DETERMINANTS OF FOREIGN DIRECT INVESTMENT LOCATION IN CHINA

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A Dissertation Submitted in Partial
Fulfillment of the Requirements for the Degree of
Doctor of Philosophy (Economics)
School of Development Economics
National Institute of Development Administration
2011

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ABSTRACT

Title of Dissertation Determinants of Foreign Direct Investment Location in China

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Degree Doctor of Philosophy (Economics)

Year 2011

The objective of this study was to empirically investigate the determinants that drive the foreign direct investment (FDI) distribution in China on regional level during 1998-2008 from fifteen sampling provinces, through the extensive literature review, as well as through four econometric analysis tools including the ordinary least square method, fixed effects model, random effects model and fixed effects model with interactive terms.

This study examined eight potential determinants including 1) Provincial GDP, 2) Provincial trade openness, 3) Provincial transportation infrastructure, 4) Provincial educational level, 5) Provincial disposable income per capita, 6) Interest rate, 7) Exchange rate and 8) Inflation rate.

Empirical findings indicted that 1) China's market size (proxied by GDP) was a significant determinant for FDI inflow in China as a whole, which is in line with both theoretical framework and previous empirical studies. Regionally, market size positively impacts on FDI inflow in both eastern and central regions while it slightly reduces the attractiveness of western region as a FDI destination. The results implicitly indicate that most of the FDI in eastern and central regions are market-seeking FDI while it was possible that most of the FDI in western regions are source-seeking FDI; 2) Trade openness played a key role on attracting FDI inflow in general. Regionally, it also positively impacted on FDI inflow in eastern region while having no effect on FDI of central and western regions; 3) Unexpectedly, transportation infrastructure had negative effects on MNEs' investment decision in general. Regionally, it also had a negative impact in eastern region, a positive impact in

Western region and has no effect on central region; 4) Educational levels had positive effects on the decision makings of the foreign investors on both country level and regional level; 5) Disposable income per capita was not significant in attracting FDI inflows; 6) Interest rate was not significant in attracting FDI inflow; and 7) inflation rate was not significant in attracting foreign investors as well, whereas 8) exchange rate positively impacted on FDI inflow on both country level and regional level.

It is expected that the empirical results of the study would be useful for both state and regional government make proper FDI promotion policies adjustments.

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my major advisor, Associate Professor Dr. Rachain Chintayarangsan, for his valuable advice, encouragement and guidance in making this dissertation a successful one. I also wish extend my indebtedness and appreciation to all of the committee members, Assistant Professor Dr. Santi Chaisrisawatsuk, Assistant Professor Dr.Wisarn Pupphavesa and Dr. Somchai Harnhirun for the academic guidance and encouragement they gave to me.

My gratitude also goes to all lecturers and professors at School of Development Economics at National Institute of Development Administration and Chulalongkorn University for their valuable support and encouragements. I gratefully acknowledge the econometrics methodolody support provided by Dr. Dilaka Lathapipat, without which this study would not have been possible.

I also would like to thank the librarian from the Library and Information Center, Nida, for their superb support in assisting my dissertation writing in all aspects. Special thanks are also extended to Miss Charlotte Kate in the United Kingdom for the editing of the final stage of this dissertation. Her unconditional love, caring and support has enabled me to maintain the dissertation writing during the hardest period of my life.

Last but not least, I owe a debt of great gratitude to my loving family. That is the deepest love in my life. I always miss and love you all!

Chanida Hongtian

January 2012

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CHAPTER 1

GENERAL INTRODUCTION

1.1 Background of the Study

1.1.1 Global FDI Inflow Statement

The world has experienced an immense transformation regarding geopolitics, economics and allocation of production. The increasing specialization and access to new markets have further helped to promote globalization and accelerate the growth of foreign direct investment (FDI) worldwide (UNCTAD, 2006). To understand the growth trend of FDI inflow, here is a brief comparison: The average annual FDI inflow of the first eight years of the new century (from 2001 to 2008) was 1107.6 Billion US Dollar; however, the average annual FDI inflow over the last eight years of the last century (from 1993 to 2000) was 608.5 Billion US Dollar. The average global FDI inflows volume increased nearly 200% in absolute term, reflecting steady growth in the new century (Table 1.1).

Table 1.1 Global FDI Inflow (Unit: Billion US Dollar), 1993 to 2008

Year	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**93~00**
Global FDI Inflow	231.5	254.7	334.9	393	488.2	690.9	1086.8	1388	608.5
Year	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**01~08**
Global FDI Inflow	817.6	678.8	557.9	710.8	958.7	1461.1	1978.8	1697.4	1107.6

As one of the most important accesses of international economics integration, FDI acts an important role for the economic growth of the regions and countries (UNCTAD, 2009). FDI inflows could bring important benefits to the recipient economies in the form of capital inflows, technology spillovers, human capital formation, international trade integration, enhancement of enterprise development and good governance (Cho, 2003: 99-112). Numerous macro-level and micro-level

empirical works found strong supporting evidence for the exogenous positive effects of FDI on economic growth (Estrin, Hughes and Todd, 1997; Lankes and Venables, 1996: 331-347; Borenzstein, De Gregorio, and Lee, 1998:115-135; Kinoshita and Campos, 2004; Alfaro, Chanda, Kalemli-Ozcan, Sayek, 2006). The importance of FDI on the global and regional economy is obvious and realized. Nowadays, FDI has the essential influence on the contemporary economic infrastructure to significant extent (Table 1.2 and Figure 1.1).

Table 1.2 FDI Flows as a Percentage of Gross Fixed Capital Formation (GFCF)
(Unit: Percent)

Region/Economy		**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
World	Inward	10.6	8.3	7.5	9.7	13.4	16.0	12.3
	Outward	9.7	8.2	8.7	9.0	12.9	17.4	13.5
Developed	Inward	10.9	7.9	6.1	8.9	13.4	17.1	11.4
Economies	Outward	12.0	10.3	10.3	10.9	15.9	22.8	17.9
Developing	Inward	9.5	8.8	10.5	11.4	13.0	13.1	12.8
Economies	Outward	2.8	1.6	4.2	4.3	6.5	7.1	6.1

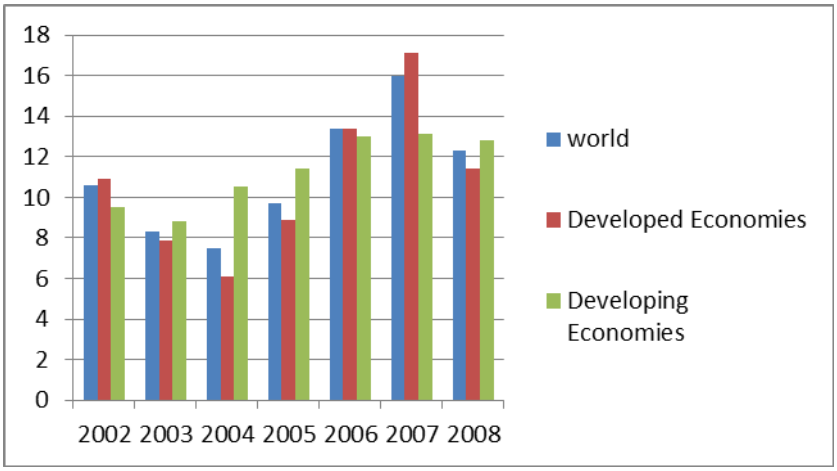

Figure 1.1 FDI Inflows as a Percentage of Gross Fixed Capital Formation (GFCF)
(Unit: Percent)

More than any time in history, countries in all levels of development seek to leverage FDI for development. As the component of capital formation to advance the domestic economic growth, FDI inflow is somewhat more noteworthy for the developing countries than it is for the developed countries. It is suggested that there is bidirectional causality between FDI and economic growth in the long run: FDI has supplement effects on economic development, while great economic growth spurs FDI (Ghazali, 2010: 1-9). People believed that a truthful understanding of FDI determinants has far-reaching significant influences on making precise and effective national FDI promotion policies. As a result, the relative FDI studies prevail in the world. Among the total, the study of FDI determinants in China draw the serious attention of many economic researchers for the aggressive national economic development and outstanding FDI performance. China is definitely well-known by its huge FDI inflow volume in the world, while people have seldom noticed the existing problems, such as uneven regional/provincial FDI distributions. However, these problems closely relates to the economic growth in China.

1.1.2 Economic Growth in China

1.1.2.1 China as the World's Third Largest Economy

China was once considered as one of the most poor and backward countries in the world. Because of this, the economic growth of China in the last three decades has been very impressive for many people. Up to now, China has already maintained the average annual gross domestic product (GDP) growth rate at 9.7 percent over twenty-five years. (Table 1.3, Table 1.4, Figure 1.2) According to the formally released data by the National Bureau of Statistics of China, China became the third largest economy of the world in 2009 with the GDP at $4.91 trillion and annual growth rate of 8.7 percent. Furthermore, as stated by Japanese economists, China would surpass Japan as the second largest economy of the world in 2011 if it maintains the current growth trends (Bloomberg News). The world admires China for the economic realization, but is also curious about how this once isolated country could achieve such success. It is suggested that economic achievement is closely related with the implementation of national economic policy. In this sense, China's economic policy is undoubtedly very wise and successful. After experiencing three

decades of poverty and slow economic development, the Chinese government has been pursuing reform and opening up economic development policies since 1978.

Three essences implemented in the policy are: strengthening export, attracting foreign direct investment and enlarging domestic demands. The first two have been proposed at the very beginning of the economy reform, and the last one is considered as the strategic response to the current world economy slowdown.

Table 1.3 Annual GDP in China (1985~2008) (Unit: Billion US Dollar)

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
GDP	307.0	297.6	324.0	404.1	451.3	390.3	409.1	488.2	613.2	559.2	727.9	856.0
Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
GDP	952.6	1019.5	1083.3	1198.5	1324.8	1453.8	1641.0	1931.7	2235.9	2657.9	3382.4	4519.9

Table 1.4 China GDP Growth Rate (1985~2009) (Unit: Percent)

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
GDP	13.5	8.8	11.6	11.3	4.1	3.8	9.2	14.2	13.5	12.6	10.5	9.6	8.8
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
GDP	7.8	7.1	8	7.5	8.3	9.5	10.1	10.4	11.6	13	9	9.1	9.71

Figure 1.2 China GDP Growth Rate (1985~2009) (Unit: Percent)

1.1.2.2 Uneven Regional Development and Income Inequality

On the whole, China's economic development is truly amazing. However, the Chinese government has encountered two problems which must be solved in the process of development: Uneven regional development and income inequality. With regard to the former, it is concerned with the economic administrative division and corresponding regional policies. With regard to the latter, it is one of inevitable consequence of uneven regional development, also an issue of which Chinese central government is trying to address with strong desire.

According to the geographic administrative division, China is divided into 23 provinces, 5 autonomous regions, 4 municipalities and 2 special administrative regions. However, amongst them, Taiwan province and the two special administrative regions including Hong Kong and Macao are not within the jurisdiction of the Chinese center government in the actual administration. Therefore, Mainland of China is divided into 31 provincial administrative regions (Hereinafter will be called as provinces, including autonomous regions and municipalities) in actual sense.

According to the economic administrative division, China is divided into three regions since 1986 as eastern region, central region and western region. After several adjustments, it was officially announced in 2005 that eastern region includes 11 provinces: Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jingsu, Zhejiang, Fujian, Shandong, Guangdong and Hainan. Central region includes 8 provinces: Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hunan and Hubei. Western region includes 12 provinces: Inner Mongolia, Guangxi, Sichuan, Chongqing, Guizhou, Yunnan, Shannxi, Ganxu, Qinghai, Ningxia, Xinjiang and Tibet. It should be noted that the division of China into three regions is based on the division of the economic policies and degree of regional development, rather than administrative division, nor is geographical concept. Therefore, it is easier to understand why eastern region is called the coastal region, although some provinces and municipality of this region, for instance Beijing, don't belong to the coastal area geographically. To the contrary, central and western regions are collectively called the inland region. This title is appropriate geographically as well. These provinces don't benefit from ocean transportation.

China's speedy economic growth has been based on an explicit regional policy, in which eastern region has been positively encouraged to become wealthy before others. The result is an extremely differentiated economic geography and uneven regional development (Goodman and Segal, 1994: 1-19). Eastern region benefits from the regional reform and opening up policies, maintains sustained and rapid economic development and grows into be the pioneer of the Chinese economic growth; while central and western regions' developed relatively slow. The latter two regions do not benefit from the related polices. The key to the uneven regional development was the partially reformed nature of China's economic policy (Chen, 1996: 18-30). (The details of regional development and related economic policy will be described in Chapter 2.)

Income inequality is one of complaining consequences of uneven regional development. Instead of previous "equal poverty", income inequality becomes to be one of the most serious issues of the Chinese economic growth. The gap between rich and poor as a problem affects social stability. According to Xianhua News on August 5, 2011, China's current Gini coefficient of 0.48 has far exceed the 0.4 of the internationally recognized warning line. Income inequality has caused many social problems. Some domestic economists believe that the regional economic development policies are to some extent responsible for the current widening gap in income distribution. These policies created inequitable distribution of resources, and exacerbated the inequitable distribution of social wealth. Further, these scholars argue that the situation of income inequality will continue to get worse if the government does not make a quick adjustment to it. Large-scale social unrest caused by income inequality throughout the China is not impossible. No one wants to see that anyhow.

As assuming that uneven regional development is the one of the root causes of income inequality, regionally synchronous development could be a solution. Chinese state government promised a rising of the real standard of living, and stressed this for the people living in central and western regions in particular. Structural adjustments towards the regional economic policies as part of the development process are then necessary. In response to the structural adjustment, attracting FDI into the relative less developed regions is undoubtedly a practical proposal. The successful methods of coastal region could be used for references in inland regions.

1.1.2.3 Successful FDI Host Country

For several reasons, China has acquired a significant role in the world economy as producers of goods and services (Vijayakumar, Sridharan and Rao, 2010: 1-15). China is considered as one of the most successful FDI receipts worldwide for the outstanding performances in both aspects of attracting and utilizing FDI. In 2008, along with the annual FDI inflow achieved at 108.3 Billion US Dollar, accounting for 6.4% of global FDI inflow, China became the second largest FDI host country, matching with country's efforts to integrate with the world economy. Before then, it had successively retained its place as the biggest FDI recipient among the developing countries since early 1990s (China was the largest FDI inflow recipient worldwide in year 2003). FDI inflow into China maintained a quite unwavering growth comparing with the somewhat wavy global FDI inflow trend (Table 1.5 and Figure 1.3). MNEs continuously move their cross-board operations to China to take advantage of its huge domestic market and cheap labor costs, both in financial value and investment deals. According to UNCTAD, China remained the most attractive destination for FDI in the developing world despite the global financial crisis, because of its quite stable economy compared with the situation worldwide. It is expected that this kind of tendency will be kept in the future several years if the given conditions and factors exert pull on MNEs do not change essentially.

Table 1.5 Global VS China FDI Inflow (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
China FDI Inflow	44.2	40.3	40.7	46.9	52.7	53.5	60.6	72.4	72.7	83.5	108.3
Global FDI Inflow	690.9	1086.8	1388.0	817.6	678.8	557.9	710.8	958.7	1461.1	1978.8	1697.4
Percentage*	6.58	3.71	2.93	5.74	7.76	9.59	8.53	7.55	4.98	4.22	6.38

Note: Percentage Refers to China FDI by the Global FDI.

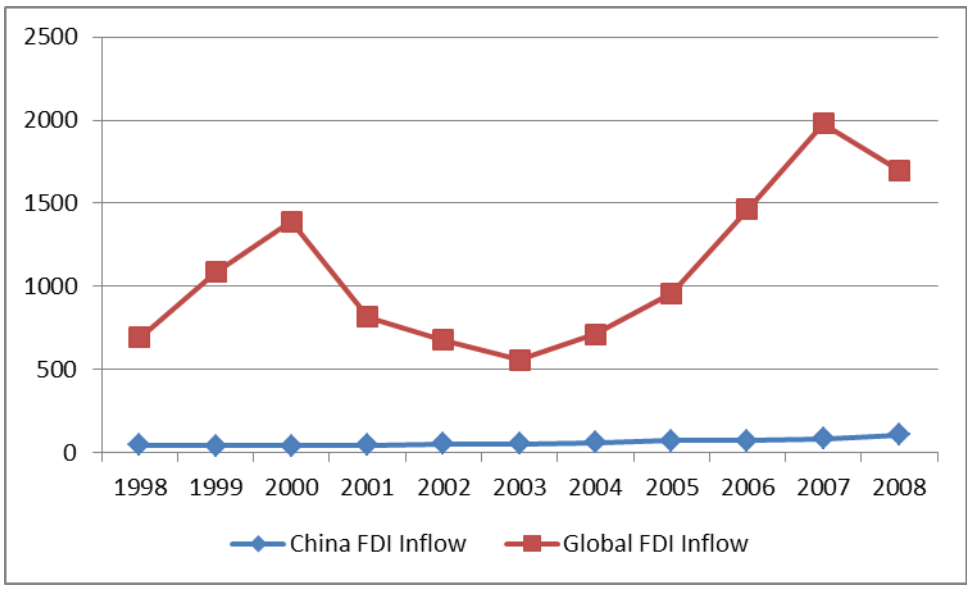

Figure 1.3 Global VS China FDI Inflow (Unit: Billion US Dollar)

China is indubitably a wise and successful FDI receiver. MNEs carried about a sufficient amount physical capital that China is searching for. FDI made a substantial contribution to the China's local economy building up (Madariaga and Poncet, 2007: 837-862). From 2002 to 2008, FDI flows as a percentage of gross capital formation is annually 7.61% on average. (Table 1.7)

Table 1.6 FDI Flows as a Percentage of Gross Fixed Capital Formation (GFCF)

	2002	2003	2004	2005	2006	2007	2008	Average*
FDI Inflow	527	535	606	724	727	835	1083	719.6
Gross Fixed Capital	5067	6221	7390	9402	11359	13917	18050	10200.9
Percentage**	10.4	8.6	8.2	7.7	6.4	6.0	6.0	7.61

Note: Average Refers to Annual Average from 2002 to 2008.

The importance of FDI on the national growth of China is not only as one kind of physical capital for the external finance. Besides the contribution being an important portion of the gross fixed capital formation, FDI dedicates greatly to the other aspects of China economics, for instance, international trade.

As well as many other developing countries worldwide, China pursues the export-orientated development policy from the very beginning of economic openness in the early 1980s. The entrance of China into the World Trade Organization (WTO) in 2001 suggested that trade would continued to play an important role in the country's economic development. So far, China is the biggest exporter worldwide. Huge amounts of export and the followed trade surplus contributed for the GDP growth. The data released by Ministry of Commence in China (Table 1.7) indicates: From 2002 to 2009, the annual average nationwide export was 867.08 billion US Dollar, and the annual average of MNEs' export was 489.41 million US Dollar, it means that 56.11% export was created by MNEs on average. In addition, the annual average of GDP during these eight years was 1,453.83 US Dollar, it means that 30.31% GDP was formed by export. Taking account of two ratios, people will find out that 17.1% GDP in China was created by MNEs through net export. It is a numerable illustration to show the importance of FDI on the Chinese economics (Figure 1.3).

