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**Entry Modes of Multinational
Corporations into China's Market:
A Socioeconomic Analysis**

by

Haishun Sun

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Abstract

The rapid economic growth of China makes it a fast expanding market in the world, which attracts increasing number of multinational corporations (MNCs) to invest. How to enter this huge and newly liberalised market and what entry mode should be taken, are key questions which need to be answered before any investment takes place. This paper is a study of the entry modes of MNCs in the particular Chinese institutional and business environments within the transaction cost analytical framework. It provides not only theoretical discussion but also an empirical investigation of MNCs entry modes in China. The main findings of this study are: (1) the entry modes vary according to investors' sociocultural backgrounds, the technology intensity of projects and locations. The multiple regression results indicate that cultural proximity, technology content and liberalised economic environment positively affect foreign equity share in foreign-invested enterprises (FIEs). (2) For investors with sociocultural distance from China, a joint venture is the most suitable mode to enter into Chinese market. This is particularly true for investments using standardised technologies, and for investments based on natural resources or oriented the domestic market.

Key words: entry mode, China, multinational corporations (MNCs), direct foreign investment (DFI), foreign-invested enterprises (FIEs).

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ENTRY MODES OF MULTINATIONAL CORPORATIONS INTO CHINA'S MARKET: A SOCIOECONOMIC ANALYSIS*

1. INTRODUCTION

As the Chinese economy continuously booms and the domestic market expands, it has become an important focus of international investment. Many multinational corporations (MNCs) increasingly target the huge domestic market of China through direct foreign investment (DFI). However, for many intending MNCs especially those from countries with cultural distance from China, how to enter Chinese market and how to choose entry modes are still open questions. On the part of the host country, a study of MNC's entry behaviour is essential for the formulation of DFI policy and assessment of the role of MNCs in economic development.

This paper is an empirical investigation of the entry modes of MNCs into Chinese market. Section two presents a theoretical analysis of MNC's entry modes into the host country within the transaction cost framework. It will discuss major factors influencing the entry modes of MNCs. Section three is an empirical investigation of the entry modes of MNCs into Chinese market. It examines MNC's entry modes from different dimensions including investors' cultural backgrounds, technology property of investment projects and the economic and policy environments of regions where MNC's investments are located. It demonstrates that the entry mode of MNCs into China varies according to investors' cultural backgrounds, technology content of investment projects and regional economic environments. Section four presents a regression analysis, using the equity share of foreign investors in foreign-invested enterprises (FIEs) as the dependent variable explained by

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cultural distance, technology nature of project and region with different policy treatment and risk levels. Conclusions are drawn in section five along with implications.

2. THEORETICAL BACKGROUND

It is essential for multinational corporations to choose an entry mode before they enter the host country market through direct investment. Entry modes are defined as the ways or legal forms in which MNCs enter the intended host country. In terms of property rights, entry mode is the ownership structure of a foreign subsidiary. There are two basic entry modes: wholly-owned subsidiary and joint venture with local firms. The joint venture (JV) mode can be broken into several sub-modes based on the percentage ownership of the equity: majority JV, balanced JV, and minority JV. These two entry modes can be realised by MNCs through the acquisition of an existing enterprise or setting up a new enterprise in the host country.

What determines the choice between a wholly-owned subsidiary and a joint venture by a MNC? In the past two decades, the transaction cost theory has been broadly employed to explain MNC's international investment activities, including their entry mode choice. Several authors have contributed to the entry mode literature. For instance, Williamson (1979, 1981, 1985); Casson (1982), Buckley (1985), Anderson and Gatignon (1986, 1988), Beamish (1988), Hennart (1988, 1991 and 1992), Gomes-Casseres (1989), Tisdell (1990a and 1990b), and Allen and Lueck (1993), carefully probe into MNC's entry mode by using the transaction cost approach. They argue that transaction costs are major determinants of MNC's entry mode choice. A MNC tends to choose an entry mode that minimises transaction costs.

This section will discuss three primary factors affecting MNC's entry modes within the transaction cost framework. These factors include sociocultural distance between MNC's home countries and the host country, technological nature of investment projects, and the institutional and business environments and policies of the host country.

2.1 Sociocultural Distance

Sociocultural distance refers to the difference in social culture between the home and host countries. It is often argued within the transaction cost framework that the greater the sociocultural distance, the lower the degree of equity participation that a MNC should aim. This can be attributed to the following two factors associated with sociocultural distance. First, sociocultural distance creates enormous information needs, hence high information costs for intending MNCs. This is because in a dissimilar cultural environment MNCs have little knowledge of the local market and business practice. In the meantime, MNCs find it difficult to transfer home technologies and management techniques to an unknown operating environment. This disadvantage may be avoided by forming joint ventures with local firms and turning management partially over to local partners, who generally outperform new foreign entrants (Root 1987, Hymer, 1976).

Secondly, operating in a foreign culture at a distance increases business uncertainty and unpredictability. This is likely to undervalue foreign investment, thereby resulting in a smaller investment involvement and a smaller equity share in a joint venture. Consequently, this raises MNCs' propensity to form joint ventures with local firms. A positive relationship between the sociocultural distance and joint venture as an entry mode has been found by several authors (Goodnow and Hanz, 1972, Anderson and Gatignon, 1988, Shan, 1991, Hu and Chen, 1993).

However, not all scholars agree on this proposition. Bivens and Lovel (1966) suggest that some firms react to sociocultural distance by demanding rather than avoiding ownership so they may impose their own operating methods. Such firms do not trust local management or local partners, and prefer sufficient control to "do it their way".

