Determinants of FDI into China:
Does Timing of Entry Matter?

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Past studies have investigated the factors responsible for foreign direct investment (FDI) into China and the impact of timing of entry on FDI performance. Little research, however, has addressed the effects of timing of entry on the determinants of FDI. Based on the premise that the driving forces of FDI decision making may change over time, this study investigated variations in FDI determinants between early entrants and late entrants. Focused on the international pharmaceutical industry, differences in FDI determinant, based on the firms’ timing of entry are identified and discussed.

INTRODUCTION

China has been pursuing a policy of encouraging foreign direct investment (FDI) into the country since the passage of the joint venture law by the National People’s Congress of China in 1979. The most notable feature of the trend in FDI inflow into China is the sharp FDI boom during the 1990s that contrasted sharply with the steady but modest amount of FDI inflows in the 1980s. Following the establishment of the first Sino-foreign joint-venture business in China in 1980, FDI inflows grew from a modest amount of a few hundred million dollars annually in the late 1970s and early 1980s to almost US$ 3.5 billion annually in the late 1980s. Actual investment showed no significant growth in 1990 as many foreign investment projects were delayed after the 1989-Tiananmen Square event. However, beginning with a growth of over 25 percent in 1991, China has since experienced a very high growth rate of FDI. Foreign funds started pouring into China after Deng Xiaoping’s tour of southern China in early 1992 resulting in a 152 percent increase for 1992 over the previous year, followed by a 150 percent increase in 1993 over 1992. FDI into China grew a further 20 percent in 1994, over 10 percent in both 1995 and 1996, and over 8 percent in 1997, with FDI reaching
US$ 45.257 billion. China recorded FDI inflow worth US$ 45.463 billion for 1998 (SSBPRC, 1999). From 1993 to 1997, China was second only to the US as recipients of FDI, and ranked third in the world in 1998 (UN 1996—1999). During the period from 1992 to 1998, China had received almost 10 percent of the total FDI inflow in the world. This amount represented over 28 percent of the total FDI inflow to developing countries. Southeast Asian countries and regions attracted approximately US$ 480 billion in FDI from 1992 to 1998, with about 50 percent of this going to China (UN, 1996-1999). China approved and signed 324,134 FDI agreements and contracts with foreign investors from 1979 to 1998. The number of approved FDI projects increased gradually during the period from 1979 to 1991, with a dramatic 275.74 percent increase in 1992. In the following year a record 83,437 projects were approved. By the end of 1998 foreign-invested enterprises formally registered in China numbered 227,807 (SSBPRC, 1999). While the number of FDI projects has tended to decrease year by year after 1993, the amount of capital has increased. The resulting increase in average amount of capital per project implies China has been attracting larger scale foreign investment since 1992.

The popularity of foreign direct investment activities in China is particularly apparent in the pharmaceutical industry. The Chinese pharmaceutical industry was one of the first groups of industries that established enterprises using foreign investment. By the end of 1998, China had established over 1,500 pharmaceutical companies with foreign investments, including investments by a majority of large multinational pharmaceutical groups from North America, Western Europe and Asia. Foreign invested pharmaceutical companies were located across almost every part of China. They produced a wide range of products, including bulk pharmaceutical chemicals, preparations, diagnostic reagents, medical dressings, pharmaceutical machinery and health care products (CCPIE, 1995; NTDB, 1996; MIMS, 1998; SPGC, 1999). With foreign cooperation and the successful introduction of foreign investments, China’s pharmaceutical industry has expanded at a fast rate, averaging double-digit annual growth for the past two decades. Analysts anticipate that China will be the world's largest pharmaceutical market by year 2020 and the world's leader of pharmaceutical manufacturing during the 2011 to 2050 period (Wang, 1999). This study, by means of both qualitative and quantitative approaches, investigates the determining factors that influenced international pharmaceutical firms’ FDI into China and explores the relationships between the importance of determinant variables and the timing of entry decisions by taking the year 1992 as a baseline.