Table 1.7 Export as a Percentage of Gross Domestic Product (GDP) and Ratio of Nationwide and MNEs' Export (Unit: Billion US Dollar)

Year	2002	2003	2004	2005	2006	2007	2008	2009	Average*
Nationwide Export	325.569	438.403	593.359	762.0	969.08	1218.016	1428.546	1201.66	867.08
MNEs' Export	169.937	240.341	338.606	444.21	563.835	695.52	790.62	672.23	489.41
GDP	1453.83	1640.96	1931.65	2235.93	2657.85	3382.44	4519.94	4909.0	1453.83
Ratio**	52.2	54.8	57.1	58.3	58.2	57.1	55.3	55.9	56.11
Percentage***	22.4	26.7	30.7	34.1	36.5	36	31.6	24.5	30.31

Note: *Average Refers to the Annual Average of Export from 2002 to 2008.

**Ratio Refers to MNEs' Export by Nationwide Export.

***Percentage Refers to MNEs' Export by GDP.

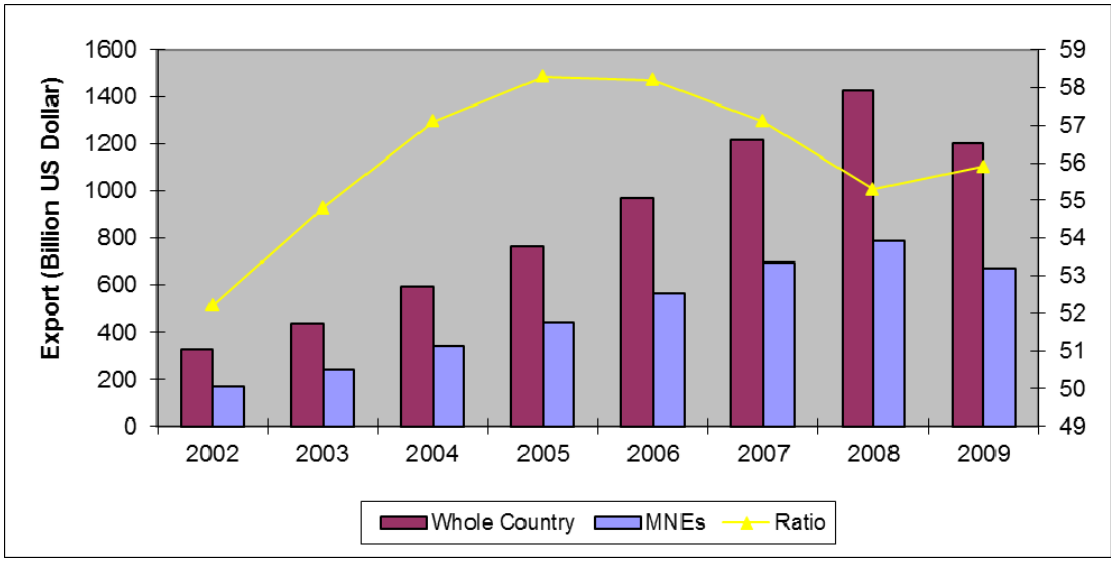

Figure 1.4 Export as a Percentage of Gross Domestic Product (GDP) and Ratio of Nationwide and MNEs' Export (Unit: Billion US Dollar)

Besides the accomplishment of export, there are other economic sectors that China greatly profited from the FDI as well. From 2002 to 2008, MNEs accounted for 28% of China's industrial added value, contributed to 20% of national taxation, imported about 52% of the country's total goods and accounted for 11% of local employment (Yunshi and Jing, 2008; Amiti and Javocik, 2008: 129-149).

Most international economists affirmed that the prospect for China to attract FDI inflow is surely bright. FDI would continue to express immense power in promoting China's economic growth while China is attracting more and more new MNEs into the country. However, domestic economists have different concerns --- The existed uneven regional/provincial FDI distribution has caused unequal development among regions and the followed income inequality. Scholars suggest that the state government should adjust the current reform and FDI promotion policies to encourage more foreigners to invest in inland region, aims to ending the existing uneven regional FDI distribution state, and then reduce the level of income inequality more or less.

1.1.2.4 Uneven Regional/Provincial FDI Distribution

The existing uneven regional development level was a definite concern to China's economic reform and development polices and approaches. China's early reforms were focused mainly on the economic development of the coastal region, with the aim of attracting foreign capitals. China's FDI inflows have greatly contributed to economic growth in general and to export industry in particular. However, both FDI and domestic export industry have been highly concentrated in the eastern coastal region, resulted by the uneven FDI distribution and unequal development among regions (Liu and Li, 2007: 449-470).

The promotion policies impacts on FDI into the region were confirmed by the FDI value into the coastal region. Comparing with the best FDI performance of coastal region, less developed inland regions lie in completely different circumstances (Table 1.8 and Figure 1.4). Besides, it is expected that such difference would be enlarged if the FDI promotion focus not changed.

From 1978 to 2008, 82.52% of MNEs were invested in eastern provinces, 8.14% were invested in central provinces, 4.49% were invested in western provinces, and the rest 4.85% were invested in the others (The others refer to finance, banking and insurance units. From 2005 on, China counted these three units additionally.) Each province in China differed widely in their ability to be a focus for FDI. The eastern provinces (geographically belong to coastal provinces) attracted much more FDI than central and western provinces (geographically belong to inner provinces).

Table 1.8 Statistics of FDI in Different Provinces as from 2002 to 2008

(Unit: Percent)

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**~ 2008**
East	86.7	85.88	86.11	73.97	81.94	78.59	72.33	82.52
Central	9.5	10.90	11.01	6.67	5.65	6.53	6.87	8.14
West	3.8	3.22	2.88	2.68	3.13	4.41	6.11	4.49
The other	-	-	-	16.68	9.28	10.47	14.69	4.85

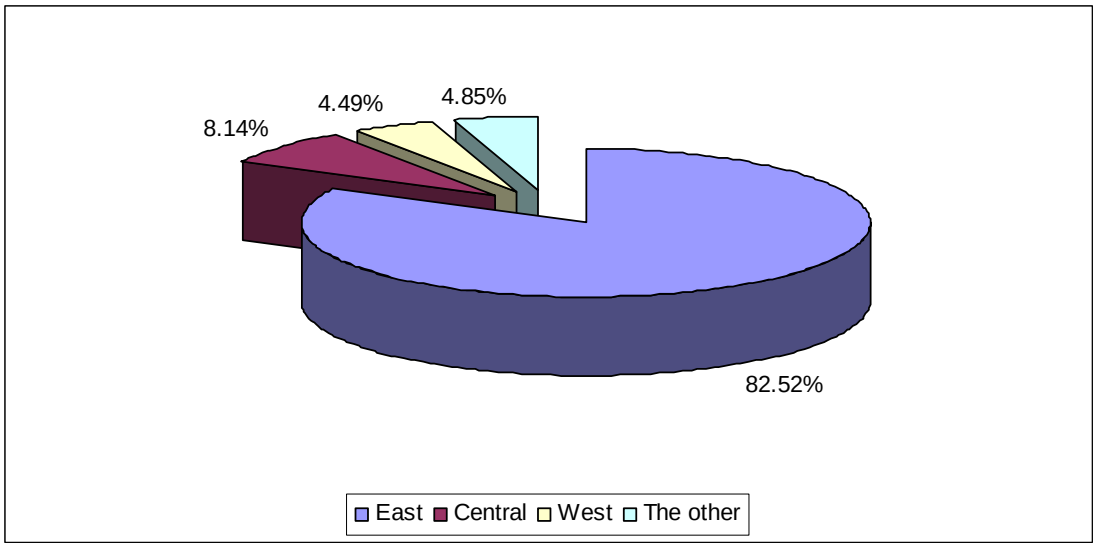

Figure 1.5 Statistics of FDI in Different Provinces as from 2002 to 2008 (Unit: Percent)

There is a long-standing impression among policymakers and economists that FDI is more conducive to long-run growth and development than other forms of capital inflows (Walsh and Yu, 2010) because of its relatively stable characteristics. Given that FDI has long run influences on the economic growth, for instance, the GDP of the province, average income standard of the resident, and the employment chances (Grossman and Helpman, 1990: 796-815); uneven provincial FDI distribution possibly enlarges the already existing economic differences between the provinces. It is opposite to China's recent full scale development principles and the accordant FDI policies and strategies.

1.2 Motivations of the Study

1.2.1 Recent FDI Policy in China

Nationwide, China has made great progress in providing business environment conducive for FDI. However, the great differences about FDI performance between the provinces forced Chinese government to transfer the focus of FDI promotion strategies from coastal region to the inner region. The priority of latest FDI policies in

China is to create an overall attractive investment atmosphere, encourage FDI in western and central provinces with special incentives which had delivered on eastern provinces. After the coastal provinces, inner areas turn into to be the new focus of the FDI promotion planning. In the past days, Chinese government had successfully attracted and utilized FDI to speed up the economic growth in coastal provinces. However, people wonder if the same strategies would be effective in the inland region, and if the successful FDI story would be repeated once again in western and central provinces. Various geographic and economic differences between coastal and inner region really exist. People query for: What makes MNEs invest in inland provinces? Are the factors which pull exert on FDI inflow in different regions, the same or not? How to the innland provinces attract more FDI inflow in practice?

Briefly, what are the regional/provincial FDI determinants in China?

1.2.2 Limitation of FDI Determinants Study

So far, it is rare to see the study of regional/provincial FDI determinants in China. Empirical works frequently focus on the aggregate FDI determinants. Annual data was usually used to explain the location decision of MNEs at the state-level. Ever so, there are some problems still exist.

Perhaps the first and the most important problem is quality of the data. FDI is a long run phenomenon in the field of international capital movement. From a completely isolated economy, China pursued open country up to world policy almost thirty years. Thirty years is long enough for economists to do the related researches if the data is available. Unfortunately, the data of China was somewhat unintelligible and fuzzy. Dr. John Frankenstein, a famous American specialist in China affair who is research associate of Weatherhead East Asian Institute of Columbia University once criticized, “Everything you hear about China is true. But none of it is accurate.” This status got improved after China’s entry into WTO in 2001. New data released by National Bureau of Statistics of China was thought as more truthful than before. However, the data before 2001 has not been corrected. The second issue is the definition of FDI. Before 1998, the classification of foreign capital investment was not completely clear. Both foreign direct investment and foreign portfolio investment were classified into “foreign investment” in Chinese language. The translated English

version commonly misled the foreign researches. The adopted data which used to investigate FDI was often the total amount of FDI and foreign portfolio investment in China. Thirdly, sourcing provincial/regional data in China itself is a very difficult matter. Even the domestic researchers cannot obtain all of information. The data are incomplete, especially in inland region. Furthermore, this data has never published in English, making it difficult for foreign researchers to investigate provincial/regional FDI in China because of the language barrier. Fourthly, China domestic scholars preferred the research of the positive sides of country-specific economics to the negative sides because of some delicate motives, especially if the subjects relate to international affairs. Resultantly, the provincial/regional FDI determinants studies are not always available.

1.2.3 Benefits of the Study

However, to understand what attracts FDI inflow to the provinces is primal for the current inland provinces FDI promotion policies. Without the accurate knowledge of regional/provincial FDI determinants, it is hard for the policy makers to formulate the correct FDI promotion policies.

China is a large country consisting of 31 provinces which have the individually provincial features by any measure. The relative developed provinces have attracted a huge amount of FDI for their absolute and comparative advantages. The less developed provinces also have its absolute and comparative advantages which foreign investors could be interested in. It is still a question if the facts that attract FDI inflow to the relatively developed provinces would be the same as the facts that attract FDI inflow into the less developed provinces. Relatively less developed provinces tend to have relatively poorer institutions and lower development growth comparing with the developed counterparts. FDI inflow has special characters in both the location advantages and government aid. Nevertheless, the less developed provinces still have the advantage of relative cheaper labor cost as some compensation. Besides, the unique geographical characteristics and natural resources of the relative less developed provinces should have vital influences on the location decisions of MNEs as well.

It is obvious that FDI inflow is very important for the economic growth of developing countries. The study of regional/provincial FDI determinants could be some useful reference for the further research in the related field. Furthermore, it is possible that a better understanding of the regional/provincial determinants could help policy makers to carry out effective policies and strategies to improve the overall investment environment, create attractive regional/provincial investment atmosphere in individual area, and reduce the level of uneven regional FDI inflow.

1.3 Research Questions and Approaches

1.3.1 Research Question

It is believed that suitable and practical regional FDI promotion policy could help to compete for more external capital and reduce the level of uneven regional FDI inflow. However, prior to the official release of the policies, many factors of individual region and/or provinces should be taken into account in advance by the governmental policy makers. Do the confirmed major factors drive FDI into China nationwide such as market size and cheap labor cost have influences on regional/provincial FDI inflow (Whalley and Xian, 2006)? Do the decisive factors stated by Ministry of Commerce of China, such as openness of the trade, infrastructure of the province, transportation status, the education level of the labor, the supply of total work force have the influence on regional/provincial FDI inflow (Milner and Pentcost, 1996: 605-615)? Do the policy related factors and risk factors such as the timing of FDI promotion policy, interest rate, inflation rate, corporate tax rate, exchange rate, have influences on regional/provincial FDI inflow (Madariaga and Poncet, 2007: 837-862)? Do the geographic factors such as the regional location, transportation cost and conveniences of the province matter (Dunning, 1981); Schneider and Frey (1985: 161-175)? All queries lead to main research question: What are the regional/provincial FDI determinants in China?

1.3.2 Research Approaches

Because of the macroeconomics nature of the study, the research approach such as company survey using the questionnaires and interviews, or the annual report

released by one company, are not suitable. To analysis the factors that exert pull on FDI inflow in China and answer the research question, secondary statistics including provincial data and aggregate data were chosen. The concerned provincial data and the other economic data are chosen from the related provincial Government Annual Working Report. The concerned aggregate data are chosen from the related State Government Annual Working Report released by Ministry of Commerce of China. The aggregate secondary data (national level part) have been confirmed by the United Nations. The adopted data is internationally comparable.

Time-series analysis would not be adopted in the dissertation for the observation concern. FDI is one sort of long run international capital movement, less observation and lack of degree of freedom will affect the accurateness of the research. Instead of, the panel data estimation is selected to capture the dynamic behaviors of the parameters and to provide more efficient estimation and information of the parameters. The ordinary least square (OLS) method can provide consistent and efficient estimates of intercept α and slope β (Vijayakumar, Sridharan and Rao, 2010). In practice, the advantage with panel data is that they allow the researchers to test and relax some of the assumptions, and allow for greater flexibility in modeling differences in behavior across individuals (Matyas and Sevestre, 1996). The dynamic approach offers advantages to OLS method and also improves efforts to examine the FDI growth links using panel Procedures (Carkovic and Levine, 2002).

Accurate and internationally comparable FDI statistics constitutes the transparency of the country's FDI real status. In order to analysis FDI determinants in China, both the regional/provincial and aggregate data would be used in the dissertation. The regional/provincial data used to explain the FDI inflow are summarized from the releases of Government Annual Working Report of each sampled province, and the aggregate data are summarized from the releases of National Bureau of Statistics of China and Ministry of Commence in China.

The dissertation aims at make a contribution to current research of FDI inflow determinants in China. The data used to explain regional/provincial FDI inflow determinants have not been used previously. It is hoped that the study will provide some new findings.

CHAPTER 2

REGIONAL FOREIGN DIRECT INVESTMENT AND ECONOMIC DEVELOPMENT IN CHINA

2.1 China's FDI Development History

As a whole country, the outstanding FDI performance in China has caught the attention of whole world. FDI has been a key drive of economic growth in China for thirty years (Dullien, 2005). Many people would have intuitively thought that the huge size of the country was the most important factor to attract the foreign investors. The thoughts and intuitions indeed have their reasons, but were lopsided anyway. Despite the huge country size, attracting FDI into China is an ongoing process and it did not proceed smoothly without hitches. (Boremans, Roelfsema and Zhang, 2011: 1-2). The policy makers encountered lots of difficulties and issues. For instance the Chinese state government is doing its best to address the challenges that have arisen from uneven regional distribution of FDI inflow recently.

There are a series of factors that could be responsible for the current uneven regional FDI distribution status, and these factors could be considered from roughly two different aspects . On the one aspect, every region has its unique economic and geographic characters, and these unique characters truly affect the related FDI performances. On the other aspect, the timing of the implementation of FDI promotion policies in the different regions by China central and regional/provincial governments was different. The timing difference between regions/provinces mattered as well, although the policies themselves were quite similar. With regard to the first aspect, it would be described and discussed in a later sub-chapter of this chapter. With regard to the second aspect, it is related to the FDI development history and different periods in China.

According to the timing and focus of the implementation of FDI promotion policies in different regions, FDI development in China fell into three successive phases correspondingly. Three different phases had three different areas as centers of attention respectively: 1) Beginning Phase --- Shenzhen and the other three SEZs, 2) Expanding Phase --- 14 Coastal Cities, 3) Current Phase --- Central and Western Provinces pan-Pearl River Delta Economic Zone.

All three phases would be discussed in the followed subchapters.

2.1.1 Beginning Phase --- Shenzhen and the other Three SEZs

China, as the biggest communist country in the world today, was established in the year of 1949. From then on, it pursued a so-called closed door economic policy for 39 years. The result of economic isolation of the whole country was the extremely weak economic status. The national economy completely stagnated in the last several years. Luckily, the terrible state of economy finally changed.

In 1978, Deng Xiao Ping took power and became the leader of the government at that time. As a man and policy maker of keen intellect, he realized that the only approach for changing the terribly national state of economic was a real economic revolution. It meant that it was necessary for China to rebuild the national economic system and change existing economic policies in order to achieve rapid modernization of the country within a socialist framework. As a result, economic-oriented country policy ceremoniously appeared on the national stage, substitute for political-oriented country policies which practiced for 39 years before then. The focus of national policy finally moved from the politic events to the building of the economy. Deng's economic system revolution was decisive and thorough, aimed at gradually replacing the former socialist command (centrally planned) economic system with an open market economic system. Economic reform and opening-up policies were then raised and got widespread support among the elite and the masses of the country.

Unfortunately, China was facing a very grave economic situation at the beginning of the implementation of economic reform and opening-up policies. At that time, even if the government and enterprises had a great desire to invest, (but constrained by the savings and per capita income), they still lacked the necessary capital to invest. Praise-worthily, Deng Xiao Ping strived for his aim with great

courage. He believed that if the economic growth in China was subject to the constraint of domestic savings, it was better to turn to the use of international resources to promote economic growth (Cheng and Kwan, 2000: 379-400). Attracting foreign investors including overseas Chinese could be one of the best solutions (Chinacity, 2009: 1-4). That was the cause of the so-called “opening up” policy. In the following decades, China promoted the country itself at full functions, more and more MNEs entered into China with the capital that the Chinese required advancing the domestic economic growth. FDI greatly contributed to the economic development in China. (Chen, 2009).

However, the actual implementation of an opening up policy was not easy to handle. It was hard for people living in a once pure communist country to accept the concept of trading with the foreign countries in the first several years (Chen, 2009). Although China did make a decision to pursue an economic reform from 1978 on, it has never considered a point of political reform anyway. International trading and the related foreign investment were regarded as something in conflict with political ideology and the socialist system.

In order to solve the mentioned problems, the concept of special economic zones (SEZs) was first proposed by Chinese state government in 1979, and firstly established in Shenzhen, a border city in Guangdong province in May of 1980. (In August of the same year, another three SEZs were established in Zhuhai and Shantou as two cities in Guangdong province, and Xiamen as a city in Fujian province.) Chinese center executed special economic policies and flexible governmental measures in SEZs. state government allowed SEZs to utilize an economic management system that was especially conducive to doing business with the outside world. In addition, economic and other laws executed in SEZs are more free-market-oriented than national laws executed in the other rest areas. However, the special economic zones are still politically based on assurance of China's state sovereignty and governing authority is wholly in China's hands. Thus SEZs were not in basic conflict with China's socialist economic system (Xu, 1981: 1-2).

