 has inflicted a severe impact on both China and the MNCs all over the world, which caused the MNCs in China encountered a tremendous challenge. However, the financial crisis has not adversely affected the investment in China for a long time. MNCs adjusted their strategy includes retracing capital, restructuring of the global layout, reorganizing and seeking new markets, and still regard China as an optimal choice for overseas investment. Till 2011, more than 490 enterprises in the Fortune 500 companies have invested in China (Chinese Ministry of Commerce, 2012). Also, the latest UNCTAD report (2013) on World Investment Perceptions listed China in the first place among the top 15 investment destinations.

3.2 Three steps of foreign investment in China

According to the distinctive features in different historical periods, the development of FDI in China can be divided into three stages: Market Entry, Market Skimming and Market Penetration. Figure 3.2 illustrates the detailed differences between individual stages clearly.



Figure 3.2. Multinationals in China – the long march to profitability.

Source: "Winning in China's Mass Markets – New Business Models, New Operations for Profitable Growth", (a Survey in cooperation with Economist Intelligence Unit), *IBM Global Business Services, 2007*

In the market entry stage, from 1979 to 1992, only a small number of pioneering companies have invested in China for a long-term profit. Yet there still existed strict policies that heavily regulated the industries, the operation could only be carried out through intermediaries and joint ventures. It was hard to gain profit and many companies failed at that time (IBM Global Business Services, 2007). The investments were mainly from Hong Kong, Macao and Taiwan in this stage.

The market skimming stage was from 1992 to 2001. In the 1990s, peace and development became the theme of the time. During that period, the reform and opening up in China have been advanced with by deregulating to foreign investments.

At the same time, some MNCs recognized the huge potential of market demand. After that, many of them began to invest in China with increased assets, expanded projects in various locations. As many of the world's top 500 companies started to invest in China, the annual FDI flow in 1992 raised over 100 billion USD, accounted increased to two times more than the amount in 1991. However, after the Asian financial crisis, the foreign investment in China showed a slight tendency to decline in 1999. But just in one year, a rapid rebound injected vigor and vitality to the market which inspired the FDI to grow stable and continuously till and in next stage.

The third stage is from 2001 to now. In the 21st century, MNCs adjusted their strategies respond to the challenges of globalization. Along with the accession to WTO, China has also entered a new phase of opening up for international cooperation, and prepared a more favorable investment environment, which effectively promoted the investments of MNCs in the Chinese market. The MNCs increased investment scales and began to involve in service industries. Also, they revised the investment modes, actively launched mergers and acquisitions, accelerated research and development (R&D), and implemented a comprehensive localization strategy in China. A huge number of MNCs entered in China at this stage, and most of them showed their optimistic about the future, which powerfully guaranteed the trend of growing inbound investment in the period ahead.

3.3 Three Economic Regions in China

Due to the vast territory and various topography of China, the regional economy played an important role in promoting national economic development projects (Zheng and Chen, 2007). After the 'The Central Committee of the Communist Part of China's Proposal' in 1985, the Chinese government formally divided 'three economic

regions' for the seventh Five-Year Plan (1986-1990) comprises the eastern (coastal), central and western regions (Beijing Review, 1986a).



Figure 3.3. Three economic regions of China
Source: "Beijing Review", 1986a

As the figure 1.3 shows, the eastern regions include 11 provinces and municipalities as follows: Beijing, Fujian, Guangdong, Hainan, Hebei, Jiangsu, Liaoning, Shandong, Shanghai, Tianjin, and Zhejiang. The central regions consist of the following 8 provinces: Anhui, Heilongjiang, Henan, Hubei, Hunan, Jiangxi, Jilin and Shanxi. The western regions include 12 provinces and municipalities: Chongqing, Gansu, Guangxi, Guizhou, Inner Mongolia, Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Xinjiang, and Yunnan. The areas of these three economic regions account 13.6%, 29% and 57.4% for the land area of China. While, the populations accounted 42%, 35.6% and 22.4% respectively by the year of 2010.

Based on the factors of unique geography, ecology, population, environment, society, culture, history, etc., distinctive duties and developing strategies have been assigned to those three economic regions: the international trade and export-oriented industrialization to the eastern region; the energy supplement and agricultural development to the central region; and the mineral exploitation and livestock cultivation to the western region (Beijing Review, 1986b).

In a decade, the rapid economic growth led the eastern regions be known as the 'golden coastline' because of the designation of 'Open Zones'. The 'Open Zones' include 14 open coastal cities, the special economic zones of Xiamen, Zhuhai, Shenzhen, Hainan and Shantou and free trade zones in coastal cities (Beijing Review, 1993) shown in Figure 3.3. A series of financial supports, national infrastructure development funds and legal inducements for attracting foreign investments created an advantageous environment for the eastern region that promote the foreign trade and local economic development (Fan, 1997).

Over time, combining with historical reasons, gaps in infrastructure development, population density, education level and consumption level were exposed from eastern to western economic regions. Thus, the Chinese government launched a program named "Western Development Strategy" in 1998 to fill the gaps and improve the domestic demands by promoting economic development in the western part of the country (Zheng and Chen, 2007). The main components of this strategy include the construction of infrastructure (telecommunications, roads and railways, power system, renewable and clean energy), enticement of foreign investment, protection of eco-system (such as reforestation), education development, and preventing the outflow of talent. Furthermore, the central government of China also passed the proposal of "Rise of Central China" program in 2009 to balance regional economic development in the central region of China. The program includes goals such as developing and improving modern agriculture, value-added raw material industry,

high-tech industry, infrastructure, recycling economy, resource conservation and comprehensive utilization level (Xinhua News, 2009).

In recent years, a dramatic prosperity in economic developing, eco-system recovery, infrastructure and educational development appeared in those provinces, especially in the western region. Many domestic firms started to invest more in the central and western part of China because of the favorable policies and the potential consumer market. Therefore, the developing disparity between eastern and other regions will be narrowed gradually under the government's control.

3.4 Forest Sector Investment in China

Investment in the forest sector in China consists of three parts: The first part is government investment in forest sector. The government forest investment is the most important forest investment pattern in China which includes fiscal appropriation, forest loan and discount, national debt and forest fund, and etc. The government forest investment is mainly utilized for national forest projects such as basic forest development project, agroforestry project, new forest technology promoting, preventing desertification management, rural and mountain area infrastructure development, city greening and other environmental forest projects. The second part is domestic private investment. The domestic private forest investment is composed primarily of commercial bank loan and capital market financing. The domestic private forest investment is mainly from domestic Chinese forest corporations for their commercial purposes. The third part is foreign forest investment. The foreign forest investment is made up of loans from international financial organizations, foreign direct investment and international aid (Sun, 2007).

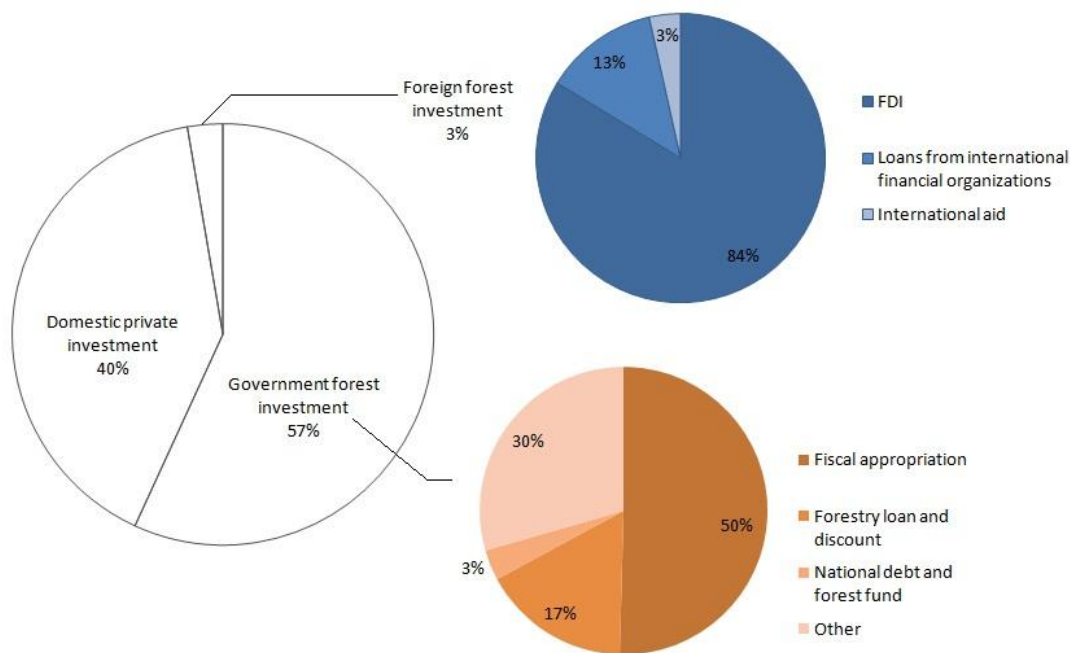


Figure 3.4. The forest investment structure in China, 2010.