In the Chinese case, foreign investors can be classified into three groups based on their sociocultural backgrounds. The first group are the investors from Hong Kong and

Taiwan. Most of them are Chinese and share the same culture with people in the Mainland China. In contrast to true "foreigners", these Chinese investors have advantages in language, cultural traits and ethnic links, and in access to Chinese society. These advantages allow them easily to enter into Chinese domestic market with less reliance on local firms. Therefore, investors in this group are expected to be less dependent on local forms for local management and market information. In many cases, it is not necessary for them to form joint ventures with local firms with view of reducing transaction costs associated with an unfamiliar operating environment. In the case where these investors choose joint ventures with local firms, they tend to invest a larger share in joint ventures than other groups of investors.

Investors from other East Asian countries including Japan, Singapore, Malaysia and South Korea form the second group. These Asian neighbouring countries have close cultural ties to China due to geographic proximity and cultural links. In contrast to Western investors who fall into the third group, investors from these East Asian countries have some advantages in sociocultural linkages. As a result, the entry modes of these investors would be similar to that of the first group and different from the third group.

2.2 Research and Development Intensity

Proprietary knowledge is an important type of specialised asset. The proprietary nature of a product, process and the amount of marketing expertise firms possess are factors found to be highly correlated with percent ownership (Hu & Chen 1993). In the entry mode literature, it is argued that firms seek to exert more control as the proprietary content of the product increases (Anderson & Gatignon 1986). Research and development intensity (R & D expenditure to total sales) is usually used to measure the intellectual proprietary content of a product or process.

Stopford & Wells (1972) and Coughlan & Flaherty (1983) find a negative correlation between R & D expenditure and the proportion of subsidiaries organised as joint ventures

rather than wholly-owned affiliates. A higher degree of control is more often employed for technically sophisticated products, which tend to have a higher proprietary content than unsophisticated products. This implies that firms tend to employ a completely-controlled entry vehicle in order to protect their interest in proprietary knowledge. As Anderson and Gatignon argue, entry modes offering higher degrees of control are more efficient for highly proprietary or poorly-understood products and processes. Thus, newer technology is likely to be handled by wholly-owned subsidiaries which offer high control (Williamson 1979).

On the other hand, "the more mature the product class, the less control firms should demand of a foreign business entity" (Anderson and Gatignon, 1986, P.13). As the diffusion of technology occurs, the products gradually lose their initial proprietary value and become mature, therefore less administrative control is needed. As Williamson (1979) points out, old technology is likely to be licensed or handled by a joint venture (lower control).

In terms of bargaining power, foreign firms with proprietary products and high technology are in a favourable bargaining position with the host country. They may force the host government and partners to allow them to have more ownership (Davidson 1982). As the product matures, the advantage erodes, creating pressure to give up control. However, if local firms hold significant proprietary products, they will either have less incentives to form joint ventures with foreign firms, or require more control over joint ventures.

2.3 The Host Country's Conditions, Risks and Policies

In international operations, external uncertainty is a critical factor. According to Williamson (1979), external uncertainty is the volatility (unpredictability) of the firm's environment. It is typically labelled "country risk". This can take many forms, e.g. political instability, the lack of a well-defined legal system, economic fluctuations, price and foreign exchange controls. In a highly unpredictable environment, MNCs tend to limit their equity involvement by avoiding full ownership in order to diversify the business risks. At the same

time, they may want to get greater control to compensate for high risks. "The greater the combination of country risks, the higher the appropriate degrees of control over the subsidiaries" (Anderson & Gatignon 1986, P.14).

In terms of the transaction cost theory, country risk and the uncertainty of business environment may increase the information need and management cost for MNCs to operate fully-owned subsidiaries in the host country. To minimise transaction costs and business risks, MNCs need to form joint ventures with local firms. For domestic market oriented investment and resource-based investment projects, local partners are essential for foreign entrants since they have expertise in exploring domestic markets, managing local labour and organising local supplies of raw materials and intermediate products.

Apart from country risk and business uncertainty, the host country's economic condition and policies may considerably affect MNC's capital involvement. The economic growth trend and domestic market size of the host country are crucial for intending foreign investors, especially for market-seeking investors. A booming economy and rapidly expanding domestic market in the host country would strengthen its attraction for foreign investment. As is found by Gomes-Casseres (1990) using logit regression analysis, economic growth in the host country is positively correlated with the establishment of joint venture.

In addition, the government policies of the host country can substantially influence the ownership structure of foreign subsidiaries. If the host country policies encourage joint venture by using favourable policy treatments such as tax concessions, other things being equal, MNCs may have incentives to choose joint venture as an entry mode. In some cases, the host government may require MNCs to form joint venture with local firms. This is particularly true for foreign investment based on natural resources like oil or coal, because foreign investors need the permission of the host government to gain access to these natural resources. Therefore, the policy orientation of the host government is one of major determinants for the ownership of foreign subsidiaries.

3. EMPIRICAL INVESTIGATION OF MNC'S ENTRY MODES

In the Chinese case, MNCs may take the following three modes to enter into the domestic market: equity joint venture (EJV), contractual joint venture (CJV) and wholly foreign-owned enterprise (WFOE). These three types of enterprises are collectively defined in China as foreign-invested enterprises (FIEs). The three types of FIEs are different in legal form, capital and risk involvement, and management structure. An EJV is a new limited liability company created by foreign and Chinese partners with equity and management shared in a negotiated proportion.

A CJV is an arrangement whereby Chinese and foreign partners cooperate in some joint projects or activities according to the terms and conditions stipulated in a venture contract. Although it also involves foreign capital or technology, a CJV is not a legally independent "entity" with a separate "legal person". Because of the absence of a clear and independent legal form and the less favourable policy treatment by the Chinese government, CJV has declined in importance since the mid-1980s. In contrast with CJV, WFOE is becoming more important as an entry mode of MNCs into Chinese market. Therefore, the present study will focus on EJV and WFOE. Some implications derived from the analysis of EJV can be applied to CJV, due to the similarities between EJV and CJV.