There are many considerations that had been taken into account during the decision-making process regarding the strategic decision of selecting Shenzhen as the first SEZ. However, the most important one was its special geographical location. It is a city close to Hong Kong, and the latter was regarded as the bridge for China to connect the outside world for lots of specific concerns

Historically, Hong Kong was a British colony from 1842 to 1997, has a major capitalist service economy mainly characterized by free trade and lower tax rate. Hong Kong has implemented a western style free-market-oriented economic system in the past centuries. Its economic freedom, financial and economic competitiveness are all highly internationally ranked. For the purpose of maintaining the role of Hong Kong as one of the most important economic centers in the far-east area while giving an impetus the economic reform in mainland of China, famous “One country, two

policies" concept was drafted by Deng Xiao Ping on February 22, 1984, and successfully implemented in 1997. Under the principle of "One country, two policies", Hong Kong which still has a "high degree of autonomy" in all matters except foreign relations and military defence, governs its current political and economic system after 1997 (Ghai, 2000: 92-97). Because of the mentioned specific characters, China traded with the outside world through Hong Kong until the overall open door policies were implemented in the whole country. Besides, Hong Kong is first and biggest foreign investor economy of China as well. Thus, Hong Kong acted the important role in economic growth in China, especially in the first several years of implementation of reform and opening-up policies. Thus, as the closet city to Hong Kong in main land China, Shenzhen has its unique geographic advantages on international trading and attracting foreign investors. Shenzhen was set as the first SEZ in China, aimed at encouraging foreign investment, enhancing the export and establishing a stable base for the further economic structure reform of the whole country.

In May of 1980, Chinese state government officially established the first SEZ in Shenzhen. However, FDI was a completely fresh concept for most Chinese at that time, and foreign investment in China was just a unique phenomenon of Shenzhen where was a small city in eastern region. People including both oversea and domestic economists wondered if FDI would help to promote the economic development in Shenzhen, and worried if FDI would have negative effects on the ongoing economic development. Even Deng Xiao Ping himself admitted several years later that setting Shenzhen as the first SEZ in China was quite risk then. According to him, Shenzhen was like an economic lab for the future state-level economic development and opening up policies' implementation in the beginning. Inspiringly, the velocity of the economic reform in Shenzhen was much quicker than the initial scheduling of the state government. As the first SEZ opened to foreign investors, Shenzhen greatly benefited from FDI promotion policies, attracted MNEs with both financial incentives such as low tax rate offered by state government and cheap labor costs. Foreigners (mostly Hong Kong investors) entered and invested in various sectors of industries of the city. Shenzhen developed into one of the most developed municipalities with best economic returns nationwide in China in a few years.

The development speed in Shenzhen was really astonishing. In 1979, per capita GDP of Shenzhen was barely 606 Yuan, or 389.7 US Dollar according to the exchange rate then (Shenzhen City, 2008). Only three years later, in 1982, per capita GDP of Shenzhen was 1480 Yuan, or 783.1 US Dollar according to the exchange rate then. It was two times bigger comparing with 1979's record, topped all the municipalities in mainland China at that time. The life quality of the citizen got greatly improved. With regard to the other economic index such as average personal income and total export volume, Shenzhen also leaded mainland China's large and mid-size municipalities. At present, Shenzhen's GDP took the fourth place of the whole country, while its government revenue ranked third among large and mid-size municipalities in China. Shenzhen's total import and export volume accounted for one seventh of the country's total, leading the country in this regard for more than 12 years (Shenzhen City, 2008).

After Shenzhen, China state government established Zhuhai and Shantou in Guangdong Province and Xiamen in Fujian Province as the SEZs in the same year as well. The latter three SEZs achieved a gradual increase in economic growth. The qualities of life of the people living in the areas got great improvement as well, although they were not as well-known as Shenzhen. In general, as the pioneers of the implementation of the reform and opening-up policies, four SEZs accumulated a lot of related experiences for the further national level economic reform while improving the general economic states in the areas. FDI changed economic structure of these areas while bringing resource transfer, in terms of capital and technical knowledge**.** As the results, hi-tech industry, modern logistics, financial services and cultural industry became the four economic pillars of the SEZs, instead of the previous agricultural-based economy structure. Furthermore, the economic success of Shenzhen and the other three SEZs gave an impetus to the economic growth of both Guangdong and Fujian provinces (where SEZs geographically belonged to) as a whole, and formed the basis for the future Pearl River Delta Economic Zone which was officially established in 1994 and pan-Pearl River Delta Economic Zone which was officially established in 2011.

Benefited by reform and opening-up policies including FDI promotion policy, from a relative undeveloped city, four SEZs and the provinces they geographically

belong to grew up to be the most dynamic area in the Chinese Mainland. The great economic achievements encouraged state government to make a decision: Open another 14 coastal cities to be new FDI promoted areas.

2.1.2 Expanding Phase --- 14 Coastal Cities

Shenzhen and the other three SEZs had monopolized the leading positions of both economic growth and FDI performance in the beginning of implementation of the reform and opening-up policies. However, the situation was changed four years later. In 1984, another 14 coastal cities including Dalian (of Liaoning province), Qinhuangdao (of Heibei province), Tianjin (metropolis), Yantai (of Shandong province), Qingdao (of Shangdong province), Lianyungang (of Jiangsu province), Nantong (of Jiangsu province), Shanghai (metropolis), Ningbo (of Zhejiang province), Wenzhou (of Zhejiang province), Fuzhou (of Fujian province), Guangzhou (of Guangdong province), Zhanjiang (of Guangdong province) and Beihai (of Guangxi province) to overseas investment, leading to a substantial FDI surge in that year. These 14 coastal cities are all major cities and seaports of the provinces they geographically belonged to. Comparing with four SEZs, the newly opened cities possessed some different competitive advantages. Before becoming the first SEZ in China, Shenzhen was just a small-sized city unknown to the public, the economic infrastructure was weak. On the contrary, these cities mostly possessed a strong economic infrastructure for quite a long time. For instance, Shanghai was the biggest city in China, always had a special importance in country-level economics. Besides, all these cities have the advantages of transportation as well. Therefore, more and more MNES entered into China. At the same time, both the SEZs and newly opened 14 coastal cities competed for more FDI inflow in order to speed up the area economic development. Some people worried if such competition would have negative effects on national economic growth. Luckily, four SEZs and 14 coastal cities all benefited from FDI inflow. The competition was positive and helpful.

A positive interaction existed between FDI inflow and economic growth in China. Both areas utilized foreign capitals to build the local economy while the economic development of the areas was attracting more and more MNEs. Just like Shenzhen did for the economic growth of Guangdong province, 14 coastal cities gave

an impetus to the provinces they geographically belong to as well. Jiangsu, the biggest province among them, attracted the most FDI inflow in 2002 for the first time, and replaced the Guangdong province of Shenzhen to be the biggest FDI host province in China from 2004 on. In addition to Jiangsu province, the other provinces such as Zhejiang, Hebei, Shangdong and Shanghai metropolis all got remarkable achievement after the implementation of economic reform and opening-up polices. It is worthy to note that the economic success of Shanghai, Jiangsu and Zhejiang provinces formed the basis for the future Yangtze River Delta Economic Zone which was officially established in 1992. Geographically, the mentioned three provinces and metropolis belong to Yangtze river delta.

It was a truth that the one of the most important factors of attracting FDI into Shenzhen and the other three SEZs was their unique geographic locations, while one of the most important factors attracting FDI into these 14 coastal cities was their strong economic infrastructures. However, the referred difference straightly reflected the adjustment process of FDI promotion strategies in China.

When Deng Xiao Ping determined to set SEZs in Shenzhen and the other three cities, the Chinese government still had various concerns about the future and growth trends in both economic and political aspects. Therefore, state government stipulated that all FDI projects should get the approval of Beijing directly before executing. MNEs could not threaten the local competitors in any industry the FDI engaged in. Regulations state that no less than 75% of the goods produced by MNEs in China must be exported to foreign countries. Domestic trading protection was the tide of popular opinion. Most foreign investors had doubts about China's FDI policies. Mainly because at least 75% of production must be exported, transportation cost definitely would be a serious concern of MNEs. The unique exception was Hong Kong investors. Accordingly, Shenzhen and Guangdong province could be ideal location candidates of FDI inflow in China. During this period, most FDI focused on labor intentive industries. Thus, cheap labor cost could be thought as the main FDI inflow determinant, and China was labeled as "world factory" afterward (Zhao and Zhu, 2008; Zhang, 2006: 22-27).

However, things could be changed over time. The rapidity of economic growth in China was truly aggressive. Along with the experienced accumulation of

domestic economic growth and familiarization towards the outside world, Chinese state government gradually accepted the ideas and concept of trade liberalism and gave up the previously complete trading protection. Combining the new thought with the efforts of integration into world economy, Beijing made two important decisions related to FDI polices in 1987. The first one was that government no longer required that MNEs must be purely export-oriented, and the goods produced by foreign firms could be traded in local market, just like their local competitors. The other decision was that provincial governments began to have the authority on the approval of FDI project in the provinces. However, provinces could only operate under general regulation and some strict constraints of state government. For instance, the state government provided financial incentives for MNEs in SEZs and opened coastal cities. However the incentive rates in different areas were ruled by state government individually, provinces had no right to change the rates. The general regulation was still strictly executed.

Due to the mentioned above policies changes, besides Hong Kong investors, large amount of foreign investors from various countries landed China. The cities and provinces of Yangzi River Delta Area attracted more and more FDI inflow for their good economic infrastructures, huge local market potentials and the other factors. Meanwhile, the policy changes benefit SEZs and the provinces they belong to as well. As the pioneer areas of the implementation of reform and opening-up policies, Guangdong and Fujian province accumulated lots of experience regarding to FDI while improving their domestic economic infrastructures. Market-oriented FDI entered the provinces as well. Thus, the economic success of both areas pushed forward the economic growth in China as a whole.

According to the economic administrative division, the mentioned opened coastal cities herein-above, with the exception of Beihai city of Guangxi province, all are in the eastern region as well as 4 SEZs. In general, Eastern region benefited from FDI inflow to the greater extent. Unfortunately, FDI performances in central and western regions need to be improved anyway.

2.1.3 New Focus -Central and Western Provinces

Since 1979, MNEs' participation contributed to the economic rebuilding and growth in China to great degree (Yue, 2003). The brilliant economic achievements of SEZs and the coastal cities made people in the world nearly forget such a truth that China is still a developing country. However, China's speedy economic growth has been based on an explicit regional policy, in which the eastern region has been positively encouraged to become wealthy before the central-western regions. People ignored the less developed provinces in the less developed regions while they are surprised by the outstanding economics development of the coastal cities in southern region such as Shanghai and Shenzhen. The existing uneven regional development between eastern provinces and central-western provinces was perhaps one of the biggest challenges that China state government confronted after the implementation of reform and opening-up polices. In order to first reduce and then eliminate the regional difference, various economic promotion strategies have been set into action by state government since 2001. One of these was promoting the central-western regions to foreign investors. FDI promotion is one of the most important parts of the overall development plan. The state government hoped that MNEs would contribute to the economic growth in inner region as they once did in coastal region.

However, comparing with coastal region, FDI promotion in inland region proceeded slower because of two major causes. One was the effects of overall economic status in China. Aimed at reducing the domestic overstated boom, China experienced an economic soft landing in 2002-2004 and implicitly postponed FDI promotion in inland region. The other one was related to the inland region itself. Briefly, the provinces and cities inland region possess neither a geographic advantage nor a strong economic infrastructure. They have no absolute or comparative advantages in attracting FDI inflows. The only approach to improve the mentioned weaknesses in the inland region is getting the strongest supports from state government.

Luckily, state government shifted the latest focus of regional development back to inland areas. In 2010, state government announced to establish a new SEZ in the Kashi city of Xinjiang province. In 2011, the Pan-Pearl River Delta Economic Zone officially established as well. With regard to the former, the city is bordered by

four countries; Tajikistan, Afghanistan, Pakistan and Kyrgyz. State government granted Kashi expanded powers to set its own economic direction and attract the most FDI inflow. They hoped that Kashi would copy the successful experiences of Shenzhen and get great economic achievement while giving an impetus to the economic growth of western region. With regard to the latter, it is a portion of the latest nationwide economic plan. Pan-Pearl River Delta Economic Zone includes 11 provinces in both the coastal region and inland region. It was designed to be boosted as a "center of advanced manufacturing and modern service industries," and as a "center for international shipping, logistics, trade, conferences and exhibitions and tourism." In 2008, China's National Development and Reform Commission set some goals which include the development of two or three new cities in the region, the development of 10 new multinational firms, and expansion of road, rail, seaport and airport capacities by 2020. They include construction of an 18-mile (29 km) bridge linking Hong Kong, Macao and the Pearl River Delta, construction of 1,864 miles (3,000 km) of highways in the region by 2012, and rail expansions of 683 miles (1,099 km) by 2012 and 1,367 miles (2,200 km) by 2020. A strong infrastructure would definitely attract FDI inflow.

People are looking forward to the wonderful FDI performance and speedy economic growth in central and west provinces of China.

2.2 China’s FDI Promotion Polices

2.2.1 Fiscal Incentives

In order to attract more FDI inflow, preferential policies included a number of features designed for SEZs, such as tax holidays of up to five years, the ability to repatriate corporate profits and to repatriate capital investments after a contracted period. They also included duty free treatment of imports of raw materials and intermediate goods destined for export products, as well as exemption from export taxes. Besides, compared with the other developing countries, fiscal incentives concerned taxes that were utilized to promote FDI inflow in China were mostly simpler. According to locally implemented commerce and international trade laws, MNEs generally needed to pay five types of tax including profit tax, turn-off tax,

value-added tax, import duty and local tax, respectively. MNEs made payments of the former four types of tax to state government. There was a uniform tax rate carrying out through the whole country. MNEs make payment of local tax to the local governments, and the related tax rates are set by individually local governments. However, state government stipulated that the collected local tax could not be more than 3% of total revenue of the firms.

In practice, many local governments reduced or even eliminated local tax for the consideration of competition. Because of the heated competition for FDI inflow, MNEs gained high bargaining power over the FDI receipts to decide the final location for their international production. Local governments thus used fiscal incentives as a tool in order to compete with other provinces. Therefore, local tax is often reduced or eliminated by particular provinces in order to attract more FDI for the reason that the provinces capturing large value FDI would be thought as flourishing by the other provinces. One of the obvious results of this kind of competition between provinces is that local tax nearly disappeared in most provinces.

Contrary to the provincial flexible FDI tax policies, the state government's attitude towards FDI is harder, especially on the matters of collecting taxes. During the earlier period of attracting FDI, the state government reduced or even remitted various taxes on the goods produced for export purpose by MNEs, resulted by MNEs getting more benefits than domestic firms. However, the preferential system and privilege MNEs once relished, have revoked in turn. Today, MNEs pay the taxes with the same rate as local producers. The only rest privilege for newly entering MNEs in SEZs is the so called "FDI incentive holiday". It involves that the new foreign firm setting up affiliates in SEZs would reduce corporate tax by 15% as an encouragement for first five years as MNEs set up their new international production base in China.

2.2.2 State Support Project

Although Chinese state government set significant constraints towards the FDI fiscal incentive, it did support the SEZs in all aspects to attract FDI. For instance, the state rebuilt the highway throughout the whole of the Guangdong province at the time of promoting Shenzhen and the other three SEZs. Shanghai and Yangzi River Delta Economic Area have the privilege to reduce the taxes initially paying for state

treasury. These projects effectively helped provinces in improving their overall abilities to attract more FDI inflow.

2.3 China Provincial FDI Performance

To understand provincial/regional FDI in China, a basic knowledge about the country is necessary. As shown on the map of section 2.1, China exercises jurisdiction over twenty-two provinces, five autonomous regions, four directly administered municipalities (Beijing, Tianjin, Shanghai, and Chongqing), and two highly autonomous special administrative regions (SARs) - Hong Kong and Macau. Chinese government still views both Hong Kong and Macau as independent economies for the so-called “Fifty years no change” political and economic policy. Thus, it is usual to say that China has a total of thirty-one provinces, divide into three regions. Eastern region includes Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Hainan. Central region includes Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hunan, Hubei. Western region includes Inner Mongolia, Guangxi, Sichuan, Chongqing, Guizhou, Yunnan, Shaanxi, Ganxu, Qinghai, Ningxia, Xinjiang, Tibet. According to eco-graphical classification, eastern region is called as coastal region, although some province and municipality, including Beijing, are actual “coastal” area. But so-called “inland regions” have no such concerns. These provinces are in the complete and real inland geographic positions, have not got the benefit of ocean transportation.

In this study, there are fifteen provinces that have be chosen as the sample provinces to present the belonged regions. Five samples are from eastern region, five samples are from western region, and the other five samples are from central region. The selection criterion of the sample provinces is based on the inward FDI performances. There are two comparatively good, one or two comparatively average, and one or two comparatively weak FDI performance provinces selected to be representatives for their region.

2.3.1 Annual Provincial FDI Inflow

Combine with the particular eco-geographical factors and the effects of uneven regional development polices, FDI performances of three regions are complete different.

Until 2008, 82.52% of MNEs invested in eastern provinces, 8.14% invested in central provinces, 4.49% invested in western provinces, and the rest 4.85% invested in the others (Table 1.9). Uneven FDI distribution and the followed economic effect come to the attention of the state government.

The sole good news is that the absolute FDI inflow value in each region appears as a positive growth tendency (Table 2.1, Table 2.2, Table 2.3, Figure 2.1, Figure 2.2, and Figure 2.3).