Source: State Forestry administration, P. R. China. (1998-2012)

The government forest investment and domestic private investment in China account for the majority part. For example, the figure 3.4 illustrates the share of components of forest investment in 2010. By the year of 2010, the annual forest investment in China accounted for 24.36 billion USD. The government forest investment represented the largest proportion (57%). The amount of government forest investment in 2010 reached 13.85 billion USD, which included the fiscal appropriation for 7.5 billion USD, forestry loan and discount for 2.48 billion USD, national debt and forest fund for 0.51 billion USD and other investment for 4.38 billion USD. Secondly, the domestic private investment occupied for 40%, and the investment amounting to 9.85 billion USD. The foreign forest investment only accounted for 3% (0.66 billion USD), which includes 84 million USD of loans from international financial organizations, 23 million USD of international aid, and the forest FDI was 0.55 billion USD. Although the investment value was relevantly small, the forest FDI was still the most important part of foreign forest investment with the percentage of 84%. Besides, as mentioned before, FDI has covered the majority of this value during the past 10 years.

4. Theoretical framework and literature review

Internationalization is a result of the development of globalization by the advancements in technology and science which caused the international business environment transformed enormously. Many researchers have focused their work on one of the focal topics—the internationalization strategy—that examines internationalization as a process, brings out a lot of literatures analyze firm's internationalization paths and determinants (Solberg and Durrieu, 2006).

When firms decide to enter a foreign market, one of the toughest parts will be choosing an appropriate entry mode to serve the market. It is crucial because it can have a continuously effect on the following performance of firms (Anderson and Hubert, 1986; Klein and et al., 1990). In the process of MNCs expanding abroad their home market under the force of globalization, entry mode as a primary strategy is in establishing effective boundaries for firms (Brouthers and et al., 2007), because a right decision of entry mode strategy builds sustainable environments for MNCs' operations to exploit their competitive advantages (Root, 1994). Distance between home and host countries – geographical or cultural – is a factor to be taken into consideration, in line with gravity model of the trade between regions (Bergstrand, 1989). The following paragraphs displayed this theoretical system and a review of past studies of entry mode choice.

4.1 Equity and Non-equity Entry Mode

The process of internationalization can be specified in different categories based on the risk of entry modes they present. It's mainly differed in two major types:

equity-based entry mode and non-equity entry mode (Figure 4.1). The non-equity based category includes export and contractual agreements (licensing, franchising, and turnkey projects), while the equity-based entry modes are composed by joint venture (JV) and wholly owned subsidiaries (WOS) (Mike, 2008). WOS includes two types of investment strategy: Greenfield Investment (establish new wholly owned subsidiaries) and acquisitions (purchase and amalgamate companies and similar entities). The joint venture mode is also divided into different degrees based on the shares of investment.

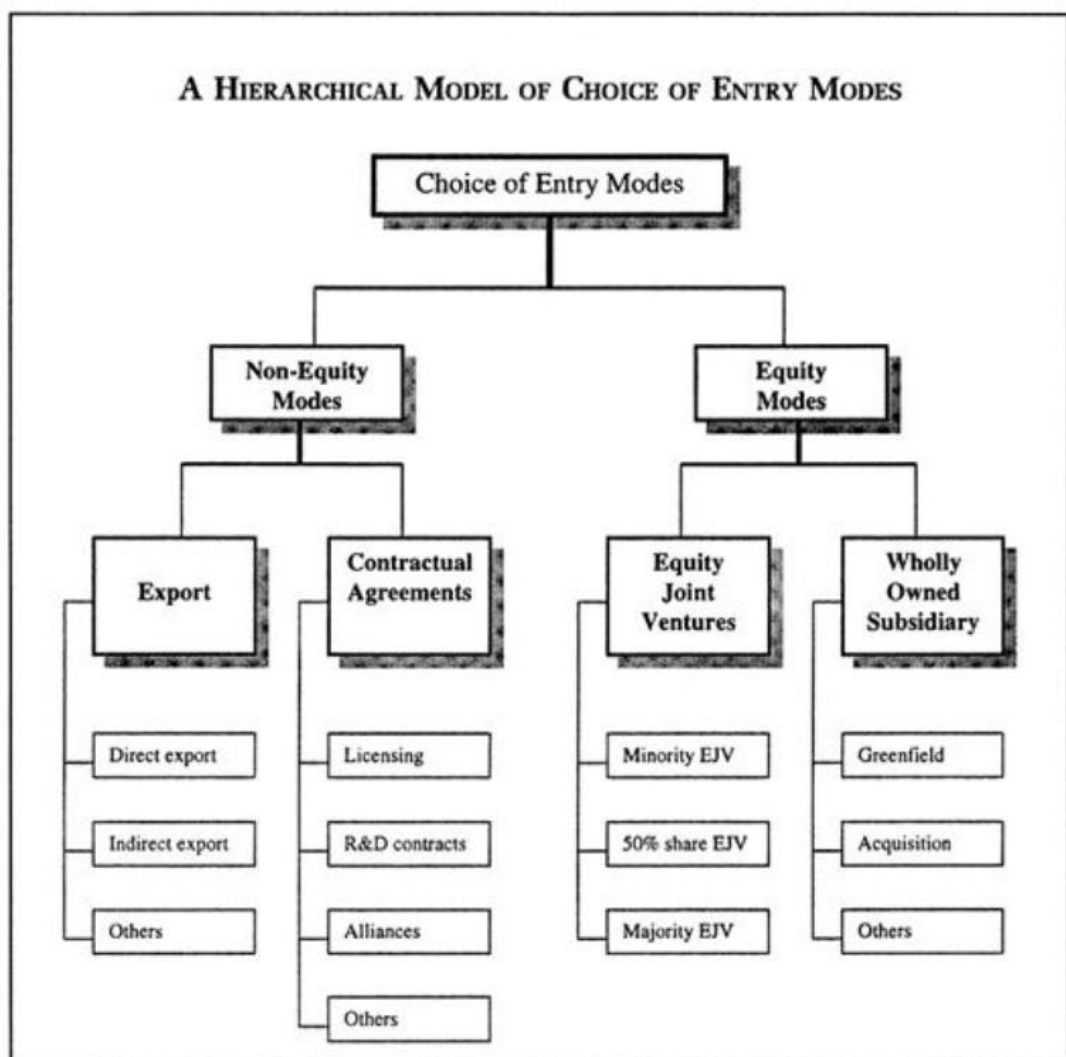


Figure 4.1. A hierarchical model of Choice of Entry Mode.
Resource from: Pan and Tse, (2000)

The current studies are often assorted into two groups: the first series analyzed the binary or multinomial choice between broad international market entry modes such as trade, licensing, and FDI (e.g. Agarwal and Ramaswami, 1992, Kim and Hwang, 1992, and Tse et al., 1997); the second series was focused on the binary choice between a WOS and a JV (e.g., Hennart and Larimo, 1998, and Markino and Neupert, 2000), or more specifically researched the choice between Greenfield investment and acquisition (e.g. Chang and Rosenzweig, 2001 and Girma, 2002, Wei and Liu, 2005). Besides, the WOS and JV tied for the most major and complicated investment forms when comparing with contract-based entry modes to the various entry modes (Zhao et al., 2004).

The equity-based entry modes significantly differ from non-equity modes in a requirement of resource commitment, such as ongoing monitor and regulatory control, constant management and a frequent interplay with local partners (Contractor, 1984; Anderson and Gatignon, 1986; Hennart, 1988; Hill and et al., 1990; Vanhonacker, 1997). Therefore, if MNCs consider applying equity-based entry modes, they need to evaluate the risks and returns of the investments. For instance, they have to understand the operation, investigate local market environment, local policies and regulations, raw materials and purchasing channels, infrastructures, labor resources, eco-environment, and so on (Pan and Tse, 2000). On the contrary, in non-equity modes, all those complex affairs can be bypassed by fixing and specifying the contract in advance.

4.2 Theoretical based factors and hypotheses

Generally, the transaction cost theory related factors, for example the international experience of the MNCs, and cultural distance between home country and host country, exhibit certain impacts on the equity-based entry mode choice (Duanmu,

2011). Furthermore, Canabal and White, (2008) reviewed the empirical studies in international entry mode research between 1980 and 2006, and found that the top 10 independent variables were as follows: MNC/international experience, cultural distance, risk, firm size, host country variables, R&D intensity, host country experience, industry competition and concentration, size of operation (scale), and advertising intensity.

On the basis of theoretical foundations, and according to the results of the previous studies, in this paper, factors were selected as distance (both in cultural and geographical terms), experience of host country, resource risk and local geographic concentration to discuss the equity-based entry mode choice of forest MNCs in China.

