To Invest or Not to Invest in China

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ABSTRACT. This research used two samples of enterprises, 123 that invested in China and 213 that did not, to examine why many Taiwanese enterprises stay home despite others that have invested in China. Our results found that most Taiwanese enterprises are pushed to invest abroad by increasing wages at home and increasing competition in the export market, which lowers their profitability. The key factors determining to invest or not to invest in China are whether they are satisfied with their profits, and whether they are able to upgrade organizational capability, if they are not satisfied with the profits. However, this conclusion does not totally apply to large enterprises. For large enterprises, their investment in China has little to do with profitability and R&D intensity, but more to do with export competition and technological capability. Furthermore, investment in Southeast Asia is complementary to investment in China for large enterprises, but a trade-off for small and medium ones.

1. Introduction

An enterprise investing abroad is motivated not only by location-specific advantages that favor a foreign host country, but also by enterprise-specific monopolistic advantages and its ability to internalize these advantages due to imperfection of intermediate inputs (Dunning, 1988; Rugman, 1979). From a strategic perspective, an enterprise's motivation to invest overseas is efficiency, strategic moves, and organizational learning (Kogut, 1988); or they are asset-seeking, market-seeking and resource-seeking (Dunning, 1993, 1998). The theories and concepts developed on the basis of large multinational corporations (MNCs) are also used to examine MNCs from developing countries (Wells, 1983; Buckley and Clegg, 1991; Lecraw, 1993). MNCs are powerful, resourceful and active in engaging in investment activities around the world. However, there are also many small and medium enterprises (SMEs) in developing countries which engage in foreign direct investment (FDI) in the global market, but few studies have reported their activities (Buckley and Ghauri, 1989; Buckley and Clegg, 1991; Chen and Chen, 1998; van Hoesel, 1999).

According to FDI theories, an enterprise investing abroad has advantages over its competitors both in the host and home countries. This is true for a large and resourceful enterprise, but it may not be true for a SME. Since SMEs have limited resources and organizational capability, it is harder for them than for MNCs to react to changes either in the domestic or global environment. To invest abroad, a SME must pay additional costs to acquire market information and to manage foreign operations. If opportunities at home are adequate, then the enterprise's owner may simply never incur those costs (Wells, 1983). Therefore, unless they are forced to, SMEs tend not to engage in foreign direct investment. This research investigates the decision of whether or not to invest in China in order to examine if Taiwanese enterprises, of which many of them are small and medium size, are forced to invest abroad, especially in China. China is selected because, since the reform of its economy, it has recently become the largest destination of Taiwanese foreign investment, although many enterprises still opt not to invest there.

This study thus seeks to answer the following questions: Under the same environment, why do many Taiwanese SMEs choose to stay home even

Final version accepted on February 7, 2002

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Small Business Economics **22**: 19–31, 2004.

though many others have invested in China? Are the enterprises investing in China different from those staying home? We further expect that our research results would have strong policy implications, enabling us to predict movement of Taiwanese SMEs in the future.

2. Taiwanese investment in China

Starting from 1991, Taiwan's government required the registration of outward investment to China (referred to as mainland China in Taiwanese publications). As shown in Table I, 237 and 264 investment cases registered in 1991 and 1992, respectively. Registration became mandatory in 1993, and thus 9,329 cases were registered. The number of registered investment cases in China went down in the following years and continued to fall until registration was again enforced in 1997, when 8,725 cases were registered. The huge up and down swing of investment registration indicates a serious under-reporting of Taiwanese investment in China. It has been estimated that more than 30,000 enterprises are currently undertaking operations in China, but slightly more than one third of the total enterprises has registered. If either the figures for 1993 and 1997 or the figures excluding those two years are compared, the average project size has shown a significant increase.

Of these investments, most are in the electronics and electric appliances industry, accounting for 18.2% in U.S. dollar amounts. The food and beverage processing industry accounts for 9.9%, basic metals and metal 9%, plastic products 8.9%, textiles 7.8%, non-metric minerals 6.7%, chemicals 6.4%, precision instruments 6%, and transport equipment 5%. These industries are mainly labor intensive, representing Taiwan's traditional exporting industries. Most investments are small and medium enterprises, defined as having fewer than 300 employees by Taiwan's government. According to a 1995 survey, 28 percent of Taiwanese enterprises engage in foreign direct investment, which is defined as having foreign production or sales agency or both (Ministry of Economic Affairs, 1996). Of the surveyed 1,680 enterprises with foreign direct investment, 65% had investment in China and 51% had China as the most important investment location. Of these investments, SMEs accounted for roughly 81% of all foreign direct investment; 86% of SMEs had investment in China and 88% had China as the most important investment location (Yeh and Lin, 1999).