Table 2.1 Annual East Provinces FDI Inflow (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
He Bei	n/a	n/a	1.02	0.75	0.82	1.11	1.62	1.91	2.01	2.42	3.42	3.6
Guang Dong	n/a	n/a	12.237	12.972	11.334	7.822	10.012	12.364	14.511	17.126	19.167	19.535
Jiang Su	6.65	6.4	6.42	7.35	10.37	10.364	10.2	13.186	17.43	21.89	25.12	25.32
Zhe Jiang	n/a	n/a	1.61	2.21	3.16	4.98	6.68	7.72	8.89	10.37	10.07	9.9
Fu Jian	n/a	n/a	2.28	2.4	2.5	2.6	2.23	2.608	3.22	4.061	5.672	5.737

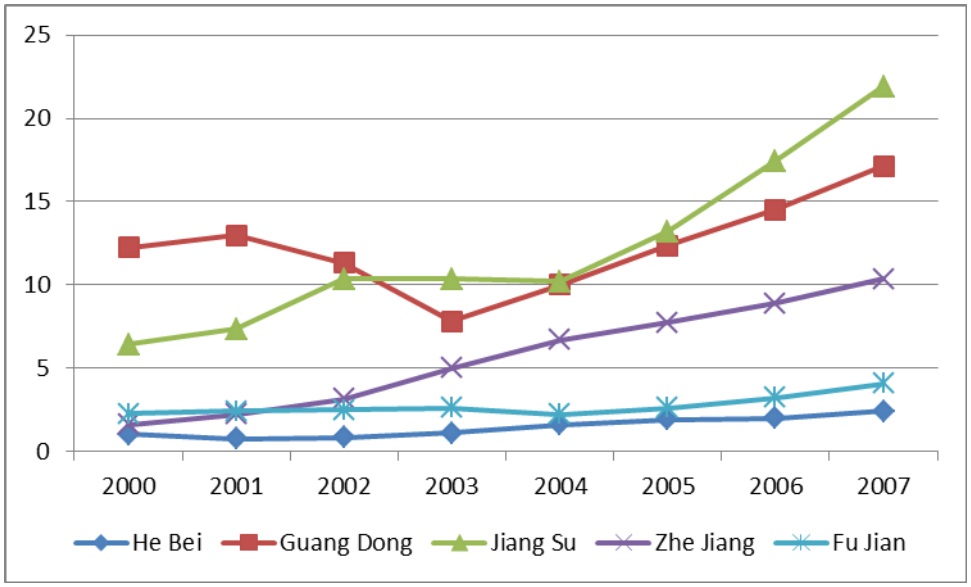

Figure 2.1 Annual East Provinces FDI Inflow (Unit: Billion US Dollar)

From Table 2.1 and Figure 2.1, it is obvious that the absolute FDI inflow volume of the five sample provinces of eastern region grew with an aggressive rate in the sampling years. Both Guang Dong and Jiang Su provinces attracted absolutely

large FDI inflow. Anyway, Jiang Su has a better trend in attracting more FDI inflow in absolute value from 2004 on. Comparing with Guang Dong, Jiang Su's beginning stages was lower. However it achieved the better performance to the end. Comparing with the stable growth in Jiang Su, the growth trend of FDI inflow in Guang Dong had been rising and falling. With regard to the other three provinces in the region that including He Bei, Zhe Jiang and Fu Jian, they had no such outstanding performance, but maintained an overall upward growth trend. Among the mentioned three provinces, Zhe Jiang generally attracted more FDI inflow than the rest two provinces.

Table 2.2 Annual Central Provinces FDI Inflow (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Hu Bei	n/a	n/a	0.944	1.211	1.402	1.557	2.071	2.185	2.449	2.766	3.245	3.658
Hu Nan	n/a	0.654	0.682	0.81	1.031	1.489	1.418	2.072	2.593	3.271	4.005	4.598
Ji Lin	n/a	n/a	n/a	0.338	0.317	0.318	0.453	0.661	0.761	0.885	0.993	1.14
Shan Xi	n/a	0.189	0.21	0.234	0.25	0.22	0.09	0.28	0.47	1.34	1.16	0.49
He Nan	0.618	0.495	0.544	0.359	0.452	0.561	0.874	1.23	1.845	3.062	4.033	4.799

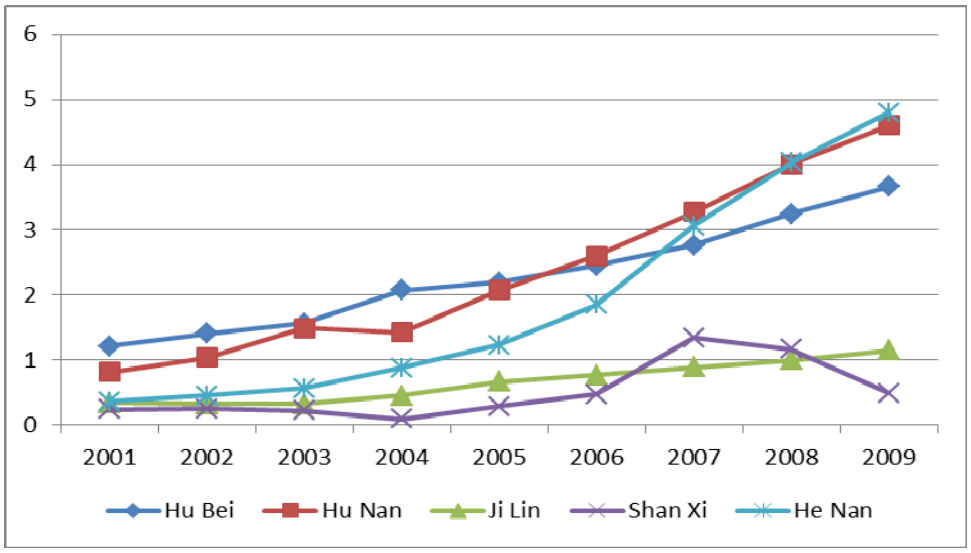

Figure 2.2 Annual Central Provinces FDI Inflow (Unit: Billion US Dollar)

Table 2.2 and Figure 2.2 describe the FDI performances in central region. Generally, central provinces had a good trend in attracting FDI inflow. Except Xian Xi province, the other provinces including Hu Bei, Hu Nan, He Nan and Ji Lin

maintained an upward sloping growth trend. It indicated that MNEs increased their investment volume in these four provinces. Among the total five sampling provinces, FDI performance in Hu Bei, Hu Nan and He Nan provinces improved greatly annually. Comparing with the mentioned three provinces, Ji Lin maintained a relative slower growth while Shan Xi's FDI performance seemed pale beside its neighbor provinces. Annual FDI inflow in Shan Xi decreased because of some unspecified reasons since 2008. FDI performance in Shan Xi seems not as good as the other provinces.

Table 2.3 Annual West Provinces FDI Inflow (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shann Xi	n/a	n/a	0.2885	0.352	0.411	0.466	0.527	0.628	0.925	1.195	1.37	n/a
Yun Nan	n/a	n/a	0.128	0.065	0.112	0.084	0.142	0.187	0.302	0.395	0.777	0.91
Si Chuan	n/a	0.454	0.437	0.582	0.659	0.582	0.701	0.887	1.208	1.493	2.480	3.063
Guang Xi	n/a	n/a	0.504	0.384	0.417	0.419	0.296	0.375	0.447	0.684	0.971	1.035
Inner Monglia	n/a	n/a	0.112	0.187	0.228	0.368	0.627	1.186	1.741	2.149	2.651	2.984

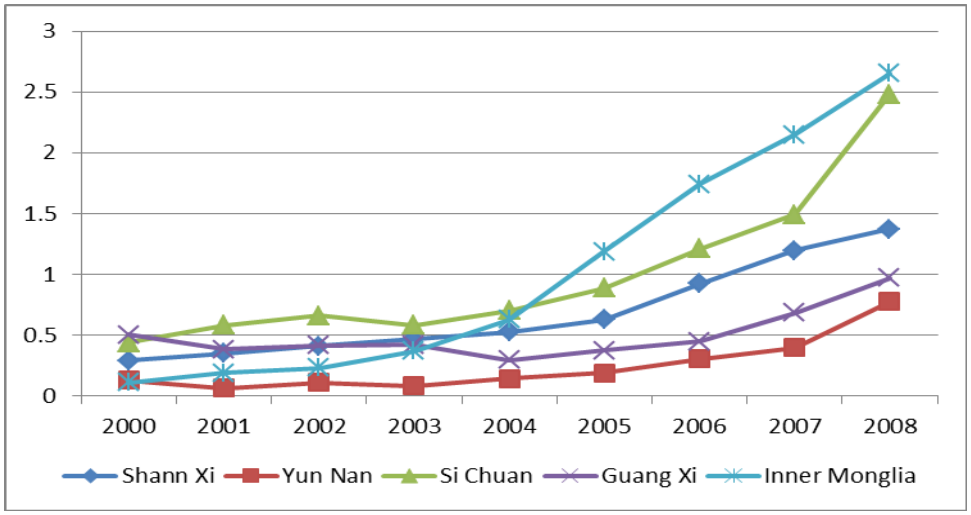

Figure 2.3 Annual West Provinces FDI Inflow (Unit: Billion US Dollar)

FDI performance of the western region is shown in Table 2.3 and Figure 2.3. From the table and figure, it is extremely obvious to see that the absolute FDI inflow volume in west region increased greatly. Both Inner Mongolia and Si Chuan

provinces possessed very upward sloping growth curves, indicated the abilities of both provinces in attracting FDI inflow. The other three provinces that includes Yuan Nan, Guang Xi and Shann Xi had upward sloping curves as well as their neighboring provinces. It indicated that MNEs increased their overseas investment into the region annually.

2.3.2 Provincial FDI Inflow Growth Rate

Besides annual FDI inflow, annual FDI inflow growth rate also indicated FDI performance. The difference between them is that the former focuses on the absolute FDI inflow value; while the latter mainly focuses on the growth rate. On average, the average aggregate FDI inflow growth rate in China from year 1999 to 2008 is 0.120.

Table 2.4 Annual East Provinces FDI Inflow Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
He Bei	n/a	n/a	-0.265	0.093	0.354	0.459	0.179	0.052	0.204	0.413	0.053	0.171
Guang Dong	n/a	n/a	0.060	-0.126	-0.309	0.279	0.234	0.173	0.180	0.119	0.019	0.070
Jiang Su	-0.037	0.003	0.144	0.410	-0.001	-0.015	0.292	0.321	0.255	0.147	0.007	0.139
Zhe Jiang	n/a	n/a	0.372	0.429	0.575	0.341	0.155	0.151	0.166	-0.028	-0.016	0.238
Fu Jian	n/a	n/a	0.052	0.041	0.040	-0.142	0.169	0.234	0.261	0.396	0.011	0.118

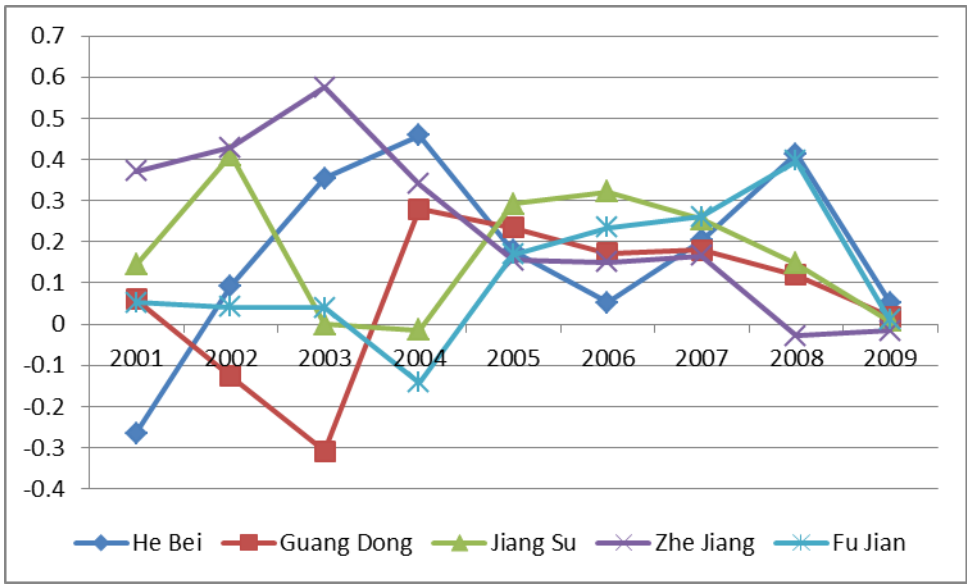

Figure 2.4 Annual East Provinces FDI Inflow Growth Rate

From Table 2.4 and Figure 2.4, it is apparent that the annual growth rate in eastern region appeared to be an extreme fluctuation. Five sample provinces expressed an uneven provincial FDI growth rate trend, and emerge negative growth at least once. As two of the biggest FDI inflow receipts of the region and country, Guang Dong and Jiang Su displayed differently. It is noticeable that Jiang Su had a more stable growth rate than its main competitors. Roughly speaking, the average FDI inflow growth rate in Jiang Su was higher than the average aggregate FDI inflow growth rate. In contrast, Guang Dong was lower than the average aggregate FDI inflow growth rate. It was an amazing finding. Besides, FDI inflow growth rate in three provinces including He Bei, Zhe Jiang and Jiang Su were higher than the average aggregate FDI inflow growth rate while the other two sampling provinces including Fu Jian and Guang Dong were lower than national average annual growth rate. In addition, among the total five sampling provinces, Zhe Jiang province had the highest average annual growth rate in the region.

Table 2.5 Annual Central Provinces FDI Inflow Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Hu Bei	n/a	n/a	0.282	0.157	0.110	0.330	0.055	0.120	0.129	0.173	0.127	0.165
Hu Nan	n/a	0.042	0.187	0.272	0.444	-0.047	0.461	0.251	0.261	0.224	0.148	0.224
Ji Lin	n/a	n/a	n/a	-0.062	0.003	0.424	0.459	0.151	0.162	0.122	0.148	0.176
Shan Xi	n/a	0.042	0.187	0.272	0.444	-0.047	0.461	0.251	0.261	0.224	0.148	0.224
He Nan	-0.199	0.098	-0.340	0.259	0.241	0.557	0.407	0.500	0.659	0.317	0.189	0.244

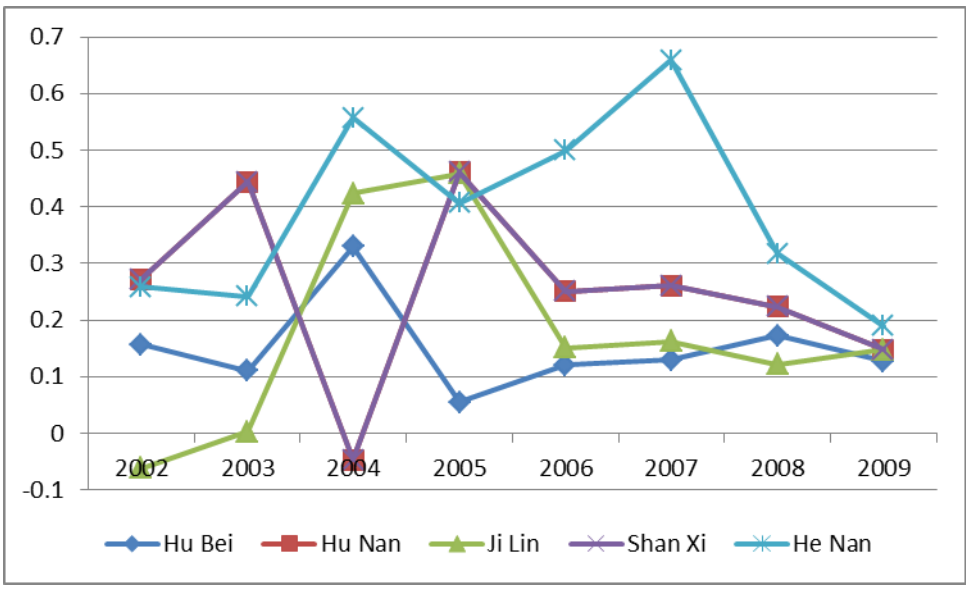

Figure 2.5 Annual Central Provinces FDI Inflow Growth Rate

From Table 2.5 and Figure 2.5, it is obvious that central region had a fluctuated FDI inflow annual growth rate as well. Five sampling province in the region including Hu Bei, Hu Nan, Ji Lin, Shan Xi and He Nan expressed an uneven provincial FDI growth rate trend. It is noticeable that annual FDI growth rate in all five sampling provinces were higher than the average aggregate FDI inflow growth rate. Among the total, He Nan had an average growth rate as 24.4% that was the highest annual rate of the region while Hu Bei had an average annual FDI growth rate as 16.5% which is the lowest in the region.

Table 2.6 Annual West Provinces FDI Inflow Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Shann Xi	n/a	n/a	0.282	0.157	0.110	0.330	0.055	0.120	0.129	0.173	0.127	0.165
Yun Nan	n/a	0.042	0.187	0.272	0.444	-0.047	0.461	0.251	0.261	0.224	0.148	0.224
Si Chuan	n/a	n/a	n/a	-0.062	0.003	0.424	0.459	0.151	0.162	0.122	0.148	0.176
Guang Xi	n/a	0.042	0.187	0.272	0.444	-0.047	0.461	0.251	0.261	0.224	0.148	0.224
Inner Monglia	-0.199	0.098	-0.340	0.259	0.241	0.557	0.407	0.500	0.659	0.317	0.189	0.244

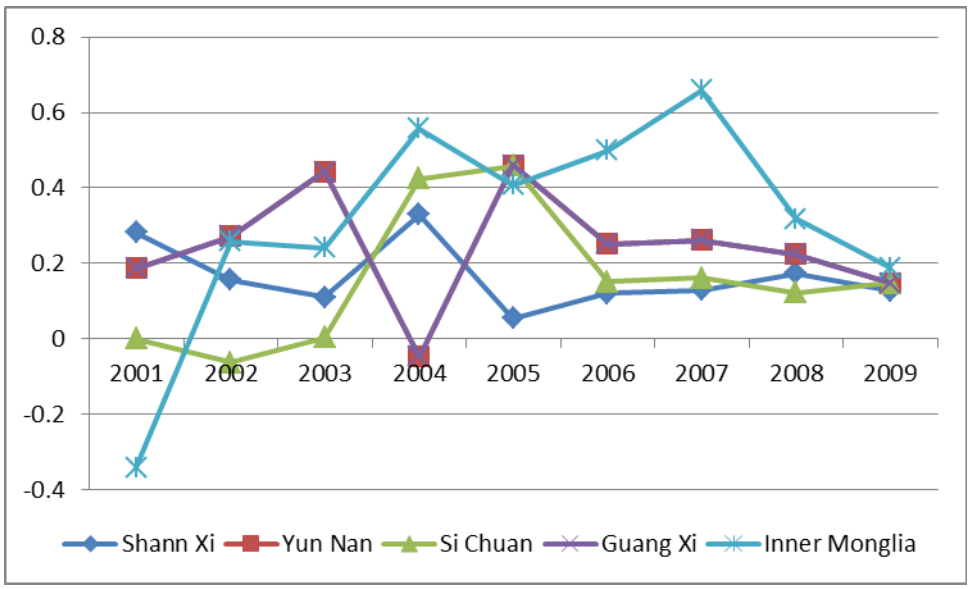

Figure 2.6 Annual West Provinces FDI Inflow Growth Rate

The best annual FDI inflow growth trend arose in the west region. From Table 2.6 and Figure 2.6, it clearly indicates that FDI inflow into the region increased greatly. Among the five sampling province, both Shann Xi and Inner Mongolia maintained a continuously positive annual growth trend. It is notable that Inner Mongolia has an annually average growth rate as 46.2%. This the highest annual FDI inflow growth rate record of the region and the country. Yun Nan gained the silver medal in the contest of attracting oversea investors, although the absolute FDI inflow into Yun Nan is the least among total fifteen sampling provinces. In addition, the other two provinces including Shann Xi and Si Chuan had comparatively higher FDI growth rate. However, there is an exception to the central region was Guang Xi. Its average rate is 11.5%, lower than national level as 12.0%.

