Foreign Direct Investment Inflows in China: Determinants at Location[1]

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Abstract

This paper applies dynamic econometric methodology empirically to investigate the location determinants affecting foreign direct investment (FDI) inflows in China. At first, based on datasets of time series, by constructing error correct model (ECM) applied cointegration theory, long-run and short-run effects of location determinants affecting FDI inflows in China are examined. The derived evidences show that some location determinants have different magnitudes and relative importance in both long-run and short-run effects attracting FDI inflows in China. Secondly, based on the different source countries of FDI inflows in China, it is found that combinations of the location determinants affecting FDI inflows from the different source countries in China have significant differences. FDI inflows from the Newly Industrialized economies (NIEs) and Association of Southeast Asian nations (ASEAN) have the strong characteristics of export-oriented FDI. In contrast, FDI inflows from the developed countries and west Europe tend to present the characteristics of market-oriented FDI. Thirdly, based on datasets of Chinese provincial level, by building panel model and cross section model, the location determinants affecting FDI inflows and causing the uneven distribution of FDI inflows in all the provinces are examined in detail. The derived evidences demonstrate that the specific characteristics in Chinese provinces are the important location determinants affecting FDI inflows across all the provinces, and determine the magnitude of FDI inflows in the individual provinces. Finally, this paper draws some important policy implications for the further introducing FDI inflows in Chinese provinces according to the relative importance of location determinants.

Key Words: Foreign Direct Investment, Determinants, Location, China

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Foreign Direct Investment Inflows in China: Determinants at Location[2]

Introduction

Since the first foreign enterprise was admitted to entry into China in 1979, the realized accumulated foreign direct investment (FDI) inflows in China have reached US dollar 562.101 billion by the end of 2004. In particular, after Deng's tour in southern region in the early 1992, the astounding amounts of FDI inflows has made China become the largest recipient among the developing countries and the second largest recipient in the world next only to the United States since 1993. Thus, the overall market-oriented economic reform and the strong growth of China's economy have make China increasingly integrated with the world Economy, and also still promoted the great confidence of foreign investors to attract the more FDI inflows in China.

Meantime, the changes of economic structure in China induced by the huge amounts of FDI inflows demonstrate the observation of the significant change of comparative advantage in China's trade, that is, the more competitive advantage of labour-intensive productions and the increasingly new comparative advantage of capital-intensive and technology-intensive productions. Thereby, this also means that the factor endowments of China have the strong complementarities with the rest of the world. As a result, it is increasingly concerned to test and identify what location determinants are affecting FDI inflows in China. Besides, FDI inflows have been concentrated in China's eastern region although the proportion of FDI inflows in middle and western region relative to national total has increased only slightly over time. Thereby, the question also arises naturally, that is, what location determinants cause the uneven distribution of FDI inflows across all the provinces of China? What are the magnitude and the relative importance of the location determinants affecting FDI inflows in China?

In the studies, error correct model based on time series data sets is made to examine what location determinants affecting FDI inflows in China are, and whether the factor endowments in China are significantly different from the rest of the world. Meantime, the combinations of location determinants affecting FDI inflows from different source countries are also investigated. Besides, panel model and cross section model based on Chinese provincial data sets are built further to investigate the location determinants of different distribution of FDI inflows across all the provinces. Thus, it is expected that this empirical investigation could be a theoretical contribution to some debates associated with FDI inflows in China, and provide some valuable information and implications of policies for governmental policy-makers for further introducing FDI inflows in China.

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The paper includes 7 parts as follows. Section 1 provides a brief overview of FDI inflows in China, including prospects, geographical distribution, sectoral distribution, and main source economies of FDI inflows in China. Section 2 presents the main theories associated with FDI flows, and discusses the location determinants affecting different types of FDI inflows in China. Section 3 gives the hypotheses of explanatory variables and description of datasets for econometrical model. Section 4 constructs the error correct model for long run and short run analysis as well as the gravity model for the location determinants affecting regional distribution of FDI inflows in China. Section 5 tests the hypotheses of explanatory variables and describes empirical results of econometrical model analysis. Section 6 concludes the basic findings of the studies. Section 7 present policy implications derived by the location determinants for further introducing FDI inflows in China.

1 Prospects and Trends of Foreign Direct Investment Inflows in China

1.1 An Overview of FDI inflows in China

Since China's move from a planned economy towards a market economy in 1979, China has received the large part of FDI flows. And China has remained the second largest recipient in the world following USA since 1993, and China was the largest recipient in the world in 2002. The actual FDI inflows in China amounted to US$560.403 billion from 1979 to 2004. At current, shares of FDI inflows in international trade have run over 50% (see Table 1.1 and Figure 1.1.3), and shares of FDI inflows in fixed asset investment have reached near 10%, and shares in tax revenue have reached about 20%, and FDI firms have employed about 22 million employees. Therefore, the increasing FDI inflows have become the significant characteristics of China's strong growth. The influences of FDI inflows on capital formation, labour training, upgrading of industrial structure, technology transfer and spillovers, international trade have significantly accelerated the transition of China's economy from the planned economy to the market economy, and also increasingly integrated the Chinese economy into the world economy. In accordance with the schedule of implemented policies of FDI inflows in China, trends of FDI inflows in China can be described the three distinct stages (see Figure 1.1.1 and 1.1.2) as follows:

In the first stage 1979-91 for the initial and explored periods, China's government had begun to implement the special incentive policies in the four established Special Economic Zones (SEZs) [3] in Guangdong and Fujian provinces since 1980. FDI inflows in China were highly concentrated in the SEZs during 1979-1983, and the actual FDI inflows amounted to only US$1.755 billion. During the period, China's performances attracting FDI inflows were not impressive. When Hailan Island and fourteen coastal cities across ten provinces were opened, the total FDI inflows in China amounted to US$10.301 billion during 1984-88, and remarkably doubled the amount of that in 1983. However, FDI inflows in China increase slowly in 1989-91, mainly due to the impact of the Tiananmen incidents. The growth rates of FDI inflows in China slowed down 6.2 % in 1989 and only 2.8 % in 1990. The total FDI inflows amounted to US$11.245 billion during 1989-91.

[3] It includes such as Shenzhen, Zhuhai, and Shantou in Guangdong Province, and Xiamen in Fujian Province.

Besides, China's government also decided to open more areas to attract FDI inflows in 1988 and 1990, such as Yangtze River Delta, the Pearl River, Min Nan region, as well as Shanghai Pudong New Development Area and the entire coastal areas. As a result, the total FDI inflows in China amounted to US$23.301 billion during the whole period from 1979-91.

In the second stage 1992-99 for the new faster growth phase, the phase was marked by Deng Xiaoping making a famous tour in China's southern coastal areas and SEZs in 1992. His speech in this tour explicitly declared his support for the successful economic development assisted by FDI inflows in SEZs and expressed a desire for the pace of the accelerated market economy, which greatly pushed China's overall economic reform process forward. Thus, China's government would comply with the commitment to the open door policy and market-oriented economic reform so as to increase the confidence of foreign investors in China. In general, Deng's this visit was thought to be the milestone and turning point for China's overall reform and openness to encourage FDI inflows in China. Since 1992, China's government has begun to implement a new developing approach, and realized a transformation from the early regional biased policies to nationwide open policies of FDI inflows by issuing a series of policies and regulations. The results were remarkable and astounding, and only in 1992 amounts of FDI inflows in China reached US$11.007 billion with the growth rate for 152.107%, and in 1998 reached the peak level of US$45.463 billion. But, in 1999, mainly because of the influences of the Asian financial crisis and the rise of acquisition transactions in both OECD and non-OECD countries, FDI inflows into China dropped down to US$40.319 billion with the negative growth rate for only -11.315% (see Figure 1.1.2). Consequently, the total FDI inflows in China amounted to US$282.574 billion during the whole period from 1992-99.

In the third stage 2000-2004 for the steady growth phase, it was marked by the turning point of Asia finance crisis and China's entry into WTO in 2001, and FDI inflows in China have quickly diffused to nationwide areas from the early coastal areas to western and northern or middle areas. FDI inflows in China have become one of the most important components in China's economy. The total FDI inflows in China amounted to US$560.403 billion for the whole period from 1979-2004, and amounted to US$ 254.528 billion during the period from 2000-2004.

1.2 Geographical Distribution of FDI inflows in China

Distribution pattern of FDI inflows in China indicates the great disparity among regions due to the biased preferential policies driving FDI inflows in the eastern open areas and SEZs during the early open door to the world. This has resulted in an overwhelming concentration of FDI inflows in the eastern region. But, after Deng's speech in the southern tour, China's government has accelerated the pace of economic reform to implement the more broadly open door policies across all the provinces for FDI inflows. Thus, FDI inflows into China have started to spread to nationwide areas from coastal areas to inland areas.

In order to capture the whole picture of the uneven distribution of FDI inflows in China, all the provinces of China can be divided into the three distinct regions by the different geographical

locations, such as eastern region, middle region, and western region[4]. By observing Table 1.2.1 and 1.2.2, it can be found that regional distribution of FDI inflows in China has obviously been very uneven. Figure 1.2.1 and 1.2.2 explicitly indicates that the shares of FDI inflows and stock in eastern region have overwhelmingly been higher than that in middle and western region, and shares of FDI inflows and stock in eastern region in total FDI inflows have run over 80% from 1988 to 2003. In contrast, the shares of FDI inflows and stock in the middle regions have been less than 10% and the shares of FDI inflows and stock in western region have remained even less than 5% during 1988-2003. Meantime, compared the distribution of GDP among the eastern region, middle region, and western region (see Table 1.2.3 and Figure 1.2.3), the eastern region with the higher GDP level of economic development, higher density of population and better telecommunication or transport infrastructure may attract the more FDI inflows, and have the higher level of the accumulated FDI. Therefore, FDI inflows in China have the closely associated with market size, infrastructure, and the level of economic development.

In addition, among the distribution of FDI inflows in China's provinces, Performance in Guangdong to attract FDI inflows have been very impressive, and remained the shares of double digits from 1988 to 2003 (see Table 1.2. 5) . Fujian have been the significant shares of FDI inflows in 1990s and later 1980s, and the shares of FDI inflows have been gradually decrease over time, from 10.076% in 1999 to 4.909% in 2003. In contrast, shares of FDI inflows in Jiangsu have been less than 5% before 1991, and remarkably increase over time, from 13.291% in 1992 to 19.594 % in 2003, and other provinces such as Sichuan, Shandong, Liaoning , Beijing, Hubei, Zhejiang, Heilongjiang and Tianjin have also had the trends to attract FDI inflows over time increasingly (see Table 1.2.5). This shows that distribution of FDI inflows has spread quickly from coastal open cities to western and middle region, especially since Deng's visiting in southern areas. Just as it is, shares of FDI stock in China's provinces have also had a clearly variations of Similar trajectory like as that of FDI inflows in China's provinces (see Table 1.2.4). The western provinces and some middle provinces such as Yunnan, Chongqin, Ninxia, Hunan, Hubei, and Henan provinces have had a somewhat increase over time from 1988 to 2003, and coastal areas such as Tianjin, Hebei, Hainan, and Guangxi provinces have had a slow trend to attract FDI inflows overtime from 1999. These variations of shares of FDI inflows and stock in the provinces have also been with respect to their distribution of GDP (see Table 1.2.6). Thus, it is obvious that the gradual expansion of FDI inflows from coastal cities or eastern provinces to middle or western cities and provinces accompanied by the overall open policies and increasingly marketing economy in China.

Thereby, through the analysis of distribution of FDI inflows and stock over time series and cross section in China, a brief outline can be obtained to indicate the significant characteristics and the uneven distribution of FDI inflows in all the provinces of China. But, what are the location

[4] Eastern region includes the 12 relatively developed areas such as Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Guangxi, and Hainan. The middle region includes the 9 intermediate areas such as Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, Hunan, and Sichuan. The western region includes the 9 less developed provinces such as Inner Mongolia, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang.

determinants causing such the characteristics and disparity of FDI inflows across Chinese Provinces, and how do these factors affect the FDI inflows in China, and what are magnitudes of effects of these factors on FDI inflows in China? These questions can be answered and explained by the following studies of dynamic econometrics.

1.3 Sectoral Distribution of FDI inflows in China's industries

By observing Table 1.3, the shares of FDI inflows in China are mainly concentrated in the manufacturing field, and have remained the largest shares of near 60%, and increase over time from 62% in 1997 to almost 71 % in 2004. Next follows real estate with the shares of FDI inflows, and the shares have steadily had the growth over time near 10% during 1997-2004. The third larger shares are involved in the industries such as banking and insurance, social services, wholesale and retailing commerce have the trends to increase overtime. Construction and transport, storage, post and telecommunications also have remained steady growth, but have had the somewhat decreasing tendency overtime for averagely near 3-2%. Electric power, gas and water production and supply have some fluctuations, the largest shares for 9.18% in 1999, and the least for 1.88% in 2004. Besides, the primary industry such as farming, forestry, animal husbandry and fishing has had the great potential to increase over time, and steadily increased from 1.387% in 1997 to 1.831% in 2004. As a result of Chinese accession to WTO in 2001, and further investment and trade liberalization, this is very favourable to further motivate FDI inflows in traditional industries, especially service trade. However, there are the significant differences between developing source countries and developed source countries for the types of FDI inflows in China. FDI inflows from the developing source countries and NIEs or ASEAN tend to be towards labour-intensive industries and traditional manufacturing industries, and most of firms are the medium-small enterprises, but FDI inflows from the developed countries are more inclined to invest in the higher technology or technology-intensive industries and the more knowledge-intensive industries, and most of firms are the larger enterprises.

1.4 Main source countries of FDI Inflows in China

The source countries of FDI inflows into China have the significant characteristics. In the early open door to the world, because of proximity of geographical location, language, and culture-custom, the source countries and large amounts of FDI inflows mainly come from the oversea Chinese affiliates in Hong Kong. Among the developed countries, Japan and the United States are the most important investors in China, and the other is West Europe. In particular, after Deng's visiting in southern provinces in 1992, and implemented the overall open policies across China, the sources countries of FDI inflows have had gradual diversifications such as NIEs[5](the newly industrializing economies), ASEAN[6] countries (Association of Southeast Asian Nations) , as well as other developed and developing countries, and the amounts of FDI inflows also have reached the astounding growth. But, the large amounts of FDI inflows still mainly come from Hong Kong and Taiwan, and the developed countries have still had rather small amounts of FDI inflows in China although they have had the increasing tendency over time. Furthermore, because

[5] NIEs economies include such as Hong Kong, Singapore, South Korea, and Taiwan.
[6] ASEAN countries include such as Malaysia, Indonesia, Thailand, Philippines.

China's accession to WTO in 2001 induces more liberal trade and investment, the amounts of FDI inflows in the developed countries are expected to have the more growth.

Amounts of FDI inflows from these countries from NIEs and ASEAN have accounted the largest shares of 75.9% in total FDI inflows into China in 1994, but have had a decreasing tendency over time for 52.048% in 2003, and their FDI inflows tend to emphasize export-oriented manufacturing industries (See Table 1.4 and Figure 1.4). These economies mainly concentrate in the labor-intensive activities, and most of FDI firms are mainly the medium and small enterprises compared with the multinational corporations from Europe and United States. In particular, overseas Chinese affiliates from Taiwan, Hong Kong, Singapore, and Macao etc are more capital-intensive than China's domestic enterprises. In contrast, the amounts of FDI inflows from the main developed economies such as Japan, United States, Canada, and Australia, as well as the west Europe economies have gradually increased over time although their shares in total FDI inflows have separately been less than near 20% and 10%. These FDI firms are the larger and more capital-intensive than overseas Chinese affiliates. The shares of other source countries of FDI inflows in China have gradually increased from 2.964% in 19994 to 20.586 % in 2003，which implies that the source countries of FDI inflows in China have increasingly experienced the diversified tendency. Besides, the shares of FDI inflows from Virgin Islands have also had an increasing tendency, and astoundingly risen from 0.38% in1994 to 10.797% in 2003. This is a very interesting phenomenon, which is called as "off-shore" investing. This is mainly caused by some Chinese firms registering abroad firms in Virgin Island in order to obtain the endowed benefits by China's commitments of preferential policies for FDI firms. Just as is known, China is well endowed with the abundant labor resources and low labour costs, and has the significantly comparative advantage in labor-intensive production compared with the rest of the world. Thus, labor-intensive and export-oriented manufacturing activities will continue to be favored by FDI Firms, which are still mainly source countries of FDI inflows in China.

2 Theories Review and Location Determinants of Foreign Direct Investment flows

Foreign direct investment theories are mainly based on theoretical hypothesis of imperfect competition and increasing returns to scale. In accordance with the different theoretical frameworks and motivation and significant characteristics of FDI flows with respect to determinants associated with investment environment, macroeconomic, and investment costs, FDI flows may be classified into market-oriented, export-oriented, resource-oriented, efficiency-seeking, production-oriented, and trade-facilitating-oriented etc. The theories having significant influences on later studies of FDI flows could mainly be summarized such as FDI theory based on industrial organization produced by S. H. Hymer (doctor thesis in 1960), international product life-cycle theory introduced by Raymond Vernon (1966), substitute theory of FDI for trade by Robert A. Mundell (1968), complement theory of FDI for trade by K. Kojima (1973, 1985), OLI theory (ownership, location and internalization advantage) of the new investment development path suggested by John Dunning(1988), vertical and horizontal investment theory of FDI proposed by James R. Markusen (2000), and so on. These theories try to

explain the determinants of FDI flows under the different assumptions and frameworks.

2.1 Literature Review of Theories of Foreign Direct Investment flows

The earliest FDI theory originated from the industrial organizational produced by S. H. Hymer. He argued that FDI flows are not randomly distributed among industries, but also by competitive conditions. That is, if FDI firms are exactly identical to the host firms, it is not profitable to enter the host market because of the added cost of doing business in host country, including communication and transport costs, the allocated labour resources costs, the costs generated by differences of language, customs, and other local services etc. but, ownership advantage of the specific firms possessed by FDI firms is sufficient to outweigh transactions costs and the costs of production in host country, such as advanced technology, brand name, lower costs due to scale economies etc, and the higher degree of imperfection in the market, the greater will be the tendency to motivate FDI flows and control operations rather than engage in arm's length transactions. Thus, FDI flows are motivated to produce abroad by the expectation of earning.