TABLE I
Taiwanese investment in China

Year	Cases	Amount (US$ m)	Average (US$ m)
1991	237	174	0.734
1992	264	247	0.936
1993	9,329	3,168	0.339
1994	934	962	1.030
1995	490	1,093	2.230
1996	383	1,229	3.210
1997	8,725	4,334	0.497
Total	20,362	11,208	0.550

Source: Council for Economic Planning and Development, *Taiwan Statistical Data Book, 1998*, Republic of China.

Many theories explain the existence of foreign direct investment by MNCs. The theories and concepts developed on the basis of large MNCs are also used to examine MNCs from developing countries. Location theory (Smith, 1981) indicates that the reasons for plant location are factors such as transportation (distance to market), natural resources, and labor (wage and skills). An extension of location theory to international plant location takes the additional factors of trade barriers and tax incentives into consideration. Industrial organization theory (Hymer, 1967; Kindleberg, 1969; Caves, 1971) explains why foreign enterprises are able to compete with local enterprises who have better local knowledge, because the foreign enterprises have monopolistic advantages in capital, production, technology, marketing, and organization. Product life cycle theory (Vernon, 1966) combines location theory and industrial organization theory with the product life cycle concept to explain how new products are first introduced in a few developed countries, move to other developed countries, and the finally onto developing countries.

These theories as of yet do not explain why enterprises have to move their monopolistic advantages directly to other nations rather than use other means, such as exporting, licensing agreements, management contracts, and joint ventures.

Internalization theory (Rugman, 1979, 1986; Hennart, 1982) reasons that there is no perfect market for the intermediate products, monopolistic advantages or proprietary assets owned by the enterprises. In order to maximize the benefits of the proprietary intermediate products, enterprises have to engage in direct management control of foreign investment.

Synthesizing all these theories, Dunning (1988) has developed an extensive and eclectic framework or a factor endowment-market failure paradigm. The framework tries to explain three production phenomena: the extent, form and pattern of an enterprise's international production. He identifies three advantages to explain international production abroad: location, ownership, and internalization advantages. The location advantages are related to the host country's transport costs, production costs, tariff barriers, investment incentives, psychological distance, and so on, as compared to the home country and third countries. The ownership advantages are both tangible and intangible properties, such as market access, patents, trademark, economies of supply, international arbitraging, etc., which enable an enterprise to enjoy a property rent or monopolistic position (Hymer, 1967; Kindleberg, 1969; Caves, 1971). The internalization advantages refer to the enterprise's organizational capabilities in international business transactions, which include effective management control, the assurance of quality control, price discrimination, avoidance of buyer uncertainty, and the avoidance of property right infringement. The extent and forms of these advantages are determined by factor endowments of the host and home countries and market failure (structural and transactional failures), especially for intermediate products. In summary, the reason a multinational enterprise is able to compete with the enterprise indigenous to the country of production is because its ownership and internalization advantages are greater than the location advantages enjoyed by the local enterprise.

In addition to Dunning's framework, the concept of network has been used to explain location choice of foreign direct investment (Chen and Chen, 1998; Coviello and Munro, 1997; Kohn, 1997). Once a powerful member in a network of enterprises moves production abroad, whether it is located in a vertical chain or a horizontal chain, other members in the transactional network tend to follow this powerful member overseas. It is not an enterprise's movement as explained in Dunning's framework, rather it is a movement of a group of enterprises that are highly connected with each other. The network linkage can be interpreted as a form of ownership advantages over local enterprises in host countries (Chen and Chen, 1998).

Taiwanese investment in China can generally be examined from Dunning's framework. China's open-door policy, which started in 1979, has provided not only many opportunities for cheap resources and a huge potential market, but also various incentives to foreign investment, which even local Chinese enterprises cannot enjoy (Child and Tse, 2001). Taiwanese enterprises are thus simultaneously pulled by China's location advantages and pushed by Taiwan's worsening location advantages and intensive international competition (Kao et al., 1994; Chen and Chen, 1999; Yeh and Lin, 1999). The Taiwanese enterprises that are able to compete with local Chinese enterprises are those that possess ownership advantages, either asset or transaction advantages.

In general, Taiwanese enterprises in China are relatively small in size and labor intensive. They use low level technology. When they are compared to many local Chinese enterprises, they are more advanced not only in capital resources and production capabilities, but also in marketing, finance and human resource management abilities, business connections, and a reputation both in domestic and export markets. The ownership advantages Taiwanese SMEs have been developed over the past thirty years both in Taiwan and in international markets. In order to compete, local Chinese enterprises need a period of time to learn.