Table 2.7 Average Provincial FDI Growth Rate

Province	Average FDI Growth Rate
He Bei	0.171
Guang Dong	0.070
Jiang Su	0.139
Zhe Jiang	0.238
Fu Jian	0.118
Hu Bei	0.165
Hu Nan	0.224
Ji Lin	0.176
Shan Xi	0.224
He Nan	0.244
Shann Xi	0.219
Yun Nan	0.340
Si Chuan	0.227
Guang Xi	0.115
Inner Mongolia	0.462

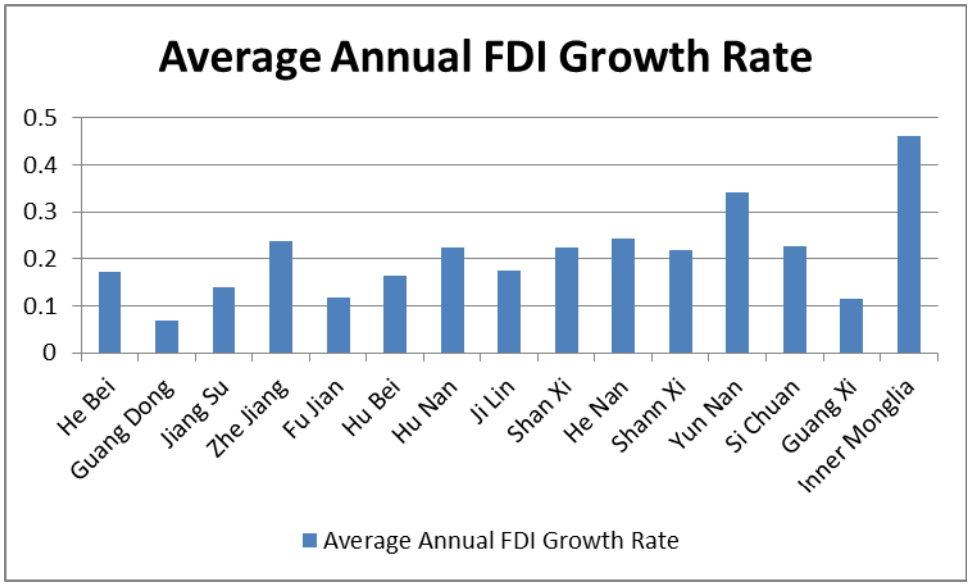

Figure 2.7 Average Provincial FDI Growth Rate

As a rough summary of Table 2.7 and Figure 2.7, it is worthy to mention that with regard to the average annual FDI inflow growth rate, Inner Mongolia of western region obviously had the most outstanding performance. In contrast, Guang Dong,

one of the largest FDI inflow receipt provinces in the eastern region, unexpectedly stood at the end of the queue and manifested some slowing down tendencies in FDI inflow.

2.3.3 Provincial FDI Inflow Per Capita

FDI per capita inflow is another important index could be used to describe FDI performance. Provincial FDI inflow volume indicates the absolute value in general. However the populations in provinces are different. Thus, FDI per inflow capita sometimes indicates the real status and future potential of individual province in attracting FDI inflow better than aggregately provincial data.

Table 2.8 Annual East Provinces FDI Inflow per capita (Unit: US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
He Bei	n/a	n/a	15	11	12	16	24	28	29	35	49	51
Guang Dong	n/a	n/a	165	167	144	98	121	134	156	181	201	203
Jiang Su	765	688	619	639	807	689	544	591	645	652	576	508
Zhe Jiang	n/a	n/a	35	48	68	107	142	158	179	205	197	191
Fu Jian	n/a	n/a	67	70	72	75	64	74	91	113	157	158

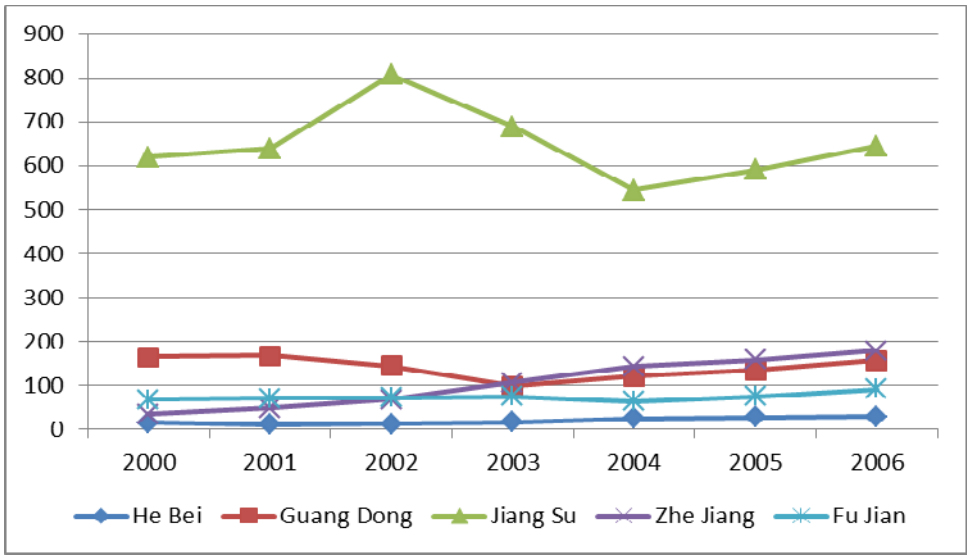

Figure 2.8 Annual East Provinces FDI Inflow per capita (Unit: US Dollar)

From Table 2.8 and Figure 2.8, it is a surprising to find that Jiang Su's FDI inflow per capita value is much higher than the rest four sampling east provinces including He Bei, Guang Dong, Zhe Jiang and Fu Jian. Furthermore, it is extremely obvious to see that FDI inflow per capita in Guang Dong is close to Zhe Jiang and Fu Jian provinces; although its aggregate FDI inflow value is close to Jiang Su provinces, and much larger than both Zhe Jiang and Fu Jian provinces. In addition, He Bei's FDI per capital is obviously lower than the rest sampling provinces in the region.

Table 2.9 Annual Central Provinces FDI Inflow per capita (Unit: US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Hu Bei	n/a	n/a	16	20	23	26	34	36	40	46	53	60
Hu Nan	n/a	10	10	12	16	22	21	31	38	48	59	66
Ji Lin	n/a	n/a	n/a	13	12	12	17	24	28	32	36	42
Shan Xi	n/a	6	6	7	8	7	3	8	14	39	34	14
He Nan	7	5	6	4	5	6	9	13	19	31	41	48

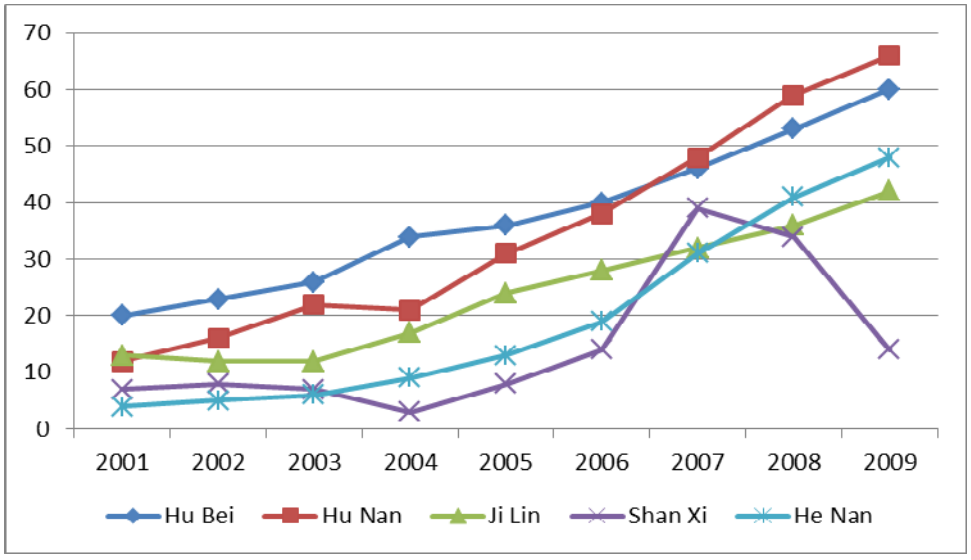

Figure 2.9 Annual Central Provinces FDI Inflow per capita (Unit: US Dollar)

From Table 2.9 and Figure 2.9, it is clearly to see that there are two provinces in central region including Hu Bei and Hu Nan provinces had relative higher FDI inflow per capita. FDI inflow per capita values in both provinces were even higher than He Bei province in eastern region. Ji Lin and He Nan provinces were weaker

than Hu Bei and Hu Nan in attracting FDI inflow. Comparing with the neighboring provinces in central region, Shan Xi's per capita FDI inflow was the lowest.

Table 2.10 Annual West Provinces FDI Inflow per capita (Unit: US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shann Xi	n/a	n/a	8	10	11	13	14	17	25	32	36	n/a
Yun Nan	n/a	n/a	3	2	3	2	3	4	7	9	17	19
Si Chuan	n/a	5	5	7	8	7	8	10	15	18	30	37
Guang Xi	n/a	n/a	11	8	9	9	6	8	9	14	20	20
Inner Monglia	n/a	n/a	5	8	10	15	26	50	73	89	110	123

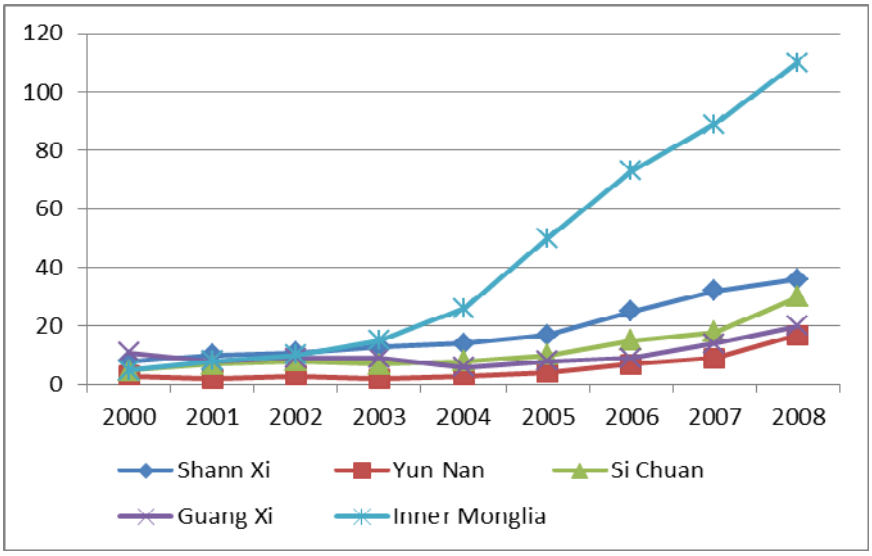

Figure 2.10 Annual West Provinces FDI Inflow per capita (Unit: US Dollar)

From Table 2.10 and Figure 2.10, it indicated that Inner Mongolia has outstanding performance in attracting FDI in west region. The surprising growth rate of FDI per capita showed a great potential of attracting and utilizing more FDI in the province. It suggested that Inner Mongolia could be a midpoint to attract FDI in west region in the future. Meanwhile, Yun Nan had the weakest performance with its FDI inflow per capita value in the region and the country.

As a summary, Jiang Su has the highest FDI per capita value at the country level, Inner Mongolia has the greatest potential in attracting FDI at the country. Both province could be current and future FDI midpoint. However, Yun Nan needed to

make great efforts to improve the current situation. As two of the biggest FDI inflow receipts of the region and the country, it was different with Jiang Su than Guang Dong with its annual FDI growth rate and FDI inflow per capita value. Such differences should be caused by the variously natural, economics and political factors in their provinces.

2.4 Economic Growth in Province

Besides the huge differences of FDI between the provinces, the economic growth in China is greatly uneven as well. It directly affects the provincial/regional growth of FDI inflow. Whereas, FDI inflow growth in the province/region push award the economic growth to the end.

2.4.1 Annual Provincial GDP

As the major economic index, GDP is the foremost focus of Chinese economic growth strategy for many years. The same with FDI inflow, GDP maintained a rapid growth rate while provincial GDP growth in China was uneven as well. Because of the natural, economics, political and historic causes, different province contributed to the country differently. In general, coastal region in China had higher GDP comparing with the inland region did. State government made continuous efforts to reduce the differences between coastal region and inland region. Attracting MNEs into inland region was one of the most important strategies.

According to most economists in the world, GDP is the most important factor to exert on FDI inflow (Dunning, 1980, 1981; Scaperlanda and Mauer, 1969: 558-568; Wheeler and Mody, 1992: 57-76; Culem, 1988: 885-904). Because of some magnificent interaction, FDI inflow would promote GDP growth greatly as a positive feed back finally. Thus, attracting MNEs to invest in the country was the one of the most important country economic growth promotion strategies. The relevant management ideas and economic concepts were proved by the earlier experiences in both Yangzi River Delta Economic Area and Pearl River Delta Economic Area and were accepted by Chinese government afterward.

Table 2.11 Annual East Provinces GDP (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
He Bei	n/a	n/a	62.316	67.388	73.415	94.566	106.765	123.464	145.663	182.223	232.963	249.328
Guang Dong	n/a	n/a	114.821	127.54	141.046	162.498	193.784	264.844	325.706	403.177	513.692	572.289
Jiang Su	86.977	93.024	103.693	114.952	128.504	150.439	187.416	222.994	270.267	335.964	436.086	498.773
Zhe Jiang	n/a	n/a	72.835	80.947	92.666	111.151	135.834	163.107	196.275	244.979	301.713	334.339
Fu Jian	n/a	n/a	47.349	51.448	56.566	63.329	73.132	80.059	94.088	120.401	155.751	174.982

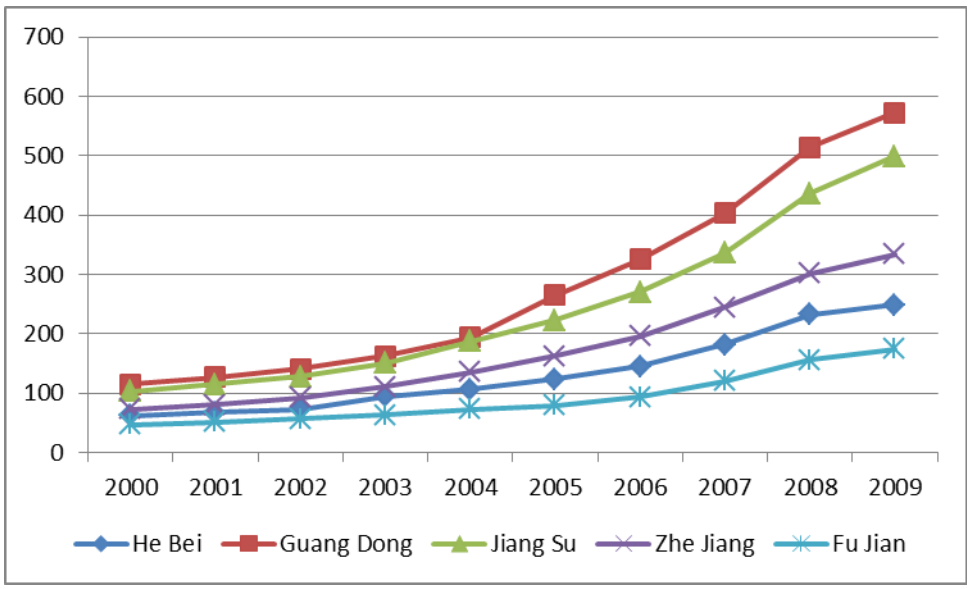

Figure 2.11 Annual East Provinces GDP (Unit: Billion US Dollar)

From Table 2.11 and Figure 2.11, it is clear to see a positive annual GDP growth trend of eastern region that including five sampling provinces. Among the total, Guang Dong obviously pioneered, followed by Jiang Su, Zhe Jiang, He Bei and Fu Jian, respectively. From year of 2000 to 2004, Guang Dong's annual GDP was higher than Jiang Su province with a small advantage. Since 2004, the advantage had increased to a great extent. The situation of the other three provinces that including Zhe Jiang, He Bei and Fu Jian, were quite similar. In 2000, the differences of annual GDP among three mentioned provinces were not so huge. However, the differences were enlarged to an obvious level since 2000. Zhe Jiang surpassed its neighboring provinces. He Bei had a relatively weak growth comparing with Zhe Jiang, however the absolute annual GDP maintained a very clearly positive growth trend. Annual GDP in Fu Jian was less than the other sampling provinces in the region. However, it still maintained a positive economic growth trend.

Table 2.12 Annual Central Provinces GDP (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Hu Bei	n/a	n/a	51.653	56.328	60.114	65.192	76.362	79.137	94.032	120.268	163.051	187.898
Hu Nan	n/a	41.154	44.593	48.121	52.4458	55.983	67.806	79.004	93.982	120.202	160.55	189.35
Ji Lin	n/a	n/a	n/a	24.556	27.099	30.468	35.74	44.117	53.295	68.692	92.446	105.479
Shan Xi	n/a	19.708	19.81	21.44	24.185	29.547	36.757	50.295	59.532	74.871	99.852	107.859
He Nan	52.301	55.146	61.916	68.201	74.461	84.885	106.501	128.572	156.329	197.924	264.898	283.604

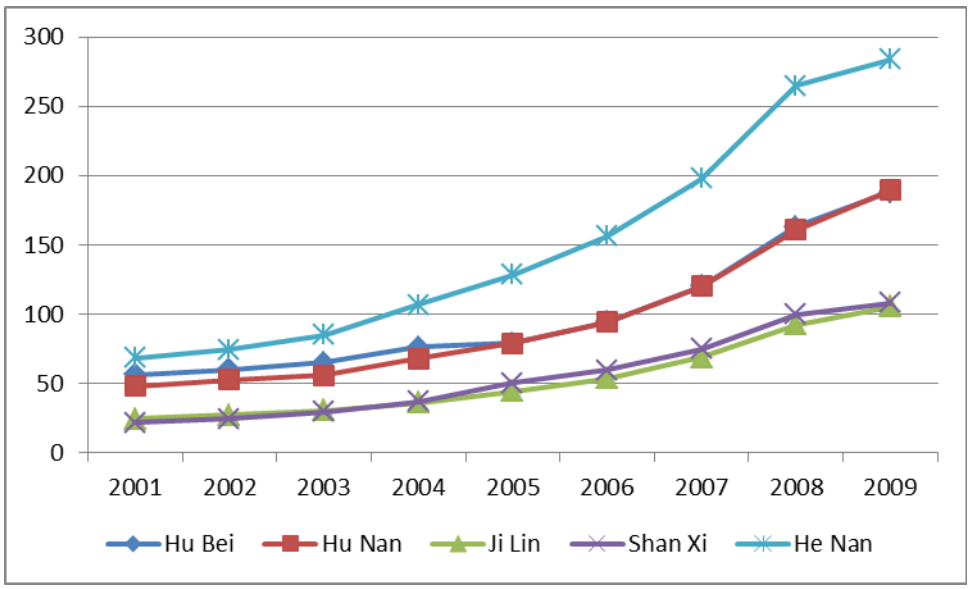

Figure 2.12 Annual Central Provinces GDP (Unit: Billion US Dollar)

From Table 2.12 and Figure 2.12, it is clearly to find out a positive annual GDP growth trend of central region that represented by five sampling provinces including Hu Bei, Hu Nan, Ji Lin, Shan Xi and He Nan. Besides, it is obvious that according to GDP, five provinces could be divided into three levels. He Nan pioneered in the absolute value from 1998 on, followed by Hu Bei and Hu Nan two provinces with similar annual GDP value. Both Shan Xi and Ji Lin were in third GDP distribution level.