Vernon (1966) introduced a new theoretical framework to explain FDI flows based on the hypothesis of comparative advantage of factor endowments, that is, the theory of international product life-cycle, which stressed the information, uncertainty and scale economies rather than merely factor costs. He argued that the whole life-cycle of a product can be explained as the sequence from home production of a new product to its export and host production, that is, a new product, the maturing product, and the standardized product, where each stage of the production all imply a different pattern of trade and FDI flows. At the first stage of a product cycle, a new product is initially invented in the home country with comparative advantage with advanced technology and innovatory capability to produce for home market. At the second stage for the maturing product, because of the expanding demands and sufficient supplying to lead to intensive competitiveness in market of the home country, the product is exported to other countries being most similar to the home country in demand patterns and supply capabilities. At the third stage for the standardized product, because of the production costs having become the more important ingredient, FDI flows are motivated to produce abroad in lower costs of host country. FDI firms could replace exports from the parent company or even export back to the home country. The product cycle theory is the first dynamic interpretation of the determinants of FDI flows and trade pattern. The Vernon's model cannot fully explain the phenomena of developing country investing in developed country. Besides, Vernon's model merely regards the FDI as a simple substitute of trade activities. Thus, Vernon's model can provide only partial explanation surrounding FDI flows.

Robert Mundell suggested that location determinants of FDI flows depended on the trade impediments. He thought that international trade was driven by differences in factor endowments and factor prices of homogenous products. Mundell thought that when high trade impediments deter commodity movements, the relationship between commodity and factor movements are substitute. The substitute relationship between FDI and trade indicates that the increasing of FDI will decrease the exports from home country to a host country. Thus, Mundell concludes that

capital movements driven by FDI are the perfect substitute for exports, if FDI flows always go on along with the trace of the particular curve (Rybczynski curve[7]), due to the relative higher efficiency or lower transformation costs of production factors.

However, the phenomena of substitute of FDI flows for trade may as well exist, but the magnitude of substitute trade is not as perfect as Mundell's model has described. In fact, the substitute of FDI flows for trade can never be perfect in the real-world economy, because of investment barriers, the change of allocations of production factors and effects of market structure generated by capital movement, and the realized difficulty of the best combining point of production induced by the substitute effects of FDI flows.

In accordance with Mundell's substitute theory, Linda Goldberg and Michael Kelin (1999) further studied whether FDI can serves as a complement for trade or a substitute for trade based on the effects identified by the Rybczynski curve through the empirical investigations of the relationship in both FDI and trade among United States and eight countries in Latin America. The results indicated that FDI could alter the sector composition of capital and labor in an economy through the different channels. But it didn't only limits the one channel of such Mundell's early theory of the substitutability of trade. That is, the relationships between FDI and trade presented a mixed pattern of linkages. Some evidences revealed that some FDI flows tended to expand manufacturing trade, while other FDI clearly reduced the trade volumes through the analysis of data set across many manufacturing sectors in United States and eight countries in Latin America[8]. Thus, Goldberg and Klein believed that the experiences of other important regions around the world could also provide important lessons.

K. Kojima introduced the complement theory in late 1970s, as a major challenge to the substitute model. Kojima thought that Japanese FDI inflows were primarily trade oriented and responds to the dictates of principle of comparative advantage between American and Japanese FDI inflows. He argued that FDI originated from the comparatively disadvantaged industries of the home country, which was potentially a comparatively advantaged industry for the host country according to the different economic developing stages in home and host countries, which also was useful in explaining dynamic patterns of FDI inflows and trade. In contrast, FDI in America was mainly conducted within an oligopolistic market structure, is anti-trade oriented and operates to the long-term disadvantage of both the source country and host country. Kojima's macroeconomic approach predicts that export-oriented FDI occurs when the source country invests in those industries in which the host country has a comparative advantage. Thus, Kojima derived the results that export-oriented FDI is characterized as being welfare improving and trade creating since it can promote both host countries' and source countries' exports. Thus, complement effects are helpful to increase the international trade between home country and host country. But, Kojima's model is not able to reveal the roles of firm-specific advantages in determining FDI

[7] A paper written by Rybczynski Jones at the Massachusetts Institute of Technology in the spring of 1955 contained the proof. The similar proof was also given by Mundell in 1968, see his paper "International Trade and Factor Mobility", International Economics, New York: Macmillan, 1968, pp.85-99.

[8] The eight countries include such as Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru and Venezuela.

inflows.

John Dunning (1988) proposed a more comprehensive theoretical framework of FDI flows, and he thought that if a firm has a strong motive to become a multinational enterprises (MNCs), it must have the offsetting advantages that are known as the OLI, that is, ownership advantages, location advantages, and internalization advantages. Firstly, a firm must possess a product or a production process that other firm couldn't access so that the firm may enjoy some market power advantages in the host country, such as a patent or blueprint, or some specific intangible assets or capabilities such as technology and information, managerial, marketing and entrepreneurial skills, organizational systems and the capabilities of access to intermediate or final goods markets, which are closely related to the technological and innovative capabilities and the economic development levels of home countries; Secondly, a firm still must be expected to be profitable for produce in host country based on the sufficient reasons associated with investment environment, costs factors, and macroeconomic factors, which include such as resource endowments, economic and social factors including market size, economic prospects, level of economic development, labour costs, exchange rate, leading interest rate, tax policies, openness, diversified structure of economy, as well as the cultural and custom, language, proximity of geographical location, legal, political and institutional environment, and government legislation and policies etc. Thirdly, a firm must have a reason to want to exploit its ownership advantage internally, that is, because of market failures in the transaction of such intangible assets, it is more favourable that the product or process is exploited internally within the firm, rather than license or sell its product or process to the host firms.

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The proposed OLI three conditions above constitute a more comprehensive theoretical framework integrating the key elements of various explanations of FDI. He thought that the dynamic changes of a country's comparative advantage affects its location advantages, and also affects the firm's ownership advantages. He divided the patterns of FDI flows into the five stages in accordance with the level of economic development of a country (See Bohm Park and Keun Lee 2001). Dunning regarded structure of resources, size of market and polices of government as the factors that determine the location of foreign investment development in host country. He also argues that the patterns of FDI flows are varied according to these factors.

James R. Markusen (2000) constructed the models integrating vertical and horizontal FDI flows into international trade to explain FDI flows according to the special characteristics between home country and host country. He argued that the interacted countries by FDI inflows include the two scenes, the first scene is that size and relative endowments between the interacted countries are relatively similar, which generally generates horizontal FDI flows. Another is that one country is smaller, but she is skilled-labor abundant, which generally generates vertical FDI flows. The horizontal investment of FDI Firms argues that FDI produces the same goods and services in different locations, and the vertical investment of FDI firms thinks that FDI geographically fragments the production process by stages. Both horizontal and vertical investment stress such

the variables as research and development across plants, plant-level scale economies, market size, factor endowments and transport costs considering geographical and cultural distance costs as well as the other kinds of impediments involved in the trade between home country and host country etc. Therefore, in vertical FDI flows theory, FDI possibly reverses trade in terms of proportion asymmetries of factor endowments between host country and home country, and the asymmetries between countries also make it possible trade and FDI to coexist for FDI firms and host firms. In horizontal FDI flows theory, it assumes that the interacted countries are the identical in technologies, preferences, and factor endowments. Then, the higher the value of firm-level scale economies or tariffs as well as transport costs relative to plant-level scale economies, the more likely it generates the horizontal FDI flows. But when home country and host country become more similar in market size and relative factor endowments as well as technical efficiency, FDI flows will greatly increase and the trade activities will become increasingly dominated by FDI firms.

Just as described above, the two obvious conclusions could be drawn, that is, one is that FDI flows are driven by international trade, such as export-oriented FDI flows which generally promote to export from host country to other countries, including exporting back to home country, and market-oriented FDI flows which possibly generate a substitute of imports from host country to home country. Another is that FDI flows are motivated by the determinants with more emphasizing the characteristics of high productivity, lower labour costs, plentiful resource endowments, better investment environment etc. Thereby, FDI flows tend to present specific characteristics associated with market-oriented, resource-oriented, efficiency-seeking, and production-oriented FDI flows etc, which may fully be explained by Dunning OLI eclectic paradigm based on industrial organization theory and governance of enterprises. However, because ownership and internalization advantages belong to supply-side factors, they are not considered here. The studies only examine the demand-side factors of location determinants of OLI attracting FDI inflows in host country, such as resource endowments, social and economic factors, and legislature and government policy etc.

2.2 Location Determinants of the Different Kinds of FDI Inflows in China

In accordance with the different characteristics of the determinants and motivation of FDI flows, FDI inflows also may be classified into market-oriented, export-oriented, resource-oriented, efficiency-seeking-oriented, production-oriented, and trade-facilitating-oriented FDI inflows etc, which are in correspondence with the location determinants involved in investment environment, macroeconomic, and investment costs, respectively. The location determinants have the significant effects on profits and cost competitiveness of FDI inflows, which also determine the types and location choice of FDI inflows, but some location determinants are also in common for these types of FDI inflows.

At current, China's strong growth, huge population, and increasing purchasing power provide the best economic prospects and a vast potential of market for FDI inflows. In particular, along with China's accession to WTO and liberalization of investment, also removing the barriers to entry into some industries, the service industries have strong attraction for FDI inflows aiming to host market, such as finances, real estate, transport, telecommunications and wholesale or resale commerce. In general, the larger market size, high density of population, high economies of scale, faster economic growth and developing level mean better and more opportunities for FDI firms to exploit their ownership advantages. Besides, the industries with strong product differentiation and the more diversified economies also motivate FDI inflows to exploit comparative advantage to seek the location for maximum profits. These location determinants are the most important location factors attracting more market-oriented FDI inflows in China to supply goods and services to occupy local market in host country. But, traditionally, market-oriented FDI inflows are a substitute for imports from host country to home country because of high tariff barriers in host. The successful examples are the FDI inflows from source countries such as United States, European Union and other developed countries.

Resource endowments are the most important location determinants for export-oriented FDI inflows, which aim to use particular and specific resources at a lower real cost such as land, plentiful labour forces, and natural resources as well as relative distance, similar culture and language between China's coastal areas and eastern south Asian countries. Especially, China has a relatively attractive and strategic geographical position to build the processing and assembling sites, which are very helpful to access to other Asian countries and America in order to export the goods produced to the home country or third countries. In general, export-oriented FDI inflows can be explained by international trade theory, which the comparative advantage in international trade theory may be used to seek to explain the commodity composition of trade in the factor endowment ratios and preference characteristics between host country and home country to determine the location decisions of FDI flows under the hypothesis of complete immobility of the different factor endowments of production. Thus, those countries endowed with a relative abundance of particular immobile factor will attract more export-oriented FDI flows. The successful examples are FDI inflows in China from the NIEs and FDI inflows in ASEAN.

In addition, at the early stage of economic reform and open door to the world, because of the implemented a series of preferential policies to encourage international trade such as deputy exemptions for intermediate products used in the production of exports and tax refund for reinvestment of profits, exports of FDI firms always induce a great deal of imports of China. In particular, China's accession to WTO and openness to international and host market in 2001, FDI firms are permitted to establish their own retail trade and expand the scope of their investment. For example, the fast expansion of FDI inflows in agriculture and hi-technology manufacture industries is accelerating the market circulation of agriculture products and the industrialized process of production operations. FDI firms not only aim to increase their shares in the international market, but also their shares in host market. Thus, FDI inflows don't have a substitute for imports of China, and in contrast, FDI inflows promote the imports of China. Thereby FDI inflows aiming to be trade are also called as trade-facilitated FDI. Thus, openness

and liberalization of investment are the important location determinants attracting more trade-facilitated-oriented FDI inflows in China. The successful examples are the FDI inflows associated with the labour-intensive industries[9].

Besides the traditionally comparative advantage of immobile factor endowments such as natural resources and land, tax incentive and, the government policy and political stability, capital and technology also increasingly become the important location determinants of FDI inflows in China. In particular, along with improving of infrastructure and education level of China, the more developed infrastructure and high accumulated human capital in the developed central or coastal cities in China have become the important location determinants of FDI inflows aiming to be huge production sites for sustaining long-run period as production bases. Thus, the immobile and mobile factor endowments have strongly attractive for production-oriented FDI inflows in China. The successful examples could be FDI inflows associated with capital-intensive or technical-intensive industries such as petroleum chemical industries, pharmaceuticals, medical equipment, and energy or electric power etc.

China has the strong comparative advantage of labour resources, with average salaries of workers remaining at a relatively lower level. Besides, the nine-year universal compulsory education system has been implemented in China. Therefore, Chinese labour forces have relatively high quality, and there are numerous technical personnel, especially in the central cities or coastal cities and the developed areas. Along with the accelerated economic development, the more highways, railways and interior transport waterways are improved and built to alleviate the increasing pressure of transport brought out by strong growth of economies. The faster developing telecommunications services have been helpful to reduce the costs of communication and information gathering to facilitate business activities. The upgrading speed of China's industrial structure and the developing high-tech industry has also been greatly accelerated. Thus, the better physical, financial, and technological infrastructure are the important location determinants to abstract efficiency-seeking-oriented FDI inflows to induce the technology transfer. The successful examples are FDI inflows associated with the headquarters or research and development centers.

China has the plentiful mineral resources or energy reserve. Besides Saudi Arabia being the main producer, Chinese production of oil for the predominant fuel is also one of the highest in the world in spite of the great imports owing to the high consumption. In addition, China is also the

[9] Labour-intensive sectors include Food processing, Food manufacturing, Textiles, Clothing & other fibre products, Leather & Fur products, Timber processing, Furniture, Paper & Paper products, Printing, Cultural, Education & Sports goods, Rubber products, Plastic products, Non-metal mineral products, Metal products, and Others. Capital-intensive sectors include Beverage manufacturing, Tobacco processing, Petroleum refining & Coking, Chemical materials & products, Chemical fibres, Ferrous metal smelting & pressing, Non-ferrous metal smelting & pressing, and Transport equipment. Technology intensive sectors include Medical & Pharmaceutical products, General machinery, Special machinery, Electrical machinery & equipment, Electronics & Telecommunication equipment, and Instruments & Meters. Details for the classification of China's industries into labour intensive, capital intensive, and technology intensive categories are in Zhang Xiaohe (1993).

largest producer of coal, roughly one third of the world's total production. As coal industry, China's electric power also has the plentiful supply. Other major natural resources such as land, metal or non-metal mineral resources are plentifully available. Thus, these factors are the important location determinants attracting more resource-oriented FDI inflows in China. The successful examples are the FDI inflows associated with developing oil and mineral deposit exploitation or metallurgy industries.

Based on the location determinants discussed above and FDI theoretical framework, especially applying the Dunning's "OLI" eclectic paradigm theory, the comparative advantage of location determinants of China have been analyzed in detail. Thereby, the hypotheses of econometric models are developed in following sections so as to further examine the importance and magnitude of these location determinants affecting FDI inflows in China. ,

3 Hypotheses for Explanatory Variables and Datasets

The sample period for time series model ranges from 1979 to 2003 by the availability. The data values are restricted to annual aggregated data of China, and all values are continuous for analysis of long run effecting and short-run effecting of ECM models. The sample period for panel model and cross section model ranges from 1992 to 2003 according to available data sets of provinces of China. The data values are restricted to annual aggregated data of Chinese provinces, and the values have two types of continuous and discrete values. All the data sources come from China Statistical Yearbook, China Statistical Bulletin, China Statistical Abstract and China Economic Blue Book as well as China Economic Information website and Economic Dataset of China People daily (www.cei.gov.cn, www.peopledaily.com.cn). The whole variables are transformed into real variable by consumer price index or deflator, and the units of measurement used in models see Table 3.1 in detail.

As described in the literature and FDI theoretical framework above, except for ownership and internalization advantage of home countries of FDI based on Dunning's "OLI" paradigm theory, the determinants effecting FDI distribution and inflows in China are mainly the location advantage of host country of China. The location advantages not only involve resource endowment, but also are intimately related with economic and social factors, such as trade barriers, costs of transport and information, economic scale and development level, culture custom and language, investment incentive and preferment, and stability of political and institutional environment etc. For example, some FDI inflows tend to access to the host country by the geographical and cultural or historical proximity, such as US FDI inflows in Latin or North America, UK FDI inflows in former colonies, and Japanese FDI inflows in ASEAN etc. On the other hand, by the point of view in host country, that is, these factors may also be further classified as the factors caused market-oriented and export-oriented FDI inflows in China. Even so, for the sake of difficulties of available datasets and quantification for all the factors, only those important variables having the statistically significant

effects on FDI inflows are screened out to be presented in the models, which are enough to investigate and capture the overall picture of location determinants of FDI inflows in the studies.

Thus, the following location factors are screened out to investigate the determinants of location of FDI inflows in China. These determinants may be summarized as three categories such as the factors associated with investment environment improving, Marco-economics and investment costs. The factors of investment environment improving include such as openness level of economics(Op), exports (Ex), imports (Im), government expenditure on education and culture & health care (Ge), level of marketing economy (Meco), policy index (Pindex), infrastructure level (Tden) and geographical location (Location). The factors of Macro-economics include such as employment level (Emp), fixed capital formation (Cf), net FDI inflows (FDI), the accumulated FDI (Fst, FNIEst, FASEANst, FDCst, FWEst), market size (Ms), economic developing level (Pg), growth rate of economy (Gr) and human capital (Hc). Cost-related factors include such as labor costs (Lc), the exchange rate (Exrate), leading rate of interests (RMBrate) and real tax revenue (Taxrev) (see Table 3.1). Implication and hypotheses of these variables in models can be explained as follows:

(1) The Factors of Investment Environment

The openness of host country's economy may encourage FDI inflows, and a relatively closed economy may discourage FDI inflows. The ratio of total trade to GDP is usually used to indicate the degree of openness of host country's economy. Exports and imports are also regarded as an indicator of liberalization of economy. The more liberal the economy is, the more economic linkage and activities with the rest of world. Thus, the higher openness and liberalization is, the more favorable attracting FDI inflows will be, especially for the export-oriented FDI inflows. As a result, the variables of openness, exports and imports are expected to have the positive effects on FDI inflows. However, for some special types of FDI inflows, the different effects on FDI inflows may take place. For example, high trade barriers cause the market-oriented FDI inflows, and make a substitute for imports. In this case, the variables of openness and imports have the negative effects on FDI inflows.