While China formally permitted the participation of foreign investors in 1979, there was relatively little activity until 1991. The year 1992 became a turning point in China’s political, legal and economic reforms. This followed the much-publicized tour of the former leader, Deng Xiaoping, to the southern provinces of China early that year and his call for the acceleration of economic reform and the opening up of the economy to the outside world. The central government adjusted its economic policy in order to speed up economic reform and to further open the economy to foreign investment. The Chinese government announced the adoption of the ‘socialism market economy’ strategy and began to build a legal framework to standardize market operations. Regulations covering corporation law, bankruptcy law, individual income law, stock
trading law, and some other commercial regulations have been passed since 1993. Other reform measures included changes to the tax system and permitting the conversion of Chinese currency. This created a favorable business environment and facilitated the functioning of market mechanisms. In addition, privatization of state-owned enterprises (by selling the government share to the public) and lowering tariffs for imports have been important measures further liberalizing the Chinese economy. These measures promoted rapid economic growth and a favorable business environment for foreign investment into the country (Sun, 1998).

Economically, China had achieved an average of double-digit growth in GDP during the period 1979-1998, with a higher growth rate during the post-1992 period (10.7 percent) than that in the pre-1992 period (9.1 percent). More importantly, since 1992 the country has achieved economic stability and sustained growth with controlled inflation, this having followed a number of dramatic fluctuations in GDP rates during the pre-1992 period of its economic reform and development (SSBPRC, 1999). The strong, balanced, economic growth and control of inflation, rather than the attainment of rapid growth at all costs, remain the government’s prime objectives (Hatheway, 1998). The country claimed significant success in macroeconomic management with controlled consumer and retail price inflations at 2.8 percent and 0.8 percent respectively, in 1997. The central Chinese Government has also successively established and opened a series of ‘coastal open areas’ and has introduced the policy of opening river and border cities for foreign investments since 1992. Consequently, six port cities on the Yangtze River, as well as 13 inland border cities and capitals of provinces and autonomous regions have been opened and offered preferential policies. These include tax reductions similar to those for coastal open cities, and Special Economic Zones (SEZs), as defined and created by the Chinese Central Government before 1992 to serve as a special channel for China to use foreign investment and to import advanced technology and enter international markets (DFIMFTECPRC, 1995; Li and Li, 1999).

Since 1992, a collective leadership rather than a single, predominant leader has governed China. Political stability and economic development and reform have been high priority objectives of the central Chinese government. Also since 1992, foreign investment across the country has undergone substantial development, both in breadth and depth. Since then, a legal framework governing foreign investment activities and a market-oriented system have been established. Most notably, China has made significant progress implementing communication and enforcing intellectual property rights regulations, as international pharmaceutical firms were sensitive to, and concerned about weak intellectual property rights protection. After a few years of negotiation between China and the United States, the two countries signed a bilateral agreement for the protection of intellectual property rights in February 1995 and further agreed in June 1996 on the procedures for ensuring effective implementation.

As the economic transition continues and the Chinese markets become more integrated with the global economy, the contextual risks and uncertainties of investing in China have been gradually diminishing over time. Since 1992, the improved political environment for international investors and rapid economic development and growth, together with the central Chinese government’s stronger commitment to economic
reform, have created a more promising market with greater potential and a more stable and favorable investment environment that facilitates FDI into the country.

A number of recent studies on the timing of market entry revealed that early entrants may have advantages in achieving market growth (Kalyanaram, Robinson and Urban, 1995; Vanderwerf and Mahon, 1997; Makadok, 1998; Song, Di Benedetto and Zhao, 1999), pricing strategies (Makadok, 1998), technological leadership, creation of buyer switching costs and positive economic benefits (Lieberman and Montgomery, 1998) and development of valuable and non-substitutable resources (Conner, 1991; Makadok, 1998). In the context of FDI in China, the early entrants may outperform the late entrants in market growth and asset efficiency and enjoy benefits from more preemptive market opportunities and business potentials than they would in home markets. In contrast, the early entrants encountered greater risks than the late entrants did in the start-up phase of international expansion. China is an economy in the process of transformation, which can present daunting challenges to the unwary investors (Luo, 1998). Foreign investors, in general, were concerned about China’s political instability, especially during the pre-1992 period when the 1989 Tiananmen Square incident occurred after a number of failures in the transformation of Chinese leadership. Many foreign investors were unsure of the direction the country was taking. Most complaints, from foreign investors in China in the early stage of economic reform and development, related to the uncertainty and ambiguity of local laws, rules and government policies on FDI (National Council, 1991). The political and social uncertainties arising in the transitional stage often reinforce variations in contextual conditions (Peng and Heath, 1996). In addition, far-reaching changes in industry and market structures in the early stage of structural transformation cause substantial variance in the investment environment that could lead to the instability of foreign invested firms in China (Luo, 1995).

