

The Location Decision of Foreign Direct Investment with a Special Reference to Ethnic Network

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ABSTRACT

The location decision of Taiwan, South Korea, and Japan regarding FDI in the 1990s are compared with a special reference to ethnic network. Further, cost-side and market-side factors are examined using a macro perspective. The results confirm that ethnic networks are important for Taiwanese, Korean, and Japanese firms in Asian developing countries. The results also suggest that the FDI within the Asian developing region is of the cost-reduction type, while it is also of the market-seeking type for Japanese FDI.

Keywords: *Ethnic network; Foreign direct investment; Location decision*

INTRODUCTION

Taiwan, South Korea, and Japan were important FDI source countries that invested in the Association of Southeast Asian Nations (ASEAN) and in China in the 1990s because the rapid and steep appreciation of currencies since the second half of the 1980s. Locational determinants are one of the important issues concerning FDI. Some scholars insist that location is a neglected factor in the analysis of MNE activity and has to be reintegrated into consideration (Dunning, 1998). Further, Hamilton (1991) suggested that ethnic Chinese networks play an important role in the Asian region. However, the relationship between ethnic networks and FDI decisions has received relatively little focused research attention despite the importance that these two constructs separately enjoy in the literature. Until now, the literatures concerning the ethnic network issue mostly adopted the individual firm's perspective (Chen & Chen, 1998). Unlike these previous empirical studies, this study will explore from the macro perspective whether or not ethnic networks continue to present the same direction in affecting FDI and examine whether or not it is a special case.

This study intends to present a comparative analysis of locational determinants of FDI from the main source countries within the Asian region, such as two members of the newly industrialized economies (NIEs)—Taiwan and South Korea—and one developed country—Japan—in the region of Asian developing countries in the 1990s. Further, the governments or firms in host countries also can learn how to strengthen their locational advantage in order to attract inward FDI. However, the effect of ethnic networks on FDI decision, which is the main focus of this study, can be considered as the basis for further investigation.

This study is organized as follows. Section 2 reviews the related literatures on the locational determinants of FDI. Section 3 describes the conceptual framework, develops hypotheses, and presents the methodology applied in this study. Section 4 presents the statistical analyses and discusses the empirical results of this study. Finally, section 5 summarizes the main conclusions and draws several implications.

LITERATURE REVIEW

According to the network approach, FDI is a process of constructing a linkage between a domestic network and a foreign network. The networks and their relations are reconstructed in localities and are spread over a space orchestrated by MNEs because the ingredients of a particular network, such as ethnic groups, are extremely place-bound (Yeung, 1998). The purpose of linkage to a foreign network is to access the resources therein, which include market opportunities, natural resources, labor, capital, technology, and other strategic assets that are essential to the investor's long-term survival (Chen, 1998). For the smaller and more recent third world MNEs (TWMNEs), ethnic contacts continue to be of fundamental importance with respect to the extent and form of their initial foreign involvement (Tolentino, 1993).

In addition, there is abundant empirical evidence that shows that location decisions made by firms abroad are determined essentially by value-maximizing incentives, which necessitates taking into account not only supply-side factors such as production costs but also demand-side factors such as scale economies or product differentiation (Thomas, 1980; Caves, 1996).

In summary, a firm will select a foreign location that will offer the lowest production cost or the largest market opportunities. It will also take into account some factors such as the network factor in order to reduce the transaction cost in its FDI activity. This is important in laying the basis for further empirical study.

RESEARCH METHODOLOGY

Conceptual Framework

Most theories on FDI identify the factors that Boddewyn (1985) described as conditions that can explain FDI. In order to compare the features of various countries, a set of variables combined within a single explanatory equation is constructed. The basic hypothesis of this paper is that the country-level location of outward investment will be determined by the trade-off between minimizing production costs and securing access to product and factor markets, except for the ethnic network factor that is highlighted in this study. This study examines the location decisions of FDI by network, cost, and market factors (Shown as equation (1)).

$$I_{ih} = f(N_{ih}, C_h, M_h) \quad (1)$$

Let I_{ih} be the FDI from the investing country i to the host country h . The three categories of determinants are explained in turn. N_{ih} is a vector of variables related to the linkage between the investing country i and the host country h such as the ethnic network factor. C_h is a vector of variables related to the cost factor of the host country h , and M_h is a vector of variables related to the market factor of the host country h .