Government expenditure on education and culture & health care is thought to promote quality and skill of the labour forces to be favourable for absorbing FDI inflows because of its making individuals invest in education more likely. Thus, this variable is expected to have a positive effect on FDI inflows. Level of marketing economy is expressed by ration of output value of non-state-owned enterprises to gross output value of state-owned and non-state-owned above designated size industrial enterprises. The higher output value of non-state-owned enterprises is, the more diversified components of economy are. This means that the diversified components of

industrial economy have an economy with system of more specialization of industrial production. Thus, this variable is expected to have a positive effect on FDI inflows. Infrastructure level is indicated by the aggregated length of roadways, railways and navigable inland waterways divided by area of province of China. This means the higher the infrastructure level is, the more beneficial the production and distribution process of goods will be facilitated. Thus, it is favorable for absorbing FDI inflows. This variable is expected to have a positive effect on FDI inflows.

Geographical location is thought to be an important variable of location to absorb FDI inflows, such as convenience of transporting and natural harbor that benefit trade and investment as well as areas around the Yangtze River and coastal cities or provinces. Thus, geographical location is regarded as the regional dummies to capture some economies of agglomeration. Geographical location variable is assigned the discrete value, and rules are: coastal cities or provinces are assigned a value “3”, middle cities or provinces are a value “2”, and western cities or provinces are “1”. In addition, the areas near the Yangtze River has a weight value added 1 (see Tables 3.3). Thus, location variable is expected to have a positive effect on FDI inflows.

Policy index is also regarded as the regional dummy variable to control the specific regional characteristics. Policy index is expressed by preferential policies endowed by central government. Preferential policy index is also a discrete variable. Policy factors have an important effect on FDI inflows at the initial stage of opening door to the world, which is also one of the important reasons causing the disparity of regional development of China’s by the gradually open policies of unfair competition. This indictor is constructed based on the characteristics of the preferential policies adopted in differently historic phases in the coastal and inland cities or provinces carried out by central government. The schedule of preferential policies executed since China’s opening door to the world is presented in Table 3.2, and the results assigned are shown in Table 3.3.

The preferential policy index is assigned a weighted value for the different areas according to this schedule, where it is assigned a weight value “3” representing the Specifically Economic Zones (SEZs) and Pudong New Zones in Shanghai (PDNZs); similarly, it is assigned a weight value “2” for the Economic Technology Developing Zones (ETDZs) and Border Economic Cooperation Zones (BECZs); also, it is assigned a weight value “1” for the Coastal Opening Cities (COCs), Coastal Opening Economic Zones (COEZs), Opening Coastal Strip Zones (OCSZs), the Opening Cities around the Yangtze River (OCYRs), the Main Coastal Harbor Cities Opening Zones (MCHCOZs) and the Inland Provinces and Capital Cities (IPACCs). Since China accessed into WTO in 2001, all the policy variables of provinces are added 1 in later time series. Thus, policy index variable is expected to have positive effects on FDI inflows, particularly in the initial stage of open door, and this variable seems to have been very little statistical significant since open policies have been implemented throughout China in 2001.

(2) Macroeconomic factors

Employment level is expected to indicate the plentiful degree of labour forces. Thus, the higher employment means that the plentiful workers and staffs with skill and knowledge may satisfy the demand of foreign enterprises, which make benefits from foreign enterprises to promote labour productivity through the process of learning by doing. Thus, employment variable is expected to be favourable for introducing FDI inflows, which should be thought to have a positive effect on FDI inflows. The fixed capital formation is expected to be able to improve the investment environment of FDI inflows. The variable should show a positive effect on FDI inflows. Human capital is expected to be an indicting variable for plentiful degree of labour resources with knowledge and skill, which may increase the labour productivity. Thus, the high availability of manpower with technical and managerial will induce more FDI inflows. This variable is expected to have a positive effect on FDI inflows.

Growth rate of economy or the absolute annual changes of GDP may be used to measure the economic growth. The more output growth means the more possible investment induced. It is obvious that the market and economy that are thought to grow fast should be favorable for absorbing FDI inflows. Thus, economic growth should be expected to have a positive effect on FDI inflows. Economic developing level is expressed by per capita GDP. A higher economic developing level shows the strong purchasing power and good economic performance. Meantime, this variable also means that the economy with high per capita GDP has high labor productivity, good local infrastructure and investment environment. Thus, economic development level should have a positive relationship with FDI inflows.

The accumulated FDI stock variable has been thought to be an important independent variable. The higher accumulated FDI stock variable implies that there are better investment environment and successful foreign investment in the economy with high FDI stock, which may generates demonstration effects and induces higher level of FDI inflows. Thus, the accumulated FDI stock variable is expected to have a positive effect on further attracting FDI inflows. In addition, this FDI stock variable is calculated by accumulating annual FDI inflows beginning in 1987 according to the available datasets, and transformed into real variable with unit being RMB Yuan, and also calculated by accumulating annual FDI inflows of different source countries such as NIEs economies, ASEAN countries, the developed countries, and west Europe countries.

Market size is generally measured by the level of GDP, and thought to be an important determinant of location decision effecting FDI inflows. The larger market size implies the more economic activities and the more opportunities for economic diversification. In accordance with

the theory of economies of scale, the larger economy may provide more opportunities for enterprises and industries to realize and explore economies of scale by carrying out the more specialization of productive factors. In particular, in the case of market-oriented FDI and FDI in the service sector which mainly come from the developed countries such as USA and EU, the market size of host country is an important location determinant of FDI inflows. In contrast, in the case of the export-oriented FDI or most FDI which mainly come from the developing countries such as NIEs and ASEAN, the market size of host country may provide opportunities for enterprises of home countries to benefit from external economies of scale and technological spillovers effects. Therefore, market size variable is expected to produce a positive impact on FDI inflows.

(3) Cost-related factors

Exchange rate variable may be a measurement of rate of return on FDI to explain the level of FDI inflows, that is, it determines the value of repatriated profits or remittances. The exchange rate used here is per US dollar Yuan RMB, that is, it is host exchange rate. In addition, the host exchange rate may generate a mixed effect on FDI inflows, especially in the case of FDI being able to be a substitute for exporting from home country to host country because of tariff and the competitive price of goods in host country when it is the strength of home currency. This means that the higher host exchange rate means strength of home currency, which isn't favourable for exports of home country to host country so as to attract FDI inflows for substitute of exports from home country to host country. On the other hand, the high host exchange rate implies the depreciation of RMB Yuan against the US Dollar, and this will discount remittance and return on FDI so as to deter FDI inflows potentially.

Leading interest rate s is a representative rate for market determined. Thus, it may generate a negative effect on FDI inflows because of its impact on the investor's costs of capital and costs of production. In addition, high leading interest rate also makes it more difficult to finance education and training of the labour force in the host country.

Real tax revenue is also an alternative to be used to measure the rate of return of FDI as a complement of the exchange rate variable. In particular, tax revenue incentives are very effective in attracting FDI inflows at the initial stage of open door to the world. Thus, real tax revenue is also expected to have a mixed effect on FDI inflows.

Annual average wage rate is used to measure the level of labor costs of host country. The lower wage rate encourages FDI inflows because of the differences of real wage rate between host country and home country. Some empirical investigations also indicate that relative wage rate

between host country and home country is a significant determinant of FDI inflows. But other empirical investigations argue that efficiency wage should be used to measure labour costs in the host country, considering that the lower wage rate may be companied by the lower productivity, that is, the variable of labour cost should be constructed by the average wage rate divided by average labour productivity. In the studies, because of the constraints of available datasets, annual average wage rate only is considered as an alternative for a measurement of labour cost. Thus, the expected impacts on FDI inflows should be negative.

4 Frameworks of Analysis and Statistical Methodology

In the studies, the relative statistical methodology is adopted to measure the effects of location determinants on FDI inflows in China according to the different datasets. Based on the dataset of time series, Following the Engle and Granger methodology, the cointegration theory is used to construct Error Correction Model (ECM) so as to estimate the long run and short-run effects of location determinants on FDI inflows in China. In addition, based on provincial datasets of China, in accordance with the specific regional characteristics, the gravity model is used to construct the cross section model and panel model to capture the regional location determinants affecting FDI inflows to cause some economies of agglomeration in provinces of China.

4.1 Long run and Short-run Determinants Analysis Affecting FDI Inflows in China

The cointegration theory and Error Correction Model is an expanding of the single equation of traditional econometrics. The model can be used to indicate the long-run equilibrium among the non-stationary series. For instance, if the vector of variables based on datasets of time series contain respectively their unit root in the same period, that is, linear combination of the variables is stationary. Then, the relationship between dependent variable and a linear combination among these variables can be thought to be cointegrated. The equation is interpreted as a long run steady and proportional relationship among the variables. The error correction model is a special model of econometrics, and it is also called as DHSY model (Davidson, Hendry, Srba, 1978). It is used to indicate the relationship between long run fluctuation and short run fluctuation of cointegrated variables. It contains the cointegration term and error correction term. The cointegration term is also known as the error correction term since the deviation from long-run equilibrium is corrected gradually through a series of partial short-run dynamics adjustments.

In order to make the dependent variable and linear combination of independent variables present a linear relationship, all the variables are expressed in a logarithmic form. Before building the ECM model, all the variables always need be tested for unit roots, and residual term has the characteristics of “White noise”. That is, ecm is subject to the random walk hypothesis, the

mean value of ecm is zero, and standard deviation variance of ecm is constant, and unit root is found to exist. In here, a general model can be constructed by considering an autoregressive distributed lag model $ARDL(k,k)$ given. Thus, the long-run equilibrium (1) is built as follows:

$$\begin{aligned} Ln(FDI_t) = \beta_0 + \alpha_1 Ln(FDI_{t-1}) + \ldots + \alpha_k Ln(FDI_{t-k}) \\ + B_1 Ln(X_t) + B_2 Ln(X_{t-1}) + \ldots + B_{k+1} Ln(X_{t-k}) + u_t + \varepsilon_t \end{aligned} \quad (1)$$

Where,

$$X_t = \begin{bmatrix} x_1 \\ x_2 \\ \vdots \\ x_N \end{bmatrix}_{N\times 1} \quad (2), \qquad B_j = \left[\beta_1, \beta_2, \cdots, \beta_N\right]_{1\times N} \quad (3)$$

$\beta_0, \alpha_1, \alpha_2, \ldots, \alpha_k$ indicate the coefficients of long run equilibrium equation. $B_1, B_2 \ldots, B_{k+1}$ denote N dimension row vector of the coefficients of long run equilibrium equation. u_t indicates the constant and / or trend term . ε_t is expressed as disturbance term associated with time. t, k separately mean time period and lagged number. $FDI_t, FDI_{t-1}, \ldots, FDI_{t-k}$ indicates aggregated FDI inflows in host country at t period or lagged k period, respectively. $X_t, X_{t-1}, \ldots, X_{t-k}$ indicate N dimension column vector of location determinants in host country at t period or lagged k period, respectively. After the model (1) is tested, error correct term can be calculated (see equation 4).

$$\begin{aligned} ecm_t = Ln(FDI_t) - (\beta_0 + \alpha_1 Ln(FDI_{t-1}) + \ldots + \alpha_k Ln(FDI_{t-k}) \\ + B_1 Ln(X_t) + B_2 Ln(X_{t-1}) + \ldots + B_{k+1} Ln(X_{t-k})) \end{aligned} \quad (4)$$

The unit roots $I(0)$ for the variables are tested. When the unit roots are found to exist, then the first difference of all the variables need be tested for unit roots again. If the test results reject the hypothesis of unit root $I(1)$, this shows that the variables are the first order stationary. Then,

the stochastic difference equation (5) about the short-run equilibrium is built as follows:

$$D(Ln(FDI_t)) = \beta_0^{'} + \alpha_1^{'} D(Ln(FDI_{t-1})) + \ldots + \alpha_k^{'} D(Ln(FDI_{t-k})) + B_1^{'} D(Ln(X_t)) + B_2^{'} D(Ln(X_{t-1})) + \ldots + B_{k+1}^{'} D(Ln(X_{t-k})) + \gamma ecm_t + \varepsilon_t^{'} \quad (5)$$

Where,

. $\alpha_1^{'}, \alpha_2^{'}, \ldots, \alpha_k^{'}, \beta_0^{'}$ indicate the coefficients of short run equilibrium equation. $B_1^{'}, B_2^{'} \ldots, B_{k+1}^{'}$ indicate N dimension row vector of the coefficients of short run equilibrium equation. $D(Ln(FDI_t)), D(Ln(FDI_{t-1})), \ldots, D(Ln(FDI_{t-k}))$ indicate the first order stationary variables of aggregated FDI inflows stationary variables in host country at t period or lagged k period, respectively. $D(Ln(X_t)), D(Ln(X_{t-1})), \ldots, D(Ln(X_{t-k}))$ indicate the first order stationary variables of N dimension column vector of location determinants in host country at t period or lagged k period, respectively. The difference term indicates the effects of short run fluctuation of variables. Therefore, the fluctuation parts of explained variables can be divided into two parts: one part is short run fluctuation, another is long run equilibrium. $\varepsilon_t^{'}, ecm_t$ indicate residual term and error correct term at t period, respectively. D is expressed as the difference sign. After all the variable is carried out the logarithmic calculation and the first difference, these variables are expected to present the stationary time series. γ is expressed as a adjustment effect of ecm on deviation from long run equilibrium. Thus, it indicates the effects of the long run equilibrium on the short run fluctuation.

4.2 Location Determinants of Distribution Affecting FDI Inflows in Provinces of China

In this sector, the gravity model is used to demonstrate what location determinants induce host country to attract FDI inflows of home country. This methodology is originally motivated by Newton's gravity model in physics is used to explain strength of the interaction between the two objects in two different spatial locations. That is, the magnitude of the attracting force of spatial interaction between two objects varies positively proportionally with size of both objects, and negatively or inversely proportionally with the distance between them. This model here is developed to examine the magnitude of FDI flows between home country and host country. Thus, based on the similar principles, the model of location determinants of FDI flows between host country and home country is similar to the gravity model, and provides a good application of the

spatial interaction of FDI flows between home country and host country. Thus, with respect to the gravity model of FDI flows between home country and host country, the magnitude of FDI flows is a function of both variables of location determinants of host country and that of home country as well as variable of the distance between them. Thus, the gravity model of FDI flows between home country and host country can be constructed as follows:

$$FDI_{ij} = f(X_i, X_j, LK_{ij}) \qquad (6)$$

$$FDI_{ij} = \kappa \frac{X_i^{\Gamma} * X_j^{\Psi}}{LK_{ij}^{\lambda}} \qquad (7)$$

$$Ln(FDI_{ij}) = Ln(\kappa) + \Gamma Ln(X_i) + \Psi Ln(X_j) - \lambda Ln(LK_{ij}) \quad (8)$$

Where,

FDI_{ij} indicates the magnitude of FDI flows between i country and j provinces of China. X_i denotes M dimension column vector of determinants affecting FDI outflows in the i country. X_j denotes N dimension column vector of location determinants affecting FDI inflows in the j provinces of China. LK_{ij} denotes linkage or interactive factors of comparative differences among culture and custom, institution, policy, the spatial distance between i country and j provinces of China. k is a proportionality constant, and is related to the rate of the event. For instance, if we consider the same system of spatial interactions, the value of k will be higher when considering interactions for a year comparatively to the value of k for one week. λ is the transport friction, and is related to the efficiency of the transport system between two different locations. It is rarely linear in space as the further the movement the greater the friction of space. For instance, a highway between two locations will have a weaker λ index than a narrow or rough road. Γ denotes M dimension row vector of the potential factors to generate movements, and is related to the people's welfare . For instance, the place with higher income levels will generate more movements. Ψ denotes N dimension row vector of the potential factors to attract movements, and is related to the characteristics of economic activities.

For instance, a center having important commercial activities will attract more movements.

However, in here, our purposes are to investigate how the location determinants of host country attract FDI inflows in provinces of China from all sources countries to host country. Location determinants of sources countries and FDI outflows from host country are not our interests. Thus, the equation (8) can be further evolved into a general equation (12) as follows:

$$FDI_{*j} = \sum_{i=1}^{m} FDI_{ij} \quad (9), \quad X_{*} = \sum_{i=1}^{m} X_{i} \quad (10), \quad LK_{*j} = \sum_{i=1}^{m} LK_{ij} \quad (11)$$

$$Ln(FDI_{*j}) = \alpha_0 + A_j Ln(X_j) + B_j D_{*j} \quad (12)$$

Where,

$$X_j = \begin{bmatrix} x_1 \\ x_2 \\ \vdots \\ x_N \end{bmatrix}_{N\times 1} \quad (13), \qquad D_{*j} = \begin{bmatrix} d_1 \\ d_2 \\ \vdots \\ d_T \end{bmatrix}_{T\times 1} \quad (14)$$

$$A_j = [\alpha_1, \alpha_2, \cdots, \alpha_N]_{1\times N} \quad (15), \qquad B_j = [\beta_1, \beta_2, \cdots, \beta_T]_{1\times T} \quad (16)$$

$FDI_{*j} = \sum_{i=1}^{M} FDI_{ij}$ denotes FDI inflows of all M sources countries in the j province of China. $\Gamma Ln(X_{*}) + Ln(k) = \Gamma Ln(\sum_{i=1}^{M} X_i) + Ln(k)$ may be expressed as a constant α_0. X_j denotes N dimension column vectors of the location determinants with continuous value in the j province of China. A_j is equivalent to Ψ, which denotes N dimension row vectors of coefficients of the location determinants with continuous value in the j province of China. D_{*j}

denotes T dimension column vectors of linkage factors with discrete value between all M sources countries and the j province of China. B_j denotes T dimension row vectors of coefficients of linkage factors with discrete value between all M sources countries and the j province of China.