The superiority of the advantages to early investors accrued at the expense of high operational risk in the local environment (Luo, 1998). Therefore, in addition to the possible advantages, the early investors might be able to take (as addressed in previous studies), there are at least five possible factors that contributed to the early entrants’ decisions on the timing of entry into the Chinese market by the international pharmaceutical firms. First, approximately two-thirds of the early investors were from Hong Kong, Taiwan and Japan who might have a better understanding of China’s overall investment environment and the skills to cope with the uncertainty. Second, over four-fifths of the early entrants committed a smaller scale of capital investment in the China ventures. This could be viewed as a first step to test the market in the early stages of FDI activities in China, which aligns with Williamson’s (1985) transaction cost theory suggesting that when uncertainty is high, the firm should minimize its commitment to the business environment. Third, the international pharmaceutical firms introduced conventional drug technology, rather than the latest innovative technology, to the Chinese market. This was achieved by transferring the manufactured conventional drugs from the operations in their home countries to the China ventures, then marketing the drugs to the Chinese market. Fourth, the large majority of international pharmaceutical firms formed joint ventures with local Chinese partners. A competent local Chinese partner can assist in reducing the risks associated with the
uncertainty by using the local partner’s country-specific knowledge. These benefits were more readily available to early entrants since there were more alternative partners available to them in the early stages of FDI activities. Finally, the early investors concentrated their investments in SEZs or open cities. As Luo (1998) pointed out, ventures located in those open areas are able to foster risk reduction in China. These five attributes deal with investors’ capability (local environment expertise) and investment strategies (partner selection, venture location selection within China and scale of investment). This may suggest that, other things being equal, a firm’s early entry decision into a politically uncertain international market like China also depends on what the firm can do (capability) and how to do it (investment strategies).

The dramatic changes in Chinese politics and economic policies since 1992 appear to have had significant impact on international pharmaceutical firms’ FDI into China. Therefore, firms whose FDI into China occurred prior to 1992 were classified as early entrants and those that started FDI after 1992 as late entrants. A comparison of FDI decision patterns between the pre-1992 period (early entrants) and the post-1992 period (late entrants) should provide a better understanding of FDI theories and practices in China.

**LITERATURE REVIEW AND RESEARCH PROPOSITION**

The theories of foreign direct investment have traditionally emphasized market imperfection (Hymer, 1960), location specific advantage (Franko, 1971; Vernon 1977), internalization theory (Buckley and Casson, 1976) and transaction cost theory (Williamson, 1975, 1985; Buckley and Casson, 1976; Caves 1982; Anderson and Gatignon, 1986). Dunning's (1988) "eclectic paradigm" denoted that a firm's FDI decision is influenced by three types of factors: ownership-specific factors of a firm, location-specific factors of a market and internalization advantages of integrating transactions within the firm. Taggart (1993) suggested that the three main divisions of FDI theory (three-division theory), via approaches based on domestic market imperfections, firm specific advantages and location specific advantages were generally more appropriate reasons for why multinational pharmaceutical firms invest abroad rather than in their home countries or regions. Location-specific advantages, including market size (Kueh, 1992; Tesai, 1994; Lardy, 1995; Wang and Swain, 1995, 1997; Milner and Pentecost, 1996; Broadman and Sun, 1997; Park, 1997; Qu and Green, 1997; Fittock and Edwards, 1998; Sun, 1998; Wu, 1999; Yan, 2000), stage of economic development (Tesai, 1994; Zhang and Yuk, 1998), openness of the economy (Singh and Jun, 1995; Walder, 1996), political stability (Walder, 1996), host country’s incentive policies (Zhang and Yuk, 1998; Li and Li, 1999) and labor cost considerations (Tesai, 1994; Wei and Christodoulou, 1997; Li and Li, 1999) have recently attracted considerable research attention in explaining why FDI occurs in China. Li and Li (1999) clarified that foreign investors with new technology and new management skills were primarily attracted by China’s huge potential domestic market and geared mainly towards long-term strategic considerations, whereas the foreign investors who made investments in labor-intensive production geared towards export were mainly pursuing China’s cheap labor costs. Zhang and Yuk (1998) asserted that FDI patterns in China
are most likely determined by location specific advantages such as large market size and low labor costs.