Hypotheses

1. Network Factor

In order to be established in a new market, the firm has to build relationships that are new to itself and to its counterparts. The strength and quality of the relationships between firms in different countries tend to be weaker than domestic relationships due to the effects of geographical and psychological distances on communication (Johanson & Vahlne, 1977). Studies show that ethnic groups living outside their countries of origin create formal or informal associations to which ethnic businesspeople from both the host and home countries have access (Rauch & Trindade, 1999). It is hypothesized that ethnic networks promote bilateral trade primarily by providing market information and by supplying matching and referral services, for example, helping producers find suitable distributors for their consumer goods or assemblers find suitable suppliers for their components. In other words, entering countries that are psychologically close will reduce the level of uncertainty and make it easier for firms to learn about them (Fletcher & Bohn, 1998). In contrast to existing researches, this study attempts to consider ethnic networks as a locational variable. Here, we arrive at the following hypothesis:

Hypothesis 1: Larger ethnic groups in the host country indicate more ethnic network and will encourage FDI from the investing country.

2. Cost Factor

Cost is also a major concern for the selection of FDI location. For FDI, it is important to take into account the relative costs of producing goods in different countries (e.g., labor cost), the cross-border transfer costs (e.g., transportation costs, supervision costs), and infrastructure availability (e.g., communication costs).

Generally, cheaper labor cost in the host country, particularly in developing countries, will attract more export-oriented FDI in which production is labor-intensive. Therefore, the significance will show ambiguity; hence, we hypothesize the following:

Hypothesis 2a: Cheaper labor cost in the host country will encourage increased outsourcing type FDI or trade barrier-circumventing type FDI.

Hypothesis 2b: Higher labor cost presents a supply of higher quality of labor in host countries that will attract more market-accessing or technology-accessing FDI.

Mariotti & Piscitello (1995) suggest that foreign investors suffer from a condition of adverse asymmetry in information costs compared with domestic investors. The measures of information costs may include the distance from the country core. Our observations on the locational preferences of Taiwanese, Korean, and Japanese firms suggest a decreasing importance of geographic proximity on FDI over time. If geographic distance is defined as transportation cost or supervision cost, longer distance makes export from the investing country more expensive, thereby making local production more desirable. Hence, it is hypothesized as follows:

Hypothesis 3: A longer distance between an investing country and a host country, which represents transportation cost or supervision cost, will encourage FDI.

Several previous studies provide the empirical support for the importance of infrastructure in FDI location decisions (Coughlin, Terza, & Arromdee, 1991; Broadman & Sun, 1997). Rioja (1999) argued that better public communication networks encourage private companies to invest because using these public infrastructures can increase the productivity of private factors. The resulting hypothesis is as follows:

Hypothesis 4: Better availability of communication infrastructure in the host country will encourage FDI from an investing country.

3. Market factor

The rationale for considering market-related factors is that a large market offers benefits such as scale economies and high revenues. Many cross-country studies indicate that inward FDI is positively related to market demand in host countries (Grosse & Trevino, 1996; Liu, Song, Wei, & Romilly, 1997). The larger current size or the higher growth potential of a host market will encourage more FDI because it affords more opportunities to foreign investors in the present or in the future. Therefore, we propose the following:

Hypothesis 5: The market size of the host country has a positive impact on the market-accessing and trade barrier-circumventing types of FDI from an investing country.

Hypothesis 6: The market potentiality of the host country has a significant impact on FDI from an investing country.

The Sample

The destinations of FDI are developing countries or regions in Asia. Each destination is selected on the basis of data availability. In the case of Taiwan, this examination considers nine developing countries (South Korea, Hong Kong, Singapore, Malaysia, Thailand, Indonesia, the Philippines, Vietnam, and China). In the case of South Korea, this examination considers seven developing countries (Taiwan, Singapore, Malaysia, Thailand, Indonesia, the Philippines, and China). In the case of Japan, ten developing countries are selected for the examination (South Korea, Hong Kong, Taiwan, Singapore, Malaysia, Thailand, Indonesia, the Philippines, Vietnam, and China) are selected for the examination.