5 Empirical Results of Econometrical Model Analysis

The empirical results include two parts, which individually adopt the different econometrical model according to the time series datasets of annual aggregation of China and cross section datasets of individual provinces of China. In part 1, by applying cointegration theory and Error Correct Model, it is expected to examine the long run determinants and short run determinants of location affecting FDI inflows in China. Besides, the location determinants of FDI inflows from the different source countries are also examined in this section. In part 2, in accordance with the regional variable sets associated with the specific regional characteristics, the cross section model and panel model are constructed to investigate the location determinants affecting FDI inflows in provinces of China.

5.1 Empirical Results Based on Cointegration Theory and Error Correct Model

At first, according to the available datasets, the variables based on time series are selected to investigate the location determinant affecting FDI inflows in China by the way of building the long run equilibrium model and short run equilibrium model. Time series begin from 1979 to 2003. These variables include such as the accumulated FDI stock for the demonstration effects, exports and imports for openness and liberalization of trade, per capital GDP and output growth for the level of economic development, GDP for market size, annual average wage rate for labour cost, as well as exchange rate, leading interest rate and tax revenue associated costs factors.

All the time series variables in the stochastic difference equation always need be tested for unit roots by the augmented Dikey-Fuller test. The test results demonstrate that all the variables can not reject the hypothesis of unit roots $I(0)$, that is, the variables are non-stationary time series in nature. After the variables are carried out the first difference, the test results show that all the variables can reject the hypothesis of unit roots $I(1)$ except for the variable of leading interest rate. However, the variable of leading interest rate rejects the hypothesis of unit root $I(1)$ by the Philips-Perron test at the 10% level. Thus, the variables are the first order stationary (see Table 5.1.1). The results show that the relationship between dependent variable and

linear combination of the independent variables is cointegrated. Thus, the short-run equilibrium model (17) and short-run equilibrium model (18) is built as follows:

$$\begin{aligned} Ln(FDI_t) = \beta_0 + \alpha_1 Ln(Fst_{t-1}) + \beta_1 Ln(Ex_{t-1}) + \beta_2 Ln(\mathrm{Im}_{t-1}) + \beta_3 Ln(Ms_{t-1}) \\ + \beta_4 Ln(Lc_{t-1}) + \beta_5 Ln(Exrate_{t-1}) + \beta_6 Ln(RMBrate_{t-1}) + u_t + \varepsilon_t \end{aligned} \quad (17)$$

$$\begin{aligned} D(Ln(FDI_t)) = \beta_0^{'} + \alpha_1^{'} D(Ln(Fst_{t-1})) + \beta_1^{'} D(Ln(Ex_{t-1})) + \beta_2^{'} D(Ln(\mathrm{Im}_{t-1})) + \beta_3^{'} D(Ln(Ms_{t-1})) \\ + \beta_4^{'} D(Ln(Lc_{t-1})) + \beta_5^{'} D(Ln(Exrate_{t-1})) + \beta_6^{'} D(Ln(RMBrate_{t-1})) + \gamma ecm_t + \varepsilon_t^{'} \end{aligned}$$

(18)

The derived results about long run equilibrium and short run fluctuations of location determinants on FDI inflows are presented in Table 5.1.2. The signs of coefficients in both the short run dynamics model and long run equilibrium model are almost very near. The variables of FDI stock, exports, market size have the expected positive effects on FDI inflows in both long run and short run models, and labour costs, exchange rate and leading interest rate have the expected negative effects on FDI inflows. This means that high FDI stock and large market size may be favourable for attracting FDI inflows in China, and labour costs, strength of host currency and high leading interest rate will significantly increase the costs of FDI inflows, whatever it is the long run or the short run. The high exports of host country will encourage FDI inflows, especially for the export-oriented FDI inflows. However, in the long term, FDI inflows can benefit from imports of host country, and in the short term, imports of host country may substitute for the FDI inflows. The coefficients of ecm is 1.745, and this implies the adjustment value of deviation from long run equilibrium is 1.745. Labour costs are statistically significant at the 5% level, and it indicates that if labour costs increase 1%, the short-run FDI inflows will decrease 2.559%, and long-run FDI inflows will decrease 3.836%. In addition, the elasticity of short fluctuation or long run equilibrium of both variables of labour costs and market size have the higher value, their elasticity in the long run model is individually -3.836 and 2.672, and their elasticity in the short run model is individually -2.263 and 1.157. Secondly, the exports and exchange rate variables also have the higher elasticity values whatever it is the long run model or the short run model.

In addition, based on datasets of the time series, through analysis of location determinants affecting FDI inflows from NIEs and Macao, ASEAN, the developed countries such as Japan, the United States, Canada, and Australia, as well as west Europe such as The Union Kingdom, Germany, France, Italy , and Netherlands, some meaningful results could be derived (see Table 5.1.3). In NIEs and ASEAN models, FDI stock for the demonstration effects, tax revenue, Exports, and imports have the positive effects on FDI inflows, and lobour costs have the negative effects on

FDI inflows, but, the signs associated with the size of market and the level of economic development, leading interest rate are not expected. These results mean that FDI inflows from NIEs, Macao, and ASEAN tend mainly to concentrate in labour-intensive productions, and have the stronger characteristics of export-oriented FDI, accompanied the great exports and imports for the processing and assembling productions. In the developed countries and West Europe models, the signs of all the variables are expected in the hypotheses of models. The exports, leading interest rate, exchange rate, and labour costs have the negative effects of FDI inflows, but, imports, size of market, infrastructure level, and FDI stock have the positive effects on FDI inflows. The results imply that FDI inflows from the developed and west Europe countries have the characteristics of market-oriented FDI, accompanied the great imports of equipments for production. The lower labour costs and leading interest rate, and depreciation of RMB Yuan are favourable to decrease the costs of FDI firm, better infrastructure level and larger size of market could attract more FDI inflows in China. Besides, the variables of FDI stock in econometrical models of these groups all have had the stronger demonstration for the further introducing FDI inflows. Although the limited datasets of time series are the shortcomings of the models, these derived results have fully consistent with the observed effects of FDI inflows in China, which are sufficient clearly to demonstrate the main location determinants affecting FDI inflows from the different source countries in China.

5.2 Empirical Results Based on Location Determinants of FDI Inflows in Provinces of China

The potential location determinants affecting FDI inflows are examined in detail over time and across provinces based on the derived principle of gravity model FDI inflows and datasets of provinces of China. Furthermore, cross section model and panel model are used to investigate the location determinants of FDI inflows in provinces of China according to the variables with respect to specific regional characteristics. According to the available datasets, FDI inflows stock is accumulated from 1987. The time series based on cross section model and panel begin from 1993 to 2003. The cross section provinces include 30 provinces, but Tibet is excluded because of missing data. Defined Variables of Provinces of Cross Section see Table 5.2.1. The variables joining in the models associated with location determinants of provinces of China include such as dependent variable for net FDI inflows, and independent variables for FDI stock, openness, market size, per capita GDP, labour cost, human capital, transport density, geographical location, policy index, and level of marketing economy. All the variables are transformed to real variables by consumer price index or deflator, and some of variables by US dollar also change to RMB Yuan.

In addition, location determinants affecting FDI inflows in the provinces of China are likely to have a lagged time period because of the delayed effects of location factors on adjusting FDI inflows to the desired levels, and this depend on the specific location determinants in provinces of China. Thereby, a time period t and lagged number k may be added into the

model (12). Thus, according to the general equation (12), the basic gravity model of location determinants affecting FDI inflows in the provinces of China can be constructed as follows:

$$\begin{aligned} Ln(FDI_{j,t}) = \alpha_0 + \alpha_1 Ln(Fst_{j,t-k}) + \alpha_2 Ln(Op_{j,t-k}) + \alpha_3 Ln(Ms_{j,t-k}) + \alpha_4 Ln(Pg_{j,t-k}) \\ + \alpha_5 Ln(Lc_{j,t-k}) + \alpha_6 Ln(Hc_{j,t-k}) + \alpha_7 Ln(Mco_{j,t-k}) \\ + \alpha_8 Ln(Tden_{j,t-k}) + \alpha_9 Location_j + \alpha_{10} Pindex_j + \varepsilon_{j,t} \end{aligned}$$

(19)

The results of models are given in the Table 5.2.2, Table 5.2.3, Table 5.2.4 and Table 5.2.5. Except for discrete variables and dependent variable FDI inflows, all the variables are expressed as the lagged 1 or 2 years, that, is, k is assigned one or two, in order to fully examine the hypotheses of location determinants affecting FDI inflows in the provinces of China.

Table 5.2.2 shows the derived results of panel model by the lagged $k = 1$. For model 1, we find that the variable Lc indicating labour costs shows the expected negative effects on FDI inflows, which has a largest elasticity or effect, and the variable Pg indicating the level of economic development and the variable Hc that is expressed Human capital also have the negative effects that is not the expected signs, and others such as $Fst, Op, Ms, Mco, Tden, Location, Pindex$ are all the expected positive signs. Coefficients of the variables all have statistically high significant at the level 1% and 5%. Considering the wrong signs of the variables Pg and Hc, it is obvious that some collinear characteristics among the ten independent variables in model 1 may exist. If it is really true, this means that the effects of Pg and Hc on FDI inflows is likely captured by other variables. Thus, sensitive analysis of the adjusting model 1 should be carried out. In this case, by eliminating the variables Pg and Hc in model1 to recombine the independent variables, model 2 and model 3 are constructed so as to remove the collinearity among these variables, respectively. The derived results show that the two models perform very well, and all independent variables have the expected signs, and have statistically high significant at the level 1% except for the location variable in model 3 at the level 10%. Furthermore, the elasticities of the variables Fst, Op, Ms, Lc are large, which implies that demonstration of FDI inflows, free trade and openness level, market size, and lobour costs have the important effects on FDI inflows in provinces of China.

Table 5.2.3 indicates the derived results of panel model by the lagged $k = 2$. For model 1, the similar phenomena like model of the lagged $k = 2$ are also found in model 1. That is, the collinearity is also true in model in the case of the lagged $k = 2$. Thereby, the similar adjusting is also adoptable for the model of the lagged $k = 2$. The derived results are similar to that of model of the lagged $k = 1$. However, almost all the independent variables have larger elasticities than those of the model of the lagged $k = 1$ except for the FDI stock variable. This demonstrates that the results derived from the models about the lagged $k = 1$ and lagged $k = 2$ have the strong robustness. Thus, these conclusions above have higher confidence and reliability.

Table 5.2.4 and Table 5.2.5 show the derived results based on cross section models by the lagged $k = 1$ considering the case of collinearity among the independent variables, that is, the derived results are divided into two parts by building the robust models removing the collinear characteristics in the models. The results of the models further demonstrate how the independent variables vary over time and across provinces of China. these results over 1993 to 2003 show that the demonstration effects of FDI inflows and elasticity of free trade denoting openness level are always big, and statistically significant at the level 1%. The effects of market size on FDI inflows in provinces gradually increase over time, and but the coefficients all are not statistically significant. The negative influences of labour costs on FDI inflows present the irregular variation over time, but have large magnitude effects, and most of the coefficients are also statistically significant. The effects of the level of economic development and geographical location on FDI inflows seem to increase slightly. But effects of policy index on FDI inflows become more and more insignificant over time. The effects of marketing economic level and transport density denoting infrastructure level on FDI inflows show the irregular fluctuation over time, and have the large magnitude values although they are statistically insignificant. In addition, the effects of human capital on FDI inflows have a random change, and have the expected positive signs, but the coefficients are not statistically significant.

In accordance with the different framework of statistical analysis based on cross section models and panel models, the derived results above have the strong robust, the specific regional characteristics across provinces of China cause the differences of distribution of the accumulated FDI inflows in China. All the variables have the expected influences on FDI inflows in provinces, and statistically high significant in the panel models. These location determinants indicate that labour costs have the significantly negative effects on FDI inflows in provinces of China. This means that the lower labour costs in host provinces of China are the most important location determinants affecting decisions of FDI inflows. The demonstrations of the previously successful FDI inflows have the strong positive effects on the later FDI inflows. Secondly, market size, free trade and level of economic development are also the very important location determinants affecting the different distribution of FDI inflows in provinces of China. Thirdly, human capital, marketing economic level, transport density indicating the infrastructure level, and geographical location have become the more and more important location determinants for the further attracting FDI inflows in provinces of China. However, the policy index has the increasingly insignificant effects on FDI inflows in provinces of China after mid-1996, but there are the strong effects on

FDI inflows at early 1990s in opening door to the world. In particular, since China's accession to WTO in 2001, the open policies associated with attracting FDI inflows have been implemented across all the provinces of China so as to promote the significant diffusion of FDI inflows in China after mid 1990s. Thus, wherever investment destinations are inland areas or eastern coastal areas, all the areas of China have been in the face of the equal developing opportunities.

6 Conclusions

The studies investigate the location determinants affecting FDI inflows in China by applying the different framework of statistical analysis based on the error correct model of time series datasets, cross section model and panel model, in order to analyze the various similarities and differences in both the importance and magnitudes of location determinants. The empirical results show that location determinants affecting FDI inflows in China have intimately related with the factors among investment environment, macroeconomics and investment costs. Meantime, the specific regional characteristics or location advantages in provinces have been the crucial factors of differences of distribution causing FDI inflows in China. In addition, the different source country group of FDI inflows in China has also had the different combination of location determinants.

The empirical results clearly show that the specific location advantages promote FDI inflows in China and cause the different distribution of FDI inflows across all the provinces. The main location determinants with long run or short run effects in the error correct model are sorted as follows by their contribution to FDI inflows in China: such as lower labour costs, higher FDI stock, depreciation of host currency, higher exports, huger market size, and lower leading interest rate, and lower imports. The location determinants of the uneven distribution affecting FDI inflows in all the provinces are listed as follows by their relative importance: firstly, higher FDI stock for demonstration effects, lower labour costs; secondly, more liberal trade, larger market size, higher economic developing level; thirdly, they are involved in such as higher human capital, higher marketing economic level, higher infrastructure level, better geographical location, and favorably steady environment of policies and institution.

The derived results based on econometrical models further demonstrate that the strong comparative advantage and factor endowments in China which are very different from the rest of the world. FDI inflows in China have a significant substitute for the imports in the short run fluctuations, and FDI inflows in China have the strong export-oriented characteristics. In the long run, FDI inflows have always induced a great deal of exports and imports of China, and promote the level of international trade in China. The depreciation of RMB Yuan and the lower leading interest rate have also been the important determinants attracting FDI inflows in China, especially in the whole 1990s. Besides, higher economic developing level, strong growth and higher market size for attracting more market-oriented FDI inflows, higher accumulated FDI stock for the demonstration effects of the further introducing FDI inflows in China, the earlier opening policy for the assigned preferential benefits, as well as the better transport infrastructure, geographical location, and lower labour costs for export-oriented FDI inflows make huge amounts of FDI inflows concentrate in eastern coastal cities or provinces and result in the significant disparity of

economic development across Chinese eastern, middle, and western provinces. Meantime, the significant location determinants in China are also the main contributors to attract the aggregated FDI inflows from the rest of the world to concentrate in China. As a result, the factor endowments which are significantly different from the other host countries, still make China have the larger potential to attract more FDI inflows than the neighboring Asian countries and others.

Besides, by the different source country groups of FDI inflows in china such as NIEs and Macao group, ASEAN group, the developed country group such as Japan, the United States, Canada, and Australia, as well as west Europe group such as The Union Kingdom, Germany, France, Italy, and Netherlands, the different combinations of location determinants are investigated. The derived results in the econometrical models clearly indicate that FDI inflows from NIEs, Macao, and ASEAN groups mainly tend to concentrate in labour-intensive productions, and have the strong characteristics of export-oriented FDI, accompanied the great exports and imports for the processing and assembling productions. In contrast, FDI inflows from the developed and west Europe country groups have the characteristics of market-oriented FDI, accompanied the great imports of equipments for production. The lower labour costs and the lower leading interest rate, and depreciation of RMB Yuan are favourable to decrease the costs of FDI firm, better infrastructure level, stronger demonstration effects and larger size of market could attract more FDI inflows in China. In spite of the shortcomings of available datasets, these derived results are sufficient clearly to show the combinations of main location determinants affecting FDI inflows from the different source countries in China.

7 Policy Implications

Through examining various similarities or differences in both importance and magnitude of location determinants affecting FDI inflows across all the provinces, these meaningful location determinants may be used to explain location decision-making of foreign investors. Some important implications of policies can be given as follows:

Among these location determinants, FDI stock, market size, economic developing level, liberal trade, and labour costs are the most important determinants of location decision-making of foreign investor, and have the larger effects on FDI inflows. It is obvious that promoting provincial GDP and per capita GDP to accelerate economic development of all the provinces is an important route to attract more FDI inflows. Conversely, demonstration effects of FDI stock and more FDI inflows also promote faster growth of provincial economies. Therefore, by use of the interactive relationship between FDI inflows and GDP or per capita GDP, it is the fundamental economic policy to attract more FDI inflows in backward western areas to accelerate economic development and raising the living level of people in western areas.

More liberal trade is helpful to shorten the gap between eastern areas and western areas. In particularly, export-oriented FDI inflows have been the contributors to the provincial FDI stock. Although FDI inflows have a substitute for imports in China in the short run, the huger exports have always reduced the more imports in the long run. Thus, the incentive policy of export-oriented FDI inflows should be made considerably.

China is a comparatively advantaged country with plentiful Labour resources, that is, lower labour costs. In particular, along with city or town construction in China, a majority of peasants are disengaged from farmland to rush to cities or towns to become the industrial workers. Thus, the newly timing educational policies associated with training lessons and reeducational projects may help these new industrial workers from countryside obtain availability of skilled manpower with technical and managerial knowledge to raise labor productivity so as to absorb more FDI inflows.

The favorably geographical location and better transport infrastructure may attract more FDI inflows because of the cost-effective investment and better investment environment. Thus, the specifically regional preferential policies associated with improving investment environment in backward western areas can overcome the unfavorably geographical location disadvantage. Thereby, accelerating the construction of transportation and telecommunication in western areas is expected to improve the investment infrastructure conditions to enhance the accessibility of these western areas to market of the developed areas, so as to attract more FDI inflows.

High marketing economic level means the fully economic liberalization, and diversified economic components, which is favourable to build a better special production chain among enterprises, that is, this will lead to construct fully commercial ties among FDI firms, upstream suppliers, and downstream customers. Thus, the industrial policies associated with encouraging medium-small enterprises development may promote to absorb more FDI inflows in China.