In this section, we will present an empirical investigation of MNC's entry modes in China based on the systematic statistical data. Firstly, we explore MNC's entry modes by country group, industry, and policy treatments and risks. Secondly, we perform a multiple regression analysis testing the effects of sociocultural distance, technology nature of products and regions (classified according to economic environments, policy treatments and risk levels) on the entry modes of MNCs into Chinese market.

3.1 Entry Mode by Country Group

It has been conceptually demonstrated in section two that, sociocultural distance between investing countries and the host country would promote MNCs to resort to joint venture with local firms in order to enter the host country market. In the meantime, it may prevent MNCs from large capital involvement in joint ventures, resulting in a lower equity share. In the context of China, as classified in the previous section, all foreign investors fall into three country groups according to their sociocultural distance from the host country. Group one is Hong Kong and Taiwan, group two is other East Asian countries and group three includes all other countries. In the following section, an empirical discussion of the relationship between the country groups and MNC's entry modes will be presented.

Based on the annual statistics prepared by the Ministry of Foreign Trade and Economic Co-operations (MOFTEC), the distribution of the three types of entry modes by country over the period of 1987-92 has been calculated and presented in Table 1. As can be seen from this table, there are considerable differences in the ownership structure of FIEs between the three groups. The difference between the first group and the third group is particularly significant. Due to the close cultural ties between Hong Kong, Taiwan and Mainland China, investors from the first group have a lower inclination to set up EJVs in China than other groups of investors. For instance, during the period from 1987 to 1992, the proportion of the DFI in EJVs to the total DFI by Hong Kong is 47 percent on average, compared to 52 percent for Japan, 59 percent for Singapore, 68 percent for the U.S. and 84 percent for Western Europe (see Table 1). This indicates that the larger the sociocultural distance with the host country (China), the higher the propensity for investors to use EJV as the main entry mode. Therefore, sociocultural difference positively correlates to the frequency of equity joint venture.

However, the frequency of using CJVs seems to relate inversely to the sociocultural distance. As seen in Table 1, the investors of the first two groups use CJVs more frequently

Table 1: Entry Modes of DFI (pledged) in China by Major Investing Countries 1987-92. (US\$ mil.)

Year	Hong Kong			United States			Japan											
	EJV %	CJV %	WFOE %	EJV %	CJV %	WFOE %	EJV %	CJV %	WFOE %									
1987	981	50	938	47	54	3	270	79	17	14	4	228	76	41	14	33	11	
1988	2086	58	1214	34	283	8	202	61	94	28	36	11	169	66	47	19	39	15
1989	1622	50	806	25	816	25	190	38	28	6	280	56	231	53	26	6	182	41
1990	1527	39	1029	26	1388	35	265	76	18	5	63	18	113	39	42	15	135	46
1991	3524	47	1748	23	2235	30	378	69	17	3	139	25	364	46	59	7	350	43
1992	19347	46	11469	28	10715	26	2200	70	206	7	712	23	1095	50	163	8	910	42
87-92	29087	47	17204	28	15491	25	3505	68	420	8	1244	24	2200	52	378	9	1649	39
		Western Europe			Singapore			Taiwan										
1987	201	90	22	10	0	0	62	88	5	7	3	5						
1988	254	92	19	7	3	1	88	64	31	23	18	13						
1989	223	92	11	4	8	4	59	53	5	5	46	42	95	22	60	14	277	64
1990	129	64	12	6	61	30	30	30	31	30	42	40	216	24	89	10	585	66
1991	671	91	5	1	36	5	77	49	15	10	63	41	555	40	169	12	664	48
1992	683	77	49	5	150	17	606	61	137	14	253	25	3076	55	507	9	1961	35
87-92	2161	84	118	5	259	10	922	59	224	14	425	27	3942	48	825	10	3437	42

Note: 1. The percentage of each type of DFI (pledged) is the three-year average percentage of each type of DFI. 2. The data for Taiwan is available only for 1989-1992. The percentage in the first three columns refer to 1989. 3. Western Europe here includes United Kingdom, France, Italy, Netherlands, Luxembourg, Belgium and Ireland.

Source: MOFTEC. Annual Statistical Report on the Utilisation of Foreign Capital, 1987-91; and Statistical Panorama of Foreign Investment Enterprises in China 1993.

than the third group. This is because a CJV lacks a clear and independent legal form. It is only a cooperative agreement between the Chinese and foreign firms, thereby more likely involving business uncertainties and risks. To operate a CJV efficiently, a foreign investor must be familiar with the local market and find a partner with sufficient reliability for cooperation. Therefore, for new entrants with cultural distance, CJV is not a favoured mode of entry.

As for WFOE, investors from the first and second groups are more likely to adopt this form to invest in China than the third group. For example, over the period from 1987 to 1992, 42 percent of Taiwan's investment and 39 percent of Japanese investment were in WFOEs, much higher than that of Western European (10 percent) and U.S. (24 percent) investments. This is because cultural similarity allows these Asian investors to have an adequate knowledge of Chinese market and business practice, and therefore facilitate their investment activities with less need for local partners. Therefore, a positive relation exists between the cultural proximity, capital involvement and the use of WFOE as MNC's entry mode.

3.2 Entry Mode by Industry

As pointed earlier, the proprietary nature and technology content of a product or process is highly correlated with the ownership structure of foreign subsidiaries. The higher the proprietary content, the higher the equity share a MNC requires in its foreign affiliates, and also the higher a MNC's propensity to set up wholly-owned subsidiaries. Therefore, for technologically sophisticated products or services, MNCs prefer full ownership or majority ownership in order to control their subsidiaries efficiently and to protect their proprietary rights. However, as technology matures and standardises, less control and protection is needed. Therefore, a joint venture become the favoured vehicle by which MNCs enter the host country market.