4.2.1 Cultural Distance

Geert Hofstede (1980) introduced a theory based on four primary dimensions to explain the cultural distances between countries. The four primary dimensions are Power Distance, Individualism, Uncertainty Avoidance and Masculinity. In specific, Power Distance Index (PDI) means in a society, organization and institution (like the family), the acceptability and expectation for the relatively vulnerable members of the unfair distribution power. Individualism vs. Collectivism (IDV) reflects the relationship between individual and society. Individualism means that the social structure is relatively loose, everyone only considering interests of their own and their immediate families. While the collectivism is a denser and strict social structure that people treat others as parts of the group and take care of them, and also they look forward the care from the society, organization and institution. In this case, people have relatively higher loyalty to the collective. Masculinity vs. Femininity (MAS) represents a distribution of emotional roles between the genders. Hofstede believes that a country shows more positive, competitiveness, assertiveness, assertiveness, heroism and challenge preference, emphasis on the pursuit of power and ambition,

and adventurousness in their culture is masculinity. On the contrary, femininity is biased in favor of sense and sensibility, pursuit delicate, small, soft things. Finally, Uncertainty Avoidance Index (UAI) expresses that people from different cultures have different attitudes toward the unpredictable future. Hofstede uses the feeling of anxiety to describe the uncertainty avoidance. In a high uncertainty avoiding society, people tend to feel anxious of uncertainties and changes. In this kind of society thinks that laws which can strictly regulate people's life and maintain the social stability is necessary. Whereas, in those countries that have lighter uncertainty avoidance, people have higher acceptance of uncertainties and changes, and keep an open mind to differences and novelties. According to data from Hofstede (1991), indices of country level cultural dimensions are attached in Appendix I. Therefore, the cultural distance is a paradigm to depict the impacts of a society's culture on the value and behavior of its members, which shows effects on the entry mode choice in MNCs' internationalization (Agarwal, 1994; Barkema & Vermeulen, 1997; Brouthers, 2002; and Drogendjik & Slangen, 2006).

From the behavioral theory point of view, Nordic school promulgated the Uppsala model (internationalization process model) demonstrates that the operation of internationalization follows a step by step pattern (Johanson and Vahlne 1990, 1977; Johanson and Weidersheim-Paul, 1975). In this process, firms first develop in domestic market, and then expand to culturally and/or geographically close countries, and then move gradually to distant countries. The Uppsala model firstly suggested that the cultural distance between home country and host country affects the choice of entry mode.

In the international business researches, cultural distance has been widely used to explain MNCs' strategies and organizational characteristics, because generally the increasing of cultural distance between home country and host country caused the decreasing of operational effectiveness and efficiency (Tihanyi et al., 2005; Hennart and Larimo 1998). According to Chen and Hu (2002), "culture is shared values and

beliefs. Cultural distance is the difference in these values and beliefs shared between home and host countries. Large cultural distances lead to high transaction costs for multinationals investing overseas”. Therefore, the choice of a proper entry mode to foreign market is a crucial strategic decision for MNCs, as it provides the possibility to break down the barrier which is caused by large cultural distance. The transaction cost theory demonstrates that MNCs should implement high-level controlling entry mode in large cultural distance markets in order to minimize transaction cost (Hennart and Reddy, 1997). Blomstermo et al. (2006) explored the impacts of cultural distance on the choice in low-level (JV) and high-level (WOS) controlling entry mode, and confirmed that larger cultural distance increases the likelihood to choose a more controlling involved entry mode in the service industry. Similarly, by exploring the Japanese wholesale and retail industries, Anand and Delios (1997) concluded that JV is most often used in culturally proximate countries over Greenfield investment (WOS). Nevertheless, on the contrary, although MNCs can mitigate the cost disadvantages through high-level controlling entry mode in markets with larger cultural distance, the high risks (e.g. political, financial) of equity-based investment sometimes hamper MNC’s ambitions, and prompt them to choose a low-level controlling entry mode to minimize risks. Likewise, Hennart and Larimo (1998) found that the greater cultural differences between the home and host countries, the bigger preference of MNCs to share the equity of its affiliation with a local partner to reduce the risks. Because of the conflicting results from previous literatures involved the impact of cultural distance on choice of equity-based entry modes, hypothesis 1 should be suspected as follows:

Hypothesis 1a: Cultural distance is positively related to the likelihood that the MNCs choose WOS rather than JV entry mode.

Hypothesis 1b: Cultural distance is negatively related to the likelihood that the MNCs choose WOS rather than JV entry mode.

4.2.2 Geographical Distance

Geographical distance is generally related to psychic distance, and it always be considered that psychically closed countries are often geographically proximate (Erramilli et al., 1999; Johanson and Weidersheim-Paul, 1975). However, as the exceptions do occur, it is worth to separate the impacts of these two factors (Dow, 2000). Based on the transaction cost theory, a larger geographic distance will lead to higher transportation (logistics) and communication (information asymmetry) costs. Thus, MNCs prefer the geographical closed countries to minimize the management costs (Dow, 2000). Furthermore, Chen (2006) suggests that longer geographical distance not only increases the transportation cost, but also causes time delay that impairs the competitive advantages compare with local firms. Limited empirical research has explored the impact of geographic distance as an isolate factor on the choice of foreign entry mode. In contrast, it has served either as a control variable or as a proxy of cultural distance in most of cases (e.g. Kogut and Singh, 1989; G-rosse and G-oldberg, 1991). Larimo (2003) argues that when geographic distance is larger, no evidence confirmed that MNCs choose JV than WOS. Also, Nunnenkamp and Andrés, (2013) suggest that larger geographical distance strongly encourage WOS more than JV. However, Ragozzino (2009) investigated the effects of geographical distance on foreign acquisition of U.S. firms, and concluded that WOS is preferred in geographically proximate market, and JV in remote locations. Thus, I divide the hypothesis 2 as:

Hypothesis 2a: Geographical distance is positively related to the likelihood that the MNCs choose WOS rather than JV entry mode.

Hypothesis 2b: Geographical distance is negatively related to the likelihood that the MNCs choose WOS rather than JV entry mode.

4.2.3 Investment Size

Investment size is another significant factor that should be considered when MNCs make decisions of entry mode. It is usually measured by assets or start-up capitals. So, to some extent, it relates to resource commitment and financial risk of the investment. According to the transaction cost theory, the financial resource commitment shows a considerable effect on the choice of entry mode. The subsidiaries which are operated in larger scales, with more start-up capitals, switching and exit costs, always involve higher financial and operational risks (Agarwal and Ramaswami, 1992). Thus the large scaled investments always cause more prudence with transactions of the investors because it involves the investment commitment (Williamson, 1985). A lower-level controlling entry mode (JV) is preferred if the transaction costs are low (Hill et al., 1990; Madhok, 1997). Contrarily, MNCs are likely to choose a higher-level controlling entry mode (WOS) when the transaction costs are exorbitant. For example, WOS is often be used in conditions like the high demand uncertainty, high market attractiveness, high cultural distance between home country and host country, high specificity assets that an MNC contributes to the foreign venture, or low need of local contributions such as indigenous capital, technology, and skilled manpower (Luo, 2001). However, Taylor (2009) suggested that, although WOS stands for the highest level of financial resource commitment, yet the JV can provide financial assistance when a parent firm is involved in a large project and huge capital investment is essential. Therefore, WOS is an optional choice of small amount investment because the parent company can operate with fully control over the subsidiary and retain its profits (Luo, 2001). Thus, the hypothesis 3 can be supposed as:

Hypothesis 3: Investment size is negatively related to the likelihood that the MNCs choose WOS rather than JV entry mode.

4.2.4 Host-country Experience

Entry mode choice can also be affected by the firms' experience in host countries. As the Uppsala model suggested, firms first gain experience from the domestic market before they move to culturally and/or geographically close foreign markets. And then they operate in more distant foreign markets, with the cognition of uncertainty and the improvement of the firm's capabilities, knowledge of abroad operations, higher correcting rate in assessing of risks and expecting of economic returns for the investments (Mutinellia and Piscitello, 1998). Johanson and Vahlne (1977) explained this phenomenon as a step-by-step increasing of a firm's involvement in a foreign market as so called 'incremental internationalization'. Obviously, here the word 'experience' acts as a significant role in the scale-up of MNCs. Tse et al., (1997) asserted that longer experience in host countries promotes the adoption of more equity-based entry modes than none-equity based modes. Furthermore, in equity based entry modes, previous studies suggested that those experienced firms were no longer requiring the contributions from a potential partner, so they prefer to choose WOS as their entry mode (Lee and et al, 2009).

On the other hand, many previous studies confirmed that JV is preferred by inexperienced investors. The transaction cost theory proposes that firms have to build governance structure that can reduce expenses and inefficiencies related to entering and operating in a foreign market. The lack of experience in host country incurs high organizational and administrative costs, because the considerable challenges of management are always caused by misunderstanding in different social norms, values, languages and beliefs in host countries. However, those mentioned barriers can be avoided by the accumulation of experience in host countries. Therefore, in situations of lack experience in host country, a JV mode with local partners who are familiar with local circumstances and management patterns, permits MNCs bridging the cultural gaps to avoid conflicts, and minimize the operational costs (Kuo and et al., 2012). For example, Hennart (1991) examined a sample of 158 Japanese

subsidiaries in US, and found that those MNCs prefer a JV over WOS when they were entering new markets with insufficient local knowledge. Moreover, Kuo and et al. (2012) reviewed past relative studies, and suggested that JV shows evidences to compensate for the lack of experience in reducing administrative costs. The process of cooperating with local partners provides opportunities to accumulate specific experiences in the foreign market. After that, when the firms have already acquired enough experience of the host country in managing the foreign operations, they will build WOS subsidiaries to reduce costs and drive profits (Johanson and Vahlne, 1977). So MNCs may prefer to choose WOS over JV to minimize unnecessary costs and improve profits when they have sufficient experience in host countries. So, the hypothesis 4 should be as follows:

Hypothesis 4: The host-country experience is positively related to the likelihood that the MNCs choose WOS rather than JV entry mode.

