MOTIVES OF FOREIGN PHARMACEUTICAL FIRMS’ FDI IN CHINA: A COMPARISON BETWEEN
EASTERN AND WESTERN FIRMS

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ABSTRACT

This study examined the determinants of foreign pharmaceutical firms’ foreign direct investments (FDI) in
China, and compared FDI determinants between eastern and western pharmaceutical firms. The analysis
suggested that foreign pharmaceutical firms’ FDI in China was determined by China’s specific
advantages, and China’s market size played the most important role. China’s incentive policy received
moderate attention, and low labour cost was not a significant consideration. The results did not support
the traditional FDI theories of market imperfection and firm specific advantages. The results also showed
that eastern firms had a tendency to agree that the incentive policies was one of the China’s specific
attractions which attracted their FDI to China, whereas, western firms tended to disagree. Both eastern
and western firms were unlikely to consider China’s low labour cost as an important factor in their
decision to invest in China, this being even more so for western firms.

1. INTRODUCTION

China has attracted substantial FDI since the passage of the Chinese-Foreign equity joint venture law by
the National People’s Congress of China in 1979. During the period of 1979-1991, the FDI flow into China
was slow, and the actual investment showed no significant growth till 1991. Begging with a 25% growth in
1991, China has since attracted greatly increase amount of FDI. A sharp increase (approximately 152% over
previous year) occurred in 1992. FDI inflow in 1992 (US$11.007 billion) was just slightly lower than the
total FDI (US$12.103) in the entire first decade (1979-1989). By 1998, this 1992 level had been
surpassed four times over (SSBPRC, 1988-1999). The country had been second only to USA as the
major recipient of FDI from 1993 to 1997 and ranked in the third position in 1998 in the world (UN, 1996-
1999). During the period from 1992 to 1998, China had hosted almost 10% of total FDI inflow in the world,
and absorbed over 28% of the total FDI inflow to developing countries and over 46% of total FDI inflow to
Asian countries or regions. South East Asian countries or regions attracted about US$480 billion FDI
flows from 1992 to 1998, and about 50% of this went to China (UN, 1996-1999). Over 70% of total FDI
inflows to China were from Asian countries/regions including Hong Kong, Taiwan, Singapore, South
Korea, Japan, and Thailand. With the exception of USA and other western countries played a minor role
(SSBPRC, 1988-1999). The popularity of FDI activities in China also applies to the pharmaceutical
industry. A significant number of American, European, Japanese and other Asian pharmaceutical groups
had been actively pursuing and evaluating avenues of access to the Chinese pharmaceutical
manufacturing industry and established over 1,500 pharmaceutical companies during the period from
1980 to 1998. Foreign invested pharmaceutical companies were distributed in almost every part of China,
producing a wide range of products including bulk pharmaceutical chemicals, preparations, medical
devices, diagnostic reagents, medical dressings, pharmaceutical machinery, health care products, etc.
This paper aimed to examine the determinants of foreign pharmaceutical firms’ FDI intro China, and
further to compare FDI decision patterns between eastern and western pharmaceutical firms.

2. FDI LITERATURE

The theories of foreign direct investment have traditionally emphasised market imperfection (Hymer,
1960; Kindleberger, 1959), location specific advantage (Franko, 1971; Vernon, 1977), internalization
theory (Buckley and Casson, 1976), and transaction cost theory (Williamson, 1979; 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 explaining 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; Broadman and Sun, 1997; Park, 1997; Qu & 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, 1995), political stability (Walder, 1995), host country's incentive policies (NRI and ISAS, 1995; Zhang and Yuk, 1995; Li and Li, 1999), labor cost considerations (Tesai, 1994; Wei and Christodoulou, 1997; Li and Li, 1999), etc., have recently attracted considerable research attention in explaining why FDI occurs in China. Li and Li (1999) clarified that when 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 aiming for China's cheap labor cost. Zhang and Yuk (1998) asserted that FDI patterns in China are most likely to be determined by the location-specific advantages such as large market size, low labor cost. The existing literature, however, remains controversial in general in relation to the variables of incentive policies, low labor cost, and market size. A number of empirical evidences (Hartman, 1984; Boskin and Gale, 1987; Newton, 1987; Slemrod, 1990) revealed that specific incentives such as lower tax 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 and cheap labor is also accessible in other developing countries. Therefore, whether the FDI theories revealed from the previous studies could explain the pharmaceutical firms' FDI in the Chinese pharmaceutical manufacturing industry remains unexplained in the existing literature, despite the fact that the multinational pharmaceutical groups have been actively pursuing and evaluating avenues of access to what could become the world's largest drug market since 1980. A comparison between eastern and western firms' FDI determinants should contribute to a better understanding of FDI theories in general.