High human capital means that this may provide the plentifully industrial workers with skill or techniques for enterprises, which may satisfy the demand of FDI firms for the excellent industrial workers to attract more FDI inflows. Thus, besides stressing the policy of the basic education, government institution also should highly pay attention on the policy associated with research and development (R&D) and training and consulting services so as to optimize the productive allocation of labour resources.

Finally, the earlier preferential policies play an important role in absorbing the huge FDI inflows in China. But the unequal policies between eastern and western areas also cause the disparity of economic growth and income gap between them. Along with China’s accession to WTO in 2001, all the provinces have been overall open door to the world. Thus, fully applying the positive effects of the preferential policies on FDI inflows in China may widely promote diffusion of FDI inflows from eastern areas to western areas. Besides, by learning the lessons from the adopted policies at the initial stage of open door to the world, institution organization not only stresses the policies associated with labour-intensive industries for the more employment positions such as processing and assembling industries, but also emphasizes the specifically industrial policies involved in capital-intensive and knowledge-intensive industries for the accelerated upgrading of industries or economic structure such as technologically advanced industries, petroleum chemical industries, transportation and communication industries, particularly service trade, and so on.

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Appendix

Table 1.1 Prospects and Trends of FDI Inflows in China

	Exchange Rate (Per 100 Dollar Yuan)	FDI (100 Million Dollar)	Growth Rate of FDI Inflows (%)	GDP (100 Million Yuan)	Growth Rate of Output (%)	Total Fixed Asset Investment (100 million Yuan)
1979	na	1.09	na	4038.20		na
1980	na	1.95	78.90	4517.80	11.88	910.90
1981	170.51	3.75	92.31	4862.40	7.63	961.00

1982	189.26	4.40	17.33	5294.70	8.89	1230.40
1983	197.57	6.36	44.55	5934.50	12.08	1430.10
1984	232.70	12.58	97.80	7171.00	20.84	1832.90
1985	293.67	16.61	32.03	8964.40	25.01	2543.20
1986	345.28	18.74	12.82	10202.20	13.81	3120.60
1987	372.21	23.14	23.48	11962.50	17.25	3791.70
1988	372.21	31.94	38.03	14928.30	24.79	4753.80
1989	376.59	33.92	6.20	16909.20	13.27	4410.40
1990	478.38	34.87	2.80	18547.90	9.69	4517.00
1991	532.27	43.66	25.21	21617.80	16.55	5594.50
1992	551.49	110.07	152.11	26638.10	23.22	8080.10
1993	576.19	275.15	149.98	34634.40	30.02	13072.30
1994	861.87	337.67	22.72	46759.40	35.01	17042.10
1995	835.07	375.21	11.12	58478.10	25.06	20019.30
1996	831.42	417.25	11.20	67884.60	16.09	22913.50
1997	828.98	452.57	8.46	74462.60	9.69	24941.10
1998	827.91	454.63	0.46	78345.20	5.21	28406.20
1999	827.96	403.19	-11.31	82067.40	4.75	29854.71
2000	827.84	407.72	1.12	89403.50	8.94	32917.70
2001	827.77	468.78	14.98	95933.00	7.30	36898.40
2002	827.70	527.43	12.51	102300.00	6.64	43908.60
2003	827.70	535.05	1.44	116694.00	14.07	55118.00
2004	827.70	606.30	13.32	136515.00	16.99	70073.00

Notes: the growth rate of output, FDI, TFI are nominal variables

Sources: Datasets for 2004 are from China statistic bulletin.

Others are from China Statistic Yearbook 1996-2004.

The datasets of FDI inflows in China for 1979-1982 are from Chen, Chunlai (1997).

Table 1.1 Prospects and Trends of FDI Inflows in China (Continue)

	Growth Rate of TFI (%)	Total Trade (100 Million Dollar)	FDI Trade (100 Million Dollar)	Shares of FDI in GDP(%)	Shares of FDI in TFI (%)	Shares of FDI Trade in Total Trade(%)
1979	na	293.30	na	0.05	na	na
1980	na	381.40	0.43	0.07	0.36	0.11
1981	5.50	440.30	1.43	0.13	0.67	0.32

1982	28.03	416.10	3.29	0.16	0.68	0.79
1983	16.23	436.20	6.18	0.21	0.88	1.42
1984	28.17	535.50	4.68	0.41	1.60	0.87
1985	38.75	696.00	23.61	0.54	1.92	3.39
1986	22.70	738.50	29.85	0.63	2.07	4.04
1987	21.51	826.50	45.84	0.72	2.27	5.55
1988	25.37	1027.90	83.43	0.80	2.50	8.12
1989	-7.22	1116.80	137.10	0.76	2.90	12.28
1990	2.42	1154.40	201.15	0.90	3.69	17.42
1991	23.85	1356.30	289.55	1.07	4.15	21.35
1992	44.43	1655.30	437.47	2.28	7.51	26.43
1993	61.78	1957.00	670.70	4.58	12.13	34.27
1994	30.37	2366.20	876.47	6.22	17.08	37.04
1995	17.47	2808.60	1098.19	5.36	15.65	39.10
1996	14.46	2898.80	1371.10	5.11	15.14	47.30
1997	8.85	3251.60	1526.20	5.04	15.04	46.94
1998	13.89	3240.50	1576.79	4.80	13.25	48.66
1999	5.10	3606.30	1745.12	4.07	11.18	48.39
2000	10.26	4743.00	2367.17	3.78	10.25	49.91
2001	12.09	5098.00	2590.98	4.04	10.52	50.82
2002	19.00	6207.66	3302.39	4.27	9.94	53.20
2003	25.53	8512.00	4721.70	3.80	8.03	55.47
2004	27.13	11548.00	6782.81	3.68	7.16	58.74

Notes: the growth rate of output, FDI, and TFI are nominal variables

Sources: Datasets for 2004 are from China statistic bulletin. Others are from China Statistic Yearbook 1996-2004

Table 1.2.1 Distribution of FDI Inflows in Eastern, Middle, and Western Region (100 Million US Dollar)

	Eastern Region	Middle Region	Western Region	Total FDI	Shares in Eastern Region (%)	Shares in Middle Region (%)	Shares in Western Region (%)
1988	22.853	1.562	1.219	25.634	89.151	6.093	4.755
1989	27.648	1.180	1.146	29.973	92.242	3.936	3.822
1990	29.741	1.226	0.717	31.684	93.867	3.869	2.263
1991	40.922	1.982	1.355	44.258	92.462	4.478	3.060
1992	100.465	7.499	2.130	110.094	91.254	6.812	1.934
1993	238.880	24.280	10.258	273.417	87.368	8.880	3.752

1994	292.201	26.127	14.349	332.677	87.833	7.854	4.313
1995	326.414	34.294	11.447	372.155	87.709	9.215	3.076
1996	368.696	39.859	10.242	418.797	88.037	9.518	2.446
1997	399.365	48.525	15.854	463.744	86.118	10.464	3.419
1998	394.901	44.202	13.736	452.839	87.206	9.761	3.033
1999	350.497	37.474	11.377	399.348	87.767	9.384	2.849
2000	354.112	37.000	12.217	403.329	87.797	9.174	3.029
2001	407.278	42.082	14.310	463.670	87.838	9.076	3.086
2002	458.746	51.857	14.110	524.713	87.428	9.883	2.689
2003	458.048	59.200	12.155	529.403	86.522	11.182	2.296

Sources: Datasets come from China Statistic Yearbook 1996-2004

Table 1.2.2 Distribution of FDI Stock in Eastern, Middle, Western Region (real FDI stock discounted by Chinese CPI, 100 Million RMB Yuan)

	Eastern Region	Middle Region	Western Region	Total FDI Stock	Shares in Eastern Region (%)	Shares in Middle Region (%)	Shares in Western Region (%)
1988	68.293	4.865	4.475	77.633	87.969	6.267	5.765
1989	155.325	8.652	8.688	172.666	89.957	5.011	5.032
1990	297.299	14.320	12.022	323.641	91.861	4.425	3.715
1991	507.496	24.392	18.951	550.839	92.132	4.428	3.440
1992	1024.323	62.521	29.797	1116.641	91.733	5.599	2.668
1993	2182.653	184.107	80.728	2447.488	89.179	7.522	3.298
1994	4222.757	364.664	179.975	4767.395	88.576	7.649	3.775
1995	6581.050	609.256	260.210	7450.517	88.330	8.177	3.493
1996	9421.288	914.580	337.961	10673.829	88.265	8.568	3.166
1997	12656.921	1304.716	464.060	14425.697	87.739	9.044	3.217
1998	15954.172	1673.212	579.462	18206.846	87.627	9.190	3.183
1999	18888.083	1988.683	674.937	21551.703	87.641	9.227	3.132
2000	21787.853	2295.153	777.129	24860.134	87.642	9.232	3.126
2001	25154.424	2642.949	893.546	28690.919	87.674	9.212	3.114
2002	28983.962	3073.777	1006.293	33064.032	87.660	9.296	3.043
2003	32739.540	3555.790	1105.551	37400.880	87.537	9.507	2.956

Sources: Datasets come from China Statistic Yearbook 1996-2004

Table 1.2.3 Distribution of GDP in Eastern, Middle, and Western Region (100 Million Yuan)

	Eastern Region	Middle Region	Western Region	Total GDP	Shares in Eastern Region (%)	Shares in Middle Region (%)	Shares in Western Region (%)
1987	4437.460	3523.620	1048.240	9009.320	49.254	39.111	11.635
1988	5648.740	4340.610	1337.420	11326.770	49.871	38.322	11.808
1989	6361.290	4892.550	1532.960	12786.800	49.749	38.263	11.989
1990	6915.610	5479.230	1795.400	14190.240	48.735	38.613	12.652
1991	11642.940	6051.240	3447.910	21142.090	55.070	28.622	16.308
1992	14593.280	7153.330	4047.680	25794.290	56.576	27.732	15.692
1993	19810.500	9316.900	5091.720	34219.120	57.893	27.227	14.880
1994	26543.470	12325.230	6532.990	45401.690	58.464	27.147	14.389
1995	33506.810	15867.640	8140.280	57514.730	58.258	27.589	14.153
1996	39532.080	19167.580	9613.220	68312.880	57.869	28.059	14.072
1997	44453.400	21642.900	10728.880	76825.180	57.863	28.172	13.965
1998	48070.920	22871.370	11552.050	82494.340	58.272	27.725	14.003
1999	51630.700	23856.370	12132.550	87619.620	58.926	27.227	13.847
2000	57739.720	26266.180	13203.470	97209.370	59.397	27.020	13.583
2001	63624.360	28670.440	14471.460	106766.260	59.592	26.853	13.554
2002	70511.141	31046.801	15956.900	117514.841	60.002	26.419	13.579
2003	82018.526	35451.495	18069.120	135539.141	60.513	26.156	13.331

Sources: Datasets come from China Statistic Yearbook 1996-2004

Table 1.2.4 Shares of Single Provincial FDI Stock in Total FDI Stock (%)

Provinces	2003	2002	2001	2000	1999	1998	1997
Beijing	3.886	3.848	3.928	3.962	3.945	3.777	3.552
Tianjin	3.866	3.993	4.143	4.079	4.256	4.227	4.116
Hebei	1.937	1.955	2.025	2.115	2.178	2.096	1.812
Shanxi	0.461	0.469	0.479	0.474	0.464	0.371	0.325
Inner Mongolia	0.202	0.207	0.188	0.181	0.169	0.170	0.162
Liaoning	4.844	4.784	4.518	4.376	4.262	4.555	4.483
Jilin	0.765	0.818	0.872	0.895	0.901	0.927	0.933
Heilongjiang	0.972	1.020	1.072	1.124	1.179	1.247	1.272
Shanghai	8.493	8.239	8.269	8.114	8.175	8.406	8.543

Jiangsu	14.950	14.293	13.508	13.306	12.883	12.450	11.884
zhejiang	4.464	3.825	3.513	3.316	3.212	3.234	3.323
Anhui	0.834	0.853	0.872	0.894	0.910	0.956	1.047
Fujian	8.842	9.356	9.669	9.838	10.057	10.058	10.269
Jiangxi	1.221	0.980	0.818	0.812	0.849	0.857	0.818
Shandong	7.365	6.841	6.509	6.360	6.197	6.302	6.681
Henan	1.174	1.196	1.261	1.304	1.286	1.278	1.250
Hubei	2.215	2.121	2.031	1.950	1.883	1.803	1.709
Hunan	1.663	1.632	1.620	1.598	1.586	1.582	1.527
Guangdong	25.812	27.251	28.089	28.417	28.505	28.344	28.748
Guangxi	1.497	1.590	1.711	1.847	1.929	1.988	1.984
Hainan	1.582	1.684	1.792	1.911	2.040	2.191	2.342
Chongqin	0.455	0.449	0.461	0.448	0.420	0.388	0.233
Sichuan	1.114	1.158	1.174	1.165	1.176	1.235	1.344
Guizhou	0.101	0.103	0.107	0.115	0.122	0.126	0.133
Yunnan	0.249	0.261	0.269	0.289	0.283	0.264	0.252
Xizhang	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shaanxi	0.788	0.809	0.828	0.839	0.857	0.902	0.963
Gansu	0.112	0.121	0.138	0.135	0.132	0.137	0.150
Qinghai	0.027	0.024	0.014	0.005	0.005	0.004	0.005
Ningxia	0.038	0.039	0.039	0.039	0.039	0.022	0.017
Xingjiang	0.072	0.078	0.084	0.091	0.097	0.104	0.119
Sum	100.000	100.000	100.000	100.000	100.000	100.000	100.000
Eastern Region	32739.540	28983.962	25154.424	21787.853	18888.083	15954.172	12656.921
Middle Region	3555.790	3073.777	2642.949	2295.153	1988.683	1673.212	1304.716
western region	1105.551	1006.293	893.546	777.129	674.937	579.462	464.060

Sources: Datasets come from China Statistic Yearbook 1996-2004

Real FDI stock (100 Million RMB Yuan)

Table 1.2.4 Shares of Single Provincial FDI Stock in Total FDI Stock (%) (Continue)

Provinces	1996	1995	1994	1993	1992	1991	1990	1989	1988
Beijing	3.626	3.642	4.080	4.080	6.050	9.077	11.848	14.928	20.021
Tianjin	3.670	3.054	2.463	1.915	1.504	2.081	1.562	1.988	0.982
Hebei	1.621	1.457	1.446	1.312	1.078	1.119	1.004	0.799	0.680

Shanxi	0.237	0.197	0.212	0.324	0.322	0.151	0.197	0.277	0.259
Inner Mongolia	0.165	0.162	0.167	0.211	0.076	0.106	0.154	0.000	0.000
Liaoning	4.276	4.329	4.616	4.912	5.037	5.365	3.488	0.000	0.000
Jilin	0.960	0.906	0.795	0.842	0.584	0.486	0.341	0.173	0.247
Heilongjiang	1.173	1.090	0.923	0.794	0.697	0.751	0.959	1.155	1.590
Shanghai	8.354	7.940	8.141	8.828	5.783	7.230	10.145	14.480	14.537
Jiangsu	11.910	11.744	10.502	9.699	8.845	4.188	3.691	3.585	4.052
zhejiang	3.356	3.235	3.166	2.921	1.959	1.738	1.491	1.481	1.167
Anhui	1.083	1.037	0.884	0.695	0.363	0.231	0.227	0.167	0.173
Fujian	10.674	10.988	11.023	11.036	11.336	9.521	8.718	8.250	4.934
Jiangxi	0.739	0.748	0.736	0.708	0.614	0.301	0.201	0.208	0.222
Shandong	6.933	7.251	7.327	6.988	6.736	4.248	3.838	3.151	1.578
Henan	1.170	1.147	1.073	1.002	0.772	1.059	1.192	1.946	2.584
Hubei	1.670	1.699	1.742	1.702	1.376	0.933	0.857	0.834	0.898
Hunan	1.372	1.193	1.117	1.244	0.795	0.411	0.298	0.251	0.294
Guangdong	29.223	29.608	30.507	32.040	38.164	42.830	41.323	35.968	34.052
Guangxi	1.999	2.170	2.396	2.329	1.363	1.043	1.266	1.587	1.690
Hainan	2.622	2.912	2.911	3.119	3.878	3.692	3.487	3.741	4.275
Chongqin	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sichuan	1.633	1.890	2.153	1.588	0.956	0.893	0.228	0.000	0.000
Guizhou	0.143	0.172	0.187	0.182	0.208	0.238	0.184	0.217	0.176
Yunnan	0.217	0.243	0.239	0.274	0.187	0.115	0.140	0.192	0.124
Xizhang	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shaanxi	0.836	0.867	0.877	1.045	1.221	2.063	3.021	4.528	5.357
Gansu	0.172	0.155	0.149	0.040	0.034	0.066	0.037	0.046	0.095
Qinghai	0.005	0.007	0.008	0.008	0.003	0.000	0.000	0.000	0.000
Ningxia	0.018	0.020	0.026	0.030	0.011	0.019	0.030	0.049	0.013
Xingjiang	0.142	0.139	0.137	0.132	0.047	0.046	0.076	0.000	0.000
Sum	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
Eastern Region	9421.288	6581.050	4222.757	2182.653	1024.323	507.496	297.299	155.325	68.293
Middle Region	914.580	609.256	364.664	184.107	62.521	24.392	14.320	8.652	4.865
western region	337.961	260.210	179.975	80.728	29.797	18.951	12.022	8.688	4.475

Sources: Datasets come from China Statistic Yearbook 1996-2004

Real FDI stock (100 Million RMB Yuan)

Table 1.2.5 Shares of Single Provincial FDI Inflows in Total FDI (%)