4.2.5 Resource Availability

According to the eclectic paradigm theory, John H. Dunning (1980) proposes that factors which affect the internationalization process of MNCs can be divided in three categories: 1, Ownership advantages, which is consisted by trademark, production technique, entrepreneurial skills, returns to scale; 2, Location advantages, such as extensive raw materials, low wages, special taxes or tariffs; 3, Internalization advantages, by producing through a partnership arrangement such as licensing or a JV. The issue of raw material here not only is concerned with the location advantages, but also related to the risks of entering a foreign market. Haner (1980) claimed that the operational risks include the faintness of firms to implement contracts, the barrier to avoid unnecessary bureaucracies, the threat to control the quality of administration, and the availability to find skilled labor and raw materials. Therefore, the raw material significantly involves the commitment of investment especially in resource-based industries (Brouthers et al., 2002).

Apparently, forest industry is highly threatened by resource risks. While, WOS as a highly risky investment, it requires the highest resource commitments, but most of the WOS subsidiaries have the disadvantages which stems from a lack of local knowledge such as the raw material origins (Ogasavara and Hoshino, 2007). Therefore, WOS may not seem as an intelligent choice in this respect. Furthermore, when a market holds a resource risk, the manufacturers are more inclined to rely on local partners, choose entry modes such as licensing, franchising, or JV which already possessed reliable resources of material (Hennart, 1991; Anderson and Gatignon, 1986). Moreover, Hennart and Larimo (1998) suggested that the resource-based industries are often politically sensitive. But MNCs can acquire special assistance from local partners with securing permits through JV. Above all, the hypothesis 5 is suspected as:

Hypothesis 5: The resource availability is negatively related to the likelihood that the forest MNCs choose WOS rather than JV entry mode.

4.2.6 Local geographic concentration of industry

The conception of “industrial cluster” was introduced and popularized by Michael Porter in his book *The Competitive Advantage of Nations* (1990). Porter claims that cluster is a geographic concentration of interconnected businesses, suppliers, and associated institutions in an industry and has potential to affect the local industrial competition. With the groups of competing, collaborating and interdependent businesses of a value chain, industrial clusters cut down the cost of operation and raw materials. This is because the value chain is managed in more effective upstream (raw material suppliers, production inputs) and downstream (logistics, value-adding, packaging and marketing) economic activities. Also this operation pattern improves productivity, increases opportunities of innovation, pursues joint solutions to common problems and builds common labor pool, technology and infrastructure

(Merly, 2012). Agglomeration economies are constructed by geographic concentrations of economic activities that involving local knowledge, interconnected firms such as suppliers, customers, and competitors, educational institutions, specialized public and private service suppliers, labor market and employers' associations, and attract MNCs invest mainly in equity-based entry mode (Mark, 2002).

Many previous studies (Porter, 1990, 1998; Krugman, 1991; Saxenian, 1994; Frost, 2001) asserted that MNCs benefit particularly within the regional clusters of higher geographic concentration, especially in technology-leading, highly-skilled areas and knowledge institutions (typically universities and research facilities). This is because of the essential local knowledge and the direct and indirect networks, specialization of labor market and institutions. Likewise, Paul (1996) and Shan and Song (1997) confirmed in their studies that high-tech subsidiaries benefit from the technology advantages of local clusters a lot.

However, based on the phenomenon that in developing countries the industrial clusters are mainly constituted by large national firms, local suppliers, small and medium enterprises and subsidiaries of MNCs (Merly, 2012), the high geographic concentration may shows less advantage than competition to new entered or entering MNCs' subsidiaries. Especially to a traditional manufacturing industry which is heavily rely on the traditional technologies that need relative lower innovational requirement, skill and labor efficiency, and characterized by labor-intensive and capital-intensive terms. In the case of China, the quality control and cost control in operations constitute competitive advantages in such manufacturing industries (Rui & Yip, 2008). Such competitive advantages are mainly obtained from tightening the operation control process and integrating the upstream supply chain for low-cost production input (Cui and Jiang, 2008), which is closely associated with the local geographic concentration. In other words, the geographic concentration may affect

the choice of equity-based entry mode in traditional manufacturing industries by affecting the competitive advantages also.

Although the transaction cost theory suggested that MNCs prefer a collaborative management to cut down risks in high competitive environments in host countries, many formal studies showed different outcomes. Bell (1996) claims that MNCs focus on their firm's specific competitiveness in host countries prefer to have solo operation mode such as WOS in high competitive industrial environments. In an insensitively competitive market, MNCs prefer to set up WOS subsidiaries to improve profit and ensure the resource commitments (Kim & Hwang, 1992). Additionally, Cui and Jiang (2008) examined firms by the case of China and confirmed that firms are likely to choose a WOS entry mode if they enter a competition intensive industry in host country. Accordingly, to overcome the competition from local geographic concentration, MNCs in forest industry may choose a higher controlling entry mode when entering China, so the hypothesis 6 should be:

Hypothesis 6: Local geographic concentration is positively related to the likelihood that the MNCs choose WOS rather than JV entry mode.

Above all, 8 hypotheses are proposed based on the selected 6 factors which relate to the corporation's elements and local industrial environment that may affect the equity-based entry mode choice of case forest MNCs. Therefore, the theoretical framework should be illustrated as Figure 4.1 illustrates:

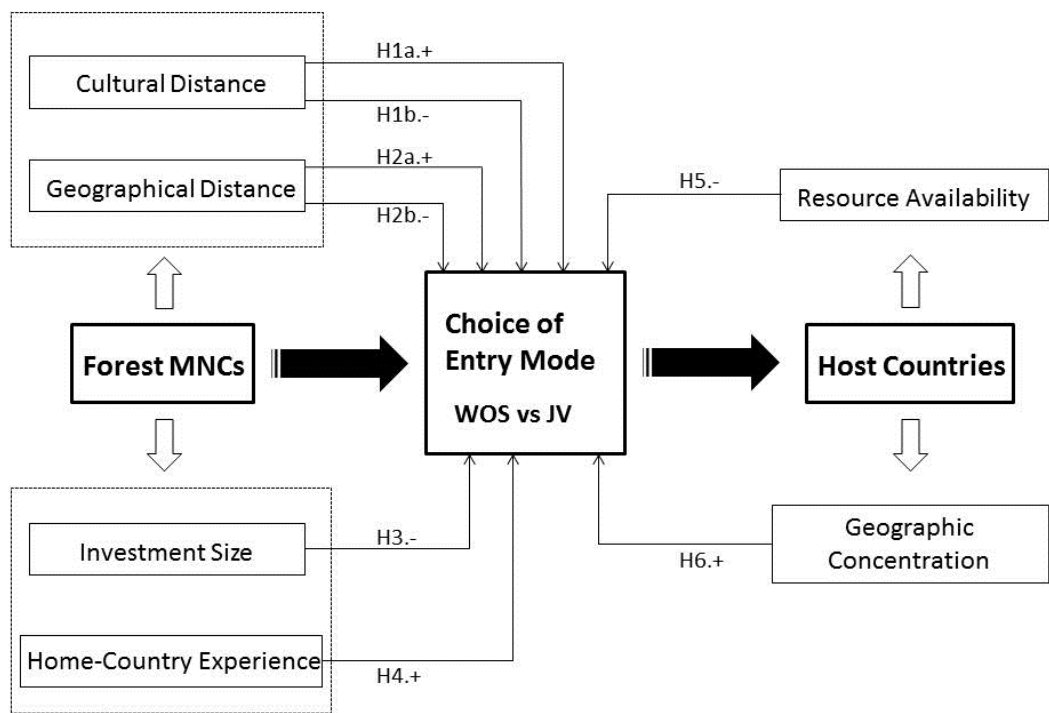


Figure 4.1. Conceptual Framework and Hypotheses of the Choice of Equity-based Entry Mode.

5. Data and Methodology

5.1 Data

The empirical context for this thesis is provided by the entry mode choice of foreign investment of the forestry industry in China. The research targeted forest MNCs listed in the Top 100 Global Forest, Paper & Packaging Industry Companies from PwC, 2012. As China was chosen as the investment host country in this study, subsidiary-level investment projects (i.e. WOSs or JVs) that had been established by the Top 100 MNCs in the forest industry constituted the sample. According to a statement from the Chinese Statistics Ministry, the investments from Hong Kong, Macao, and Taiwan are regarded as foreign investment. Thus, the corporations from these regions are also regarded as case MNCs in this thesis. All the MNCs-level information was collected mainly from companies' annual financial reports, Internet home pages and brochures. Besides, macro-level information related to the local industrial environment in China was collected through the government authorities (i.e. statistical year book, etc.). However, due to the availability of data, a few projects with incomplete information were dropped from the sample, and a list of 109 subsidiaries based on the equity entry modes was finally obtained as the data. According to the theoretical framework, the proxy for each factor should be described as follows:

5.1.1 Cultural distance

The composite cultural distance index (CDI) is based on four cultural dimensions, and it is regarded as the best reflection of the differences between countries (Hoecklin, 1996). Based on Hofstede's (1980) research, Kogut and Singh (1989) suggested a formula to calculate the composite CDI, which has been adopted as the most common method to measure the cultural distance nowadays. The formula is:

$$CD_{ht} = \sum_{i=1}^4 \{(I_{ih} - I_{it})^2 / V_i\} / 4$$

The CD_{ht} is the cultural distance between home country h and host country t , I_{ih} stands for the index for the i th cultural dimension of home country, I_{it} for the host country, $(I_{ih} - I_{it})$ is the difference in scores of countries h and t on characteristic i , and V_i is the variance of the index on characteristic i . In this case, cultural distance between MNCs' home country and China is calculated as a measurement of cultural differences between two countries. All the data of cultural distance are quoted from THE HOFSTEDE CENTRE.