Table 2.13 Annual West Province GDP (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shann Xi	n/a	n/a	17.031	22.245	24.598	28.979	34.838	44.847	54.984	70.582	98.594	104.017
Yun Nan	n/a	n/a	23.617	25.099	26.965	29.706	35.755	42.377	50.193	62.063	82.082	90.324
Si Chuan	n/a	44.837	48.439	53.423	58.899	65.921	79.027	90.128	108.338	138.082	179.973	207.224
Guang Xi	n/a	n/a	24.587	26.597	29.446	33.022	40.112	49.589	60.229	77.364	103.203	103.26
Inner Mongolia	n/a	n/a	16.91	18.672	20.931	25.285	32.766	46.653	60.078	79.112	111.697	142.419

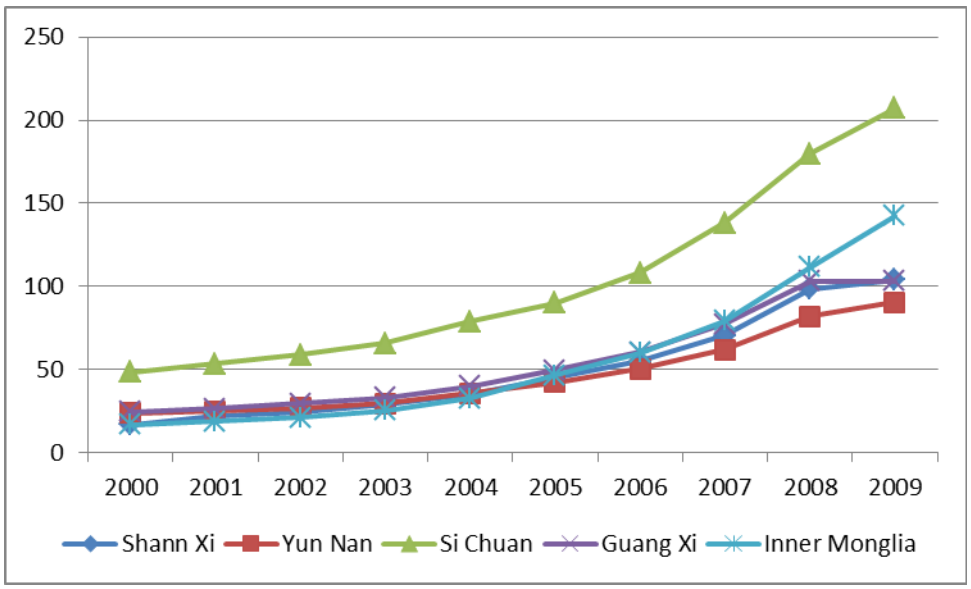

Figure 2.13 Annual West Provinces GDP (Unit: Billion US Dollar)

Table 2.13 and Figure 2.13 undoubtedly show a positive annual GDP growth trend of the western region that represented by five sampling provinces including Shann Xi, Yu Nan, Si Chuan, Guang Xi and Inner Monglia. In this region, GDP in Si Chuan was higher than the others to great extent. It is worthy to note that Si Chuan is the biggest inland province with the most population in China as well as the biggest economic contributor of the region. GDP value and increasing trend in the other four sampling provinces were similar. However, it seems that the economic growth in Inner Mongolia represented by GDP was quicker the others.

2.4.2 Provincial GDP Growth Rate

Not only the annual GDP value but also the annual GDP growth rate are important index to indicate economic growth. The difference between them is that the former focuses on absolute GDP value; the latter focuses on the growth speed.

Table 2.14 East Provinces GDP Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
He Bei	n/a	n/a	0.087	0.096	0.116	0.129	0.134	0.132	0.129	0.101	0.100	0.113
Guang Dong	n/a	n/a	0.095	0.108	0.136	0.142	0.125	0.141	0.145	0.101	0.095	0.121
Jiang Su	0.101	0.106	0.102	0.116	0.135	0.149	0.145	0.149	0.148	0.125	0.124	0.127
Zhe Jiang	n/a	n/a	0.105	0.123	0.140	0.143	0.124	0.136	0.145	0.101	0.089	0.123
Fu Jian	n/a	n/a	0.090	0.105	0.115	0.121	0.113	0.134	0.151	0.130	0.120	0.120

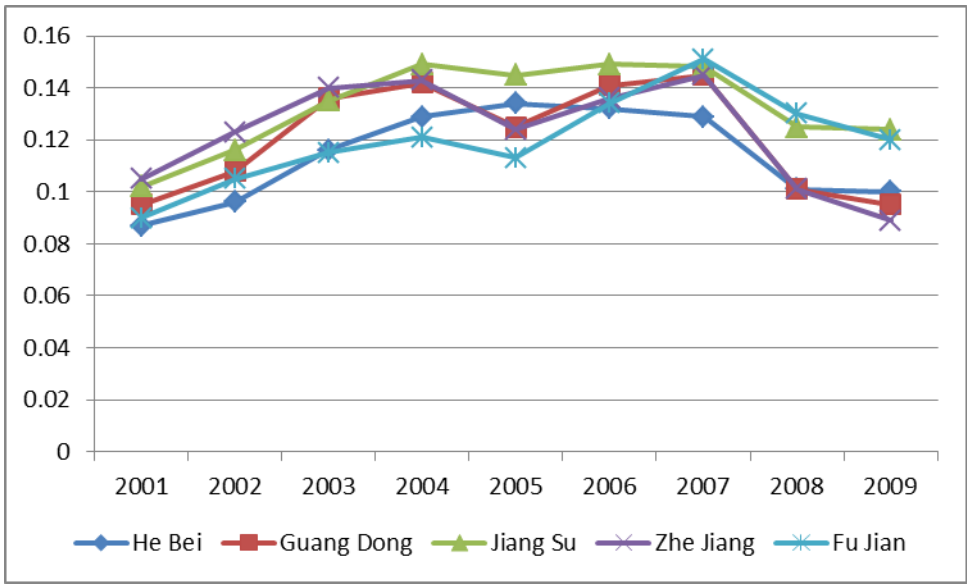

Figure 2.14 East Provinces GDP Growth Rate

From Table 2.14 and Figure 2.14, it is obviously to find an overall positive growth trend in east region. Among the total, Jiang Su and He Bei have relative stable growth trends compared with the other provinces. Guang Dong and Zhe Jiang have a very similar growth trace. Fu Jian had a more tortuous growth curve indicating why the province's growth rate was relative smoother. In general, the region maintained a positive annual GDP growth rate.

Table 2.15 Central Provinces GDP Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Hu Bei	n/a	n/a	0.091	0.091	0.093	0.114	0.115	0.121	0.145	0.132	0.134	0.115
Hu Nan	n/a	0.090	0.090	0.090	0.096	0.124	0.116	0.121	0.144	0.128	0.136	0.114
Ji Lin	n/a	n/a	0.093	0.095	0.102	0.120	0.122	0.150	0.160	0.161	0.133	0.126
Shan Xi	n/a	0.077	0.083	0.108	0.132	0.141	0.125	0.118	0.142	0.083	0.055	0.106
He Nan	0.080	0.094	0.091	0.095	0.105	0.137	0.141	0.141	0.144	0.121	0.107	0.114

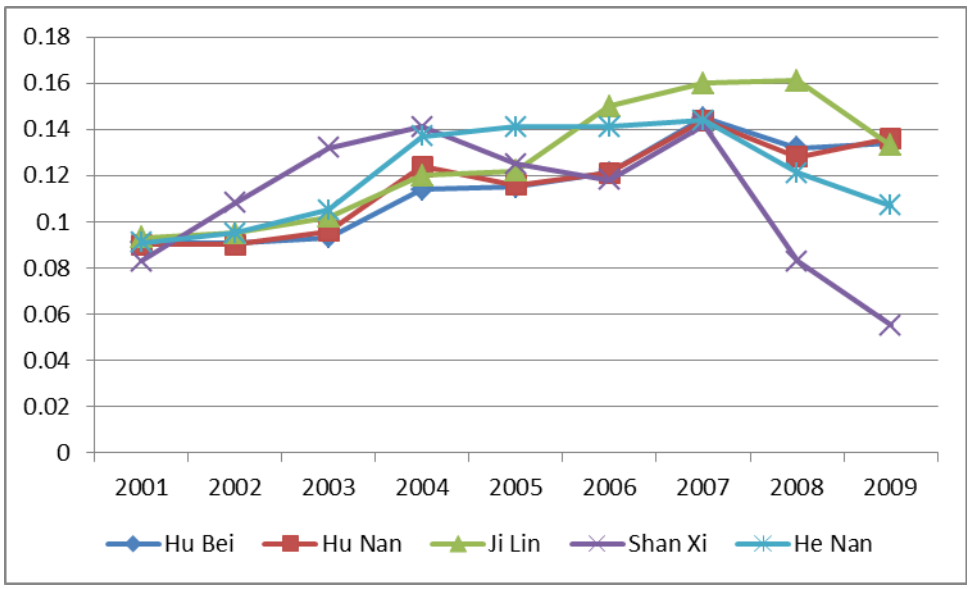

Figure 2.15 Central Provinces GDP Growth Rate

From Table 2.15 and Figure 2.15, it is obvious to see a positive growth trend in central region. Among the total five sampling provinces, Hu Bei, Hu Nan and He Nan kept a relative stable annual GDP growth rate. Ji Lin and Shan Xi had relative rising and falling growth curve. However, from 2005 on, it seems that Ji Lin speeded its economic growth, while the growth in Shan Xi slowed for some reasons. In general, the region maintained a positive annual GDP growth rate.

Table 2.16 West Provinces GDP Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Shann Xi	n/a	n/a	0.091	0.097	0.109	0.129	0.126	0.127	0.144	0.156	0.145	0.125
Yun Nan	n/a	n/a	0.065	0.081	0.086	0.115	0.090	0.119	0.123	0.110	0.121	0.101
Si Chuan	n/a	0.,090	0.092	0.106	0.118	0.127	0.126	0.133	0.142	0.095	0.145	0.117
Guang Xi	n/a	n/a	0.082	0.103	0.082	0.118	0.127	0.135	0.149	0.128	0.139	0.118
Inner Monglia	n/a	n/a	0.096	0.121	0.163	0.194	0.216	0.180	0.190	0.172	0.169	0.167

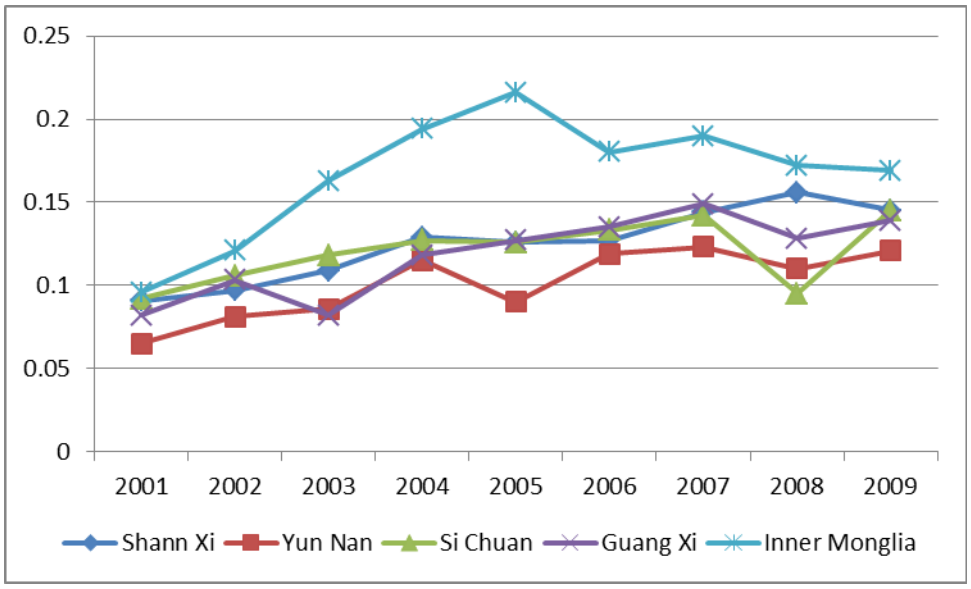

Figure 2.16 West Provinces GDP Growth Rate

From Table 2.16 and Figure 2.16, it is obvious to see that the economic growth in west region which represented by five sampling provinces maintained a quite stable and positive. Among the total five sampling provinces, economic growth represent by GDP in Inner Mongolia was quicker and greater than the neighboring provinces by quite a big extent In general, the region maintained a positive annual GDP growth rate.

Table 2.17 Average Provincial GDP Growth Rate

Province	Average Annual GDP Growth Rate
He Bei	0.113
Guang Dong	0.121
Jiang Su	0.127
Zhe Jiang	0.123
Fu Jian	0.120
Hu Bei	0.115
Hu Nan	0.114
Ji Lin	0.126
Shan Xi	0.106
He Nan	0.114
Shann Xi	0.125
Yun Nan	0.101
Si Chuan	0.117
Guang Xi	0.118
Inner Mongolia	0.167

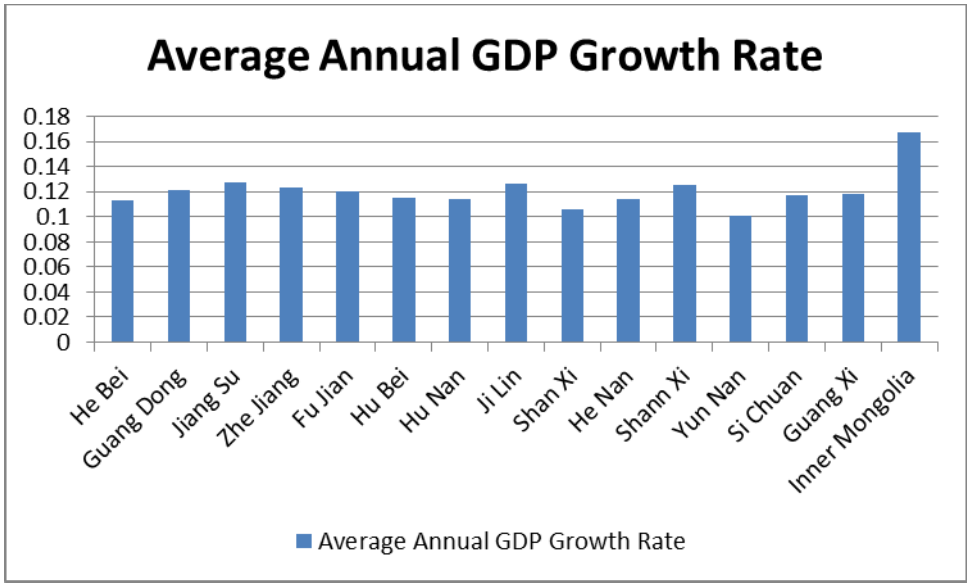

Figure 2.17 Average Provincial GDP Growth Rate

As a brief summary, Table 2.17 and Figure 2.17 indicate the average annual provincial GDP growth rate. Among the total, the economic growth rate of Inner Mongolia was greater than the other provinces. Meanwhile, the economic growth rate of Yun Nan was the slowest.

2.4.3 Annual Provincial Export

Export is another important economic index. As well as many other developing countries worldwide, China pursues the export-orientated development policy. The annual provincial/regional export volume indirectly indicates the economic growth of the province and region (Dunning,1980, 1981; Buckley and Casson, 1981: 75-87; Markusen,1984: 205-266).

Table 2.18 Annual East Provinces Export (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
He Bei	n/a	n/a	3.707	3.96	4.59	5.93	9.34	10.93	12.83	17.02	24.03	15.69
Guang Dong	n/a	n/a	91.92	95.42	118.465	152.944	191.558	238.16	301.954	369.246	404.097	358.956
Jiang Su	15.65	18.31	25.77	28.88	38.48	59.14	87.56	122.982	160.42	203.73	238.04	199.24
Zhe Jiang	n/a	n/a	19.44	22.98	29.4	41.6	58.16	76.8	100.9	128.3	154.29	133
Fu Jian	n/a	n/a	12.909	13.926	17.373	21.14	29.397	34.845	41.265	49.943	56.986	53.329

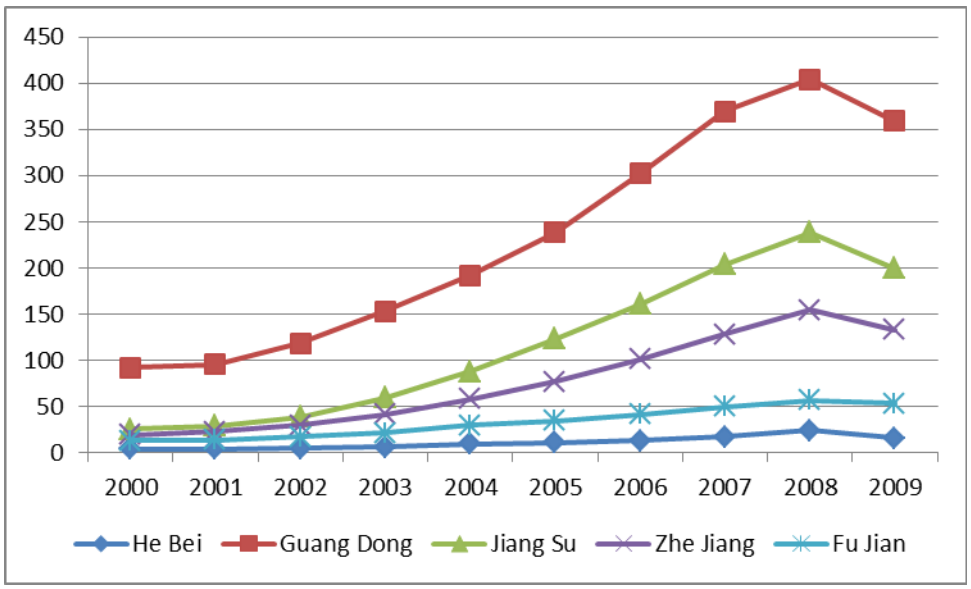

Figure 2.18 Annual East Provinces Export (Unit: Billion US Dollar)

From Table 2.18 and Figure 2.18, it is obvious to see that the export volume of Guang Dong province is absolute high. In 2008, the annual export volume of the province was 404.1Billion USD. After Guang Dong, Jiang Su had the high export volume as well. Followed Guang Dong and Jiang Su, Export in Zhe Jiang increased great annually. He Bei and Fu Jian were relatively weaker than the neighboring provinces in export. However, both provinces still kept a positive export volume growth rate.

Table 2.19 Annual Central Provinces Export (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Hu Bei	n/a	n/a	1.93	1.798	2.099	2.656	3.384	4.45	6.259	8.174	11.592	9.978
Hu Nan	n/a	1.282	1.653	1.754	1.785	2.146	3.098	3.747	5.094	6.523	8.41	5.493
Ji Lin	n/a	n/a	n/a	1.463	1.768	2.162	1.715	2.467	2.997	3.858	4.772	3.132
Shan Xi	n/a	0.839	1.24	1.47	1.66	2.27	4.03	3.53	4.14	6.53	9.24	2.84
He Nan	1.187	1.129	1.493	1.715	2.119	2.98	4.17	5.101	6.699	8.391	10.714	7.346

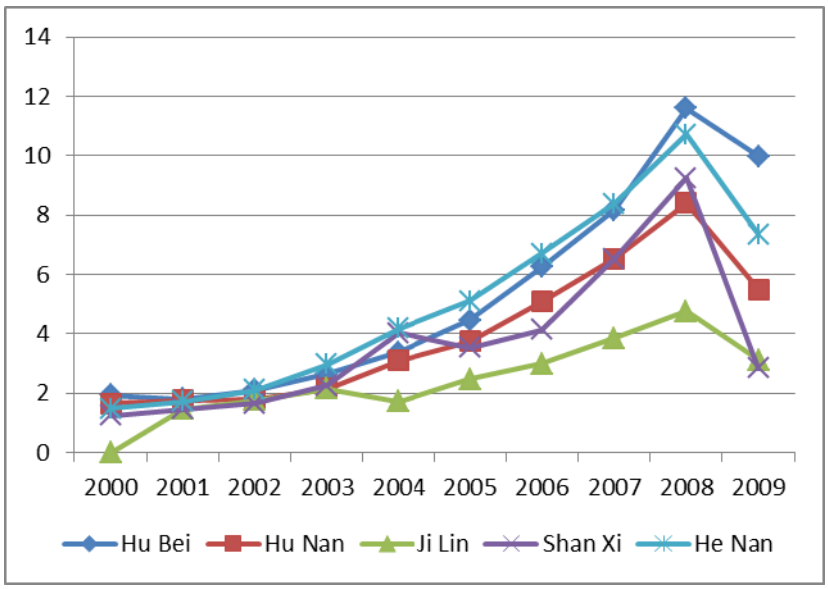

Figure 2.19 Annual Central Provinces Export (Unit: Billion US Dollar)

From Table 2.19 and Figure 2.19, it is clearly to see that the export in central region experienced a quick development from 2000 to 2008. The development was broken in 2009 for some reason and the export volume declined quickly. In general, Hu Bei and He Nan exported more than the other sampling provinces in the region, and Ji Lin export less than the others.