From the perspective of internalization advantages, current studies have found that Taiwanese enterprises in China have adopted a dominant ownership strategy (sole venture and majority joint venture). They have exported a high proportion of their production to Japan, the U.S., and to European countries, and used the parent company and other companies as major sources of equipment and machinery, working capital, raw materials, and technology (Kao, 1994, 1995; Kao et al., 1994; Yeh and Lin, 1999). These results

indicate that many Taiwanese enterprises in China are motivated to maximize internalization advantages by seeking efficiency rationalization to rationalize their value activities. For example, many Taiwanese enterprises have expanded their scale of production after investing in China, which they were unable to do in Taiwan because of the high price of land.

The special relationship between China and Taiwan is important when discussing Taiwanese investment in China. While Taiwan's government has encouraged Taiwanese enterprises to invest in Southeast Asian countries for political reasons, many Taiwanese enterprises typically choose China over Southeast Asian countries, because of similarities in language and culture (Kao et al., 1994; Yeh and Lin, 1999). To Taiwanese enterprises, this is an important ownership advantage when compete with other national enterprises in China. Furthermore, China is a big country with heterogeneous areas in resources, infrastructure, and government policies concerning incentive schemes. As with investment from Hong Kong and other countries, Taiwanese investment in China is concentrated in the southern and eastern regions. In those regions, the Chinese government provides favorable investment incentives, and there are seaports connecting to the outside world (Kao, 1994, 1995; Kao, 1994).

3. To invest or not to invest in China: Hypotheses

Taiwanese enterprises, especially SMEs, have competitive advantages over their local competitors in China. However, more Taiwanese enterprises stay home than invest abroad. Why is this? Do enterprises investing in China own superior advantages over those staying home, as FDI theories predict? How can those enterprises that stay home cope with the pressures in costs and competition, which have motivated other enterprises to move their production abroad? Can we also use FDI theories to understand why some Taiwanese enterprises decide not to invest in China?

Let us now speculate on the differences between those enterprises investing in China and those that have not. We summarize the above discussions into the decision flowchart in Figure 1 to understand why an enterprise stays home or engages in foreign direct investment. As discussed above, a Taiwanese enterprise is simultaneously pulled by the location advantages of China and Southeast Asian nations and pushed by Taiwan's worsening location advantages and intensive international competition. As shown in Figure 1, these pressures change the relative costs of manufacturing in Taiwan. The changes in relative costs are reflected in an enterprise's exports and imports and then its investment returns. If the owners of SMEs are satisfied with their current returns, then they tend to stay home (Wells, 1983). If the returns are not satisfactory, then the enterprises are forced to improve and upgrade if they want to stay home, or they may have to move their production abroad. Thus, an enterprise's abilities to improve and upgrade technology will then decide whether the enterprise stays in Taiwan or engages in foreign investment. To the owners of SMEs, FDI incurs additional costs not only in management, but also on their families, because these enterprises have limited capabilities in finance, technology, and human resources.

Once a Taiwanese enterprise is unable to improve and upgrade in Taiwan, and so decides to invest abroad, it has two choices, China or a Southeast Asian nation, two areas that Taiwanese enterprises have comparative advantages. The hostile relationship between Taiwan and China, however, has forced Taiwan's government to encourage Taiwanese enterprises to invest in Southeast Asian nations, while discouraging them from investing in China. This is despite the advantages China has in lower wages and cultural similarities than do Southeast Asian nations.

It is easy to assume that, whether they are local market-oriented or export market-oriented, Taiwanese enterprises investing in Southeast Asian nations and China have advantages over their local competitors. Do they, however, have competitive advantages over those that decide to stay home? The answer may not be as clear as it may seem.

We first use the Dunning's framework (1988) to examine these two types of enterprises, those engaging in FDI (referred to as Investors) and those not engaging in FDI (referred to as Non-investors). Both face the same location advantages or disadvantages, but they react differently, because of their different ownership advantages.