5.1.2 Geographical Distance

The transaction cost theory claims that the relationship between headquarter and subsidiaries is principal and agent (Grossman and Hart, 1986; O'Donnell, 1997). Therefore the geographical distance between headquarter and subsidiary plays an important role in the administration and operation. Review the previous studies which have examined the factors of equity-based entry modes, several methods were applied to measure the geographical distances between headquarters and subsidiaries. For example, Nunnenkamp and Andrés, (2013) calculated the geographical bilateral distances between the largest cities of the two countries by India (home country) and the host country; Duanmu (2011) measured the geographical distance as the physical distance in miles between Suzhou (location of headquarter) and the capital city of investing country. In this thesis, the geographical distance was evaluated in a more accurate way: by measuring the straight distances between the cities of the MNC's headquarter and the cities of its subsidiaries in China on Google Map (expressed in kilometers).

5.1.3 Host-Country Experience

The host-country experience represents the extent of the familiarity and the accumulation of local knowledge in the host country. In this thesis, the host-country experience was defined by calculating the existing time of a MNC had already presented in China when a new WOS or JV project was established. For example, if a MNC has several subsidiaries in China, the host-country experience for the first subsidiary is zero, while the experience for the subsequent subsidiaries is using the establishing year of the new subsidiaries minus the year of the first subsidiary. The bigger number means richer experience in China, which represents they are more familiar with the Chinese market environment, and know how to cope with cultural difference. And also, the numbers illustrate the differences of entry mode choice in each historical period.

5.1.4 Investment size

The size of investment was defined by many different measurements. Li (1995) calculated the size of investment by subsidiaries' sales. While Pothukuchi et al. (2002) measured the investment size by investment capital and sales turnover. But the employee number was applied by Luo and Peng (1999) as a proxy for size of investment. However, Chen and Chang (2011) suggested that the investment size is usually measured by assets in many previous studies such as Chung and Beamish (2005), Uhlenbruck and et al (2006), Duanmu (2011), Barkema et al (1997). So in this thesis, the assets of subsidiaries were chosen to generalize the investment size. The register capital as the assets was exchanged in USD based on the average exchange rate for different investment years.

5.1.5 Geographic Concentration

The local geographic concentration demonstrates the regional industrial development level and the degree of industrial intensity. In this thesis, this proxy was calculated as Forest GDP Density to illustrate the geographic concentration degree of the local forest industry. The paper "Geography and Economic Development" published in the International Regional Science Review in 1999 introduced the concept of "GDP density". Gallup et al. (1999) delimited this conception by measuring GDP density which is calculated as GDP per square kilometer, to explain some subtle relationship between population density and income. GDP density is an excellent indicator to reflect the local economic development, the geographic concentration level, the efficiency of land utilization and the industrial and commercial concentration degree. Robert (2002) applied the GDP density to indicate the local geographic concentration of Japan. In this thesis, the Forest GDP Density which was calculated by the ratio of local forest GDP in USD to the land area in square kilometer for each province (Forest GDP per square meter), was used as an indicator to illustrate the local geographic concentration of forest industry. (All source from the Annual Yearbook of China, 2011)

5.1.6 Resource Availability

As mentioned above, the resource commitment is significant to resource-based manufacturing industries, because the production should be guaranteed from the beginning of the value chain. As all selected firms are wood pulp based paper manufactures, so the annual wood yield (in ton) at the provincial level was selected as an indicator to illustrate the local resource availability. (All source from the Annual Yearbook of China, 2011)

5.2 Method

Consider $y_i=1$ ($i=1, \dots, 109$) the choice for WOS as opposed to JV ($y_i=0$). Aim of the analysis is to estimate the equation $P(y_i=1|x_i)=F(x_i'\beta)$, where the probability associated to $y_i=1$ depends on the vector ($1 \times K$) of explanatory variables x_i' , with K standing for number of variables; the function $F(\cdot)$ is a cumulative density function,

logistic distribution $F(x_i'\beta) = \frac{e^{x_i'\beta}}{1 + e^{x_i'\beta}}$ as Figure 5.1 illustrates was selected, able to

guarantee the assumption of probability values only within the $[0, 1]$ interval; the vector ($K \times 1$) of parameter, β , contains the effects (positive or negative and their related extension) exerted by every explanatory variable on the probability to choose a WOS. In this study the dependence variables were defined as JV=0, WOS=1. The functions figure is as follow.

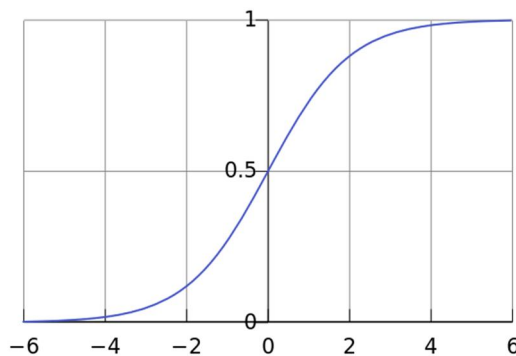


Figure 5.1. The logistic distribution (Source: Rodriguez, 2008)

The independent variables in this study are shows in table 5.1. The CDI (cultural distance index) based on Hofstede's (1980) indices, Kogut and Singh (1988) suggested index as mentioned. The Geographical Distance is collected according to the straight line geographical distance between two cities of MNCs' headquarters and subsidiaries. The Home Country Experience is described by the experience that when parent companies build new subsidiaries, which are calculated by the difference of

years between the new invested subsidiaries and the first subsidiary was built in China. The variable of Investment Size is described by the registered capital of those subsidiaries in USD of the year of invested. The local industry environment is on the local factors with the Local Industrial Geographic Concentration and Resource availability of that province. The Local Industrial Geographic Concentration is calculated by the forest GDP in the year of 2011/ the area of that province and the Resource Availability is the yield of the wood production for industrial use in that province.

Table 5.1. The explanatory of dependent variables

<i>Theoretical determinants</i>	<i>Empirical proxy</i>	<i>Definition</i>	<i>Unit</i>
Cultural Distance	CDI	Cultural distance index (Hofstede,G,2001)	–
Geographical Distance	Geographical Distance	Straight line geographical distance between two cities of MNCs' headquarters and subsidiaries	km
Host-Country Experience	Years of Presence	Years of Experience of MNCs have entered in China	year
Investment Size	Assets	Registered capital of subsidiaries	million USD
Resource Availability	Yield of Wood	Annual yield of wood in each province	m ³
Local Industrial Geographic Concentration	Forest GDP Density	Forest GDP/ Land areas of each province	USD/km ²

6. Result

6.1 Descriptive Statistics

From the results of descriptive analysis, we can get an approximate understanding of the state and development of foreign forest investment in China over the past two decades. Firstly, Figure 6.1 illustrates a global distribution diagram of home countries of the case MNCs. From the figure, we can find that the most popular home countries in this study were US, Japan, Hong Kong and Singapore, since the numbers of subsidiaries from those countries are much higher than other countries — each of them has invested more than 15 subsidiaries in China (24, 24, 15, 29 prospectively). It is reasonable because the investments from US, Hong Kong and Singapore were traditionally popular in China. But it is worth mentioning that besides these traditional investment home countries, recent years the Scandinavian countries, such as forest MNCs from Finland and Sweden have started to join the Chinese market as well. Furthermore, another notable phenomenon is that WOS (illustrated by lighter color in Pie charts) was the more preferred entry mode over JV (darker color), as JV only occupied around 10% in this case. From the pie charts of the top 4 popular home countries, it is interesting to comprehend that all the subsidiaries from Singapore and Hong Kong were WOS. This may be caused by their close cultural distance. The following paragraphs provide more specific results about it.