In the Chinese case, most foreign investment projects are labour intensive and use standardised technology. This is consistently associated with a low R & D content for many

investment projects. As a result, a lower percentage of wholly foreign-owned subsidiaries in all FIEs has been found in comparison to joint ventures. As shown in Appendix Tables 1 and 2, WFOEs accounted for 26.7 percent of the total registered DFI by the end of 1993 and 26.9% of DFI in the manufacturing sector in 1992. Equity joint ventures accounted for 49.7 and 58.6% respectively for the two periods.

Since the ownership structure of FIEs is simultaneously affected by many factors, the impact of technology on ownership arrangement of FIEs may become blurred. However, a positive relationship between high technology content and WFOE can be found from the available statistical data. In high proprietary sectors and technology intensive industries, DFI largely adopt the form of WFOE. For instance, DFI in the finance and insurance industry of China over the period of 1979-93 was dominated by wholly foreign-owned subsidiaries, which accounted for 55.2 percent. The scientific services sector also shows a relatively high percentage of WFOEs (40.1 percent in value). Within the manufacturing sector, the machinery and electronics industry led other industries in establishing WFOEs. One-third of DFI in this industry are in WFOEs, which is higher than all other manufacturing industries. These facts reveal that the high proprietary and technology contents of products or services are associated with a higher frequency of wholly-owned subsidiaries.

3.3 Entry Mode by Region

In China, the economic conditions and policy environments vary substantially among different regions. In the Southeast coastal region, including Guangdong, Fujian and Hainan, a special policy package was granted by the central government. As economic reforms have progressed, the economy of this region has become highly liberalised and shifted from the traditional centrally-planned regime to a market economy. Consequently, economic efficiency has been improved considerably. In the past 15 years starting in 1979, this region has led the economic growth of China. Furthermore, economic liberalisation and special favourable policies on foreign trade and investment significantly ameliorate the investment environment

of this region, and strengthen its attraction for foreign investment. For instance, in the Special Economic Zones (SEZs) located in this region, a special preferential tax rate (15 percent) rather than a normal tax rate (33 percent) is applied to foreign investment.

Table 2: Entry Mode of Arrived DFI by Region 1988-91 (US\$ mil.)

Regions	EJV		CJV		WFOE		Total
	Value	%	Value	%	Value	%	
Southeast Coast	3077.2	44.2	2052.5	29.5	1837.9	26.4	6967.4
Guangdong	2372.7	44.3	1845.9	34.4	1139.7	21.3	5358.1
Fujian	536.3	44.2	136.1	11.2	540.7	44.6	1213.1
Hainan	168.2	42.5	70.5	17.8	157.5	39.8	396.2
Other Coast	3954.5	78.4	607.1	12.0	486.0	9.6	5046.6
Liaoning	488.0	64.1	31.0	4.1	242.4	31.8	761.4
Beijing	1314.5	97.9	18.3	1.3	10.2	0.8	1343.0
Tianjin	172.7	67.4	1.4	0.5	82.2	32.1	256.3
Hebei	111.2	87.4	9.6	7.5	6.5	5.1	126.3
Shandong	404.6	80.8	54.8	10.9	41.4	8.3	500.8
Jiangsu	488.6	86.6	50.9	9.0	25.0	4.4	564.5
Zhejiang	183.1	87.6	13.3	6.4	12.7	6.1	209.1
Shanghai	685.0	60.7	385.5	34.2	57.2	5.1	1127.7
Guangxi	106.8	67.8	42.3	26.9	8.4	5.3	157.5
Inland Region	666.5	60.0	286.8	25.8	157.5	14.2	1111.5
National Total	7698.2	58.6	2946.4	22.4	2481.4	18.9	13126.0

Source: State Statistical Bureau (1992): *China Foreign Economic Statistics 1979-1991*, pp.378-386.

In comparison with the Southeast coastal region, other regions, especially the inland region, lack the liberalised market economic conditions and preferential policies. To a great extent, the central planning system still governs the economy. The economic policies including foreign trade and investment policies in these regions are less favourable compared to the Southeast coastal region. Therefore, the business environment is rather restrictive and less attractive for foreign investment. As a result, business uncertainty and risk are higher in these regions than the Southeast coastal region.

The economic conditions and business risk levels in the different regions are expected to influence the entry modes of MNCs significantly. This is demonstrated by the entry mode

distribution of MNCs by region, as shown in Table 2. There are significant differences in the entry mode of DFI between the Southeast coastal region and the other two regions.

First, the percentage of EJV is impressively lower in the Southeast coastal region than in the other two regions. During the period from 1988 to 1991, EJV accounted for 44.2 percent of total arrived DFI in the Southeast coastal region. This is significantly lower than other coastal region (78.4 percent) and the inland region (60.0 percent). For individual provinces, in Beijing, the Chinese capital city, DFI is overwhelmingly concentrated in EJV, which accounted for 97.9 percent of the total arrived DFI. EJV also dominated in DFI in other provinces, like Zhejiang (87.6 percent), Hebei (87.4 percent), Jiangsu (86.6 percent) and Shandong (80.8 percent). In the Southeast coastal provinces, EJV's share in the total arrived DFI is much lower. For example, it was 44.3 percent in Guangdong, 44.2 percent in Fujian and 42.5 percent in Hainan. Second, WFOE and CJV accounted for a relatively large share of the DFI in the Southeast coastal region, 26.4 percent and 29.5 percent respectively. In Fujian and Hainan provinces WFOE accounted for 44.6 percent and 39.8 percent of the arrived DFI. These are significantly higher than that in other coastal region (9.6 percent) and the inland region (14.2 percent).

From these statistics it can be concluded that a liberalised economic environment and lower business uncertainty and less risk in the Southeast coastal region tend to encourage foreign investors to form wholly-owned enterprises. By contrast, the economic reform and liberalisation (or termed as openness of the economy) in other regions are still quite limited and at the initial stage. As a result, the business uncertainty and risk are expected to be high. This prevents foreign investors from establishing fully-owned subsidiaries in these less liberalised regions. Therefore, the difference in entry modes by MNCs between the various regions can be attributed to the regional divergence in economic environment, government policy and business risk.