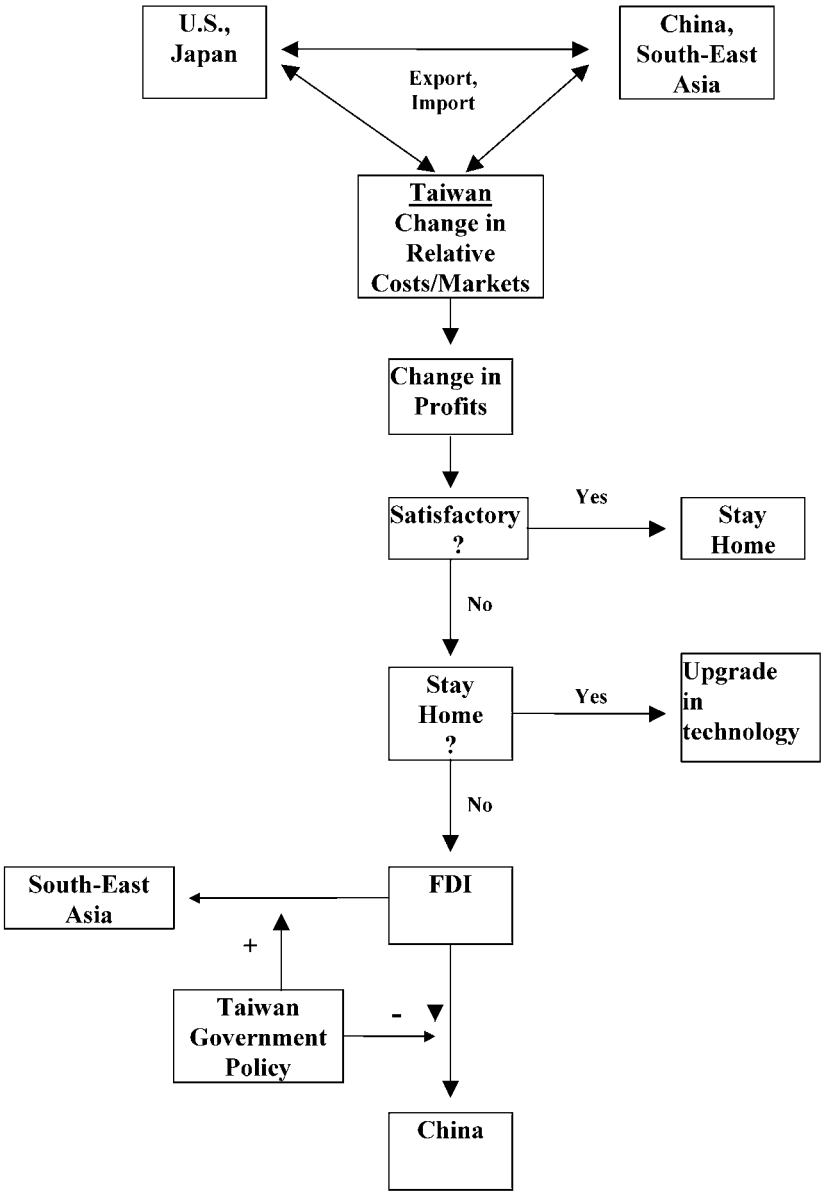

Figure 1. The choice of investment in China by Taiwanese enterprises.

With regard to Non-investors, either the location advantages and/or disadvantages are not important to them, or they can be overcome by advancement of technology and/or management.

As compared to local competitors, Investors have better technology and organizational capacities. However, the ownership advantages of Non-investors should be compared to the advantages owned by Investors. It is not clear whether Non-investors have different enterprise-specific advantages, so that they are able to get fair values in external markets, or whether their advantages are local market-oriented and they do not have values abroad. With regard to internalization advantages, Non-investors do not need the advantages of integration across nations, because of their home market orientation.

If Kogut's (1988) three motivations for an

overseas venture (efficiency, strategy and organization learning) are used for comparison, these three objectives become unimportant to Non-investors since they stay home. To them, it is not important to invest abroad in order to gain cost reductions and efficiency for present resources and technology, or to gain economic scale and to acquire access to overseas resources and incentives provided by foreign governments. FDI is neither an important strategic move, preemptive, offensive, defensive, or adaptive, nor is it a route of learning. Rather than FDI, there are various ways to reduce costs, increase efficiency, acquire resources, face competition, and conduct organizational learning. The enterprise can reduce costs and increase efficiency by a technology upgrade. To compete or to maintain a satisfactory return, an enterprise can upgrade, diversify, and/or change its product line at home. An enterprise can also obtain the advantages of foreign markets, resources and technologies by exports, imports, contractual arrangements, licensing agreements, and other alliances.

In summary, as compared to Investors, Non-investors do not invest abroad are attributed to four possible reasons. First, foreign endowments are not important or they can be overcome by developing organizational advantages. Second, they do not have enterprise-specific advantages in foreign markets. Third, they have, or are able to develop, advantages to overcome cost and/or market pressure. Forth, foreign markets, economy of scale, foreign learning, and integration across nations are not important.

In the case of Taiwanese enterprises, a comparison between Investors and Non-investors should consider the special relationship between China and Taiwan and the role that the Taiwan's government plays in investment decisions. Theoretically, China and Taiwan have been at war since 1949, but Taiwan's government has let many Taiwanese enterprises invest in China for economic reasons. In order to reduce the over-dependence on China in their economy, the island government encourages enterprises to invest in Southeast Asian countries and has adopted a so-called "no haste/be patient" policy toward investment on the mainland.