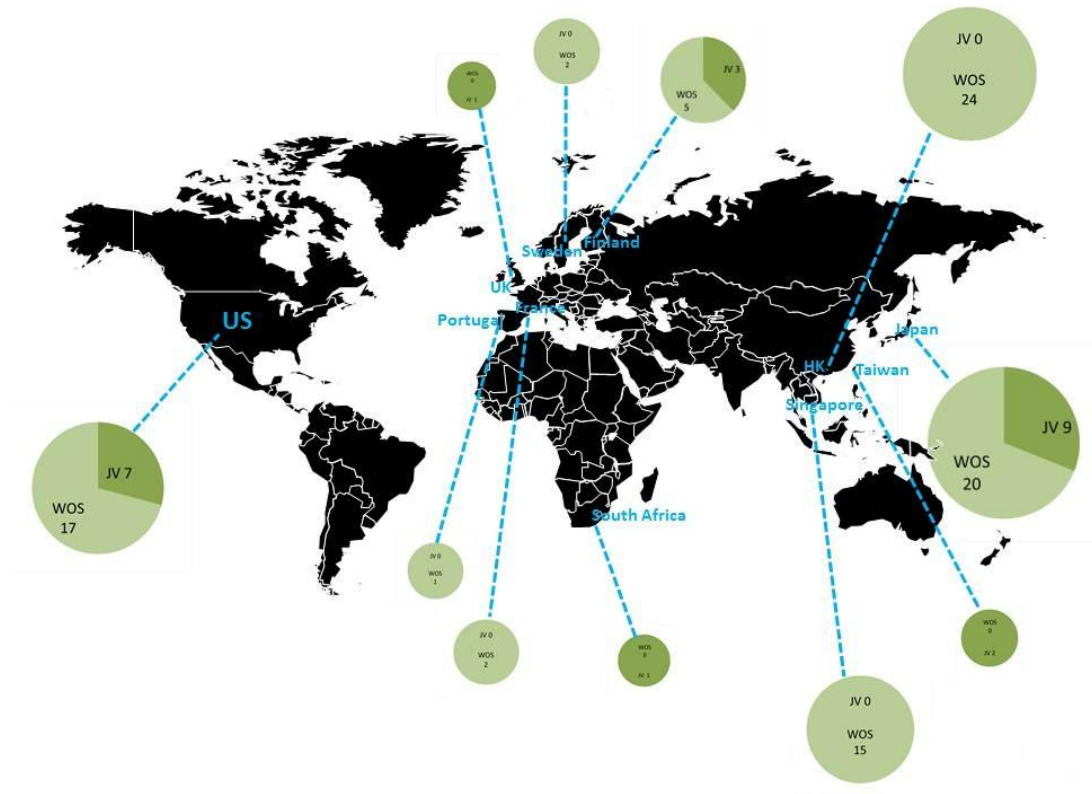


Figure 6.1. Global distribution diagram of home countries

The Figure 6.2 visually illustrates the distribution diagram of subsidiaries in this paper. It is easy to find that there is no subsidiary locating in western regions of China. Conversely, all the subsidiaries were concentrated in eastern and southeastern parts of China, especially the coastal areas, such as Shanghai city and Zhejiang province, which possess rich raw materials and convenient transportation. And these regions are the traditional forest industrial bases of China, which means huge numbers of local domestic Chinese forest companies can act as the role of corporate partners, or competitors.

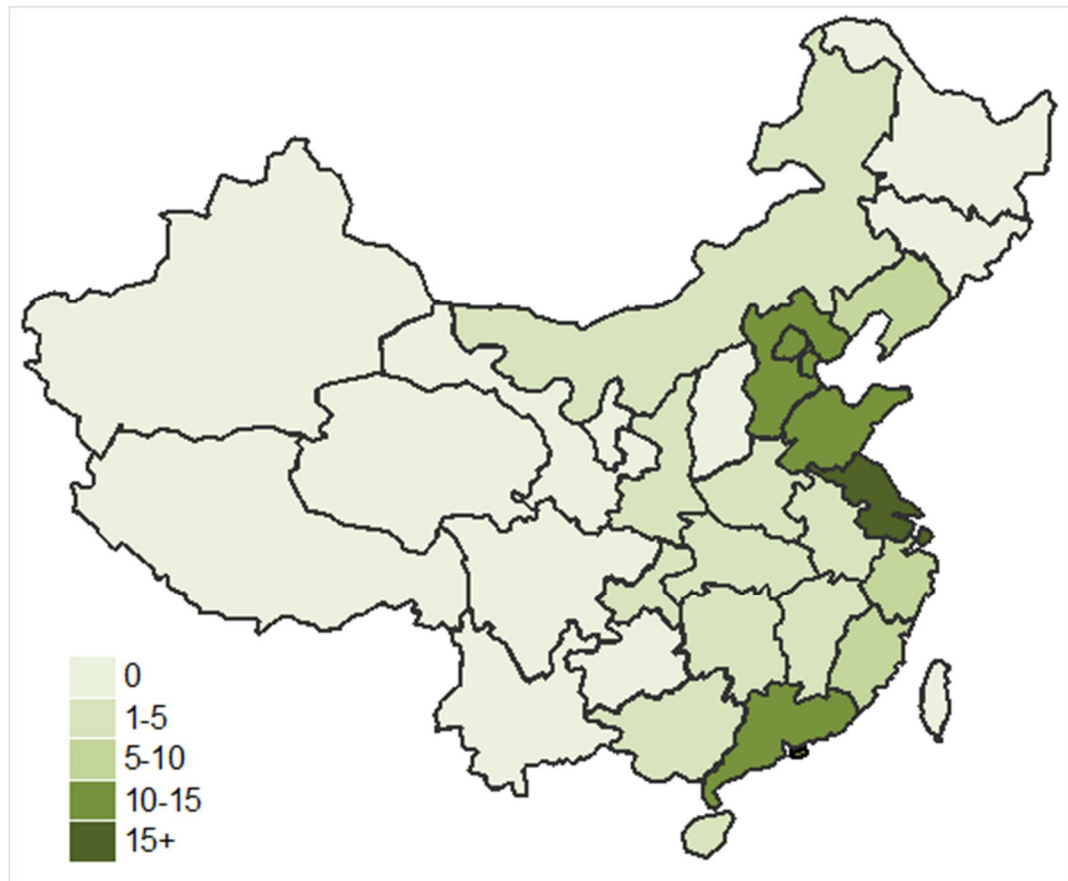


Figure 6.2. The partition of Chinese provinces and the distribution diagram of subsidiaries

ANOVA analysis was applied to explore more indications concerning the differences of investment in each geographic region and investment period. The results of differences among three economic regions were illustrated in Table 6.1. As mentioned in the background section, the central Chinese government has divided China into three economic regions: eastern region, to expand international trade and export-oriented industrialization; central region, to guarantee the nation's energy supplement and agricultural development; and western region, to take mineral exploitation and livestock cultivation. In the sample of this study, 91 subsidiaries were located in the eastern region, while only 7 and 11 subsidiaries were established in the central and the western regions respectively. In Table 6.1, the mean values of investment assets, geographical distance, CDI and years of presence in three economic regions in China have been compared. Specifically, the investment assets

have a significant difference (sig. of F-test 0.000) among three economic regions, in which the eastern region was located with the largest number of subsidiaries (91), but in the smallest mean value of assets (only accounts 16.2 million USD). On the contrary, although the number of subsidiaries in the central region was much less than it in the eastern region, the mean value of assets was significantly higher (28.5 million USD). Moreover, the mean value of investment assets in the western region was the largest, which reached 64.5 million USD. Furthermore, seen from the column of CDI, MNCs with the largest mean value of CDI (2.16) preferred the eastern region most, while the MNCs with smallest mean value of CDI (0.73) set their subsidiaries mainly in the central region. Correspondingly, MNCs with the medium mean value of CDI chose the western region most. The last row shows a phenomenon that the experienced (average 18 years of experience) MNCs selected the central region as the major locations for establishing subsidiaries, while there was little difference in experience (0.48 year) between the eastern and the western regions. The results illustrate there was no significant difference in geographical distance over three economic regions.

Table 6.1. Investment in economic regions

Economic Region	N	Assets		Geographical Distance		CDI		Years of Presence	
		Mean	Sig. of F-test	Mean	Sig. of F-test	Mean	Sig of F-test	Mean	Sig. of F-test
Eastern Region	91	16.2	.040	5514.29	.914	2.16	.005	12.48	.060
Central Region	7	28.5		4767.29		.73		18.00	
Western Resion	11	64.5		5527.27		1.33		12.00	

Also, the background section introduced the development of foreign investment in China and its three historical stages: Market Entry (1979-1992), Market Skimming (1992-2001) and Market Penetration (2001-now). As Table 6.2 illustrates, the case MNCs mainly entered into Chinese market after 1991. The Figure shows that 54

subsidiaries were built in the Market Skimming stage and 49 in the Market Penetration stage, while only 6 subsidiaries were established before 1992. From the mean values in the table, the figures illustrate the differences only in geographical distance and CDI among three investment stages in China. Except assets, both geographical distance and CDI show significant difference (sig. of F-test, 0.034, 0.000 respectively, < 0.05) in each investment stage. The results demonstrate that the mean values of both geographical distance and CDI increased significantly from the Market Entry stage (2488.33, 0.2 respectively) to the Market Penetration stage (6544.31, 2.7 respectively). The rises indicate that with the time changing, MNCs have been attracted from more geographical and cultural remote home countries to China than before. However, the investment assets maintained stable during the whole stage.

Table 6.2. Investment in different periods

Period	N	Assets		Geographical Distance		CDI	
		Mean	Sig. of F-test	Mean	Sig. of F-test	Mean	Sig. of F-test
Market Entry (1979-1992)	6	17.8	.587	2488.33	.034	.20	.000
Market Skimming (1992-2001)	54	14.3		4822.22		1.54	
Market Penetration (2001-now)	49	27.1		6544.31		2.70	

6.2 Logistic Regression

Table 6.3 provides the descriptive statistics include the Maximum, Minimum, Mean, and Std. Deviation value of independent variables involving the logistic modeling. Because of the Geographical Distance, Investment Size, Forest GDP Density, and Wood Production have comparative large Mean and Std. Deviation values, so Z-score was calculated for the above variables in order to eliminate the magnitudes and units of variables in the following paragraphs.