4. Regression Analysis of MNC's Entry Modes

In order to test the effects of the major influencing factors on the entry modes of MNCs in China, a multiple regression analysis is presented in this section. In this regression analysis, the foreign equity share in FIEs is the dependent variable. The explanatory variables are the cultural backgrounds of foreign investors, the technology nature of products and regions with different economic conditions and policy environments.

As has been discussed in previous sections, foreign investors in China fall into three groups according to their cultural backgrounds. Group one includes investors from Hong Kong and Taiwan. Group two are investors from other East Asian countries and group three includes investors from all other countries, primarily the U.S., Europe and Australia. The second explanatory variable is the technology nature of products. Based on the two digit codes of the Standard Industrial Classification published by the United Nations in 1987, all the products produced by FIEs are broadly classified into two categories: high technology products and low technology products.

The third explanatory variable is the region in which DFI is located. According to business environments and policy treatments, two regions can be identified. The first region is the Southeast coastal region including three provinces: Guangdong, Fujian and Hainan. The second region includes all other provinces. This classification is consistent with the findings based on Table 2. The first region is more economically liberalised, and the business risks associated with the traditional economic regime are lower.

4.1 Methodology and Data

In this regression analysis the dependent variable is the foreign equity share (percentage) in FIEs excluding contractual joint ventures. The range of change in the dependent variable is between 25 percent and 100 percent, since foreign equity share in a FIE is legally

required to be 25 percent or above. Unlike a regression using continuous (quantitative) variables, this regression analysis uses three qualitative variables as independent variables (cultural backgrounds of investors, technology of products and region in which DFI is located). Therefore, the methodology applied here is somehow different from the case where all variables are quantitative (for a detailed discussion, see Jacob Cohen and Patricia Cohen, 1983, Chapter 5).

Firstly, we need to code qualitative variables by using dummy variables. In the present case, the cultural background of investors can be coded as CB. The first cultural group (Hong Kong and Taiwan) is represented by CB1, the second group (other East Asian countries) by CB2. The third group is the reference group. When an investor belongs to the first group, CB1 takes 1, and CB2 takes 0. If an investor is in the second group, CB2 takes 1 and CB1 takes 0. If an investor is in the third group, both CB1 and CB2 take 0. Therefore, the three cultural groups are distinguished by two dummy variables (CB1 and CB2). Similarly, we use TECH to code technology nature of products, taking 1 for high technology products and 0 for low technology products. This dummy-variable coding methodology can also be applied to regions where DFI is located. The region is coded as REGION, taking 1 for the Southeast coastal region and 0 for all other regions.

Secondly, the demonstration and interpretation of regression results will be different from that of a regression using continuously quantitative variables. In a regression on qualitative variable(s), a partial regression coefficient (B_j) indicates the amount and direction of net change in the dependent variable (expressed in units of it) resulted from a change in one unit of independent variable, but it can not give the elasticity coefficient, i.e. the percentage change of the dependent variable associated with one percent change in an independent variable. Therefore, the regression coefficients can be interpreted only in two qualitative occasions (events) associated with the dichotomy of the variables.

The multiple regression is specified as follows:

$$\text{Share} = \beta_0 + \beta_1 \text{CB1} + \beta_2 \text{CB2} + \beta_3 \text{TECH} + \beta_4 \text{REGION} + e$$

where β_i is the regression coefficient for each variable; and

CB1 = 1 if the investor is in the first cultural group (Hong Kong and Taiwan),

= 0 otherwise.

CB2 = 1 if the investor is in the second cultural group (other East Asian countries),

= 0 otherwise.

TECH = 1 if the product is high-technology product,

= 0 otherwise.

REGION = 1 if the FIE is located in Guangdong, Fujian and Hainan,

= 0 otherwise.

e = error term.

The data used in this analysis is from *the Statistical Panorama of Foreign Investment Enterprises in China* published by The Ministry of Foreign Trade and Economic Cooperation (MOFTEC) of the P.R. China in 1993. This comprehensive two-volume statistical book includes detailed information of 34,500 FIEs registered in 1992 in 19 economic sectors. The scope of this study includes 25,400 FIEs in the manufacturing sector. The sample size is equal to 1 percent of all FIEs in the manufacturing sector, i.e. 254 FIEs. These FIEs are chosen by computer using random sampling technique.

4.2 Result and Interpretation

The regression is run by using the SPSS computer program, and the result is presented in Table 3. As illustrated, all the four independent variables positively and significantly affect the dependent variable--foreign equity share in FIEs. Firstly, the cultural links between

investing countries (or region) and the host country (China) positively affect the foreign equity share in FIEs. As the coefficients of CB1 and CB2 indicate, the equity share held by investors from Hong Kong and Taiwan, and from other East Asian countries are 11.38 percentage points and 9.98 percentage points respectively higher than that by investors from other countries. This further confirms the hypothesis that cultural proximity is positively correlated with the wholly-owned foreign enterprises and the foreign equity share in FIEs. In other words, the larger the cultural distance between investors and China, the lower the foreign equity involvement in FIEs.

Secondly, high technology positively contributes to the foreign equity share in FIEs. If the investment project is high-technology intensive, the equity share held by the foreign investor is 9.31 percentage points higher than that of a low technology project. This supports the proposition raised in the first section, that the higher the proprietary content of project, the higher the ownership percentage a MNC should aim at, and also the higher the frequency of wholly-owned subsidiaries in the host country.