The areas restricted for investment are key industries such as specific electronic component & parts, communication equipment & apparatus, semi-conductor and petrochemical industries, products such as chip, cellular phone, foundry, notebook 586 etc., technologies, and services like banking that have negative impacts on national security and the stability of the economy, finance and society. Products, technologies, and services that are permitted for investment are those that require labor intensity or are environmentally costly, small scale, of low production in Taiwan, and those that do not have a significant impact on the economy. However, to those permitted to invest, there are limitations on the amount of capital invested, which varies according to whether the investing enterprise is a small and medium size enterprise, an over-the-counter company, or a listed company. The products not in the restricted and permitted areas are treated as special cases subject to special approval. To counter the trend of outflow investment to China, until the recent Asian financial crisis, Taiwan's government has encouraged Taiwanese enterprises to invest in Southeast Asia, but no incentives are provided. For the time being, only a few companies have engaged simultaneously in Southeast Asia and China. To many of them, Southeast Asia is an alternative to investment in China.

To explain the decision for Taiwanese enterprises of whether to invest or not in China, four propositions for empirical research are developed. First, let's considers the change in relative costs rising from the change in the factor endowments of Taiwan, China and Southeast Asian nations. The change in relative costs alters the trade pattern of Taiwan with the rest of world, especially with the United States and Japan. Therefore,

H_{1a}: The change in relative labor costs is a driving cause in the choice of investment in China. An enterprise that has a relatively higher labor cost structure is more likely to invest in China than one with a lower cost structure.

H_{1b}: An enterprise that is export oriented is more likely to invest in China than a domestic market-oriented enterprise.

The change in relative costs and export market pressures affect the rate of returns in investment. A satisfactory return tends to discourage changes

in technology and management. An enterprise's profitability is a significant factor in the choice of investment in China. Thus,

H_2: An enterprise that has a higher profitability is less likely to invest in China than an enterprise that has a lower one.

Whether an enterprise stays home or engages in foreign direct investment depends on its ability to cope with decreasing profitability by improving and upgrading its technology and management. In other words, an enterprise's competitive advantages determine the choice of investment in China. In contrast to the prediction of FDI theories, we speculate that:

H_3: An enterprise that is able to develop advantages at home is less likely to invest in China.

The effect of Taiwan's government policy has to be considered in the choice of investment in China. In addition, Taiwan foreign direct investment is at an early stage of internationalization, in which there are few enterprises engaging in investment simultaneously in Southeast Asia and China. Investment in Southeast Asian nations is an alternative to investment in China, making it a negative factor in the investment choice. Therefore, it is expected that:

H_4: An enterprise that has investment in Southeast Asian nations is less likely to invest in China.

The above hypotheses are based on an assumption that enterprises invested in China have limited resources and organizational capabilities. What would happen if the enterprises become relatively large and have more resources and higher organizational capabilities? Will they become proactive, rather than passive like small enterprises, and act more like a MNC seeking integration efficiency across nations, in which investment in Southeast Asian nations becomes a part of the integration arrangement (Yeh and Lin, 1999)? We therefore divide the sample into two groups, enterprises with a larger production scale and enterprises with a smaller production scale, and speculate that:

H_5: For the group of enterprises with a large production scale, their technological capability and investment in Southeast Asian nations are likely to be positively associated with their investment in China. For the group of enterprises with a small production scale, the relationships are likely to be negative.

4. Methodology

Sample

The study's data were collected from a choice-based, two-strata sampling. One stratum includes enterprises which have invested in mainland China (abbreviated as EIC). The other one is enterprises which did not invest in mainland China by July 1996 (abbreviated as ENIC). We feel that a choice-based sampling is sensible where a random sample from the total population would obtain very few EIC. The Council of Foreign Direct Investment reported that there were only 793 EIC by July 1996, accounting for 3% of business' total population (Taiwan electronics and electrical appliances (E & EA Industry) and textile industries). A random sample here would fail to get enough EIC for analysis, and thus a choice-based sampling was adopted by this study. It resulted in 123 EIC. Of them, 84 enterprises were in the E & EA industry and 39 enterprises were in the textile industry. In addition, 213 ENIC were randomly selected from the total population, resulting in 136 enterprises in the E & EA industry and 77 enterprises in the textile industry. Once the name lists of EIC and Non-investor were selected, enterprise's characteristics were elicited from the 1990–1994 Taiwan Industry Statistical surveys, conducted by Statistics Department of the Ministry of Economic Affairs. The surveys interviewed manufacturing plants in regard to production, wages and salaries, exports, R&D, total royalties, and technical and other professional fees remitted abroad, etc.

Model and variables

A logit choice model was specified and a weighted maximum likelihood estimation (WMLE, Manski and Lerman, 1977) was employed. When the MLE was applied to a choice-based sample, its estimators came out inconsistent. Thus, Manski and Lerman suggested the WMLE in order to get consistent estimators.