Table 6.3. Descriptive statistics of variables

Independent variable	Descriptive statistics			
	Minimum	Maximum	Mean	S.D.
CDI	.146	5.02	1.99	1.36
Geographical distance	500	14500	5467	4465
Years of Presence	0	19	7.03	5.44
Assets (Million)	0.02	5000	202	692.2
Yield of Wood	98800	15259200	3009432	2976116
Forest GDP Density (cluster effect)	2851	784925	301987	236376

Table 6.4 shows the correlations and multi-collinearity diagnostics of independent variables in this analysis. Pearson correlation coefficients are calculated to measure the linear relationship between two variables, and the range values are between -1 to 1. In the logistic regression, correlation matrix is always used as a pre-check of how well the variables are interconnected to avoid the possibility of multicollinearity between independent variables. Based on Table 6.4, although some of correlations are statistically significant at 0.1 or 0.05 level, which increase the likelihood of multi-collinearity in the regression, the Pearson correlation coefficients of all variables are still comparative low (equal or smaller than 0.5), indicating the relating

high independence of each variable. In addition, multicollinearity has been further checked through examining the Variance Inflation Factor (VIF) values. As the maximum value of VIF greater than 10 is considered problematic for regression analyses (Neter et al., 1990), while in this study all the VIFs are less than 2 (the maximum VIF is 1.63), indicate that there is no multicollinearity between these variables (normally a VIF of 5 or above indicating a serious multicollinearity problem).

Table 6.4. Correlations and multi-collinearity among independent variables

Independent variable	Pearson correlations						Multi collinearity
	1	2	3	4	5	6	VIF
CDI	1						1.63
Z-Geographical Distance	.503**	1					1.45
Years of Presence	-.159	-.095	1				1.13
Z-Assets	-.212*	-.069	.152	1			1.09
Z-Forest GDP Density	.256**	-.080	-.094	.052	1		1.17
Z- Yield of Wood	-.199**	-.158	.287**	.007	.107	1	1.13

* $p < 0.05$, ** $p < 0.01$.

Table 6.5 shows results of logistic regression model based on theoretical hypotheses. Model 1 demonstrates the MNCs' level specific impacts on the choice of entry mode, in which we take into account the effects of MNCs' geographical and cultural distances from host country to China, MNCs' operational experiences entered in China and the accumulation of subsidiaries' assets. The Pseudo R^2 of the model is 0.286 showing an acceptable degree of goodness of fit in the regression; meanwhile the insignificance of Hosmer and Lemeshow (H and L) test ($p = 0.554 > 0.5$) indicating a non-significant evidence for lack of goodness of fit in the model and the

percentage correct gains to 78%. Moreover the log odds value rise up to $2.239 > 2$, means the test of the whole model is significant at 95% level. Thus, it can be confirmed that model 1 fits the data well.

The beta coefficient of CDI (-0.844) is significant at 0.01 level meaning that holding other variables at a fixed value, for a unit increase in CDI, the expected change in log odds is -0.844. In other words, taking the exponentiation of beta coefficient (i.e. $\text{Exp}(B)$ value) of CDI (0.430), it can be interpreted that for a one-unit increase in CDI, the expected change in odds (i.e. $P(\text{WOS})/P(\text{JV})$) is 0.430 indicating a negative impact on the choice of WOS than JV. This result supports the Hypothesis 1b that cultural distance is negatively related to the likelihood that the MNCs choose WOS than JV entry mode. The beta coefficient of geographical distance is statistically significant at the 0.05 level and the $\text{Exp}(B)$ is 2.126. It can be interpreted that for a one-unit increase of geographical distance, the expected change in odds is 2.126 indicating a positive impact on the choice of WOS over JV. Hypothesis 2a has been proved that geographical distance is positively related to the likelihood that the MNCs choose WOS than JV entry mode. Similarly, the beta coefficient of corporate experience in China is also significant at the 0.05 level and its $\text{exp}(B)$ value (1.111) indicating a positive impact on the choice of WOS over JV as well. This result is in consistency with the Hypothesis 4 that the international experience is positively related to the likelihood that the MNCs choose WOS than JV entry mode. However, subsidiaries' assets do not significant at 0.1 levels in the model, indicating that assets may not have the impact on the MNCs' entry mode choices. Hypothesis 3 cannot be confirmed.

Table 6.5. The logistic regression results for the entry mode models

Variable	Model 1		Model 2	
	B	Exp(B)	B	Exp(B)
Constant	2.661*** (.001)	14.305	3.462*** (.000)	31.867
CDI	-.844*** (.001)	0.430	-1.134*** (.000)	0.32 2
Z-Geographical Distance	.754** (.016)	2.126	1.030*** (.002)	2.80 2
Years of Presence	.105** (.042)	1.111	.096* (.088)	1.10 0
Z-Assets	-.185 (.508)	0.831	-.161 (.604)	0.85 1
Z- Yield of Wood			.131 (.655)	1.14 0
Z-Forest GDP Density			.867*** (.010)	2.37 9
R ²	.286		.378	
H and L test	.554		.568	
Percentage Correct	78.0		81.7	
Log odds	2.239		2.898	

* p<0.10; ** p<0.05; *** p<0.01

The effects of local industrial environment factors are examined in Model 2 through the introduction of 2 variables about local forestry affairs. Both Pseudo R² (0.378) and H and T test (p=0.568>0.5) are higher than Model 1 indicating the improvement of the model quality. The significance of beta coefficients of previous variables maintained as model 1, although the value has changed a little bit. The beta coefficient of the forest industry density (0.867) is significant at the 0.05 level and its Exp(B) value indicates an one-unit increase of forest industry density associating with an expected change in odds of 2.379. This result suggests that a positive impact of forest industry density on the choice of WOS than JV, which consistent with Hypothesis 6. However, the material resource (yield of wood) is insignificant indicating that it may not have impacts on the choice of entry modes. Thus, Hypothesis 5 can be denied.

In model 2, it can be seen that the correct percentage of predictions have been improved from 78% to 81.7% which also indicates the improvement of the model quality. The Log-odds value (2.898) is higher as well, which confirms the improved reliability of predictions.

7. Discussion

This Master's thesis examined the impacts of host-home country distance (both in geographical and cultural terms) combined with corporate and local factors on entry mode choice of forest MNCs who have invested in China. The results were illustrated in the previous chapters, and based on the results four of the posed hypotheses have been confirmed by the statistical results. The results will be discussed along with the hypotheses as follows:

Hypothesis 1b: Cultural distance is negatively related to the likelihood that the MNCs choose WOS rather than JV entry mode. (Confirmed)

Regarding the effect of distance level, this paper shows that the distance factors, both cultural and geographical distance, have significant impacts on the choice of equity-based entry mode. Consistent with many previous studies, such as Anderson (1986), Erramilli (1991), Sun (1999), Asiedu and Esfahani (2001), Brouthers (2001), Barbosa and Louri (2002) and Chun (2009), the result shows negative relation between larger cultural distance and the probability to choose a WOS. Although previous studies (Hennart and Reddy, 1997; Madhok, 1997) have concluded that higher-controlling entry mode such as WOS is associated with a low transaction cost, the political and financial risks are still noteworthy. In contrast, a lower-level controlling entry mode such as JV is the preference of MNCs who have larger cultural differences, to cope with operational inefficiency and ineffectiveness (Tihanyi et al., 2005; Hennart and Larimo 1998). Moreover, since the market environment in China is complicated to MNCs, especially those corporations from larger cultural distance countries, JV shows more significance and convenience over exploring their business in China alone (WOS). For example, MNCs from developed countries with better rules of law system prefer to collaborate with local partners to avoid potential disputes and conflicts that may be caused by substandard quality of contract enforcement,

property rights protection, and the function of court in China (Duanmu, 2011). In addition, as forest industry belongs to environmental and material based manufacturing industry, it is intelligent to choose a JV mode for MNCs from larger cultural distance countries. This is because the local corporations can provide expediencies such as the paths to purchase legal and cost-effective raw materials, the communication to local stakeholders, and the appropriate methods to control pollution etc.

The next hypothesis to be discussed is:

Hypothesis 2a: Geographical distance is positively related to the likelihood that the MNCs choose WOS rather than JV entry mode. (Confirmed)

As limited research has explored the impact of geographic distance as an isolating factor on the choice of foreign entry mode, in this paper the geographical distance was examined as an important factor, and the result shows that the geographical distance does affect the decision of equity-based entry mode. In addition, the results indicate that the forest MNCs prefer to choose a WOS rather than JV if their headquarters are geographically remote from the investment locations. This indicates more certainty and directivity than the study of Cristina and Marta (2013) since their results are only statistically significant in some estimated models. Generally, larger geographical distance always represents higher transportation and administration cost, and many other inconveniences. Kuo and Fang (2008) assert that geographical distance not only affects the costs of transportation and communication, but is also particularly important to companies that deal with heavy or bulk products, or whose operations require high coordination among highly dispersed people or activities. In this respect, as the primary management advantage of WOS is the tight control, which makes the operation fast and efficient with its own administration, the obstacles caused by large geographical distance may be mitigated or avoided by WOS.

Next discussed hypothesis is:

Hypothesis 3: Investment size is negatively related to the likelihood that the MNCs choose WOS rather than JV entry mode. (Not Confirmed)

The results show significance in distance level, but no relation between the choice of entry mode and investment size was found in this study. The transaction cost theory asserts that the investment size is related to the risk commitment of investments and their parent companies, which may affect the equity-based entry mode choice. Although many previous studies (Hill et al., 1990; Madhok, 1997; Scherer and Ross, 1990; and Taylor, 2009) have proved a connection between the choice of WOS or JV, in this paper, the results show no connection of this type. So the investment size – the assets and start capitals of those subsidiaries – have no effect on the choice of entry mode of those forest MNCs.