3. CONCEPTUAL FRAMEWORK

![FDI Framework Diagram]

Taggart (1993) analysed the three economies of multinational theory including theories of international trade, the theory of FDI and the general theory of international production, and applied these theories to the world pharmaceutical industry. He found that trade theory relies on a range of perfect market assumptions and is not helpful in understanding the international drug industry. Internationalization models have some utility in describing the industry and in predicting the circumstances under which internationalization will take place. The three main divisions of FDI theory, viz., approaches based on market imperfections, firm-specific advantages, and location-specific advantages are generally more
useful than other theories for explaining why pharmaceutical firms invest abroad rather than in their home countries or regions. Taggart’s model was the first one that explained the reasons for pharmaceutical firms’ FDI. This research adopted Taggart’s three FDI divisions model as the conceptual framework to test it’s relevance in the context of foreign pharmaceutical firms’ FDI in China. Three key variables for each one of the three divisions namely Domestic Market Imperfection (DMI), Firm Specific Advantage (FSA) and Location Specific Advantages (China’s Specific Advantages - CSA) were identified as the exploratory variables (independent variables) based on the literature review for testing. FIGURE 1 is an elaboration of the framework explaining the relationships between the dependent and independent variables.

4. RESEARCH METHOD

A total of one hundred and seventeen foreign pharmaceutical firm invested pharmaceutical companies (FPFIPIPCs) in Mainland China were defined as the population for the research based on the following four sources: 1) Catalogue of Chinese Pharmaceutical Enterprises with Foreign Investment (CCPIE, 1995) which was published by the China Centre for Pharmaceutical International Exchange, an agency of State Pharmaceutical Administration of China. It contains necessary information on over 1,310 FIPCs in China. 2) Market Reports of National Trade Data Bank of the United States of America (NTDB, 1996). 3) MIMS Asia (1998) and the report of Shanghai Pharmaceutical (Group) Corporation (SPGC, 1999). Over 84% of FPFIPIPCs were located in the east China’s thirteen provinces and municipalities including Hainan, Guangdong, Fujian, Zhejiang, Shanghai, Jiangsu, Anhui, Shandong, Hebei, Tianjin, Beijing, Liaoning and Heilongjiang. Less than 16% of FPFIPIPCs were distributed in China’s middle and west areas. A total of ninety-eight FPFIPIPCs distributed in the three major regions in east China and which accounted for about 84% of the population were defined as the sample size for this research. A questionnaire was designed in both English and Chinese for the data collection. The questionnaire was pretested with six knowledgeable pre-test respondents. The research fieldwork was mainly conducted in China between early April and late June in 1999. The data was collected through both personal interviews, and a mail questionnaire survey. Personal interviews were conducted with senior executives of foreign business partners in FPFIPIPCs in China, and the posted questionnaires were addressed to foreign general managers/representatives in FPFIPIPCs in China. In total forty-four companies participated in this research, and 82% of answered questionnaires were obtained through personal interviews. Of the responding FPFIPIPCs, Twenty-one FPFIPIPCs had investment by eastern pharmaceutical firms including four Japanese and seven-teen Non-Japanese Asian pharmaceutical firms. The rest had western firms’ investment including fourteen from USA and nine from European countries or regions. Three companies including two in Guangdong and one in Jiangsu were found to have ceased operations during the fieldwork. Also one company in Guangdong had the foreign partner’s share sold to its Chinese partner before this survey conducted. Therefore the real sample size was reduced from an estimated ninety-eight to ninety-four FPFIPIPCs, which means that a 46.8% response rate was achieved.

5. DATA ANALYSIS AND RESULTS

Respondents were requested to indicate the degree of their agreement on the determinants of their parent firms’ FDI in China. Respondents had questions with a six-point Likert scale for each of the independent variables from “1” strongly disagree to “6” strongly agree. The internal consistency of the scale values for each one of the three groups of variables was found to be at an acceptable level. The reliability coefficients (Alpha) for three groups of independent variables were 0.78 for DMI (3 items), 0.71 for FSA (3 items) and 0.69 for CSA (3 items). The data was analysed with three types of techniques at two different levels. The first level focus was on summarizing the mean scores for each one of nine exploratory variables using descriptive statistics. The sample mean scores for all of the variables are depicted in FIGURE 2. It suggests that China’s huge market size played the most important role in motivating foreign pharmaceutical firms’ FDI in China. The incentives offered by the Chinese government received moderate attention. China’s low labour cost is less likely to be an important factor in foreign pharmaceutical firms’ FDI decision in China. Respondents indicated their disagreement that the variables of DMI-Production skills, DMI-Marketing skills, DMI-Unique technology skills, FSA-Innovative skills, FSA-Advanced technology and FSA-Management skills have an impact on their parent firms’ FDI decisions.
The second level of analysis compares both the median and mean scores on each variable for the respondents as a whole from senior managers of Eastern and Western foreign firms. The analysis was processed using both the independent sample t-test (parametric test) to compare the mean scores for the two independent groups and Mann Whitney test (non-parametric test) for two independent groups to compare the relative values (ranks) of the observations. The results of both tests consistently suggest that the differences between Eastern and Western pharmaceutical firms attitudes towards the factors of the China's incentive policy and low labour cost are significant at 0.05 level in the sample (refer to TABLE 1).