Table 2.20 Annual West Provinces Export (Unit: Billion US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shann Xi	n/a	n/a	1.309	1.11	1.377	1.735	2.397	3.076	3.63	4.672	5.407	n/a
Yun Nan	n/a	n/a	1.175	1.24	1.43	1.677	2.24	2.642	3.39	4.736	4.987	4.514
Si Chuan	n/a	1.14	1.39	1.58	2.71	3.21	3.98	4.7	6.62	8.61	13.11	14.15
Guang Xi	n/a	n/a	1.491	1.236	1.508	1.97	2.396	2.877	3.599	5.113	7.351	8.371
Inner Monglia	n/a	n/a	1.022	1.14	1.371	1.441	1.682	2.065	2.141	2.948	3.579	2.316

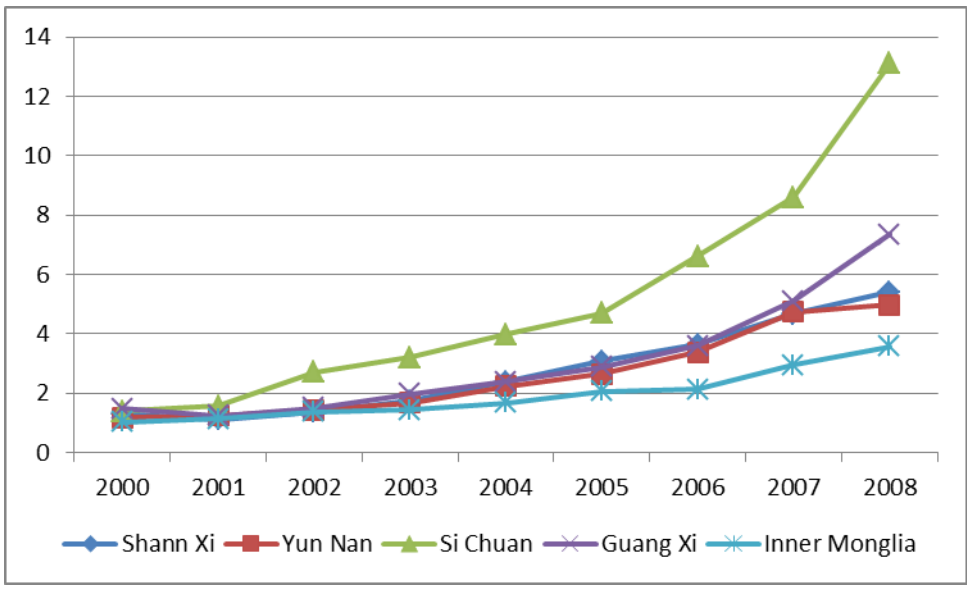

Figure 2.20 Annual West Provinces Export

From Table 2.20 and Figure 2.20, it is apparent that the absolute export volume in the western region is increasing annually. Si Chuan leaded the growth trend, followed by Guang Xi, Shann Xi, Yun Nan and Inner Mongolia, respectively. It is notable that the export volume of Inner Mongolia was the lowest in the region.

2.4.4 Provincial Export Growth Rate

Both provincial annual export volume and export growth rate are important economic index. The difference between them is that the former focuses on the absolute export volume; the latter mainly describes the growth speed.

Table 2.21 East Provinces Export Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
He Bei	n/a	n/a	0.068	0.159	0.292	0.575	0.170	0.174	0.327	0.412	-0.347	0.203
Guang Dong	n/a	n/a	0.038	0.242	0.291	0.252	0.243	0.268	0.223	0.094	-0.112	0.171
Jiang Su	0.170	0.407	0.121	0.332	0.537	0.481	0.405	0.304	0.270	0.168	-0.163	0.276
Zhe Jiang	n/a	n/a	0.182	0.279	0.415	0.398	0.320	0.314	0.272	0.203	-0.138	0.249
Fu Jian	n/a	n/a	0.079	0.248	0.217	0.391	0.185	0.184	0.210	0.141	-0.064	0.177

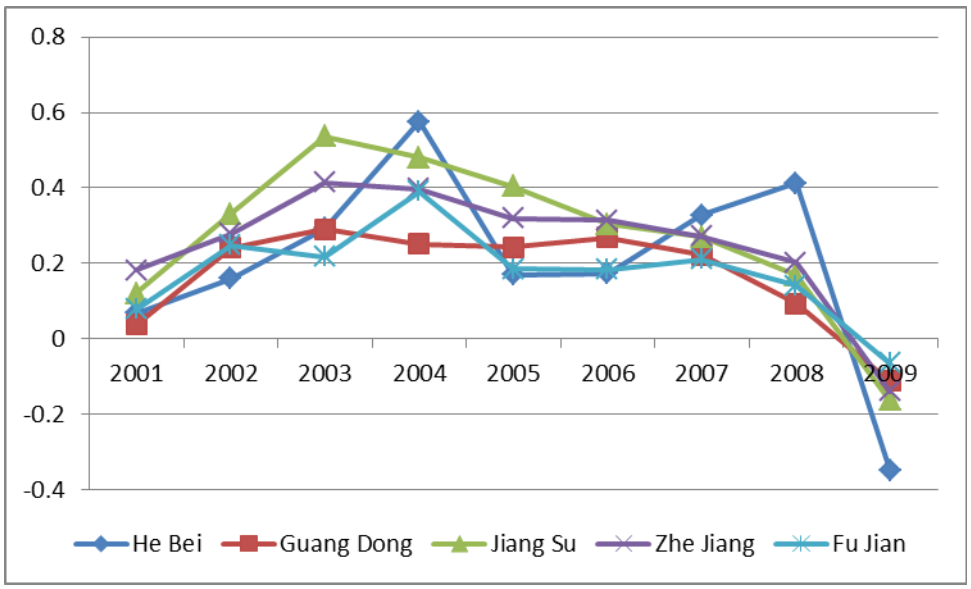

Figure 2.21 East Provinces Export Growth Rate

From Table 2.21 and Figure 2.21, it is clear to see that from 1999 to 2008, all five sampling provinces of the eastern region underwent a positive growth. However the export declined since 2008. The region went through a negative growth. It is worthy to note that the regional export growth was slowing down in general. However, compared with the other provinces, He Bei province had a more undulate trend in export growth.

Table 2.22 Central Provinces Export Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Hu Bei	n/a	n/a	-0.068	0.167	0.265	0.274	0.315	0.407	0.306	0.418	-0.139	0.216
Hu Nan	n/a	0.289	0.061	0.018	0.202	0.444	0.209	0.359	0.281	0.289	-0.347	0.181
Ji Lin	n/a	n/a	n/a	0.208	0.223	-0.207	0.438	0.215	0.287	0.237	-0.344	0.132
Shan Xi	n/a	0.478	0.185	0.129	0.367	0.775	-0.124	0.173	0.577	0.415	-0.693	0.228
He Nan	-0.049	0.322	0.149	0.236	0.406	0.399	0.223	0.313	0.253	0.277	-0.314	0.201

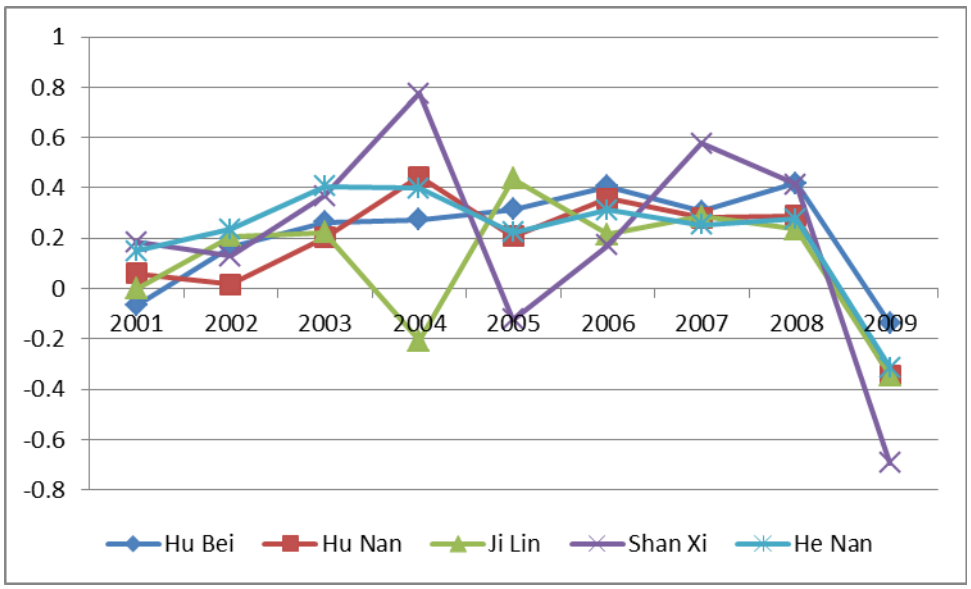

Figure 2.22 Central Provinces Export Growth Rate

From Table 2.22 and Figure 2.22, it is obvious to see the export growth trend in central region was similar with east region. From 1999 to 2008, all five sampling provinces of the central region underwent a positive growth. However it changed in 2009. The whole region went through a negative growth. Comparing with the other sampling provinces in the region, Ji Lin and Shan Xi had more undulate trends in export growth. Except for the year of 2009, central region maintained an overall stable growth trend in export.

Table 2.23 West Provinces Export Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Shann Xi	n/a	n/a	-0.152	0.241	0.260	0.382	0.283	0.180	0.287	0.157	n/a	0.205
Yun Nan	n/a	n/a	0.055	0.153	0.173	0.336	0.179	0.283	0.397	0.053	-0.095	0.171
Si Chuan	n/a	0.219	0.137	0.715	0.185	0.240	0.181	0.409	0.301	0.523	0.079	0.299
Guang Xi	n/a	n/a	-0.171	0.220	0.306	0.216	0.201	0.251	0.421	0.438	0.139	0.224
Inner Monglia	n/a	n/a	0.115	0.203	0.051	0.167	0.228	0.037	0.377	0.214	-0.352	0.115

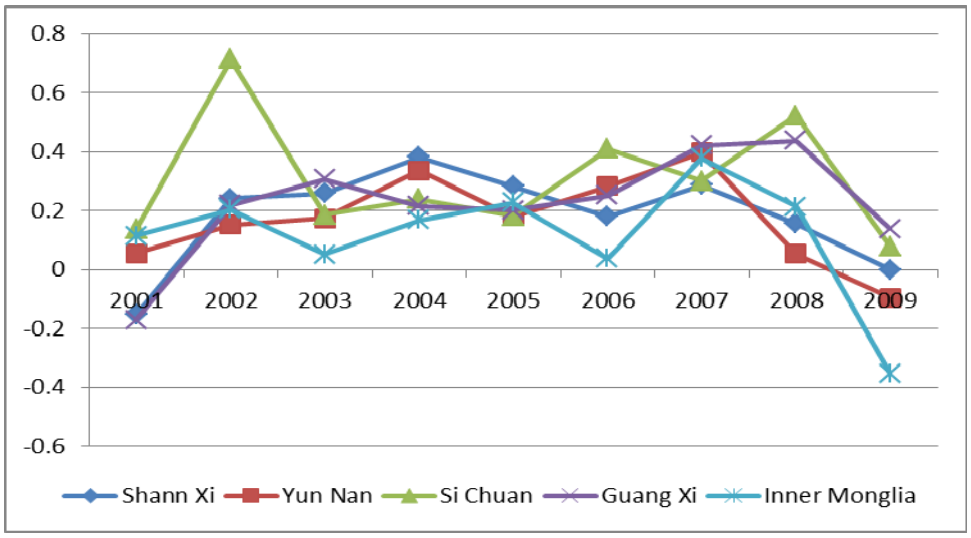

Figure 2.23 West Provinces Export Growth Rate

From Table 2.24 and Figure 2.24, it is obvious to find out that west region maintained a regular rising and falling export growth trend. Among the total, Export in Si Chuan increased quicker than the other provinces in the region while Inner Mongolia export increased slower than the others.

Table 2.24 Average Provincial Export Rate

Province	Average Annual Export Growth Rate
He Bei	0.203
Guang Dong	0.171
Jiang Su	0.276
Zhe Jiang	0.249
Fu Jian	0.177
Hu Bei	0.216
Hu Nan	0.181
Ji Lin	0.132
Shan Xi	0.228
He Nan	0.201
Shann Xi	0.205
Yun Nan	0.171
Si Chuan	0.299
Guang Xi	0.224
Inner Monglia	0.115

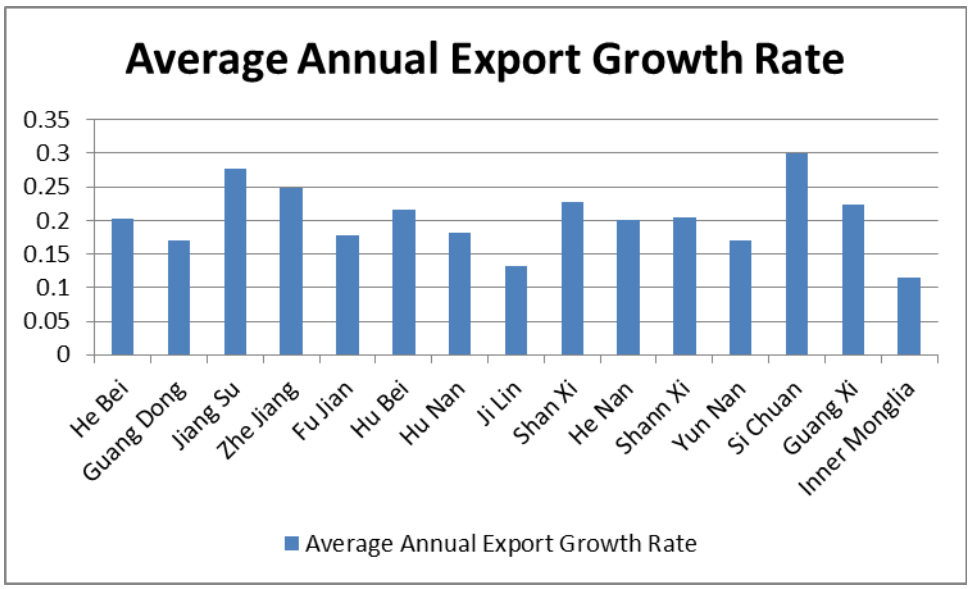

Figure 2.24 Average Provincial Export Growth Rate

As a brief summary in Table 2.24 and Figure 2.24, it was found that the average export growth rate of Si Chuan province in west region was the highest in the country represented by fifteen sampling provinces, followed by Jiang Su province in east region. Inner Mongolia is the province with the weakest export growth rate.

2.4.5 Annual Provincial Transportation Infrastructure

China is the territories second largest country in the world. Transportation infrastructure is always a significant concern about the national economic growth (Das, 1987: 171-182). Good quality transportation Infrastructure will attract more FDI (Dunning 1980, 1981). As one category of infrastructure building, Chinese government spent huge amount money to build and rebuild various kinds of highways, waterways and ports to improve the state of transportation of the provinces. Because of the different economic circumstances of the provinces, the quantity and quality of the transportation infrastructure status of various provinces differ greatly. The volume of transportation indicates provincial economic development level and quality of transportation itself.

In the most China's empirical works, transportation cost of the region or country is often used to be the proxy of the transportation infrastructure (Liao and He,

2008; Ma and Zhou, 2009; Lin and Lin, 2006; Jing, 2009). It is worthy to note that in most China's empirical works, the transportation costs are calculated as annual total freight. Statistically, the calculation method of the annual total freight is to use annual total transported goods (use ton as the unit) times annual total transportation length (use kilometers as the unit) in one year.

Table 2.25 Annual East Provinces Transportation (Unit: Billion Km-Ton)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
He Bei	n/a	n/a	232.568	276.07	276.28	302.48	379.61	475.06	515.93	550.7	520.9	598.16
Guang Dong	n/a	n/a	319.124	327.361	315.798	330.254	393.89	413.666	411.093	431.067	451.9	492.359
Jiang Su	148.26	164.9	174.3	154.23	156.6	184.34	210.07	306.372	364.46	410.02	436.26	515.45
Zhe Jiang	n/a	n/a	119.97	134.19	177.32	203.92	265.91	321	436.435	496.238	538.508	491.85
Fu Jian	n/a	n/a	72.986	79.383	82.744	122.385	137.77	157.711	189.09	208.372	232.726	247.746

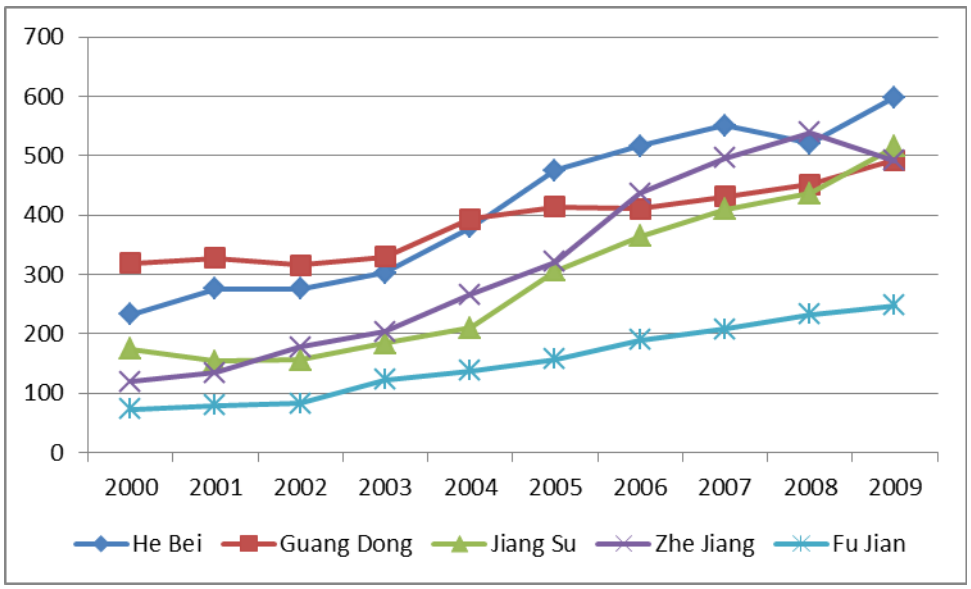

Figure 2.25 Annual East Provinces Transportation (Unit: Billion Km-Ton)

From Table 2.25 and Figure 2.25, it is obvious that the transportation volume of Guang Dong province was the highest from 2000 to 2004. From 2005 on, He Bei leaded the transportation volume of the region. Zhe Jiang's annual transportation volume exceeded Guang Dong since 2006. In 2009, Jiang Su's annual transportation volume surpassed Guang Dong as well as Zhe Jiang provinces. Finally, it is noticeable that the annual transportation volume of Fu Jian was lower than its neighboring provinces. Anyhow, east region maintained an overall positive growth trend in transportation volume.