The Estimation Equation and Definitions of Variables

In light of the above propositions, the following equation is estimated:

$$\ln\text{OFDI}_{iht} = \beta_0 + \beta_1 \ln\text{EN}_{iht} + \beta_2 \text{LC}_{iht} + \beta_3 \text{IA}_{ht} + \beta_4 \ln\text{GD}_{ih} + \beta_5 \ln\text{MS}_{ht} + \beta_6 \text{MG}_{ht} + \varepsilon_{iht} \quad (2)$$

where the dependent variable (OFDI) is the FDI outflow (in U.S. dollars) from the investing country i to the host country h in year t . The observation period is from 1990 to 1999. The independent variables are ethnic network (EN), labor cost (LC), infrastructure availability (IA), geographic distance (GD), market size (MS), and market growth potentiality (MG). Variables that are not expressed as ratios or shares are transformed into logarithms (indicated by ln). According to Ito (1997), the process of investing abroad takes at least two to three years from the time of the initial survey to reaching a final decision on the matter. Meanwhile, the economic situation in the countries involved may experience a violent fluctuation in the period of a year. Owing to the above two reasons, the average data for the previous three years are used. They include market size, market growth, labor cost, infrastructure availability, and ethnic network.

The definitions of variables are as follows:

FDI Outflow (OFDI): This represents the outward FDI from an investing country to a host country. All are flow figures and are converted into U.S. dollars according to the average exchange rate in the same year.

Ethnic Network (EN): This indicates the average ethnic population in the host country for the previous three years.

Labor Cost (LC): This represents the average ratio of the manufacturing wage rate in the host country to that in the investing country for the previous three years. The wages are all converted into U.S. dollars according to the average exchange rate in the same year.

Infrastructure Availability (IA): This denotes the average number of telephone mainlines per 100 inhabitants in the host country for the previous three years.

Geographic Distance (GD): This represents the distance between the investing country and the host country according to the great circle distance between capital cities formulated by Jon Haveman.

Market Size (MS): This is the average nominal GDP of the host country for the previous three years. The current price is converted into U.S. dollars according to the average exchange rate in the same year.

Market Growth (MG): The market growth is the average real GDP growth rate of the host country for the previous three years.

EMPIRICAL RESULT AND DISCUSSION

Table 1 shows the FDI flows from Taiwan, South Korea, and Japan by world regions during the 1990s. The main destinations of Taiwanese FDI were the United States and the Asian region. Furthermore, the share of Taiwanese FDI flow toward China accounted for 41.6% of the total FDI inflow in China in the 1990s. Thus, it is clear that China is an important destination for Taiwanese FDI, and most of the Taiwanese FDI in China was acquired by the manufacturing industry. In the case of South Korea, it accounted for the majority of the Korean FDI in the Asian region during the 1990s. However, the United States as a single destination accounted for the greatest share of Korean FDI. Japanese FDI flow toward the United States accounted for an overwhelming majority share, about 40% of Japanese FDI in the 1990s. Japanese FDI flow toward European countries witnessed a declining trend for some time since 1991, but rose again since 1997. It accounted for 23.7% of Japanese FDI in the 1990s. In recent years, Japanese FDI toward the Asian region has shifted from NIEs to ASEAN and China.

Empirical Results in the Case of Asian Developing Countries

The methodology adopted was to regress the dependent variable (measuring FDI outflow from the investing country to the host country) on the independent variables (EN, LC, IA, GD, MS, and MG) by using nine, seven, and ten countries in the case of Taiwan, South Korea, and Japan, respectively, and ten years' data in a pooled sample of ninety, seventy, and one hundred observations, respectively. Each case is estimated by using the ordinary least squares (OLS) method. The empirical results are displayed in Table 2.

The first column in Table 2 presents the result of the estimation on a regression equation for Taiwanese FDI in Asian developing countries. The ethnic Chinese network (EN) has a positive effect on Taiwanese FDI in Asian developing countries. In addition, the cost factors of the host country have a great impact on Taiwanese FDI in Asian developing countries because labor cost, infrastructure availability, and geographic distance all have statistical significance. The relative labor cost of the host country (LC) has a negative effect on Taiwanese FDI, while the communication infrastructure (IA) and geographic distance (GD) both have a positive effect on Taiwanese FDI. However, the market factors of the host country, such as market size (MS) and market growth (MG), have no significant impact on Taiwanese FDI in Asian developing countries.