### TABLE 1: PARAMETRIC AND NON-PARAMETRIC TESTS RESULTS (EASTERN FIRMS VS. WESTERN FIRMS)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean Eastern Firms</th>
<th>Mean Western Firms</th>
<th>Wilcoxon Test W</th>
<th>Asymp. Sig. (2-tailed)</th>
<th>t-value</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMI-Production skills</td>
<td>2.67</td>
<td>2.35</td>
<td>460.00</td>
<td>0.1612</td>
<td>0.7859</td>
<td>.4385</td>
</tr>
<tr>
<td>DMI-Marketing skills</td>
<td>2.48</td>
<td>2.22</td>
<td>479.00</td>
<td>0.3476</td>
<td>0.7225</td>
<td>.4740</td>
</tr>
<tr>
<td>DMI-Unique technology skills</td>
<td>2.71</td>
<td>2.26</td>
<td>461.50</td>
<td>0.1751</td>
<td>1.1577</td>
<td>.2535</td>
</tr>
<tr>
<td>FSA-Innovative products</td>
<td>2.20</td>
<td>2.09</td>
<td>481.00</td>
<td>0.3504</td>
<td>0.7307</td>
<td>.4690</td>
</tr>
<tr>
<td>FSA-Advanced technology</td>
<td>2.71</td>
<td>2.22</td>
<td>449.00</td>
<td>0.0826†</td>
<td>1.8244</td>
<td>.0762†</td>
</tr>
<tr>
<td>FSA-Management skills</td>
<td>2.14</td>
<td>1.76</td>
<td>480.50</td>
<td>0.3563</td>
<td>1.2891</td>
<td>.2065</td>
</tr>
<tr>
<td>CSA-Huge market size</td>
<td>5.62</td>
<td>5.43</td>
<td>474.50</td>
<td>0.2462</td>
<td>1.0353</td>
<td>.3064</td>
</tr>
<tr>
<td>CSA-Incentive policy</td>
<td>4.10</td>
<td>3.28</td>
<td>420.00</td>
<td>0.0177*</td>
<td>2.6345</td>
<td>.0117*</td>
</tr>
<tr>
<td>CSA-Low labour cost</td>
<td>3.38</td>
<td>2.70</td>
<td>423.50</td>
<td>0.0206*</td>
<td>2.2754</td>
<td>.0281*</td>
</tr>
</tbody>
</table>

†: p<.10; *: p<0.05; **: p<0.01; ***: p<0.001.

The mean scores from the respondents of western firms for the factors of China's low labour cost and incentive policy were significantly lower than that from the respondents of eastern firms. Eastern firms had a tendency to agree that the incentive policies was one of the China's specific attractions which attracted their FDI to China, whereas, western firms tended to disagree. Both eastern and western firms were unlikely to consider the China's low labour cost as an important factor to their decision to invest in China, this being even more so for western firms.
6. DISCUSSION AND CONCLUSION

This research adapted Taggart's (1993) three FDI divisions model as the theoretical framework and examined the determinants of foreign pharmaceutical firms' FDI in the Chinese pharmaceutical manufacturing industry. It reveals that foreign pharmaceutical firms' FDI decision is more likely to be determined by China's specific advantages. China's huge market size was the dominant determinant of foreign pharmaceutical firms FDI in China. Incentive policy proposed by the Chinese government was unlikely to be considered as a decisive factor, but more likely to be treated as an additional benefit to foreign pharmaceutical firms' FDI in China. Low labour cost in China did not receive significant attention from foreign pharmaceutical firms. The results of this research did not support the traditional FDI theories based on foreign firms' domestic market imperfection and firm's specific advantages in the case of foreign pharmaceutical firms' FDI into the Chinese pharmaceutical manufacturing industry. China has become one of the most popular FDI destinations in the world particularly after 1992. Relatively stable political environment, steady GDP growth, dramatic increase of income per capita, consistent increase of per capita annual expenditure on medicine and medical service, re-establishment of rural health care cooperative systems by the Chinese government, awareness of Western medicine and an increase in the number of western-style health care facilities together with the population of 1.2 billion people make China become one of the most attractive FDI destinations in the world. The pharmaceutical manufacturing industry is a technology and capital intensive industry. Cheap labour therefore would not have a significant effect on foreign pharmaceutical firms' FDI decision into China. This finding is consistent with Li and Li's 1999 study on foreign investment in China. However, eastern pharmaceutical firms were likely to pay more attention to the factors of China's incentive policy and low labour cost than western firms. A number of previous studies (NRI and ISAS 1995; Zhang and Yuk 1998) have also revealed similar results.

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