Provinces	2003	2002	2001	2000	1999	1998	1997	1996
Beijing	4.139	3.287	3.813	4.174	4.946	4.788	3.435	3.708
Tianjin	2.899	3.015	4.601	2.891	4.417	4.667	5.415	5.140
Hebei	1.821	1.492	1.445	1.684	2.609	3.155	2.379	1.982
Shanxi	0.403	0.403	0.505	0.557	0.980	0.540	0.580	0.330
Inner Mongolia	0.167	0.337	0.231	0.262	0.162	0.201	0.158	0.172
Liaoning	5.335	6.502	5.427	5.069	2.659	4.837	5.103	4.150
Jilin	0.360	0.466	0.728	0.836	0.754	0.904	0.867	1.078
Heilongjiang	0.608	0.677	0.736	0.746	0.797	1.162	1.585	1.354
Shanghai	10.330	8.142	9.256	7.835	7.103	7.953	9.111	9.410
Jiangsu	19.954	19.419	14.913	15.931	15.219	14.645	11.720	12.441
zhejiang	9.408	5.862	4.770	3.998	3.087	2.911	3.242	3.631
Anhui	0.694	0.731	0.726	0.790	0.654	0.611	0.937	1.210
Fujian	4.909	7.315	8.450	8.509	10.076	9.302	9.050	9.753
Jiangxi	3.045	2.062	0.854	0.563	0.803	1.027	1.037	0.719
Shandong	11.364	9.022	7.594	7.367	5.656	4.864	5.985	6.288
Henan	1.018	0.771	0.986	1.398	1.306	1.361	1.492	1.250
Hubei	2.963	2.719	2.563	2.340	2.291	2.149	1.830	1.626
Hunan	1.924	1.716	1.747	1.682	1.637	1.807	1.977	1.780
Guangdong	14.777	21.600	25.734	27.970	29.191	26.544	27.246	28.066
Guangxi	0.791	0.795	0.829	1.301	1.590	1.957	1.910	1.583
Hainan	0.796	0.976	1.007	1.068	1.213	1.584	1.521	1.884
Chongqin	0.493	0.373	0.553	0.606	0.598	0.952	0.901	0.000
Sichuan	0.779	1.059	1.255	1.083	0.854	0.823	0.536	1.053
Guizhou	0.085	0.073	0.061	0.062	0.102	0.100	0.107	0.075
Yunnan	0.158	0.213	0.139	0.318	0.385	0.322	0.357	0.156
Xizhang	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shaanxi	0.627	0.686	0.759	0.715	0.606	0.663	1.355	0.779
Gansu	0.044	0.117	0.160	0.155	0.103	0.085	0.089	0.215
Qinghai	0.048	0.090	0.079	0.000	0.011	0.000	0.005	0.002
Ningxia	0.033	0.042	0.036	0.043	0.129	0.041	0.014	0.013
Xingjiang	0.029	0.036	0.044	0.047	0.060	0.048	0.053	0.153
Sum	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000

Eastern Region	458.048	458.746	407.278	354.112	350.497	394.901	399.365	368.696
Middle Region	59.200	51.857	42.082	37.000	37.474	44.202	48.525	39.859
western region	12.155	14.110	14.310	12.217	11.377	13.736	15.854	10.242

Sources: Datasets come from China Statistic Yearbook 1996-2004

FDI inflows (100 million US Dollar)

Table 1.2.5 Shares of Single Provincial FDI Inflows in Total FDI (%) (Continue)

Provinces	1995	1994	1993	1992	1991	1990	1989	1988
Beijing	2.902	4.123	2.439	3.178	5.535	8.741	10.625	19.614
Tianjin	4.087	3.051	2.244	0.979	2.996	1.102	2.714	0.934
Hebei	1.469	1.573	1.450	1.027	1.278	1.242	0.896	0.653
Shanxi	0.172	0.095	0.316	0.489	0.086	0.107	0.294	0.254
Inner Mongolia	0.155	0.120	0.312	0.047	0.038	0.336	0.000	0.000
Liaoning	3.828	4.329	4.678	4.691	8.188	7.693	0.000	0.000
Jilin	1.096	0.727	1.007	0.684	0.715	0.555	0.112	0.242
Heilongjiang	1.389	1.045	0.850	0.656	0.471	0.773	0.771	1.526
Shanghai	7.773	7.434	11.558	4.484	3.281	5.492	14.083	14.206
Jiangsu	13.948	11.312	10.401	13.291	4.953	3.919	3.157	4.019
zhejiang	3.380	3.458	3.774	2.178	2.085	1.529	1.729	1.154
Anhui	1.297	1.112	0.942	0.496	0.241	0.303	0.159	0.170
Fujian	10.866	11.162	10.513	12.931	10.646	9.153	10.970	5.078
Jiangxi	0.776	0.787	0.761	0.906	0.440	0.196	0.196	0.220
Shandong	7.225	7.672	6.854	9.114	4.889	4.761	4.381	1.525
Henan	1.286	1.162	1.115	0.483	0.858	0.331	1.423	2.511
Hubei	1.680	1.809	1.977	1.845	1.054	0.915	0.766	0.870
Hunan	1.364	0.995	1.600	1.205	0.575	0.352	0.215	0.301
Guangdong	27.569	28.446	27.635	33.618	43.899	46.080	38.582	35.853
Guangxi	1.807	2.514	3.235	1.653	0.720	0.905	1.533	1.661
Hainan	2.854	2.760	2.586	4.111	3.993	3.251	3.572	4.455
Chongqin	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sichuan	1.455	2.771	2.090	1.019	1.828	0.506	0.000	0.000
Guizhou	0.153	0.191	0.157	0.180	0.318	0.148	0.249	0.172
Yunnan	0.262	0.195	0.355	0.261	0.079	0.082	0.247	0.121
Xizhang	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Shaanxi	0.871	0.718	0.857	0.414	0.718	1.323	3.243	4.359
Gansu	0.172	0.264	0.044	0.003	0.108	0.027	0.006	0.092
Qinghai	0.004	0.007	0.012	0.006	0.000	0.000	0.000	0.000
Ningxia	0.010	0.022	0.044	0.003	0.004	0.008	0.078	0.012
Xingjiang	0.148	0.145	0.194	0.049	0.005	0.169	0.000	0.000
Sum	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
Eastern Region	326.414	292.201	238.880	100.465	40.922	29.741	27.648	22.853
Middle Region	34.294	26.127	24.280	7.499	1.982	1.226	1.180	1.562
western region	11.447	14.349	10.258	2.130	1.355	0.717	1.146	1.219

Sources: Datasets come from China Statistic Yearbook 1996-2004

FDI inflows (100 million US Dollar)

Table 1.2.6 Shares of Single Provincial GDP in Total GDP (%)

Provinces	2003	2002	2001	2000	1999	1998	1997	1996
Beijing	2.703	2.734	2.665	2.550	2.484	2.438	2.356	2.365
Tianjin	1.806	1.745	1.723	1.686	1.656	1.620	1.608	1.614
Hebei	5.237	5.210	5.224	5.235	5.219	5.159	5.146	5.055
Shanxi	1.812	1.717	1.667	1.691	1.721	1.801	1.927	1.915
Inner Mongolia	1.587	1.495	1.448	1.441	1.448	1.445	1.432	1.442
Liaoning	4.429	4.481	4.714	4.803	4.765	4.705	4.663	4.622
Jilin	1.861	1.911	1.904	1.873	1.897	1.888	1.883	1.957
Heilongjiang	3.268	3.304	3.335	3.346	3.309	3.393	3.525	3.517
Shanghai	4.612	4.603	4.637	4.682	4.609	4.471	4.374	4.248
Jiangsu	9.194	9.047	8.909	8.829	8.792	8.728	8.696	8.789
zhejiang	6.932	6.634	6.320	6.210	6.128	6.046	6.037	6.069
Anhui	2.931	3.024	3.082	3.125	3.322	3.401	3.475	3.424
Fujian	3.860	3.984	3.984	4.033	4.055	3.984	3.905	3.782
Jiangxi	2.088	2.085	2.038	2.061	2.117	2.245	2.233	2.221
Shandong	9.175	8.979	8.840	8.788	8.751	8.682	8.656	8.725
Henan	5.200	5.249	5.283	5.285	5.227	5.281	5.310	5.359
Hubei	3.985	4.111	4.367	4.399	4.406	4.490	4.491	4.348
Hunan	3.422	3.524	3.731	3.798	3.800	3.780	3.896	3.875
Guangdong	10.053	9.987	9.973	9.940	9.668	9.600	9.522	9.543
Guangxi	2.018	2.089	2.090	2.109	2.231	2.307	2.365	2.485
Hainan	0.495	0.508	0.511	0.533	0.538	0.532	0.533	0.570

Chongqin	1.660	1.677	1.639	1.635	1.690	1.733	1.757	1.726
Sichuan	4.026	4.149	4.142	4.125	4.239	4.340	4.322	4.370
Guizhou	1.001	1.008	1.016	1.022	1.041	1.021	1.032	1.045
Yunnan	1.819	1.900	1.943	2.011	2.120	2.175	2.140	2.184
Xizhang	0.136	0.137	0.130	0.121	0.121	0.111	0.100	0.095
Shaanxi	1.770	1.788	1.727	1.709	1.699	1.675	1.692	1.721
Gansu	0.963	0.988	1.005	1.012	1.064	1.054	1.017	1.045
Qinghai	0.288	0.290	0.282	0.271	0.272	0.267	0.263	0.269
Ningxia	0.284	0.280	0.279	0.273	0.276	0.276	0.275	0.283
Xingjiang	1.385	1.360	1.391	1.404	1.335	1.354	1.367	1.335
Sum	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
Eastern Region	82018.526	70511.141	63624.360	57739.720	51564.220	48070.920	44453.400	39532.080
Middle Region	35451.495	31046.801	28670.440	26266.180	23856.370	22871.370	21642.900	19167.580
western region	18069.120	15956.900	14471.460	13203.470	12132.550	11552.050	10728.880	9613.220

Sources: Datasets come from China Statistic Yearbook 1996-2004

GDP 100 million Yuan

Table 1.2.6 Shares of Single Provincial GDP in Total GDP (%)(Continue)

Provinces	1995	1994	1993	1992	1991	1990	1989	1988	1987
Beijing	2.425	2.389	2.524	2.749	2.833	3.529	3.566	3.622	3.628
Tianjin	1.600	1.598	1.567	1.594	1.621	2.191	2.216	2.292	2.442
Hebei	4.954	4.820	4.941	4.957	5.071	6.317	6.435	6.192	5.793
Shanxi	1.899	1.881	2.059	2.210	2.216	3.025	2.943	2.796	2.855
Inner Mongolia	1.448	1.503	1.557	1.635	1.701	2.250	2.289	2.391	2.356
Liaoning	4.857	5.424	5.876	5.710	5.676	7.489	7.850	7.778	7.982
Jilin	1.963	2.064	2.098	2.164	2.192	2.997	3.063	3.255	3.302
Heilongjiang	3.503	3.567	3.516	3.350	3.899	5.040	4.932	4.873	5.046
Shanghai	4.282	4.345	4.417	4.320	4.227	5.331	5.447	5.724	6.054
Jiangsu	8.963	8.940	8.762	8.281	7.574	9.982	10.338	10.673	10.238
zhejiang	6.128	5.876	5.580	5.292	5.117	6.328	6.598	6.761	6.701
Anhui	3.484	3.280	3.126	3.106	3.139	4.637	4.819	4.829	4.910
Fujian	3.756	3.714	3.312	3.054	2.942	3.681	3.585	3.383	3.099

Jiangxi	2.095	2.089	2.113	2.220	2.267	3.021	2.944	2.877	2.918
Shandong	8.697	8.532	8.123	8.516	8.564	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Henan	5.221	4.901	4.859	4.961	4.946	6.587	6.653	6.613	6.766
Hubei	4.158	4.139	4.163	4.219	4.320	5.809	5.608	5.531	5.747
Hunan	3.818	3.734	3.736	3.868	3.941	5.246	5.011	5.157	5.211
Guangdong	9.357	9.344	9.425	8.892	8.422	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Guangxi	2.604	2.736	2.611	2.507	2.453	3.165	2.999	2.766	2.681
Hainan	0.633	0.729	0.754	0.704	0.570	0.722	0.715	0.681	0.636
Chongqin	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Sichuan	6.145	6.121	6.127	6.298	6.541	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Guizhou	1.095	1.148	1.216	1.318	1.400	1.833	1.844	1.870	1.837
Yunnan	2.098	2.146	2.277	2.399	2.447	3.183	2.839	2.658	2.542
Xizhang	0.097	0.101	0.109	0.129	0.144	0.195	0.171	0.179	0.197
Shaanxi	1.739	1.799	1.962	2.096	2.209	2.849	2.803	2.776	2.719
Gansu	0.962	0.995	1.088	1.232	1.284	1.711	1.696	1.694	1.771
Qinghai	0.287	0.305	0.320	0.339	0.355	0.493	0.472	0.485	0.482
Ningxia	0.295	0.295	0.303	0.322	0.340	0.457	0.463	0.444	0.440
Xingjiang	1.435	1.484	1.478	1.560	1.589	1.931	1.700	1.701	1.648
Sum	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
Eastern Region	33506.810	26525.470	19810.500	14593.280	11642.940	6915.610	6361.290	5648.740	4437.460
Middle Region	15867.640	12325.230	9316.900	7153.330	6051.240	5479.230	4892.550	4340.610	3523.620
western region	8140.280	6532.990	5091.720	4047.680	3447.910	1795.400	1532.960	1337.420	1048.240

Sources: Datasets come from China Statistic Yearbook 1996-2004

GDP 100 million Yuan

Table 1.3 Sectoral Distribution of FDI Inflows in China (10,000 US Dollar and %)

Year	1997		1998		1999		2000	
Sector	FDI Inflows	Share %	FDI Inflows	Share %	FDI Inflows	Share %	FDI Inflows	Share %
National Total	4525704	100	4546275	100	4031871	100	4071481	100
Farming, Forestry, Animal Husbandry and Fishery	62763	1.387	62375	1.372	71015	1.761	67594	1.660

Mining and Quarrying	94033	2.078	57809	1.272	55714	1.382	58328	1.433
Manufacturing	2811983	62.134	2558238	56.271	2260334	56.062	2584417	63.476
Electric Power, Gas and Water Production and Supply	207191	4.578	310279	6.825	370274	9.184	224212	5.507
Construction	143782	3.177	206423	4.540	91658	2.273	90542	2.224
Geological Prospecting and Water Conservancy		0.000		0.000	452	0.011	481	0.012
Transport, Storage, Post and Telecommunication	165513	3.657	164513	3.619	155114	3.847	101188	2.485
Services								
Wholesale & Retail Trade and Catering Services	140187	3.098	118149	2.599	96513	2.394	85781	2.107
Banking and Insurance		0.000		0.000	9767	0.242	7629	0.187
Real Estate Management	516901	11.421	641006	14.100	558831	13.860	465751	11.439
Social Services	198802	4.393	296315	6.518	255066	6.326	218544	5.368
Health Care, Sports and Social Welfare	19535	0.432	9724	0.214	14769	0.366	10588	0.260
Education, Culture and Arts, Radio, Film and Television	7403	0.164	6830	0.150	6072	0.151	5446	0.134
Scientific Research and Polytechnical Services		0.000		0.000	11013	0.273	5703	0.140
Other Sectors	157611	3.483	114614	2.521	75279	1.867	145277	3.568

Sources: Datasets for 2004 are from China statistic bulletin. Others are from China Statistic Yearbook 1996-2004

Table 1.3 Sectoral Distribution of FDI Inflows in China (10,000 US Dollar and %) (Continue)

	2001		2002		2003		2004	
Sector	FDI Inflows	Share %	FDI Inflows	Share %	FDI Inflows	Share %	FDI Inflows	Share %
National Total	4687759	100	5274286	100	5350467	100	6063000	100

Farming, Forestry, Animal Husbandry and Fishery	89873	1.917	102764	1.948	100084	1.871	111000	1.831
Mining and Quarrying	81102	1.730	58106	1.102	33635	0.629	54000	0.891
Manufacturing	3090747	65.932	3679998	69.772	3693570	69.033	4302000	70.955
Electric Power, Gas and Water Production and Supply	227276	4.848	137508	2.607	129538	2.421	114000	1.880
Construction	80670	1.721	70877	1.344	61176	1.143	77000	1.270
Geological Prospecting and Water Conservancy	1049	0.022	696	0.013	1777	0.033	23000	0.379
Transport, Storage, Post and Telecommunication	90890	1.939	91346	1.732	86737	1.621	127000	2.095
Services								
Wholesale & Retail Trade and Catering Services	116877	2.493	93264	1.768	111604	2.086	158000	2.606
Banking and Insurance	3527	0.075	10665	0.202	23199	0.434	25000	0.412
Real Estate Management	513655	10.957	566277	10.737	523560	9.785	595000	9.814
Social Services	259483	5.535	294345	5.581	316095	5.908	282000	4.651
Health Care, Sports and Social Welfare	11864	0.253	12807	0.243	12737	0.238	9000	0.148
Education, Culture and Arts, Radio, Film and Television	3596	0.077	3779	0.072	5782	0.108	49000	0.808
Scientific Research and Polytechnical Services	12044	0.257	19752	0.374	25871	0.484	29000	0.478
Other Sectors	105106	2.242	132102	2.505	225102	4.207	108000	1.781

Sources: Datasets for 2004 are from China statistic bulletin. Others are from China Statistic Yearbook 1996-2004

Table 1.4 The Distribution of Source Countries of FDI Inflows in China (10,000 US Dollar,%)

NIEs	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003

Hong Kong	1982268	2018511	2085160	2063200	1850836	1636305	1549998	1671730	1786093	1770010
Taiwan	339134	316516	348202	328939	291521	259870	229658	297994	397064	337724
Singapore	117961	186061	224716	260641	340397	264249	217220	214355	233720	205840
South Korea	72612	104710	150416	214238	180320	127473	148961	255178	272073	448854
China Macao	50944	43982	60628	39455	42157	30864	34728	32112	46838	41660
Sub-total	2562919	2669780	2869122	2906473	2705231	2318761	2180565	2471369	2735788	2804088
Shares (%)	75.900	71.154	68.763	64.222	59.504	57.510	53.482	52.719	51.870	52.408
ASEAN										
Indonesia	11570	11163	9354	7998	6897	12917	14694	15964	12164	15013
Malaysia	20099	25900	45995	38183	34049	23771	20288	26298	36786	25103
Philippines	14040	10578	5551	15563	17927	11728	11112	20939	18600	22001
Thailand	23487	28824	32818	19400	20538	14832	20357	19421	18772	17352
Sub-total	69196	76465	93718	81144	79411	63248	66451	82622	86322	79469
Shares (%)	2.049	2.038	2.246	1.793	1.747	1.569	1.630	1.762	1.637	1.485
The main developed countries										
Japan	208616	321247	369214	432647	340036	297308	291585	434842	419009	505419
United States	249082	308373	344417	346117	389844	421586	438389	443322	542392	419851
Australia	18826	23299	19406	31374	27197	26331	30888	33560	38070	59253
Canada	21605	25704	33797	34412	31652	31442	27978	44130	58798	56351
Sub-total	498129	678623	766834	844550	788729	776667	788840	955854	1058269	1040874
Shares (%)	14.752	18.086	18.378	18.661	17.349	19.263	19.348	20.390	20.065	19.454
West Europe										
United Kingdom	68884	91520	130193	185756	117486	104449	116405	105166	89576	74247
Germany	26412	39053	51887	99263	73673	137326	104149	121292	92796	85697
France	19340	28702	42465	47465	71489	88429	85316	53246	57560	60431
Italy	20616	27020	16944	21504	27457	18744	20951	21998	17674	31670
Netherlands	11105	11411	12517	41380	71882	54168	78948	77611	57175	72549
Sub-total	146357	197706	254006	395368	361987	403116	405769	379313	314781	324594
Shares (%)	4.334	5.269	6.088	8.736	7.962	9.998	9.952	8.091	5.968	6.067
Virgin Islands	12827	30376	53761	171730	403134	265896	383289	504234	611739	577696

Shares (%)	0.380	0.810	1.288	3.795	8.867	6.595	9.401	10.756	11.598	10.797
Others(100 million US Dollar)	10.0099	12.9526	18.882	29.8165	61.0942	47.0108	63.5575	79.8642	107.914	110.148
Shares (%)	2.964	3.452	4.525	6.588	13.438	11.660	15.589	17.037	20.460	20.586
Total FDI Inflows (100 million US Dollar))	337.67	375.21	417.25	452.57	454.63	403.19	407.72	468.78	527.43	535.05

Sources: Datasets come from China Statistic Yearbook 1996-2004

Table 3.1 Descriptions of Variables of Location Determinants Affecting FDI Inflows in Provinces of China.