The dependent variable is the choice of invest-

ment in mainland China during 1991–1996 coded 1 for such investment or 0 otherwise. Independent variables include wage rates, profitability, capital labor ratio, R&D intensity, export ratio, investment in Southeast Asian countries, technology imports, technology exports, the accumulated number of enterprises invested in mainland China in the previous years and the year 1993. Four groups of enterprises were analyzed: all enterprises, enterprises with equal or more than 300 employees ($N \geq 300$), enterprises with fewer than 300 employees and with equal to or more than 100 employees ($300 > N \geq 100$), and enterprises with fewer than 100 employees ($N < 100$). Within each type of enterprises, two logit models were analyzed.

The wage rate is measured by enterprise wage per head to indicate the labor cost pressure. To control for the industry effect, profitability is represented by the difference between pre-tax profits-assets ratio and industry profits-assets ratio mean. An assumption is made here that high profitability means high satisfaction to an enterprise. Technology imports (the ratio of royalties and technology price paid by a foreign country to sales), technology exports (the ratio of royalties and technology price received from a foreign country to sales), capital labor ratio, and R&D as a percentage of sales are used as indicators of ownership advantages. To eliminate business fluctuation on variables, those variables are measured by the average from 1990 to 1994.

The export ratio is used to represent the pressure of international competition faced by the enterprises. Whether an enterprise has investment in Southeast Asian nations is coded 1 for such investment or 0 otherwise. The accumulated number of enterprises invested in mainland China by industry in the previous years is used to measure the demonstration effect. Year 1993 is a dummy variable used to indicate the unusual increase in investment in mainland China, because Taiwan's government required enterprises to register their China investment in 1993.

5. Results

The descriptive statistics of independent variables are shown in Tables II and III. They reveal the average of each independent variable for the group of 123 enterprises invested in China (EIC) and those of SMEs, and the group of 213 enterprises not invested in China (ENIC) and those of SMEs. On average, as compared to ENIC, EIC have fewer employees and pay a lower wage rate. They also export more output and earn a lower profit. They further use more labor-intensive technology, spend less on R&D and have a higher ratio of technology imports. They are also less likely to invest in Southeast Asian nations, and have a higher ratio of technology exports. However, if a t-test is conducted, the two groups are statistically different only in their R&D intensity and their investment in Southeast Asian nations.

The results for five conditional choice models with the weighted average maximum likelihood method are presented in Table IV for five groups. These groups are all the enterprises, enterprises with equal to and more than 300 employees ($N \geq 300$), enterprises with fewer than 300 employees ($N < 300$), enterprises between 100 and 299 employees ($300 > N \geq 100$), and enterprises with fewer than 100 employees ($N < 100$). The table shows the effects of each independent variable in the choice of China investment for the five groups. For all enterprises as a group, with the exception of ratio of technology imports and investment in Southeast Asian nations, all independent variables are significantly related to investment in China. The wage rate, export ratio, and the year 1993 are positively related to the investment decision, while profitability, size, capital-labor ratio, R&D intensity, and the number of enterprises invested in previous years are negatively related. The relationships between the China investment and both technology imports and investment in Southeast Asian nations are negative, but statistically not significant. However, contradictory to our hypothesis, the ratio of technology exports relates positively to investment in China. It cannot be used as an indicator of organizational capability, but rather is related to investment in China and technology sale to China.

The results overall conenterprise most of our hypotheses in that Taiwanese enterprises invest in China because they face higher pressure in wage increases and international market competition, which thus lowers profits at home, and have a lower ability to upgrade. When they invest abroad,

TABLE II
Statistics of variables: Means & standard deviations (in parenthesis) for EIC

Independent variable	All	Large (N ≥ 300)	Medium (300 > N ≥ 100)	Small (N < 100)
No. of enterprises	123	31	35	57
Industry	0.317 (0.467)	0.323 (0.475)	0.343 (0.482)	0.298 (0.462)
Average size (no. of employees)	316 (669)	986 (1089)	168 (52)	43 (26)
Ratio of foreign investment	1 (0)	1 (0)	1 (0)	1 (0)
Wage per head (NT$1,000)	304 (114.5)	335 (129)	288 (76)	297 (124)
Export ratio	36.2 (38.5)	39.5 (38.9)	33.9 (35.7)	35.8 (40.5)
Profitability (profits/assets)	0.254 (0.347)	0.376 (0.372)	0.277 (0.274)	0.174 (0.357)
Capital/Labor ratio	1193 (1302)	1226 (1084)	1374 (1273)	1066 (1429)
R&D intensity	0.009 (0.013)	0.015 (0.013)	0.008 (0.010)	0.007 (0.013)
Ratio of technology imports	0.0025 (0.0230)	0.009 (0.046)	0.00007 (0.0002)	0.0005 (0.0026)
Investment in Southeast Asia	0.285 (0.453)	0.613 (0.495)	0.257 (0.443)	0.123 (0.331)
Ratio of technology exports	0.0017 (0.0131)	0.0003 (0.0018)	0.006 (0.024)	0 (0)
No. of enterprises invested in previous years	252 (135)	259 (141)	251 (130)	249 (137)

there is a choice, or a trade-off, between investment in China and investment in Southeast Asian nations, but the crowding effect is not significant. There is also a significant, but decreasing, demonstration effect of past investment as measured by the number of enterprises investing in previous years.