However, the theories of FDI into China in the existing literature do not address whether the timing of entry has any significant impact on firms’ FDI into China, although China’s economic system has been in a gradual transition process from the centrally-planned economic system to what is termed a socialism-market economic system in a ‘learning-by-doing’ process since 1979 (DFIMFTECPRC, 1995). This comprehensive (and complicated) experimental process has been accompanied by corresponding political/legal and economic environmental changes in China that might have influence on international investors’ FDI decisions to enter China. In fact, FDI inflow into China has experienced two main distinctive patterns during the period of 1979-1998; that is, following a slow growth period from 1979 to 1991, FDI inflow has increased dramatically since China’s former leader Deng Xiaoping’s South China tour in 1992. The general strategic literature on the timing of entry has focused on early mover advantages and disadvantages (Conner, 1991; Kalyanaram, et al., 1995; Vanderwerf and Mahon, 1997; Makadok, 1998; Luo and Peng, 1998; Song, et al., 1999) and the impact of timing of entry on firms’ performance (Kerin, Varadarajan and Peterson, 1992; Shaver, Mitchell and Yeung, 1997; Lieberman and Montgomery, 1998; Luo, 1998; Peng, Li and Tse, 1999; Isobe, Makino and Montgomery, 2000). Therefore, a comparison between the driving forces of the FDI decision-making processes of early and late entrants should contribute to the understanding of the temporal nature of the determinants of FDI into China during the different periods. Furthermore, the findings of past studies also remain controversial in relation to the variables of incentive policies, low labor cost and market size. A number of the empirical studies (Hartman, 1984; Boskin and Gale, 1987; Slemrod, 1990) revealed that specific incentives such as lower taxes have no major impact on FDI decisions. Wu (1999) also argued that large market size and low labor cost are not unique to China. India, for example, is also a large nation with accessible cheap labor as it is in many developing countries. Thus, the international pharmaceutical firms’ FDI in the Chinese pharmaceutical manufacturing industry remains unexplained in the existing literature, while at the same time international pharmaceutical groups are actively pursuing and evaluating avenues of access to what could become the world’s largest drug market. This study addresses a neglected area in FDI research by investigating the determining factors that drove international pharmaceutical firms’ FDI into China during the period of 1980-1998 and the impact of timing on firms’ FDI decisions.

RESEARCH METHOD

Population and Sample Frame

A total of 117 international-pharmaceutical-firm-invested pharmaceutical companies (IPFIPCs) in Mainland China were defined as the population for the research, based on four major sources: 1) the Catalogue of Chinese Pharmaceutical Enterprises with Foreign Investment (published by the China Centre for Pharmaceutical International Exchange (CCPIE, 1995), an agency of State Pharmaceutical Administration of China);
2) the Market Reports of National Trade Data Bank of the United States of America (NTDB, 1996); 3) MIMS Asia (MIMS, 1998); and 4) the report of Shanghai Pharmaceutical (Group) Corporation (SPGC, 1999). Pharmaceutical companies that had capital investments by non-pharmaceutical firms (for example, business trading companies and investment development firms) were not included in the research population. The key difference between the pharmaceutical and non-pharmaceutical firms is that the non-pharmaceutical firms do not have the technological advances in pharmaceutical research and product development as do the pharmaceutical firms, and these technology advances may have significant influences on foreign investors’ FDI decisions. Within the population, ninety-nine firms (84.6 percent) chose a joint venture entry operation with a local Chinese partner as their entry mode into the Chinese market and the remaining firms (15.4 percent) established 100 percent foreign-owned sole venture operations in China. The local Chinese partners were mainly state-owned Chinese pharmaceutical firms or government agencies.