Variables	Implication	Units of measurement	Description
Investment improving factors			
Op	Economical openness level	100 million Yuan RMB	(exports + imports)*exchange rate/GDP
Ex	Exports level	100 million Yuan RMB	exports*exchange rate
Im	Imports level	100 million Yuan RMB	imports*exchange rate
Ge	Government expenditure on education culture & health care	Percentage per annum	annual expenditure on education culture & health care/GDP
Meco	Level of marketing economy	Percentage per annum	Industrial output value of non-state-owned enterprises/ gross output value of all the enterprises
Location	Geographical location	Discrete value	Assign values coastal cities or cities with harbor and through Yangtze River
Pindex	Policy index	Discrete value	assign values to cities with favourable policies

Infra	Transport length for Infrastructure level	Ten thousand kilometers	length of roadways, waterways and highways
Tden	Transport Density for Infrastructure level	Ten thousand kilometers per 100 square Km	length of roadways, waterways and highways/area
Macroeconomic factors			
Emp	Employment level	Ten thousands persons	number of employed persons in urban area
Cf	Fixed Capital formation	Percentage per annum	fixed Capital formation/GDP
FDI	Net FDI inflows	100 million Yuan RMB	net FDI inflows in China*exchange rate
Fst	Real FDI stock in China	100 million Yuan RMB	accumulated FDI inflows by China*exchange rate/CPI
FNIEst	Real FDI stock from NIEs in China	100 million Yuan RMB	accumulated FDI inflows by China*exchange rate/CPI
FASEANst	Real FDI stock from ASEAN in China	100 million Yuan RMB	accumulated FDI inflows by China*exchange rate/CPI
FDCst	Real FDI stock from the main developed countries in China	100 million Yuan RMB	accumulated FDI inflows by China*exchange rate/CPI
FWEst	Real FDI stock from the main west Europe in China	100 million Yuan RMB	accumulated FDI inflows by China*exchange rate/CPI
Ms	Market Size	100 million Yuan RMB	GDP
Pg	Economical developing level	Per person RMB Yuan	Per capita GDP
Gr	Growth of economy	Percentage per annum	the absolute annual changes of GDP
Hc	Human capital	Ten thousands persons	number of annual enrolment in regular secondary school
Cost-related factors			
Lc	Real labour cost	Average real wage per annum Yuan	average money wage per annum Yuan RMB
Taxre	Real tax revenue	100 million Yuan RMB	average annual tax revenue
Exrate	Exchange rate	Percentage per annum	annual average exchange rate RMB Yuan per dollar

RMBrate	Leading rate of interests	Percentage per annum	annual average leading interest rate

Data sources: China Statistical Yearbooks (1996-2004), Blue Book of China's Economy 2004 and A Statistical Survey of China (1997-2004) and national economical center of China (www.cei.gov.cn).

Table 3.2 Schedule of the Preferential Policies Executed in China's Provinces and Cities

Schedule	Style and Numbers of Opening Areas	Geographical Location
1979	The Specifically Economic Zones (SEZs): 3.	Guandong.
1980	The Specifically Economic Zones (SEZs): 1.	Fujian.
1984	The Coastal Opening Cities (COCs): 14.	Liaoning, Hebei, Tianjin, Fujian, Jiangsu, Shanghai, Zhejiang, Shandong, Guangdong and Guangxi.
	The Economic Technology Developing Zones (ETDZs): 10.	Liaoning, Hebei, Tianjin, Jiangsu, Zhejiang, Shandong and Guangdong.
1986	The Economic Technology Developing Zones (ETDZs):2.	Shanghai.
1988	Opening Coastal Strip Zones (OCSZs): SEZs (1) and ETDZs (1).	Hainan and Shanghai.
1990	The Pudong New Zones in Shanghai (PDNZs): 1.	Shanghai.
1992	The Main Coastal Harbor Cities Opening Zones (MCHCOZs):13.	Tianjin, Guangdong, Shandong, Jiansu, Zhejiang, Fujian and Hainan.
	The Opening Cities around the Yangtze River (OCYRs): 10.	Jiangsu, Anhui, Jiangxi, Hunan, Hubei and Sichuan.
	The Border Economic Cooperation Zones (BECZs): 13.	Jilin, Heilongjiang, Inner Mongolia, Xingjing, Yunnan and Guangxi.
	The Inland Provinces and Autonomous Capital Cities (IPACCs):. ETDZs (5).	Fujian, Liaoning, Jiansu, Shandong and Zhejiang.
1993	The Economic Technology Developing Zones (ETDZs): 12.	Anhui, Guangdong, Heilongjiang, Hubei, Liaoning, Sichuan, Fujian, Jilin and Zhejiang.
1994	The Economic Technology Developing Zones (ETDZs): 2.	Beijin and Xingjiang.
2001	China's accession to WTO	All the provinces or cities.

Sources: Based on China Foreign Investment Report Series by Chinese Academy of Social Sciences, and www.peopledaily.com.cn

Table 3.3 Preferential Policy Index and Weight Value of Geographical Location of China's Provinces (Discrete Value)

Provinces	*03*	*02*	*01*	*00*	*99*	*98*	*97*	*96*	*95*	*94*	*93*	*92*	*91*	*90*	*89*	*88*	*87*	*Location*
Beijing	3	3	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	3
Tianjin	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
Hebei	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	3
Shanxi	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	2
Inner Mongolia	3	3	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2
Liaoning	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	3
Jilin	3	3	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2
Heilongjiang	3	3	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2
Shanghai	4	4	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	4
Jiangsu	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
zhejiang	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
Anhui	3	3	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	4
Fujian	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Jiangxi	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	4
Shandong	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
Henan	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	2
Hubei	3	3	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	3
Hunan	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	3
Guangdong	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Guangxi	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	3
Hainan	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	3
Chongqin	3	3	2	2	2	2	2	2	na	na	na	na	na	na	na	na	na	2
Sichuan	3	3	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	1
Guizhou	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Yunnan	3	3	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	1
Xizhang	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Shaanxi	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Gansu	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1

Qinghai	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Ningxia	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Xingjiang	3	3	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	1

Table 5.1.1 Tests of Unit Root for Variables of Location Determinants with Respect to models of Long-run and Short-run Effects.

Variables	ADF	PP	1% Critical value	5% Critical value	10% Critical value	significant level
Ln(FDI)	-1.747	-1.16476	-4.417	-3.622	-3.247	
D(Ln(FDI))	-3.315	-2.787	-4.442	-3.633	-3.254	c
Ln(Fst))	-0.618	-2.408	-4.417	-3.622	-3.247	
D(Ln(Fst))	-3.826	-3.095	-4.442	-3.633	-3.254	b
Ln(Ex))	-2.279	-2.569	-4.417	-3.622	-3.247	
D(Ln(Ex))	-4.688	-5.504	-4.442	-3.633	-3.254	a
Ln(Im))	-3.041	-2.184	-4.417	-3.622	-3.247	
D(Ln(Im))	-3.397	-2.962	-4.442	-3.633	-3.254	b
Ln(Ms)	-4.481	-2.345	-4.417	-3.622	-3.247	a
D(Ln(Ms))	-3.673	-2.754	-4.442	-3.633	-3.254	b
Ln(Lc)	-0.247	0.128	-4.417	-3.622	-3.247	
D(Ln(Lc))	-4.134	-4.042	-4.442	-3.633	-3.254	b
Ln(Exrate)	-0.673	-0.552	-4.417	-3.622	-3.247	
D(Ln(Exrate))	-3.989	-4.513	-4.442	-3.633	-3.254	b
Ln(RMBrate)	-1.247	-0.935	-4.417	-3.622	-3.247	
D(Ln(RMBrate))	-2.647	-3.312	-4.442	-3.633	-3.254	b
Ecm	-3.206	-2.651	-3.750	-2.997	-2.638	b

Notes: ADF refers to the Augmented Dickey-Fuller test. PP denotes the Philips-Perron test.

All the level variables are estimated including an intercept and a linear trend.

"c" reject the null hypothesis of a unit root at 10% significant level .

"b" reject the null hypothesis of a unit root at 10% significant level.

"a" reject the null hypothesis of a unit root at 1% significant level.

Table 5. 1.2 Long-run and Short-run Effects Models; Method: Least Squares, lagged k =1.

Dependant variable	Ln(FDI)	D(Ln(FDI))	

Independent variables	Long-term Effecting model	t-Stat	Variables	Short-term Effecting Model	t-Stat
C	1.361	0.142	C	0.079	0.441
Ln(Fst(-1))	0.385	1.699	D(Ln(Fst(-1)))	0.305	1.096
Ln(Ex(-1))	1.101	1.020	D(Ln(Ex(-1)))	0.730	1.021
Ln(Im(-1))	0.206	0.303	D(Ln(Im(-1)))	-0.007	-0.014
Ln(Ms(-1))	2.672	1.126	D(Ln(Ms(-1)))	2.515	1.157
Ln(Lc(-1))	-3.836	-2.186	D(Ln(Lc(-1)))	-2.559	-2.263
Ln(Exrate(-1))	-0.695	-0.457	D(Ln(Exrate(-1)))	-1.175	-1.359
Ln(RMBrate(-1))	-0.616	-1.064	D(Ln(RMBrate(-1)))	-0.713	-1.650
			Ecm	0.440	1.745
Adj. R. Squared	0.964		Adj. R. Squared	0.544	
F-stat	88.191		F-stat	2.086	
DW_ stat	0.913		DW_ stat	1.033	
Schwarz criterion	1.483		Schwarz criterion	0.825	

Notes: “a” means a “significant” level at 1%; “b” is a “significant” level at 5%; “c” is a “significant” level at 10%;

Tables 5.1.3 Models of Location Determinants Affecting FDI Inflows from NIEs, the Main Developed Countries, and West Europe in China. Method: Least Squares; Lagged k =1; Dependent Variable: Ln(FDI) for annual net FDI inflows from the individual economies.

Vraiables	NIEs Model	t-Stat	ASEAN Model	t-Stat	DC Model	t-Stat	WE Model	t-Stat
C	16.887	(40.746)b	45.460	(3.454)c	8.617	(0.117)	-2.096	(-0.063)
Ln(FNIEst(-1))	0.348	(32.090)b						
Ln(FASEANst(-1))			0.946	(3.589)c				
Ln(FDCst(-1))					0.029	(0.023)		
Ln(FWEst(-1))							0.218	(0.383)
Ln(Ex(-1))	0.086	(6.431)c	0.856	(1.655)	-0.601	-0.535	-1.544	(-1.010)
Ln(Im(-1))	0.272	(29.502)b	1.399	(4.528)b	0.864	(1.240)	0.348	(0.333)
Ln(Ms(-1))			-7.179	(-3.204)c	0.547	(0.071)	2.266	(0.387)
Ln(Pg(-1))	-4.640	(-38.420)b						
Ln(Lc(-1))	-0.613	(-33.417)b	-0.483	(-0.741)	-0.754	(-0.624)	-0.923	(-0.400)
Ln(Taxre(-1))	2.640	(61.967)a						
Ln(RMBrate(-1))	1.250	(102.730)a					-0.061	(-0.102)
Ln(Infra(-1))			2.084	(3.832)c	0.775	(0.478)		

Ln(Exrate(-1))			-1.345 (-0.080)	
Adjusted R-squared	1.000	0.891	0.649	0.665
F-statistic	10757.920	11.896	3.115	3.642
Durbin-Watson stat	3.338	2.013	3.183	-1.273
Akaike info criterion	-11.227	-3.482	-2.659	3.263

Notes: “a” means a “significant” level at 1%; “b” is a “significant” level at 5%; “c” is a “significant” level at 10%;

Table 5.2.1 The Defined Variables of Provinces of Cross Section and Division of Region in China.

Special Region	Province or City	Abbreviation of Variable	Capital City	Region Location
Huabei	BEIJING	_BEIJ	Beijing*	Coastal Area
	TIANJING	_TIANJ	Tianjing	Coastal Area
	HEBEI	_HEB	Shijiazhuang	Coastal Area
	SHANDONG	_SHAND	Jinan	Coastal Area
	INNER MONGOLIA	_NEIMG	Baotou	Inner area
Donbei	LIAONING	_LIAON	Shenyang*	Coastal Area
	JILIN	_JIN	Changchun	Inner area
	HEILONGJIANG	_HILJ	Haerbin	Inner area
Huadong	SHANGHAI	_SHANGH	Shanghai*	Coastal Area
	JIANGSHU	_JIANGS	Nanjing	Coastal Area
	ZHEJIANG	_ZHEJ	Hangzhou	Coastal Area
Huadong	GUANGDONG	_GUANGD	Guangzhou*	Coastal Area
	FUJIAN	_FUJ	Fuzhou	Coastal Area
	HAINAN	_HAIN	Haikou	Coastal Area
Huazhong	ANHUI	_ANH	Hefei	Inner Area
	HENAN	_HEN	Zhengzhou	Inner Area
	HUBEI	_HUB	Wuhan*	Inner Area
	HUNAN	_HUN	Changsa	Inner Area
	JIANGXI	_JIANGX	Nanchang	Inner Area
	SHANXI	_SHANX	Taiyuan	Inner Area
Xinan	GUANGXI	_GUANGX	Nanning	Coastal Area
	CONGQING	_CONGQ	Congqing	Inner Area
	SHICHUAN	_SIC	Chengdu*	Inner Area
	GUIZHOU	_GUIZ	Guiyang	Inner Area
	YUNNAN	_YUNN	Kunming	Inner Area
	TIBET	_XIZ	Lasa	Inner Area
Xibei	SHAANXI	_SANX	Xian*	Inner Area

	GANSHU	_HANS	Lanzhou	Inner Area
	QINGHAI	_QINH	Xinin	Inner Area
	LINGXIA	_LINX	Yinchuan	Inner Area
	XINJIANG	_XINJ	Wurumuqi	Inner Area

Notes: * denotes the central city in a region. _BEIJING denotes the abbreviation of variable name in cross section method or pooled method.

Table 5.2.2 Panel Analysis of Location Determinants Affecting FDI Inflows in China. Dependent Variable: Ln(FDI) for Net FDI Inflows; Model: Panel Data Model for lagged k =1, Method: Pooled Least Squares.

Variable	Model 1	t-Stat	Model 2	t-Stat	Model 3	t-Stat
C	6.943	(7.684)a	11.796	(13.113)a	0.629	(0.943)
Ln(Fst(-1))	0.497	(12.509)a	0.631	(14.686)a		
Ln(Op(-1))	0.413	(8.993)a			0.710	(17.728)a
Ln(Ms(-1))	0.529	(2.798)a	0.185	(3.035)a		
Ln(Pg(-1))	-0.382	(-2.205)b	0.486	(4.924)a		
Ln(Lc(-1))	-1.077	(-8.851)a	-1.599	(-12.125)a	-0.535	(-6.209)a
Ln(Hc(-1))	-0.504	(-2.862)a			0.253	(5.341)a
Ln(Meco(-1))	0.162	(2.179)b			0.385	(4.289)a
Ln(Tden(-1))	0.154	(3.226)a	0.267	(4.872)a	0.351	(6.394)a
Location	0.218	(5.208)a	0.184	(3.872)a	0.103	(1.689)c
Pindex	0.012	(0.246)	0.157	(2.818)a	0.289	(6.144)a
Adj.R. Square	0.933		0.907		0.896	
F-stat	440.695		442.462		391.448	

Notes: “a” means a “significant” level at 1%; “b” is a “significant” level at 5%; “c” is a “significant” level at 10%;

Table 5.2.3 Panel Analysis of Location Determinants Affecting FDI Inflows in China. Dependent Variable: Ln(FDI) for Net FDI Inflows; Model: Panel Data Model for lagged k =2; Method: Pooled Least Squares.