Table 3: Multiple Regression Using Foreign Equity Share as Dependent Variable

Variables	Partial Coefficient	Standard Error	t- statistics	Significance of t-ratio	Standardised Coefficient
CB1	11.3808	4.2407	2.684	0.0078	0.2146
CB2	9.9833	4.9426	2.020	0.0445	0.1588
TECH	9.3122	3.3558	2.775	0.0059	0.1626
REGION	18.5002	3.5028	5.282	0.0000	0.3133
Constant	43.0755	3.9352	10.943	0.0000	

F-stat. = 12.892, statistically significant at 1% level (one tailed test).
 $R^2 = 0.1716$.

Thirdly, economic environment and government policy is the most important determinant for the entry mode (i.e. the ownership of FIEs) of MNCs. The effect of this factor can be measured by using the dummy variable "region", since the economic environments and policies are considerably different between regions. As pointed out earlier, the Southeast

coastal region is more economically liberalised than other regions. It also has a more favourable policy treatment than other regions. The regression coefficient suggests that there is a significant difference between the Southeast coastal region and other regions in the foreign ownership of FIEs. In the Southeast coastal region, foreign investors prefer majority joint ventures or wholly-owned subsidiaries rather than minority joint ventures. On average, the foreign equity share of FIEs in this region is 18.5 points higher than that of FIEs in other regions.

Based on the estimated regression coefficients, we can compute the average of foreign equity shares in FIEs for different country groups and different types of investment projects in different regions. The following Table 4 is a summary of foreign equity share in various occasions.

Table 4: The Estimated Average Foreign Equity Share in FIEs

Country Group	Southeast Coast		Other Region	
	Hi-tech	Low-tech	High-tech	Low-tech
Hong Kong, Taiwan	82.27	72.95	63.77	54.46
East Asia	80.87	71.56	62.37	53.06
Other Countries	70.89	61.58	52.39	43.08

5. Conclusions and Implications

This paper is an empirical study of the entry modes of MNCs into Chinese market. From the findings obtained in this study, some conclusions and implications can be drawn. First, the closer the cultural backgrounds of investors to that of China, the higher the equity share held by foreign investors in FIEs. In other words, the sociocultural distance between the home countries and the host country discourages MNCs to invest in wholly-owned subsidiaries. Therefore, joint venture is the suitable entry mode for MNCs from a country at cultural distance from the host country.

Second, this study indicates that the proprietary content, technology intensity and liberalised locational economic environment positively affect the foreign equity share in FIEs and MNC's capital involvement. These findings are consistent with the major propositions of the prevailing theories of multinational corporations, especially the eclectic theory (Dunning, 1977 and 1981). According to this theory, the investment behaviour and entry mode of MNCs are primarily determined by firm-specific advantages (or termed industry-related factors) and location-specific factors. The proprietary technology is the main component of firm-specific advantages and determine why and how a MNC invest overseas, including the ownership of foreign affiliates. Another determinant is the location-specific factor which refers to the politic and economic environments and the government policies of the host country. These locational factors are often used to justify where and how a MNC invests.

Based on the findings of this study, some important implications can be drawn for both foreign investors and the host country. For foreign firms whose technology is standardised, equity joint venture is the most suitable mode to invest in China. This is particularly true for those investments oriented to the Chinese domestic market or natural resource-based investment projects. Joint venture mechanism will help to minimise the external business uncertainty due to the cultural distance and the lack of knowledge of local market. By forming a joint venture foreign firms can utilise local partner's expertise in exploring local markets and managing local labour and business relations. Therefore, a joint venture tends to facilitate a foreign firm's access to the local market. In addition, a joint venture may diversify business risks and produce net benefits from economies of scale. Moreover, joint venture is the preferred form of foreign investment by the Chinese government and local firms who are motivated to introduce foreign technology.

On the part of the host country, joint venture as the dominant type of foreign-invested enterprises can contribute more effectively to the Chinese economy than other forms of DFI. This is because 1) joint ventures provide an efficient mechanism for technology transfer from

foreign investing firms to local Chinese firms. By forming joint ventures with foreign firms, local Chinese firms have more accesses to advanced equipment and technology, and learn new management skills. Managing staff and labour can be better trained. As a result, the labour productivity and management efficiency will be upgraded. 2) Joint ventures promote domestic capital formation. Since many investment projects need a large amount of capital and complex technology, it would be difficult to implement without the participation of foreign firms. 3) The joint venture mechanism facilitates development of industrial linkages between FIEs and local Chinese firms. Joint ventures may utilise the local partners' industrial linkage network with other local firms to buy materials, intermediate products or sell products in the domestic market. As a result of the input-output relations, the linkage effects of FIEs on the local firms will materialise. Finally, as with other forms of DFI, joint ventures can contribute enormously to the Chinese economy, creating employment, promoting exports and paying tax to the government.

Other forms of DFI including CJV and WFOE are also available options for foreign investors to enter China's market. A CJV is a suitable form for project cooperation between foreign investors and Chinese companies over a short period, especially for some technical projects, infrastructures and venture investment. Since the financial and management commitments and distribution of profits between the two sides in the CJV are spelled out in the cooperation contracts, the business risks involved in the CJV is limited and expectable.

A WFOE is a favoured investment vehicle by MNCs investing in high technology industries, since this form of enterprise enables foreign investors to exercise a sufficient control over the operation of the business and to minimise the management costs associated with joint ventures. However, one pre-condition for running a WFOE successfully is that investors (or their managers) have a sound knowledge of the legal system, market structure, business practice and economic and policy conditions of the host country. Without this condition, foreign investors would not efficiently operate a WFOE. Therefore, forming joint ventures with local firms, holding a majority equity share, is the second best choice for many foreign

investors. This would significantly reduce transaction costs associated with their unfamiliarity with the local political and economic conditions. On the part of the host developing country, forming joint ventures with foreign investors in high technology industries is a direct way to learn and absorb new technology, and therefore upgrade the technical standards of domestic firms.