Over 84 percent of IPFIPCs were located in east China’s thirteen provinces and municipalities including Hainan, Guangdong, Fujian, Zhejiang, Shanghai, Jiangsu, Anhui, Shandong, Hebei, Tianjin, Beijing, Liaoning and Heilongjiang. The east China region was the priority area for the Chinese government to initially practice the policy of opening to the outside world for foreign investment. China’s five Special Economic Zones (SEZs), fourteen coastal open cities and the Shanghai Pudong New Development Area are all located in this region, whose investment environment is relatively advantageous over China’s middle and west areas. In August 1980, China created the four SEZs of Shenzhen, Zhuhai, Shantou and Xiamen in southeast China’s coastal area. In 1988, Hainan Province, China’s largest island province, was defined as the fifth special economic zone. The SEZs are comprehensive experimental sites for China’s economic restructuring and opening to the outside world. They also serve as a special channel for China to use foreign investment, to import advanced technology and enter international markets (DFIMFTECPRC, 1995). In April 1984, the Chinese Government defined fourteen cities as coastal open cities including Tianjin, Shanghai, Dalian, Qinhuangdao, Yantai, Qingdao, Lianyungang, Nantong, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhanjiang and Beihai. In an effort to support these cities and bring their advantages into full play (for example, existing industrial and technological bases, harbor transportation, scientific research and education, increasing international economic links and accelerating economic development) the Central Chinese Government has offered these cities policy preferences. These include the power to make decisions independently on foreign economic and trade activities, preferential treatment for foreign-funded enterprises and technical transformation of old enterprises. In investing in these cities, foreign investors can enjoy preferential treatment on taxation. For example, the income tax on productive enterprises with foreign investment is levied at a reduced rate of 24 percent and the income tax on foreign-funded enterprises undertaking projects encouraged by the State is levied at a reduced rate of 15 percent (DFIMFTECPRC, 1995). In June 1990, the Chinese Government approved a plan to authorize the municipality of Shanghai to develop and open the Pudong New Area and develop policies analogous to those applied in the SEZs. As the most economically developed area of China, the east China region is a decisive force in the national economy and social development of China (ECPRCY,
As a result, a majority of foreign-funded businesses in China have been established in this region. Foreign-funded projects in Midwestern China are relatively few. This pattern also applies to the locations of international pharmaceutical firms’ FDI in China. The 98 IPFIPCs that are distributed in the three major regions of east China (accounting for 83.8 percent of the total population) were defined as the sample for this research. The IPFIPCs in the sample include twenty-nine in Guangdong and Fujian provinces (the Southeast Region - SER), thirty-eight in the Shanghai municipality and the provinces of Jiangsu, Anhui and Zhejiang (the Middle East Region - MER), and thirty-one in the Beijing and Tianjin municipalities and the provinces of Liaoning, Shandong and Hebei (the Northeast Region - NER) (CCPIE, 1995; NTDB, 1996; MIMS, 1998; SPGC, 1999). (Refer to Table 1).

Table 1.
Geographic Distribution (Sample Frame) of IPFICs in China

<table>
<thead>
<tr>
<th>IPFICs Location in China</th>
<th>No. of IPFICs</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>South East Region (SER)</td>
<td>29</td>
<td>29.6</td>
</tr>
<tr>
<td>Middle East Region (MER)</td>
<td>38</td>
<td>38.8</td>
</tr>
<tr>
<td>North East Region (NER)</td>
<td>31</td>
<td>31.6</td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>100</td>
</tr>
</tbody>
</table>


Data Collection

A questionnaire was designed in both English and Chinese and reviewed by two bilingual speakers. One reviewer was a graduate from a Chinese university with a major in English studies who received an MBA from an Australian university. Another held an Australian masters degree in marketing. Additionally, the questionnaire was pre-tested by six respondents using four personal interviews, one mail questionnaire and one telephone survey. Of the six pre-testing respondents, four had received MBA degrees from Australian universities and had worked for foreign invested companies in China for a number of years in senior management positions (two had worked for IPFIPCs in China). The rest were senior managers of a large Chinese-US joint venture pharmaceutical company in China.