Table 1 Direct Investment Outflows of Taiwan, Korea, and Japan in the 1990s

Unit: US\$ million; [] is %

Area	Asia	ASEAN	China	America	U.S.	Europe	Others	World
Taiwan	20,986 [60.2]	4,348 [12.5]	14,495 [41.6]	12,726 [36.5]	3,703 [10.6]	706 [2.0]	432 [1.3]	34,850 [100.0]
Korea	9,742 [40.9]	2,928 [12.3]	4,326 [18.2]	8,166 [34.3]	6,732 [28.2]	4,315 [18.1]	1,608 [6.7]	23,831 [100.0]
Japan	86,945 [18.2]	46,990 [9.9]	17,391 [3.7]	247,256 [51.9]	190,907 [40.1]	112,699 [23.7]	29,550 [6.2]	476,450 [100.0]

Notes: Since the data of Korean FDI in Vietnam are unavailable, the ASEAN region includes only Singapore, Indonesia, Thailand, Malaysia, and the Philippines.

Source: Prepared with data from the *Monthly Statistics on Overseas Chinese & Foreign Investment, Outward Technical Cooperation, Indirect Mainland Investment*, Guide of Mainland Industry Technology, Investment Commission, Ministry of Economic Affairs, Republic of China (Taiwan); *International Direct Investment Statistics Yearbook*, OECD (Korea); *Ministry of Finance Statistics Monthly*, No.584, Ministry of Finance, Japan (Japan).

Table 2 Determinants of FDI in Asian Developing Countries

Independent variable	Taiwan	South Korea	Japan
Ethnic Network (EN)	0.32 [3.57]***	0.45 [4.70]***	0.41 [4.08]***
Labor Cost (LC)	-6.34 [-3.48]***	-1.40 [-1.15]	-4.01 [-0.91]
Infrastructure Availability (IA)	0.12 [3.17]***	0.002 [0.08]	0.04 [1.02]
Geographic Distance (GD)	1.24 [3.83]***	1.34 [3.68]***	1.34 [2.09]**
Market Size (MS)	0.01 [0.06]	0.36 [1.42]	0.69 [1.91]*
Market Growth (MG)	0.09 [1.56]	0.04 [1.08]	0.11 [1.22]
Adjusted R-square	0.64	0.64	0.36
Sample Size	90	70	100

Note: 1. The numbers in the brackets are t-statistics.

2. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

The second column in Table 2 presents the estimation result regarding FDI undertaken by Korean firms in Asian developing countries. Similar to the ethnic Chinese network, the ethnic Korean network (EN) also has a positive effect on Korean FDI in Asian developing countries. In addition, the geographic distance (GD) has a positive effect on Korean FDI in Asian developing countries. All the other factors have no statistical significance although they have the same signs as those in the case of Taiwan.

The result of the estimation on Japanese FDI in Asian developing countries is listed in the third column of Table 2. The ethnic Japanese network in the host country (EN), geographic distance (GD), and market size (MS) all have a positive coefficient with statistical significance in the case of Japanese FDI in Asian developing countries. The other factors all display the same signs as those in the former cases of Taiwan and South Korea, but have no statistical significance.

Taiwanese FDI in China accounted for a large proportion of the total FDI in Asian developing countries (see Table 1). However, it should be noted that China has a very large Chinese population. Because this fact creates the possibility of the empirical result being biased, a regression excluding China was also estimated. Table 3 presents the empirical results of the locational determinants of FDI in Asian developing countries excluding China. A comparison of the results in Tables 2 and 3 reveals that the results including China and those excluding China show no difference in all the cases for Taiwanese FDI, Korean FDI, and Japanese FDI. The results are qualitatively identical with or without China.

Table 3 Determinants of FDI in Asian Developing Countries, Excluding China

Independent variable	Taiwan	South Korea	Japan
Ethnic Network	0.42	0.75	0.40
(EN)	[2.97]***	[2.34]**	[3.71]***
Labor Cost	-5.31	-1.50	-5.56
(LC)	[-2.51]**	[-1.21]	[-1.14]
Infrastructure Availability	0.10	0.005	0.05
(IA)	[2.14]**	[0.20]	[1.11]
Geographic Distance	1.11	1.12	1.22
(GD)	[2.84]***	[2.52]**	[1.78]*
Market Size	0.06	0.22	0.90
(MS)	[0.34]	[0.85]	[2.05]**
Market Growth	0.09	0.04	0.12
(MG)	[1.33]	[0.73]	[1.23]
Adjusted R-square	0.57	0.56	0.35
Sample Size	80	60	90

Note: 1. The numbers in the brackets are t-statistics.

2. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Discussion

By combining the empirical results shown in Tables 2 and 3, it is clear that Taiwan, South Korea, and Japan have the same directions with regard to the effects on FDI outflows to Asian developing countries for all the explanatory variables. However, the determinants of FDI that are considered important reveal few differences among the three cases. In the case of Taiwan, the ethnic Chinese network is an important factor influencing Taiwanese FDI in Asian developing countries. It is consistent with the previous argument that Taiwanese FDI in the 1990s has largely been directed toward Southeast Asia and China owing to the vast number of ethnic Chinese businesspersons in those regions. Many Taiwanese investment decisions are made incidentally, with initiatives originating from friends, peers, governments,

related firms, and so on. A survey conducted by Chen & Liu (1998) also indicates that the most important network connections are the overseas Chinese. In addition, the ethnic network also is an important factor in attracting Korean and Japanese FDI to Asian developing countries. Most countries have various ethnic groups in their societies. Cultural and linguistic proximity brings firms into contact with local ethnic groups in various business areas. In the case of developing countries in Asia, it was found that Taiwanese, Korean, and Japanese firms all tended to invest in countries with larger ethnic populations. For example, in the case of Korea, the initial wave of investments in China is presumably due to the large number of Korean Chinese residents—most of them concentrated in Shandong and Tianjin in China. This explains the cultural aspects of Korean FDI in China, which is strongly based on ethnicity rather than economic background.

The availability of adequate infrastructure implies an ease of operations for foreign investors in a given location. Previous empirical studies have also generally found that the host country infrastructure plays a significant role in influencing the distribution of FDI (Loree & Guisinger, 1995). The geographic distance between the investing country and the host country has a positive impact on Taiwanese, Korean, and Japanese FDI in Asian developing countries. It indicates that overseas production costs do not outweigh both the domestic production costs and the export costs if the FDI is aimed at serving local markets or adjacent third-party countries. The proximity of production to the market is particularly important in the presence of significant transportation costs or any kind of protectionist measures (Meyer, 1998).

Fukushima & Kwan (1995) argued that the main stream of FDI in Asia is still of the outsourcing type with the goal of achieving lower production costs and aiming at the export market; however, the other types of FDI aiming at the market within the region were on the rise in the 1990s. The empirical results also show that the Taiwanese and Korean FDI in Asian developing countries in the 1990s are of the outsourcing type that aim at achieving lower production costs and targets the export market, while Japanese FDI is of the type that aims at the market within the region in addition to being the cost-reduction type.

CONCLUSIONS

This study adopts a country-specific perspective in order to compare the location decisions of Taiwan, South Korea, and Japan with regard to outward FDI. The major conclusions of the paper can be summarized as follows. First, ethnic networks are important for Taiwanese, Korean, and Japanese firms in developing countries in Asia. Second, in the case of Asian developing countries, the cost factor is important for Taiwanese, Korean, and Japanese FDI, while the market factor is important only for Japanese FDI.

Further, we draw some valuable implications and suggestions from our research. First, our study focuses on Taiwanese, Korean, and Japanese FDI, and examines whether or not our findings can be generalized to the FDI undertaken by Asian firms. However, host countries will be more interested in how MNEs determine the location of their FDI. Thus, from a host country's perspective, it is desirable to identify the locational factors through which the host country may exert some influence on the magnitude and the direction of FDI. MNEs are likely to be attracted to countries that have lower labor costs, better infrastructure conditions, and larger markets. Further, ethnic networks have played a crucial role in FDI flows. In addition to ethnic Chinese networks, the effect of ethnic Japanese and ethnic Korean networks on FDI was also first examined and identified in this study. This effect is based on the fact that overseas ethnic groups not only share the same language and culture with the ethnic group in the host country but also have relatives, friends, and former business ties in the host country. These links made it easier for overseas ethnic investors to negotiate or obtain information in the host countries as compared with other foreign investors.

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