References:

- Allen, Douglas W and Lueck, Dean (1993), Transaction costs and the design of cropshare contracts, *The Rand Journal of Economics*, Vol.24, No.1, Spring, pp.78-100.
- Anderson, Erin and Gatgnon, Hubert (1986), Modes of foreign entry: a transaction cost analysis and propositions, *Journal of International Business Studies*, Vol.17, No.3, pp.1-26.
- (1988), The multinational corporation's degree of control over foreign subsidiaries: an empirical test of a transaction cost explanation, *Journal of Law, Economics Organisation*, Vol.3-4, IV:2, pp.305-335.
- Beamish, Paul W (1988), *Multinational Joint Ventures in Less-developing Countries*, London and New York: Routledge Press.
- Bivens, Daren Kraus and Lovell, Enid Baird (1966), *Joint Ventures with Foreign Partners*, New York: the National Industrial Conference Board.
- Buckley, Peter and Mark Cassion (1985), *The Economic Theory of the Multinational Enterprise*, London: Macmillan Press.
- Casson, Mark (1985), Transaction Costs and the theory of multinational enterprise, in Alan M. Rugman (ed), *New Theory of the Multinational Enterprise*, London: Croom Helm, and New York: St martin's Press.
- Cohen, Jacob and Cohen, Patricia (1983), *Applied Multiple Regression / Correlation Analysis for the Behavioural Sciences*, (second edition), Chapter 5. New Jersey and London: Lawrence Erlbaum Associates, Publishers.
- Coughlan, Anne T. and Therese Flaherty (1983), Measuring the international marketing productivity of U.S. semiconductor companies, in David Gautschi (ed) *Productivity and Efficiency in Distribution System*, pp.123-149. Amsterdam: Elsevier Science Publishing Co. inc.
- Davidson, William H. (1982), *Global Strategic Management*, New York: John Wiley and Sons Press.
- (1980), The location of foreign direct investment activity: country characteristics and experience effects, *Journal of International Business Studies*, No.11, P.9-22.
- Dunning, John H. (1981), *International Production and the Multinational Enterprise*, London: George Allen & Unwin.
- (1988), The eclectic paradigm of international production: a restatement and some possible extensions, *Journal of International Business Studies*, Vol.9, No.1, pp.1-31.
- (1977), Trade, location of economic activity, and the multinational enterprise: a search for an eclectic approach, in B. Ohlin, P.O. Hesselborn and P.M. Wijkman (eds) *The International Allocation of Economic Activity*, New York: Holmes & Meier.

- Gomes-Casseres, Benjamin (1990), Firm ownership preferences and host government restrictions: an integrated approach, *Journal of International Business Studies*, Vol.21, No.1, pp.1-22.
- (1989), Ownership structures of foreign subsidiaries: the theory and evidence, *Journal of Economic Behaviour and Organisation*, January, pp.1-25.
- Goodnow, James D. and Hanz, James E. (1972), Environmental determinants of overseas market entry strategies, *Journal of International Business Studies*, No.3 (Spring), pp.33-50.
- Hennart, Jean-Francois (1988), A transaction cost theory of equity joint ventures, *Strategic Management Journal*, Vol.9, pp.361-374.
- (1991), The transaction cost theory of joint ventures: an empirical study of Japanese subsidiaries in the United States, *Management Science*, Vol.37, No.4, April, pp.483- 497.
- (1992), The transaction cost theory of the multinational enterprise, in Christos N. Pitelis and Roger Sugden (eds) *The Nature of the Transnational Firm*, London and New York: Routledge.
- Hu, Michael Y. and Chen, Haiyang (1993), Foreign ownership in Chinese joint ventures: a transaction cost analysis, *Journal of Business Research*, Vol. 28, No.2, February, pp.149-160.
- Hymer, Stephen H. (1960), *The International Operations of National Firms*, Cambridge Mass: MIT Press, printed in 1976).
- Root, Franklin (1987), *Entry Strategies for International Markets*, Lexington, Mass: Lexington Books.
- Shan, Weijian (1991), Environmental risks and joint venture sharing arrangements, *Journal of International Business Studies*, No.4, pp.555-578.
- Stopford, John M. and Wells, Louis T. (1972), *Managing the Multinational Enterprise*, New York: Basic Books.
- Tisdell, Clem (1990a), International joint ventures and technology transfer: some economic issues, *Prometheus*, Vol.8, No.1, pp.67-78.
- (1990b), Market transaction costs and transfer pricing: consequences for the firm and for technical change, *Rivista Internazionale Di Scienze Economiche Commerciali*, Vol.37, No.3, pp.203-218.
- Williamson, Oliver (1979), Transaction cost economics: the governance of contractual relations, *Journal of Law and Economics*, No. 22 (October), pp.233-262.
- (1981), The economics of organisation: the transaction cost approach, *American Journal of Sociology*, Vol. 87, No. 3, pp.548-577.
- (1985), *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, New York: Free Press.

Appendix Table 1:

Type of DFI in the Registered Foreign-Invested Enterprises in China by the End of 1993 (US\$ million)