The fieldwork began in early April 1999 and was conducted over a three month period. The data was collected, in the main, from personal interviews and complemented by mail questionnaires. Personal interviews were conducted with senior executives of foreign business partners in IPFIPCs in China and the postal questionnaires were addressed to foreign senior executives in IPFIPCs in China. In line with the logic of John (1984), who argues for selecting knowledgeable informants, the choice of this rather exclusive respondent group is based on the belief that people in these sensitive positions are the most cognizant about global investment projects and the dynamics of the overall foreign entry decision process (Kim and Hwang, 1992; Chandprapalart, 2000). In total, 44 companies participated in this research and 82
percent of the completed questionnaires were obtained through personal interviews. Of the 44 responding IPFIPCs, 43 firms provided useful data for the research questions. These include 16 firms established in China before 1992, and 27 that had been set up since 1992. Among the 16 early entrants, 10 IPFIPCs had investments by Asian firms mainly from Hong Kong, Taiwan and Japan. The remainder of the early entrants were mostly from the US and Western European countries. Western firms also comprised about 60 percent of the late entrants. About 62 percent of the firms in the sample invested less than US$ 20 million in China. Over 81 percent of early-entrants committed to this smaller scale of investment and this same percentage existed in the proportion of late entrants who invested more than US$ 20 million in China. In the sample, three companies, including two in Guangdong and one in Jiangsu, were found to have ceased operations during the fieldwork. In addition, one company in Guangdong had the foreign partner’s share sold to its Chinese partner before this survey was conducted. Therefore, the actual sample size was reduced from an estimated 98 to 94 IPFIPCs, resulting in a 45.74 percent response rate.

**DATA ANALYSIS AND RESULTS**

Respondents were asked to describe why their parent firms made FDI decisions to invest in China. The responses were categorized in a method similar to that prescribed by Walsh, Wang, and Xin (1999), and Coffey and Atkinson (1996). That is, following the scanning of data a number of times, bulk groups of data sets were created, based on those with the most appropriate meaning. Each bulk group of data set then was condensed into analyzable units by creating categories and each category was treated as an independent variable (factor) for statistical analysis. In total, ten categories were identified, including: China’s market size and market growth potential (for pharmaceutical products); rapid economic development and growth, China’s open-door policy, relatively stable political conditions, low cost of plant and facility establishment, incentive policies, China’s low labor cost, traditional contacts and linkages, similar culture and language, and continuation of previous business.

The quantitative data analysis procedures were performed with SPSS following data categorization. The descriptive analysis was carried out, first, to summarize the frequency percentages for each factor considered by foreign firms with respect to their FDI decision into China. Variables considered as important factors by firms were coded as ‘1’; those not considered were coded as ‘2’. Table 2 presents the descriptive results of the number of firms that considered each particular factor. It reveals the existence of four distinctive patterns. The primary concerns of the ten factors were strongly associated with China’s political, economic, social and culture conditions. The first two most important factors, China’s market size and market growth potential and rapid economic development and growth are connected with China’s market and economic conditions and the second two most important factors, China’s open-door policy and stable political conditions are related to the government’s policy on business and economic activities. Of these, China’s open-door policy seems to be more important than relatively stable political conditions to foreign investors’ FDI decisions. Incentive policies provided by China tended to have a minor impact on the pharmaceutical firms’ FDI decisions to invest in China. The remaining
Table 2.
FDI Determinants (Variables) by Frequency of Participating Firms

<table>
<thead>
<tr>
<th>Variables</th>
<th>Not Considered</th>
<th>Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Firms</td>
<td>Percent</td>
</tr>
<tr>
<td>China's market size with great potential</td>
<td>1</td>
<td>2.3</td>
</tr>
<tr>
<td>Rapid economic development and growth</td>
<td>14</td>
<td>32.6</td>
</tr>
<tr>
<td>China's open-door policy</td>
<td>25</td>
<td>58.1</td>
</tr>
<tr>
<td>Relatively stable political conditions</td>
<td>29</td>
<td>68.0</td>
</tr>
<tr>
<td>Low cost of establishment of plant and facility</td>
<td>33</td>
<td>77.0</td>
</tr>
<tr>
<td>Incentive policies provided by China</td>
<td>40</td>
<td>93.0</td>
</tr>
<tr>
<td>Low labor cost in China</td>
<td>40</td>
<td>93.0</td>
</tr>
<tr>
<td>Traditional contacts and linkage</td>
<td>41</td>
<td>95.3</td>
</tr>
<tr>
<td>Similar culture and language</td>
<td>41</td>
<td>95.3</td>
</tr>
<tr>
<td>Continuation of previous business</td>
<td>42</td>
<td>97.7</td>
</tr>
</tbody>
</table>

n = 43

five factors, including low cost of establishment of plant and facility, low labor cost, traditional contacts and linkage, similar culture and language and continuation of previous business turned out to be insignificant in the context of international pharmaceutical firms’ FDI into China. Each participating firm reported more than one factor that influenced its FDI decisions to invest in China. On average 2.88 factors were reported per firm. The independent sample t-test suggested that there was no significant difference between early and late entrants vis-à-vis the average number of factors per firm reported (mean=2.75 for early entrants and mean=2.96 for late entrants, p >0.05, t = -0.5822). This may suggest that the decisions of the international pharmaceutical firms’ FDI into China were determined by a combination of factors.