For the group of enterprises with fewer than 300 employees, the results are the same as those for all the enterprises as a group, with the exception of the effects of the export ratio, ratio of technology imports, and investment in Southeast Asian nations. The effect of the export ratio is statistically not significant, the effect of technology imports becomes significant, and the crowding effect of investment in Southeast Asian nations is significant.

If the group with fewer than 300 employees (SMEs) and the group with equal to and more than 300 employees are compared, the results become very interesting. As compared to the smaller size group (N < 300), the effects for the export ratio are more important for the larger size group, while the effects for profitability and R&D intensity become insignificant. The effects for technology imports and investment in Southeast Asia change to be positively and significantly related to investment in China for the larger size group. The significant differences between the two groups reveal that investment in China for the larger size enterprises have more to do with pressure from international competition in the export markets, but little to do with profitability and R&D intensity as they are predicted for the SMEs. Moreover, invest-

TABLE III
Statistics of variables: Means & standard deviations (in parenthesis) for ENIC

Independent variable	All	Large (N ≥ 300)	Medium (300 > N ≥ 100)	Small (N < 100)
No. of enterprises	206	80	55	71
Industry	0.362 (0.482)	0.300 (0.461)	0.455 (0.503)	0.380 (0.489)
Average size (no. of employees)	370 (549)	804 (699)	193 (65)	48 27
Ratio of foreign investment	0.582 (0.494)	0.663 (0.476)	0.636 (0.485)	0.451 (0.501)
Wage per head (NT$1,000)	321 (114)	340 (96)	318 (121)	310 (126)
Export ratio	33.9 (114)	40.2 (39.2)	32.2 (35.7)	28.1 (37.7)
Profitability (profits/assets)	0.390 (0.931)	0.454 0.917	0.473 1.285	0.333 (0.475)
Capital/Labor ratio	1360 (1268)	1515 (1372)	1534 (1397)	1128 (1030)
R&D intensity	0.015 (0.028)	0.0157 (0.116)	0.0172 (0.025)	0.014 (0.039)
Ratio of technology imports	0.0023 (0.011)	0.002 (0.004)	0.004 (0.020)	0.001 (0.005)
Investment in Southeast Asia (dummy)	0.493 (0.501)	0.55 (0.501)	0.564 (0.501)	0.366 (0.485)
Ratio of technology exports	0.00022 (0.0015)	0.00002 (0.0001)	0.00034 (0.0018)	0.00037 (0.0023)
No. of enterprises invested in previous years	425 (101)	438 (96)	406 (105)	422 (102)

* Number of enterprises, 80 + 55 + 71 = 206, is less than 213. The difference is due to missing values.

ment in Southeast Asian nations complements, rather than competes, with the investment in China. Hypothesis H_5 is thus confirmed.

In Table IV the effects for the small size group (N < 100) and the medium size group (300 > N ≥ 100) also indicate their contribution to the effects for all SMEs as a group. For the small size enterprises, the effects of export ratio, R&D intensity, and ratio of technology imports are not significantly related to investment in China. For the medium size enterprises, investment in China is not related to export ratio, profitability, capital-labor ratio, number of enterprises invested in previous years, and the year 1993.

In summary, our results found that Taiwanese enterprises in general are pushed to invest abroad by increasing wages at home and increasing competition in the export market, which lowers their profitability. The key factors determining the choice of investment in China are whether they are satisfied with their profits and whether they are able to upgrade their organizational capability, if they are not satisfied with profits. However, this conclusion does not totally apply to large enterprises. For large enterprises, their investment in China has little to do with profitability and R&D intensity, but more to do with export competition and technological capability. Investment in Southeast Asia is complementary to investment in China for large enterprises, but a trade-off for SMEs. Furthermore, it seems that the discouragement policy by Taiwan's government aimed at

TABLE IV
Empirical Results of the Choice of Investment in China – Logit Model (WMLE result) (standard deviation in parenthesis)