	EJVs				CJVs				WFOEs				TOTAL		
	No.	%	Value	%	No.	%	Value	%	No.	%	Value	%	No.	Value	Unit value
Agriculture*	2125	50.0	993.8	40.4	1249	29.4	868.7	35.3	872	20.5	599.8	24.4	4246	2462.3	0.58
Industry**	83951	67.4	46422.1	55.2	17124	13.7	15050.6	17.9	23531	18.9	22552.9	26.8	124606	84025.6	0.67
Geological Exploration	41	87.2	18.7	94.9	2	4.0	0.2	2.2	4	8.5	0.74	3.8	47	19.7	0.42
Construction	2853	62.0	1410.1	42.9	714	15.5	1057.3	32.2	1036	22.5	816.9	24.9	4603	3284.2	0.71
Transport, Post & Telecommunication	1020	53.2	1810.1	64.0	839	43.7	966.3	34.2	59	3.1	49.8	1.8	1918	2826.2	1.47
Commerce, Catering & Storing	4574	52.3	3711.1	49.5	1515	18.5	2078.6	27.7	2553	29.2	1705.8	22.8	8742	7495.5	0.86
Real estate, hotel	10817	55.8	18679.4	40.2	3277	16.9	14497.1	31.2	5290	27.3	13254.4	28.5	19384	46430.9	2.40
Finance & insurance	18	58.1	112.7	44.8	0	0.0	0.0	0.0	13	41.9	139.0	55.2	31	251.6	8.12
Health care, sports & social welfare	215	60.2	145.5	27.0	103	28.9	321.9	60.0	39	10.9	71.4	13.3	357	538.8	1.51
Education, culture	1040	64.6	548.3	46.1	309	19.2	350.8	29.4	260	16.2	291.2	24.5	1609	1190.3	0.74
Scientific services	551	62.35	221.7	50.9	60	6.8	39.0	8.9	267	30.4	174.6	40.1	878	435.3	0.50
Other	615	56.6	616.4	50.5	172	15.8	225.5	18.5	299	27.5	380.0	31.1	1086	1221.8	1.13
All Sectors	107820	64.4	74689.9	49.7	25464	15.2	35456.1	23.6	34223	20.4	40036.4	26.7	167507	150182.4	0.90

Notes: * This sector includes agriculture, forestry, fishing and husbandry. ** Industry sector includes manufacturing and mining.

Source: The State Statistical Bureau of China: *China Foreign Economical Yearbook 1994*, pp311-314.

Appendix Table 2:

Type of DFI in the Registered Foreign-Invested Enterprises in China by Industry in 1992 (US\$ mil.)

Industries	EJVs				CJVs				WFOEs				Total	
	No.	%	Value	%	No.	%	Value	%	No.	%	Value	%	No.	Value
Food*	2141	75.0	1331	62.9	316	11.1	306	14.5	362	12.8	479	22.7	2819	2116
Textile, sewing	4625	69.1	2355	53.9	882	13.2	751	17.2	1190	17.8	1236	28.4	6697	4342
Light manufacture	3244	65.1	1661	52.8	704	14.1	560	17.8	1036	20.8	923	29.4	4984	3144
Chemicals**	3503	78.6	2182	65.6	394	8.8	385	11.5	592	13.2	789	23.5	4489	3356
Pharmaceutical	554	89.2	402	85.6	43	6.5	24	0.7	67	10.1	68	14.4	664	494
Machinery and electronics	4680	70.1	2830	52.6	662	9.6	821	15.3	1326	19.8	1725	32.1	6668	5376
Other	3657	89.3	1087	70.1	121	3.0	124	8.0	317	7.7	341	22.0	4095	1551
Total Manufacture	30471	73.6	11955	58.6	3122	10.2	2971	14.6	4925	16.2	5483	26.9	30471	20409

Notes: *This industry includes food, beverage, tobacco and forage processing. **This industry includes chemical materials and products, rubber and plastic products.

Source: MOFTEC: *Statistical Panorama of Foreign Invested Enterprises in China 1993*.

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- 63 W.J. Merrilees *Economic Record*, 59(166), September 1983
- 65 A.J. Phipps *Australian Economic Papers*, 22(41), December 1983
- 67 V.B. Hall *Economics Letters*, 12, 1983
- 69 V.B. Hall *Energy Economics*, 8(2), April 1986
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- 150 D. Wright *Applied Economics*, 24(6), June 1992
- 157 B. Rao *Economic Papers*, 10(1), March 1991
- 158 W.P. Hogan *Local Government and Market Decentralisation: Experiences in Industrialised, Developing and Former Eastern Block Countries*, R. J. Bennett (ed.) UN University Press, 1994
- 159 P. Groenewegen *Applied Financial Economics*, 1(3), September 1991
- 160 C. Karfakis *Southern Economic Journal*, 61(2), Oct. 1994
- 161 B. Rao *Erkenntnis*, 38, 1993
- 162 Y. Varoufakis *Science and Society*, 56(4), 1993
- 163 Y. Varoufakis *The Manchester School of Economics and Social Studies*, 63(4), December 1995
- 164 D. Wright *The Rand Journal of Economics*, 24(4), Winter 1993
- 173 C. Rose *Canadian Journal of Economics*, 28(4), November 1995
- 174 D. Wright *European Journal of the History of Economic Thought*, 1(2) Spring 1994
- 177 P. Groenewegen *Economic Record*, 70(211), December 1994
- 178 D. J. Wright *Australian Economic Papers*, 33(62), June 1994
- 187 C. Karfakis & A. J. Phipps
- 189 C. Karfakis & S.J Kim *Journal of International Money and Finance*, 14(4) August 1995

- 190 A.J. Phipps & J.R. Sheen *Labour Economics and Productivity*, 6(1), March 1994
- 193 P. Groenewegen *Contributions to Political Economy*, 13, 1994
- 194 D. Dutta & A. Hussain *Journal of Contemporary Asia*, 25(4), 1995
- 197 P. Groenewegen *New Perspectives on Keynes*, Supplementary History of Political Economy, 27, 1995, A.F. Cottrell & M.S. Lawlor
Duke University Press, Durham
- 199 J. Yates *Housing Policy Debate*, 5(2), 1994
- 202 P. Groenewegen *Dix-Huitieme Siecle* (26), 1994
- 203 F. Gill *Australian Economic Papers*, 33(62), June 1994
- 208 J.B. Towe & D.J. Wright *Economic Record*, 71(212), March 1995
- 210 S-J Kim *Applied Financial Economics*, 6(2), 1996
- 218 R. Hataiseree & A. J. Phipps *Applied Economics Letters*, 3, 1996
- 225 W.P. Hogan *Economic Analysis and Policy*, 25(2), September 1995