The hypothesis 4 has been confirmed as:

Hypothesis4: The host-country experience is positively related to the likelihood that the MNCs choose WOS rather than JV entry mode. (Confirmed)

In this paper, there was evidence that the length of experience in the host country does affect the equity-based entry mode choice. Moreover, the experience factor illustrates positive relations with the choice of WOS. The results show the same suggestions as previous studies (e.g., Barkema et al., 1997, Beamish and Banks, 1987 and Youself and Hoshino, 2003) that experienced MNCs prefer to choose WOS, because they are more familiar with circumstances in political, cultural, economic, environmental and marketing aspects in host countries. Abundant host-country experience means possessing more local resources, relationships, favorable empirical knowledge and skills, which can guarantee the production to operate efficiently and effectively. Therefore, this circumstance with lower risks of entering encourages MNCs who have rich experience in host country to choose WOS as their entry mode. The advantages of collaborating with local firms appear less attractive to the MNCs with rich host-country experience. Besides, JV mode may even cause unnecessary conflicts in

communication and administration with partners. Moreover, this mode shows disadvantages in this case such as sharing the profits, delay or obstructing the development of subsidiaries.

The hypothesis 5 is:

Hypothesis 5: The resource availability is negatively related to the likelihood that the forest MNCs choose WOS rather than JV entry mode. (Not confirmed)

The resource availability shows strong significance in the theoretical chapter of this paper, but the results indicate difference that the local raw materials yield has no impact on the choice of WOS or JV to the forest MNCs. In addition, the results illustrate that many forest MNCs have not taken the yield of local raw materials into account when choosing their entry mode and location strategies. This situation may be caused by two reasons: one possibility is, as the ‘Natural Forest Protection Project’ was proposed and implemented in 1994, most pulp and paper manufacturers in China have to import raw materials from the neighbor tropical countries, for example, Thailand, Indonesia and Vietnam (Ren Min news, 2006). This is because the domestic fast-growing forest for paper and pulp industry is not sufficient for the industrial demand. Another reason, the local forest yield cannot constitute any impact on the business operation and strategy decision, because some of the forest MNCs (e.g. APP) have developed their own materials origins as forest plantation yards and pulp mills in China, which guaranteed all the raw materials supply to the subsidiaries.

The last hypothesis is discussed as:

Hypothesis 6: Local geographic concentration is positively related to the likelihood that the MNCs choose WOS rather than JV entry mode. (Confirmed)

The analysis of local cluster factor appears significant, and the results indicate that the local industrial environment affects the equity-based entry mode in the business

expansion of the forest MNCs. In this case, the results proved the hypothesis in theoretical section that to companies in material-based traditional manufacturing industries, high geographic concentration brings more competition over reciprocal collaboration. In the forest industry, the purpose that MNCs explore their international business is to improve the competitive advantages, the financial and operational efficiency, the capacity to control the strategic resources, and the sustainability of renewable resources (Zhang and et al., 2013). Therefore, unlike the high-tech R&D industries which rely on the institutions and availability of vocational labor heavily, a forest MNC prefers to strengthen its operation and administration in a high geographically concentrated environment through WOS.

8. Conclusion

This thesis has focused on describing the impacts on equity-based entry mode choice of forest MNCs in China. The analysis was carried out by examining the role of distance (both in cultural and geographical terms) combined with the corporate and local level operating environmental factors. Through the statistical analysis, the results demonstrate that the major equity-based entry mode of forest MNCs in China was WOS over JV. The significant statistical results in the regression models indicate that only the MNCs from larger cultural distance home countries or those still suffering from insufficient experience in China were willing to choose JV as their entry mode. While, although larger geographical distance and higher geographic density may cause operational obstacles to the multinational forest investments, the MNCs still preferred WOS rather than JV. Moreover, the investment size and local forest resources illustrate no effect on the choosing of equity-based entry mode.

Therefore, the suggestions of the choice of equity-based entry mode to forest MNCs who want investment in China are as follows: choosing a WOS shows more competitive advantage over JV in this case, so it could be an optimal choice in equity-based entry modes. However, for an MNC who is very unfamiliar with the Chinese culture and has insufficient experience in the Chinese market, it is more justified to choose a JV mode to co-operate with local partners.

Furthermore, the study also shows the changes and current state of the foreign forest investments in China. As mentioned in the previous chapters, the most popular investor home countries were still the traditional forest industrial countries and/or geographical neighbor countries (e.g. the US, Singapore, Japan, and Hong Kong). However, in recent years, the developments in investments in China have displayed new trends in foreign forest investment, which can be concluded as follows. First of

all, increased numbers of forest MNCs from larger cultural distance and/or geographical distance home countries, such as forest MNCs from Finland and Sweden, have started to expand their business in the Chinese market. Secondly, the coastal regions were the favorite regions of those forest MNCs in this study, and have already been allocated the biggest proportion of forest subsidiaries. However, increased numbers of forest MNCs holding large-scaled investments have moved their investments to the western regions of China. Thirdly, the MNCs from larger culturally distance home countries settled their subsidiaries mainly in eastern (coastal) regions, while the MNCs from the most culturally closed home countries (Hong Kong) were willing to invest in the central regions.

Accordingly, the suggestions of this thesis for the choice of location to forest MNCs who want investment in China are: First, forest industry MNCs' investment in China is based on market-seeking rather than resource-seeking strategies. So the local forest yield should not be taken into account, but the efficiency and effectiveness of transportation instead. Second, to big sized investments, the trends indicate that it could be better to establish subsidiaries beyond the eastern regions, because the costs of land and labor in central and western regions of China are much favorable. Third, it seems like the central regions is the most optimal investment destination to MNCs have the similar culture and possess sufficient experience in China. But for a MNC who is unfamiliar with China both in terms of business culture and prior experience, it is better to still choose location in the eastern regions.

The main limitation of this study is naturally the available small sample size (109 investments found in China in 2013, but it could not be larger), and therefore the results should be considered as tentative rather than fully conclusive. Because China was selected as the case country, the collected sample at subsidiaries level is limited, but cannot be larger. Therefore, although the data is limited, the results reflect the

situations of forest MNCs' investment in China now. In future research, replicating the similar study in other emerging country, such as India, Brazil or Russia could be worthwhile.

To summarize, the contribution of this study is in the new results based on the analyzed impacts of both cultural distance and geographical distance combined with corporate and local level factors on the choice of equity-based mode in China. Thus, this study filled an obvious research gap in this field. Although the examined factors showed only partially statistical support to the hypothesized influences on the choice of equity-based entry mode, all the proposed research questions were resolved and managerial recommendations were provided for.

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Appendix

Cultural distance dimension scores of 66 countries and regions

<i>Country</i>	<i>PDI</i>	<i>IDV</i>	<i>MAS</i>	<i>UAI</i>
Malaysia	104	26	50	36
Guatemala	95	6	37	101
Panama	95	11	44	86
Philippines	94	32	64	44
Mexico	81	30	69	82
Venezuela	81	12	73	76
China	80	20	66	40
Egypt	80	38	52	68
Iraq	80	38	52	68
Kuwait	80	38	52	68
Lebanon	80	38	52	68
Libya	80	38	52	68
Saudi Arabia	80	38	52	68
United Arab Emirates	80	38	52	68
Ecuador	78	8	63	67
Indonesia	78	14	46	48
Ghana	77	20	46	54
India	77	48	56	40
Nigeria	77	20	46	54
Sierra Leone	77	20	46	54
Singapore	74	20	48	8
Brazil	69	38	49	76
France	68	71	43	86
Hong Kong	68	25	57	29
Poland	68	60	64	93
Colombia	67	13	64	80
El Salvador	66	19	40	94
Turkey	66	37	45	85
Belgium	65	75	54	94
Ethiopia	64	27	41	52
Kenya	64	27	41	52
Peru	64	16	42	87
Tanzania	64	27	41	52
Thailand	64	20	34	64
Zambia	64	27	41	52
Chile	63	23	28	86

<i>Country</i>	<i>PDI</i>	<i>IDV</i>	<i>MAS</i>	<i>UAI</i>
Portugal	63	27	31	104
Uruguay	61	36	38	100
Greece	60	35	57	112
South Korea	60	18	39	85
Iran	58	41	43	59
Taiwan	58	17	45	69
Czech Republic	57	58	57	74
Spain	57	51	42	86
Pakistan	55	14	50	70
Japan	54	46	95	92
Italy	50	76	70	75
Argentina	49	46	56	86
South Africa	49	65	63	49
Hungary	46	55	88	82
Jamaica	45	39	68	13
United States	40	91	62	46
Netherlands	38	80	14	53
Australia	36	90	61	51
Costa Rica	35	15	21	86
Germany	35	67	66	65
United Kingdom	35	89	66	35
Switzerland	34	68	70	58
Finland	33	63	26	59
Norway	31	69	8	50
Sweden	31	71	5	29
Ireland	28	70	68	35
New Zealand	22	79	58	49
Denmark	18	74	16	23
Israel	13	54	47	81
Austria	11	55	79	70

SOURCE: Adapted from Hofstede, G. (1991). Culture and Organisations: Software of the Mind.