Independent variable	All	Large (N ≥ 300)	M & S (N < 300)	Medium (300 > N ≥ 100)	Small1 (N < 100)
Wage per head	0.0124*** (13.122)	0.0117*** (6.991)	0.0150*** (7.949)	0.0175** (3.153)	0.0195*** (5.452)
Export	0.0150*** (5.116)	0.0121* (2.072)	0.0079 (1.920)	0.00058 (0.060)	0.0099 (1.554)
Profitability (deviation from industry mean)	–1.2975*** (–3.344)	–0.2965 (–0.663)	–1.8892*** (–3.591)	–0.7134 (–0.621)	–4.1956*** (–4.765)
Size of employees	–1.5287** (–2.645)				
Capital-labor ratio	–0.00021* (–2.451)	–0.0012*** (–3.963)	–0.00024* (–2.208)	–0.00004 (–0.191)	–0.0001** (–3.105)
R&D intensity	–24.624*** (–3.363)	–24.612 (–1.378)	–41.390** (–3.285)	–84.785* (–2.110)	–19.58 (–1.820)
Ratio of technology imports	–2.3432 (–1.020)	14.796* (2.086)	–77.977* (–1.986)	–1796.6* (–2.276)	142.7 (0.768)
Invest in Southeast Asia (dummy)	–0.1000 (–0.290)	1.790*** (3.620)	–1.6354*** (–3.942)	–2.0346* (–2.183)	–5.2192*** (–4.412)
No. of enterprises invested in previous years	–0.0011** (–2.766)	–0.0042*** (–4.640)	–0.0015* (–2.030)	–0.007 (–0.427)	–0.0037* (–2.095)
Ratio of technology exports	111.08** (2.749)	3216.9 (1.562)	129.09*** (3.458)	175.40* (2.532)	
1993 (dummy)	18.534*** (7.365)	15.984*** (16.694)	14.952*** (44.196)	14.651 (14.157)	23.105*** (7.082)
Log likelihood	–533.0868	–147.5947	–318.0043	–120.5915	–151.7978
Chi-squared	121.6367	123.5050	121.8784	80.2819	131.8145
Predict ratio	0.8663	0.8756	0.8947	0.8679	0.8721

Note 1: The ratio of technology exports is not included in the equation, because of the 0 value.
* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

large enterprises is not very effective, because they are able to invest in both Southeast nations and China.

6. Discussion and implications

Our research results are theoretically derived from a very different perspective. As compared with FDI theories, this paper asks a very different question – why do many Taiwanese enterprises stay home even though many others have invested in China, despite facing the same business environment. The FDI theories do not provide an answer, but our results help us understand more about foreign direct investment, especially foreign direct investment of SMEs. To a SME, the ownership advantages and internalization advantages may not be as important as they are to a large one. Yet, the changes in location advantages, either at home or abroad, especially in the case of a small and open economy like Taiwan, have a significant impact on SMEs. They have limited resources and organizational capabilities. As indicated that by Yeh and Lin (1999), it seems that a two factor-model, push and pull factors, better describes the migration of a large number of Taiwanese SMEs to China, where is a much less-developed country than Taiwan. Taiwanese SMEs are forced to invest by changes in their cost increase at home, a migration of major domestic customers to China, and/or

demand from foreign customers. They are also attracted to invest in China by her huge and rapid growing market.

A special situation should be noted for the migration of Taiwanese enterprises to China. Foreign direct investment incurs additional costs, which most SMEs are unable to afford. For Taiwanese enterprises, the additional costs incurred in a China investment is not that great for two reasons: geographical proximity, and cultural and language similarity, even though the political relation between Taiwan and China remains hostile and Taiwan's government discourages investment there. The investment by Taiwanese enterprises in China is very similar to the migration of enterprises within a country setting, where their investment in China should be viewed as a special case of foreign direct investment.

Our model empirically provides a framework to help predict future Taiwanese investment in China. Is it going to change, increase or decrease? The model has identified five key variables: Taiwanese domestic cost conditions, foreign competition, economic development in China, an enterprise's profits and an enterprise's upgrading ability. Once we are able to forecast the five variables, the trend of Taiwanese investment in China can be estimated. For example, the recent Asian financial crisis has reshaped relative cost conditions and export competition of Taiwan's economy and thus has affected Taiwanese investment in China.

Several research limitations need to be discussed. First, our research focuses only on the push factors that drive Taiwanese enterprises to invest or not in China. We have ignored other factors such as market opportunities in China, investment of major suppliers and/or customers, and the enterprise/owner's personal reasons, which are also important in motivating enterprises to decide whether or not to invest in China. Second, except for the average profitability, our empirical results are derived from cross-sectional data, which by nature has limitations. For example, some important sequential events are neglected in the analysis. Some enterprises may first invest in China and then expand their operations to Southeast Asian nations, or vice versa. These sequential decisions are treated as being simultaneous or complementary in our empirical analysis. In addition, the motivations for investment in China may change as time passes. The importance of the push factors at the early stages of investment may decrease, while China's domestic factors may become more important after enterprises have been established there and have become large and diversified. Some enterprises even may make China their home base and move their headquarters there. Further research is required to investigate these strategic changes.

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