Variable	Model 1	t-Stat	Model 2	t-Stat	Model 3	t-Stat
C	8.252	(7.018)a	13.849	(11.483)a	2.389	(3.202)a
Ln(Fst(-2))	0.371	(7.911)a	0.524	(10.011)a		
Ln(Op(-2))	0.511	(9.712)a			0.764	(17.474)a
Ln(Ms(-2))	0.713	(3.141)a	0.268	(3.572)a		
Ln(Pg(-2))	-0.424	(-2.129)b	0.623	(4.611)a		
Ln(Lc(-2))	-1.282	(-8.054)a	-1.883	(-10.378)a	-0.770	(-7.901)a

Ln(Hc(-2))	-0.631	(-3.002)a			0.218	(4.301)a
Ln(Meco(-2))	0.043	(0.507)			0.241	(2.598)a
Ln(Tden(-2))	0.235	(4.270)a	0.357	(5.513)a	0.381	(6.710)a
Location	0.270	(5.598)a	0.223	(3.939)a	0.088	(1.379)
Pindex	0.005	(0.079)	0.177	(2.675)a	0.310	(6.316)a
Adj.R. Square	0.921		0.880		0.895	
F-stat	322.881		304.318		351.764	

Notes: “a” means a “significant” level at 1%; “b” is a “significant” level at 5%; “c” is a “significant” level at 10%;

Table 5.2.4 Cross Section Analysis of Location Determinants Affecting FDI Inflows in China. Dependent Variable: Ln(FDI) for Net FDI Inflows; Model: Cross Section Model

Model	c	Ln(Fst(-1))	Ln(Ms(-1))	Ln(Lc(-1))	Ln(Pg(-1))	Location	Pindex	Adj. R	F-stat
M1993	2.564	0.507	0.440	-0.083	0.031	0.176	0.509	0.960	304.318
t-Stat	(0.519)	(7.916)a	(3.494)a	(-0.125)	(0.133)	(1.928)c	(3.502)a		
M1994	-3.433	0.827	0.249	0.505	-0.225	0.080	0.186	0.923	56.629
t-Stat	(-0.617)	(6.162)a	(-1.210)	(0.665)	(-0.652)	(0.550)	(0.763)		
M1995	4.101	1.005	0.086	-0.717	0.137	0.058	0.033	0.980	227.428
t-Stat	(1.323)	(13.342)a	(0.748)	(-1.754)c	(0.695)	(0.787)	(0.252)		
M1996	2.588	1.000	0.093	-0.664	0.487	0.062	-0.215	0.973	170.498
t-Stat	(0.662)	(11.363)a	(0.698)	(-1.295)	(1.917)c	(0.687)	(-1.412)		
M1997	2.086	0.953	0.090	-0.538	0.483	0.132	-0.378	0.960	113.935
t-Stat	(0.452)	(9.192)a	(0.572)	(-0.885)	(1.445)	(1.218)	(-2.130)b		
M1998	0.419	0.914	-0.008	-0.223	0.388	0.120	-0.226	0.949	84.706
t-Stat	(0.099)	(8.621)a	(-0.053)	(-0.391)	(1.212)	(1.112)	(-1.380)		
M1999	-5.334	0.851	-0.019	0.625	0.167	0.094	-0.282	0.934	67.081
t-Stat	(-0.966)	(7.425)a	(-0.110)	(0.843)	(0.400)	(0.730)	(-1.463)		
M2000	-2.911	0.928	0.208	-0.021	0.209	-0.016	-0.133	0.967	132.689
t-Stat	(-0.810)	(10.394)a	(1.824)c	(-0.043)	(0.764)	(-0.181)	(-1.052)		
M2001	-7.118	0.662	0.184	0.809	0.296	0.234	-0.224	0.901	43.608
t-Stat	(-1.168)	(4.666)a	(0.873)	(1.003)	(0.630)	(1.490)	(-0.966)		
M2002	-3.843	0.695	0.206	0.339	0.272	0.379	-0.161	0.865	31.972
t-Stat	(-0.547)	(3.506)a	(0.772)	(0.376)	(0.493)	(1.897)c	(-0.574)		
M2003	-7.080	0.830	0.206	0.630	0.132	0.353	-0.523	0.961	121.200
t-Stat	(-2.167)b	(8.234)a	(1.545)	(1.621)	(0.776)	(3.244)a	(-3.508)a		

Notes: “a” means a “significant” level at 1%; “b” is a “significant” level at 5%; “c” is a “significant” level at 10%;

Table 5.2.5 Cross Section Analysis of Location Determinants Affecting FDI Inflows in China. Dependent Variable: Ln(FDI) for Net FDI Inflows. Model: Cross Section Model

Model	c	Ln(Op(-1))	Ln(Lc(-1))	Ln(Hc(-1))	Ln(Meco(-1))	Ln(Tden(-1))	Pindex	Adj. R	F-stat
M1993	9.223	0.782	-1.839	0.034	0.573	0.482	0.443	0.935	68.516
t-Stat	(1.323)	(4.194)a	(-1.968)c	(0.149)	(1.598)	(3.336_a	(1.754)c		
M1994	3.138	0.884	-1.161	0.063	0.561	0.495	0.229	0.914	50.418
t-Stat	(0.530)	(3.949)a	(-1.461)	(0.263)	(1.132)	(2.437)b	(0.728)		
M1995	12.501	0.928	-2.420	0.160	0.813	0.331	0.392	0.923	56.934
t-Stat	(1.812)c	(4.428)a	(-2.606)b	(0.688)	(1.760)c	(1.630)	(1.428)		
M1996	13.190	1.029	-2.594	0.041	1.302	0.198	0.103	0.915	51.169
t-Stat	(1.613)	(4.408)a	(-2.370)b	(0.152)	(2.411)b	(0.870)	(0.340)		
M1997	11.005	1.049	-2.311	0.032	0.661	0.474	0.000	0.919	53.889
t-Stat	(1.448)	(4.894)a	(-2.390)b	(0.129)	(0.998)	(1.950)c	(-0.001)		
M1998	8.592	0.613	-1.611	-0.028	0.800	0.732	0.270	0.879	32.601
t-Stat	(1.201)	(3.963)a	(-1.816)c	(-0.115)	(1.253)	(3.137)a	(1.081)		
M1999	1.657	0.791	-0.885	0.067	0.307	0.716	0.140	0.933	63.807
t-Stat	(0.251)	(4.381)a	(-1.078)	(0.289)	(1.021)	(4.812)a	(0.697)		
M2000	5.597	0.746	-1.385	0.335	0.229	0.679	0.330	0.912	47.416
t-Stat	(0.821)	(4.007)a	(-1.527)	(1.626)	(0.657)	(3.313)a	(1.593)		
M2001	0.311	0.622	-0.362	0.190	0.607	0.385	0.181	0.822	22.492
t-Stat	(0.034)	(2.555)b	(-0.313)	(0.656)	(1.180)	(1.439)	(0.590)		
M2002	8.532	0.994	-1.509	0.021	0.445	0.199	-0.007	0.757	16.084
t-Stat	(0.790)	(3.435)a	(-1.162)	(0.061)	(0.710)	(0.800)	(-0.018)		
M2003	-1.013	0.714	-0.361	0.231	0.852	0.348	-0.263	0.813	22.078
t-Stat	(-0.110)	(3.583)a	(-0.343)	(0.807)	(1.543)	(1.648)	(-0.772)		

Notes: “a” means a “significant” level at 1%; “b” is a “significant” level at 5%; “c” is a “significant” level at 10%;

Figure 1.1.1 Prospect of FDI Inflows and GDP in China

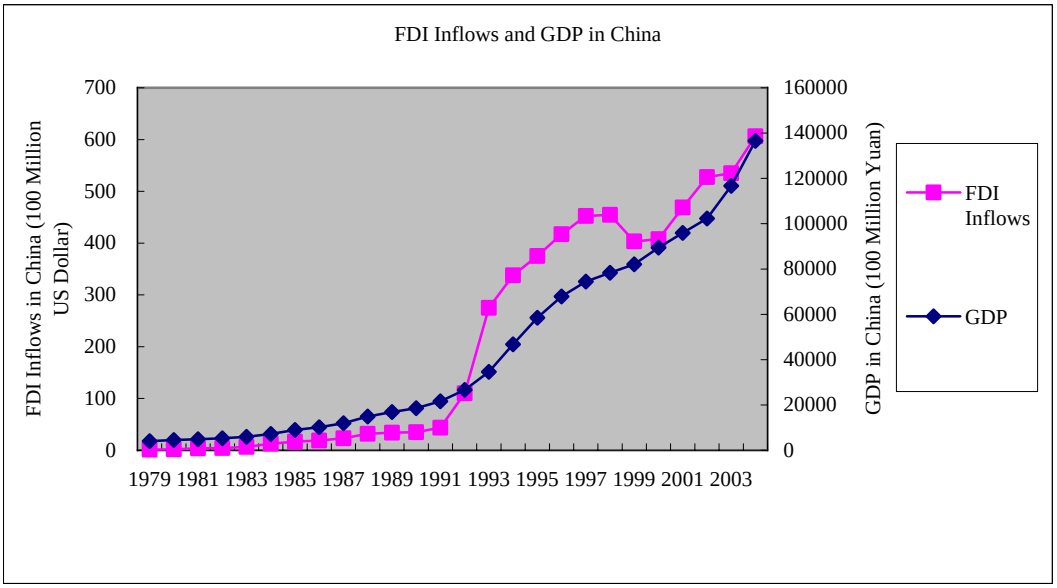

Figure 1.1.2 Growth Rate of FDI, Total Fixed Asset Investment, and Output of GDP

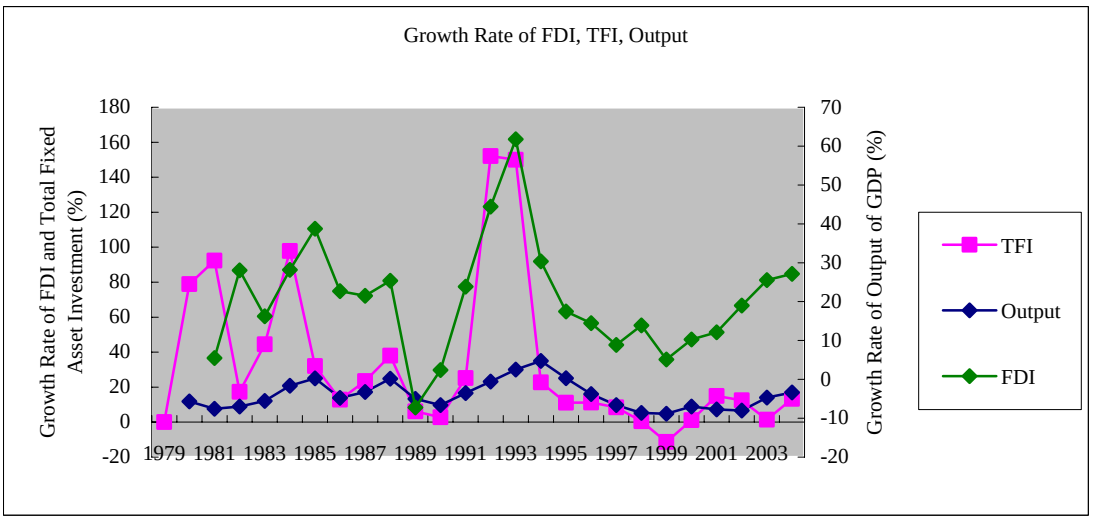

Figure 1.1.3 Shares of FDI Inflows in GDP, TFI, and Trade

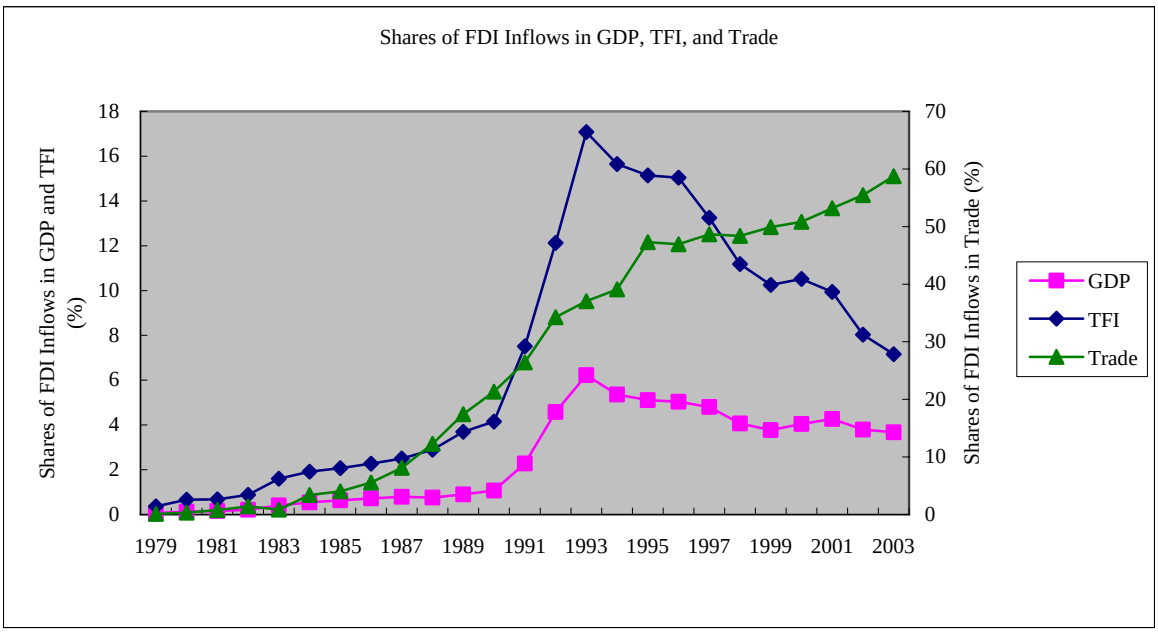

Figure 1.2.1 Distribution of FDI Inflows in Eastern, Middle, and Western Region

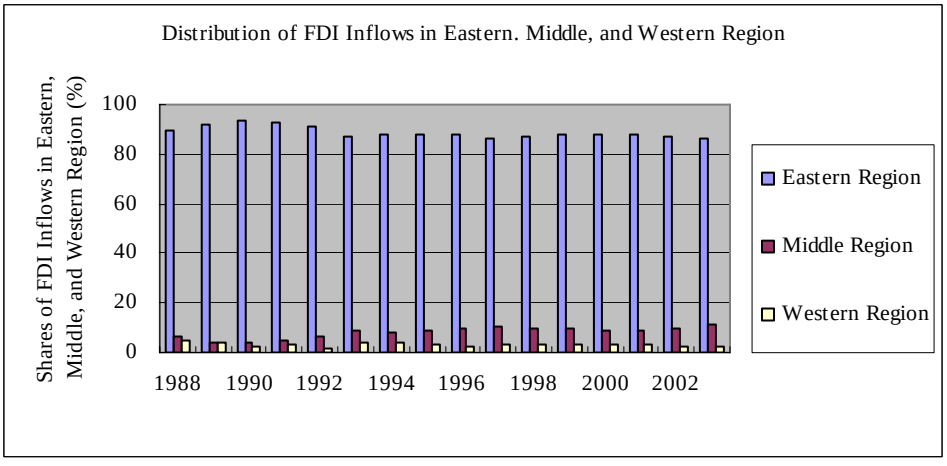

Figure 1.2.2 Distribution of FDI Stock in Eastern, Middle, and Western Region

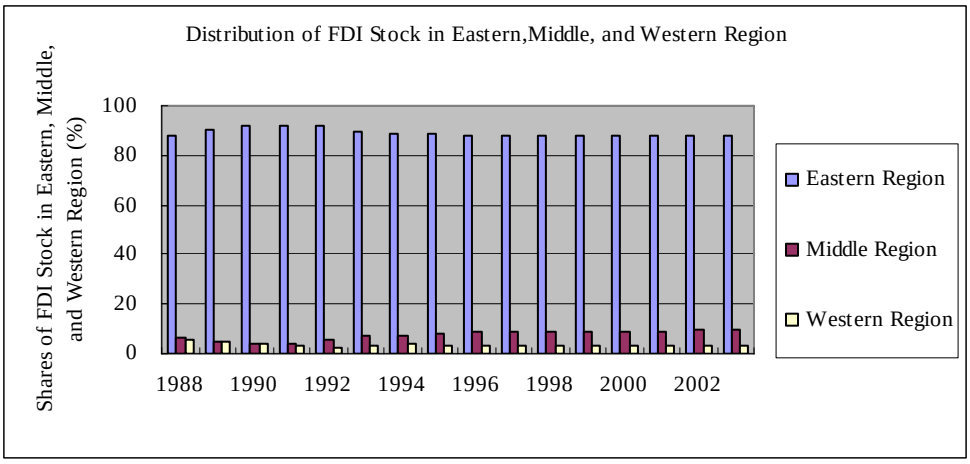

Figure 1.2.3 Distribution of GDP in Eastern, Middle, and Western Region

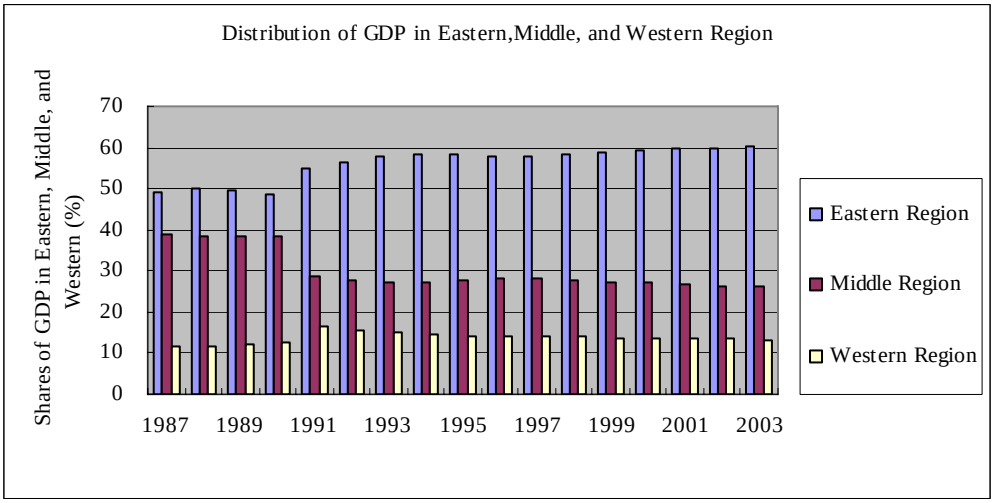

Figure 1.4 The Distribution of Shares of Source Countries of FDI inflows in China (%),