The second level of analysis took into consideration the relatively small sample size used for this research. The Simple Logistic Regression (SLR) technique was used to investigate whether any associations existed between the importance of determinant factors and timing of FDI (pre-1992 vs. post-1992). The SLR is appropriate for a two-by-two table comparison, instead of using Pearson’s chi-square test. The pre-1992 period (early entrants) were coded as ‘1’ and the post-1992 period (late entrants) were coded as ‘2’. The outcome of the SLR is shown in Table 3 and indicates that there was a significant positive relationship between the factor of China’s open-door policy and the timing of FDI (β = 1.376; p<0.05). A significant negative relationship was identified between the factor of China’s economic development and growth and the timing of FDI (β = -2.260; p<0.01); and a significant negative relationship was shown between the factor of relatively stable political conditions and timing of FDI (β = -1.722; p<0.05). A positive beta (β) indicates a positive relationship between the importance of factors and the timing of
Table 3.
Simple Logistic Regression Results
Dependent Variable: Timing of FDI
(Early Entrants vs. Late Entrants)

<table>
<thead>
<tr>
<th>Variables</th>
<th>β†</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>China’s market size with great potential</td>
<td>6.7162</td>
<td>.8546</td>
</tr>
<tr>
<td>Rapid economic development and growth</td>
<td>-2.2600</td>
<td>.0025**</td>
</tr>
<tr>
<td>China’s open-door policy</td>
<td>1.3758</td>
<td>.0390*</td>
</tr>
<tr>
<td>Relatively stable political conditions</td>
<td>-1.7222</td>
<td>.0426*</td>
</tr>
<tr>
<td>Low cost of establishment of plant and facility</td>
<td>-7.7970</td>
<td>.8232</td>
</tr>
<tr>
<td>Incentive policies provided by China</td>
<td>1.2384</td>
<td>.0980</td>
</tr>
<tr>
<td>Low labor cost in China</td>
<td>1.3120</td>
<td>.3011</td>
</tr>
<tr>
<td>Traditional contacts and linkage</td>
<td>.5500</td>
<td>.7046</td>
</tr>
<tr>
<td>Similar culture and language</td>
<td>.5500</td>
<td>.7046</td>
</tr>
<tr>
<td>Continuation of previous business</td>
<td>-6.7162</td>
<td>.8546</td>
</tr>
</tbody>
</table>

* p<.05  ** p<.01
† Positive betas indicate variables more important to early (pre 1992) entrants
Negative betas indicate variables more important to late (post 1992) entrants

FDI and means the factor was important in pre-1992 (early entrants). Conversely, a negative beta (β) indicates a negative relationship between the importance of factors and the timing of FDI and means the factor was important in post-1992 (late entrants).

Thus, the results reveal that early entrants viewed China’s open-door policy to be more important than did the late entrants. On the other hand, the late entrants were more likely to consider China’s economic development and growth and relatively stable political conditions as important positive factors to their FDI decisions.

CONCLUSION AND DISCUSSION

The purpose of this research was to examine the determinants of international pharmaceutical firms’ FDI into China during the period from 1980 to 1998. It is differentiated from similar studies on FDI into China by investigating the determinants of international pharmaceutical firms’ FDI into the Chinese pharmaceutical industry and the possible changes in importance of determining factors through time. As such, the study advances the understanding of the industry specific nature of FDI and the temporal fashion of FDI into China during the different periods. The research results suggest that international pharmaceutical firms’ FDI into China were determined predominantly by location-specific factors. This finding partially supports Dunning’s (1988) eclectic paradigm and Taggart’s (1973) three-division theory on multinational pharmaceutical firms’ FDI activities. However, it was consistent with the most recent
studies on multinational firms’ decisions to invest in China. The research results reveal that four factors, namely China’s market size with its great potential, rapid economic development and growth, China’s open door policy and relatively stable political conditions have been the major motivations in attracting international pharmaceutical firms’ direct investment into the Chinese pharmaceutical manufacturing industry during the period from 1980 to 1998.

Incentive policies provided by China had no major impact on firms’ FDI decisions. The low labor cost and social-cultural related factors appeared to be insignificant to international pharmaceutical firms’ FDI decisions into China. Steady GDP growth, increase of income per capita, consistent increase of per capita annual expenditure on medicine and medical services, together with over 1.2 billion people make China’s market size and market growth potential the most important motivation among the four major factors.

The importance of the other three primary factors depends on the timing of FDI into China. China’s open-door policy played the second most important role in encouraging international investment particularly during the early stages of China’s economic reform and socialism market development. The promulgation of the Law of the People’s Republic of China on Joint Ventures Using Chinese and Foreign Investment in July 1979 was a momentous event in opening up the Chinese economy. The gradual implementation of the open door policy represented a breakthrough from past economic development strategy in China. The open door policy was a strong signal to the outside world indicating China’s intention to break out of its international isolation and become aggressively involved in world economic activities after three decades of isolation and central planning of the economic system. The open door policy brought new opportunities for foreign investors who intended to develop business in the Chinese market.

The rapid economic development and growth, combined with the relatively stable political conditions in China, has had significant impact on international investors’ decisions to make direct investment in the country, particularly since 1992. The speeches of China’s former leader, Deng Xiaoping, published in 1992, accelerated the process of Chinese economic reform and opened up the economy for foreign investments resulting in a positive impact on economic development and political conditions in the country. This in turn contributed to the late entrants’ FDI decisions to invest in China.

This study also demonstrated that the incentives provided by the Chinese government would most likely be treated as an additional benefit by most international pharmaceutical firms, rather than a decisive factor on their FDI decisions to China. This finding supports previous studies, primarily based on FDI in the US (Hartman, 1984; Boskin and Gale, 1987; Slemrod, 1990), but does not agree with the findings of recent studies based on FDI in China (Zhang and Yuk, 1998; Li and Li, 1999). This may be because the pharmaceutical industry is a more technology-based, rather than a labor-intensive, industry. International pharmaceutical firms that invested their capital and technology into China did so with the primary goal of accessing China’s potentially huge market for their products. Usually, export-oriented FDI has invested mainly in labor-intensive industries. Incentives, therefore, may be significant for export-oriented investments in labor-intensive industries in China. For similar reasons, cheap labor, low establishment costs and social cultural related factors would not have significant effects on international pharmaceutical firms’ FDI decisions into the Chinese pharmaceutical
manufacturing industry. This finding supports Li and Li’s (1999) clarification about the impact of China’s low cost of labor on foreign firms’ decisions to invest in the country.

**LIMITATIONS AND FUTURE RESEARCH DIRECTION**

There are three main limitations in this research. First, this research suggests that the timing of FDI had significant impacts on FDI determinants. The changes in investment environments and other conditions in China continue as the political/legal and economic reforms in China unfold. This study was conducted in a particular time period and only gave insights into the situation at that moment in time (1980 to 1998). Second, most of the pharmaceutical companies with foreign investments in China had capital investments by non-pharmaceutical firms (CCPIE, 1995; MIMS, 1998). Therefore, further research into FDI of international non-pharmaceutical firms would be expedient and meaningful. In addition, a comparison of determinants between pharmaceutical and non-pharmaceutical firms FDI in the pharmaceutical industry would further add to the understanding of how FDIs operate. Finally, future research studies may also extend to other industries rather than just the pharmaceutical industry, as international investors have also been actively engaging in other industries in China.

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**NOTES**

1. A US$ 20 million investment is usually regarded as a rather small scale of investment for international pharmaceutical firms.

2. Pearson’s chi-square test is only appropriate if there is sufficient data (Francis, 1999). Pearson’s chi-square is equivalent to the simple logistic regression that uses the pooled estimate of the standard error (Christensen, 1997). Logistic regression is relatively free of restrictions, and, with the capacity to analyze a mix of all types of predictors (continuous, discrete and dichotomous), the variety and complexity of data sets that can be analyzed is almost unlimited (Tabachnick and Fidell, 1996).

**REFERENCES**