Table 2.26 Annual Central Provinces Transportation (Unit: Billion Km-Ton)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Hu Bei	n/a	n/a	78.53	81.265	98.157	124.19	140.36	166.93	172.66	189.136	193.801	280.846
Hu Nan	n/a	96.088	107.143	113.226	121.714	136.817	156.599	165.71	177.605	198.459	208.275	253.834
Ji Lin	n/a	n/a	n/a	59.492	61.552	61.991	69.95	70.825	72.215	76.403	84.63	128.1
Shan Xi	n/a	79.976	85.894	99.637	109.7	118.257	125.88	148.03	152.18	161.35	232.83	210.01
He Nan	135.569	145.721	148.7	159.953	171.115	183.33	199.787	228.226	241.549	272.93	296.905	351.239

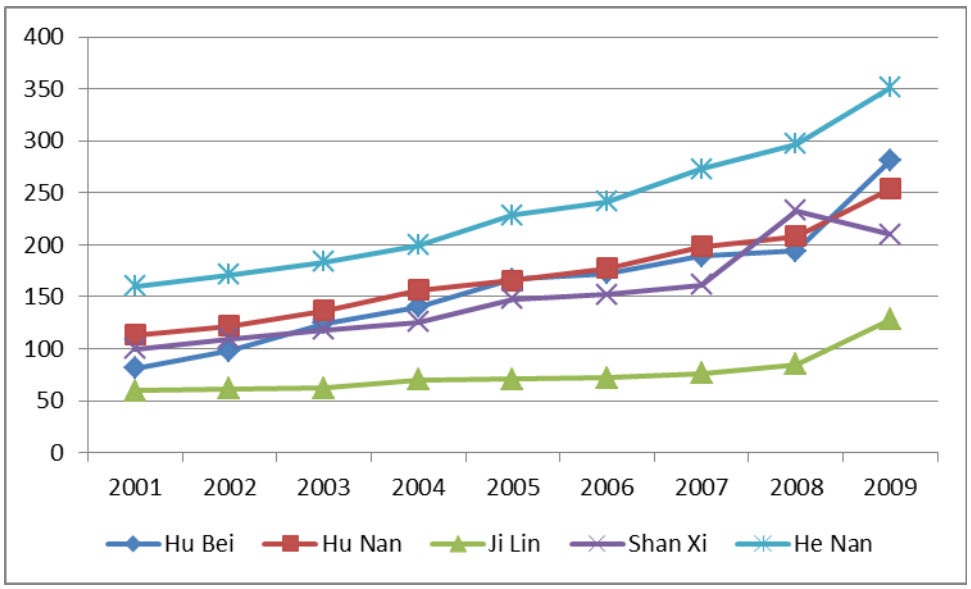

Figure 2.26 Annual Central Provinces Transportation (Unit: Billion Km-Ton)

From Table 2.26 and Figure 2.26, it is obvious that the transportation volume of He Nan province in central region was higher than the other sampling provinces. In 2009, the annual export volume of the province achieved 351.24 Billion Km-Ton. Besides He Nan, three sampling provinces including Hu Bei, Hu Nan, and Shan Xi had an obviously upward transportation growth curve. Nevertheless, He Nan had an absolute advantage in transportation volume in central region. Ji Lin was weakest among five provinces. Generally, the central region maintained a obviously positive growth trend in annual transportation volume.

Table 2.27 Annual West Provinces Transportation (Unit: Billion Km-Ton)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shann Xi	n/a	n/a	63.898	73.866	81.763	121.704	142.944	172.368	166.185	181.752	203.435	n/a
Yun Nan	n/a	n/a	48.38	55.147	54.871	59.61	62.889	65.649	69.221	77.096	83.168	90.427
Si Chuan	n/a	57.4	59.7	64.8	70.4	69.9	80.4	89.8	89.1	97.9	101.72	145.39
Guang Xi	n/a	n/a	77.06	79.94	86.073	93.677	108.772	119.434	132.65	151.655	175.486	184.261
Inner Monglia	n/a	n/a	104.12	109.011	107.87	121.822	144.14	160.431	179.835	212.16	255.867	396.322

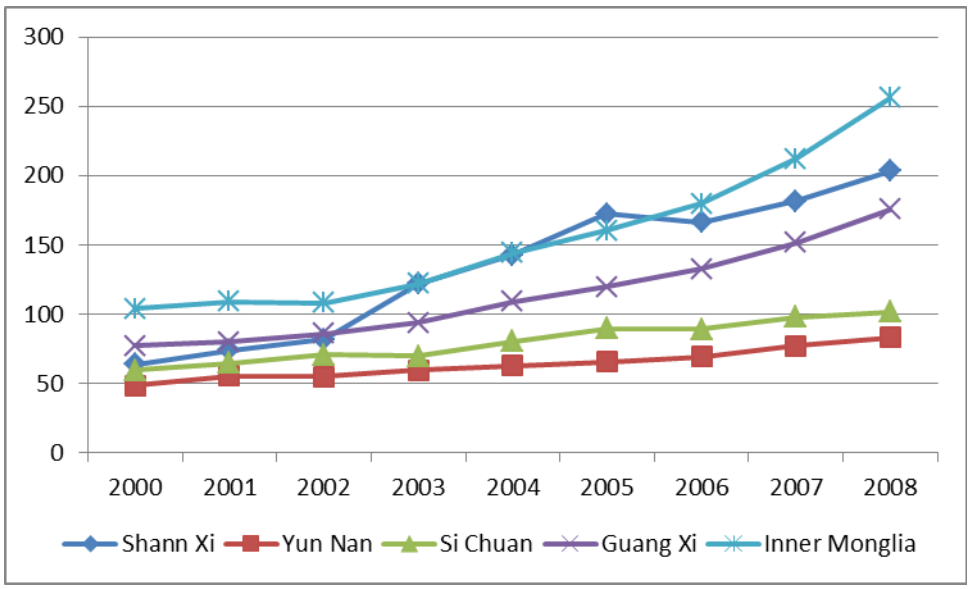

Figure 2.27 Annual West Provinces Transportation (Unit: Billion Km-Ton)

From Table 2.27 and Figure 2.27, it is obvious that the annual transportation volume in east region continuously increased. Among the total, Inner Mongolia had the absolute advantage in transportation volume compared with the other sample provinces of west region. Among the rest four sampling provinces, the transportation volume in Shann Xi is larger than the rest three sampling provinces before 2002. However, Guang Xi overtook Shan Xi as the second biggest transportation volume sample province of west region from 2002 on. Unexpectedly, as two large provinces, Si Chuan and Yun Nan had less annual transportation volume comparing with the neighboring provinces. However, the annual transportation volume in both two provinces obviously increased.

2.4.6 Provincial Transportation Growth Rate

Usually annual transportation volume increases along with the economic growth. Therefore, provincial transportation freight growth rate is expected to be one of important index to indicate the speed of economic growth.

Table 2.28 East Provinces Transportation Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
He Bei	n/a	n/a	0.187	0.001	0.095	0.255	0.251	0.086	0.067	-0.054	0.148	0.115
Guang Dong	n/a	n/a	0.026	-0.035	0.046	0.193	0.050	-0.006	0.049	0.048	0.090	0.051
Jiang Su	0.112	0.057	-0.115	0.015	0.177	0.140	0.458	0.190	0.125	0.064	0.182	0.128
Zhe Jiang	n/a	n/a	0.119	0.321	0.150	0.304	0.207	0.360	0.137	0.085	-0.087	0.177
Fu Jian	n/a	n/a	0.088	0.042	0.479	0.126	0.145	0.199	0.102	0.117	0.065	0.151

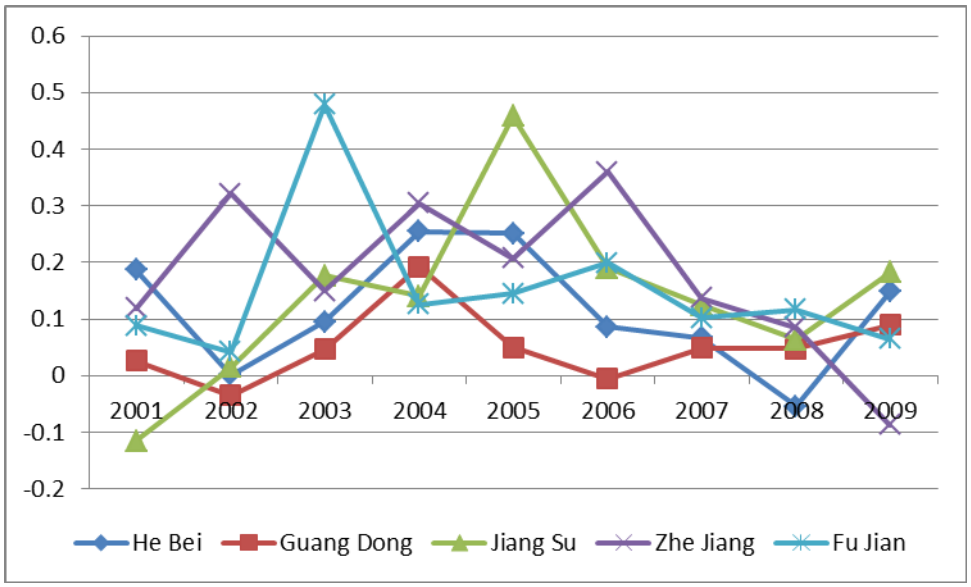

Figure 2.28 East Provinces Transportation Growth Rate

From Table 2.28 and Figure 2.28, it is clearly to see that annual transportation volume growth rate maintained a positive trend in east region. Among the total, the related growth rate of Guang Dong is relatively stable. By the contrast, Jiang Su, Zhe Jiang, Fu Jian and He Bei had a large degree of undulating curves that indicated the transportation volume growth rates were not always positive.

Table 2.29 Central Provinces Transportation Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Hu Bei	n/a	n/a	0.035	0.208	0.265	0.130	0.189	0.034	0.095	0.025	0.449	0.159
Hu Nan	n/a	0.118	0.054	0.075	0.124	0.145	0.058	0.072	0.117	0.049	0.219	0.103
Ji Lin	n/a	n/a	n/a	0.035	0.007	0.128	0.013	0.020	0.058	0.108	0.514	0.110
Shan Xi	n/a	0.074	0.160	0.101	0.078	0.064	0.176	0.028	0.060	0.443	-0.098	0.109
He Nan	0.075	0.020	0.076	0.070	0.071	0.090	0.142	0.058	0.130	0.088	0.183	0.091

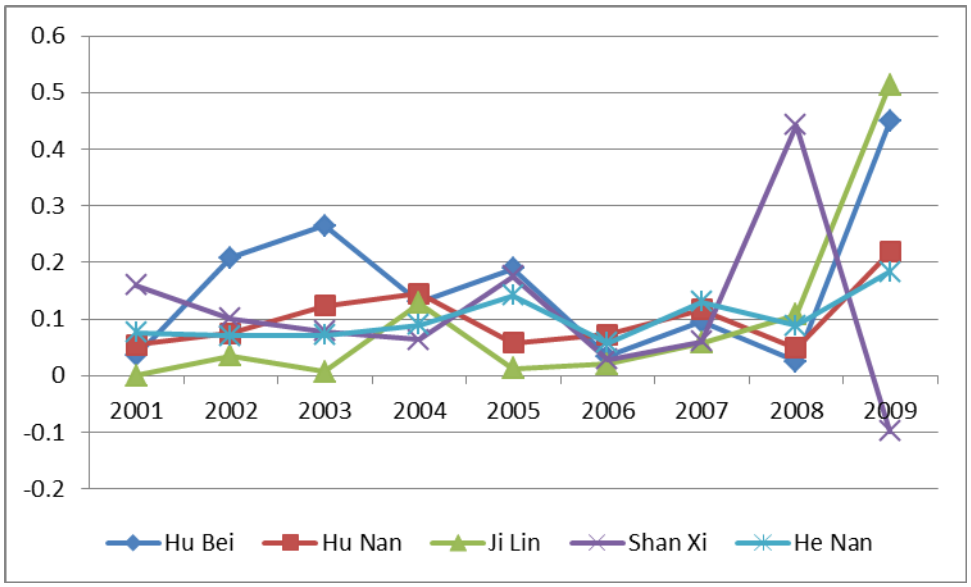

Figure 2.29 Central Provinces Transportation Growth Rate

From Table 2.29 and Figure 2.29, it is clearly to see an overall positive transportation volume growth trend in central region. However, before 2008, five sampling provinces had a relatively stable growth curve. From 2008 to 2009, transportation growth rates differed greatly. Shan Xi reduced by a surprising 54% within one year. The rest four sampling provinces including Hu Bei, Ji Lin, Hu Nan, and He Nan increased astonishing 42%, 40%, 17% and 10%, respectively.

Table 2.30 West Provinces Transportation Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Shann Xi	n/a	n/a	0.156	0.107	0.488	0.175	0.206	-0.036	0.093	0.119	n/a	0.164
Yun Nan	n/a	n/a	0.140	-0.005	0.086	0.055	0.044	0.054	0.114	0.079	0.087	0.073
Si Chuan	n/a	0.040	0.085	0.086	-0.007	0.150	0.117	-0.008	0.099	0.040	0.430	0.103
Guang Xi	n/a	n/a	0.037	0.076	0.088	0.161	0.098	0.111	0.143	0.157	0.050	0.103
Inner Monglia	n/a	n/a	0.047	-0.010	0.129	0.183	0.113	0.121	0.180	0.206	0.549	0.169

Source: Self Summary

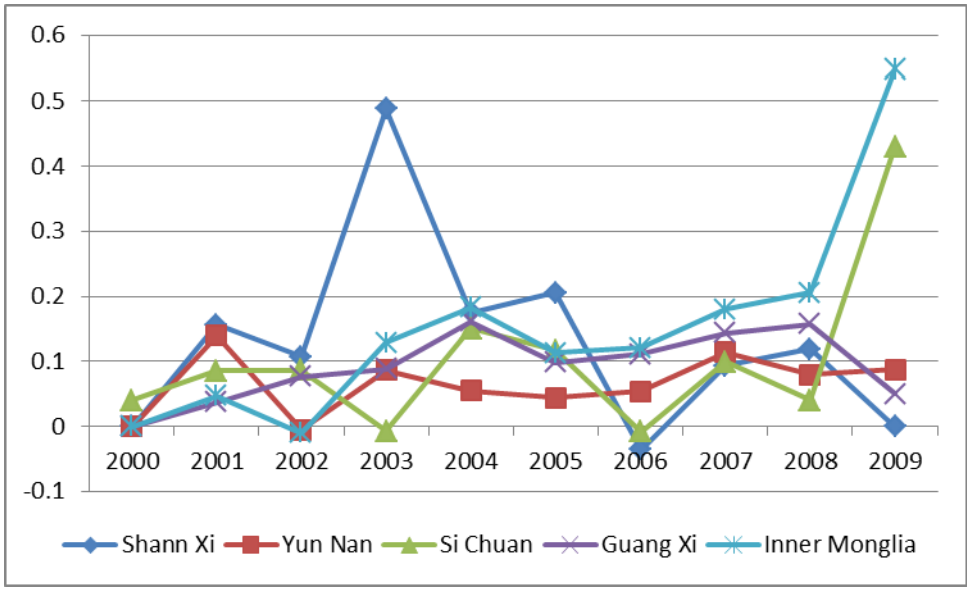

Figure 2.30 West Provinces Transportation Growth Rate

From Table 2.30 and Figure 2.30, it is obvious to see an overall positive transportation growth rate in west region. Among the total five sampling provinces, the related growth rate of Yun Nan and Guang Xi were relatively stable. By contrast, the rest of the provinces including Shann Xi, Si Chuan and Inn Monglia had a more undulated growth trend. It is worthy to note that both Si Chuan and Inn Mongolia annual transportation volume growth rate increased greatly from 2008 to 2009. The total transportation volume in both provinces increased 39% and 34%, respectively.

Table 2.31 Average Provincial Transportation Growth Rate

Province	Average Annual Transportation Growth Rate
He Bei	0.115
Guang Dong	0.051
Jiang Su	0.128
Zhe Jiang	0.177
Fu Jian	0.151
Hu Bei	0.159
Hu Nan	0.103
Ji Lin	0.110
Shan Xi	0.109
He Nan	0.091
Shann Xi	0.164
Yun Nan	0.073
Si Chuan	0.103
Guang Xi	0.103
Inner Monglia	0.169

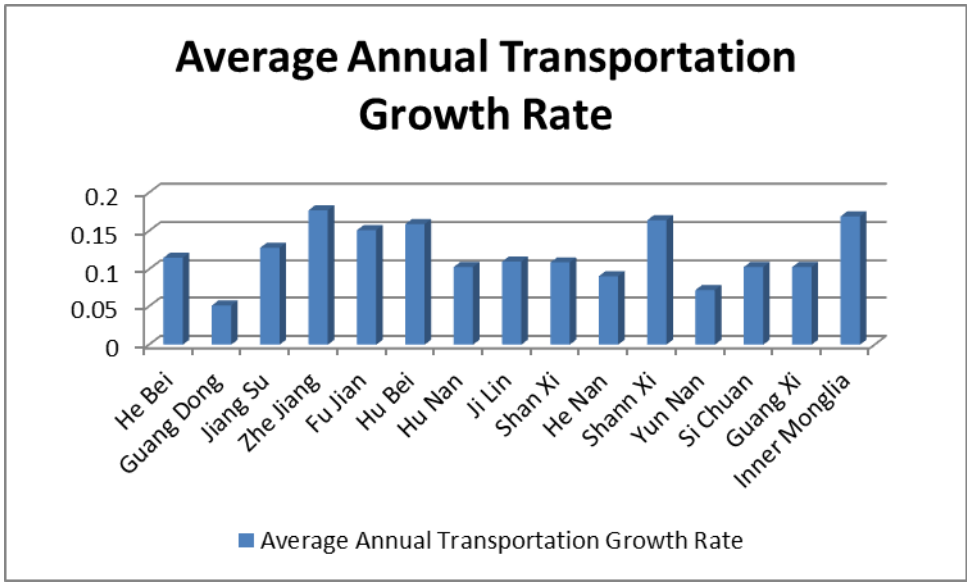

Figure 2.31 Average Provincial Transportation Growth Rate

As a brief summary, Table 2.31 and Figure 2.31 introduced the average annual transportation volume growth rate. Among the total, Zhe Jiang had the highest average annual transportation volume growth rate as 17.7%, Guang Dong possesses the lowest average annual transportation growth rate as 5.1%.

2.4.7 Annual Provincial College Enrollment

Educational level is another important index to indicate the economic growth. Most economists believe that the higher the nationally educational level, the higher the nationally economic growth (Nonnemberg and Mendonca, 2004; Banga, 2003; Head and Ries, 1996: 38-60; Fu, 2008: 89-110). In fact, there is a positive interaction between educational level and economic growth. Usually, people in relatively developed countries prefer to take higher level education. As a result, people with better educational background usually economically contribute to the economic growth more than the people with weaker educational background. The annual college enrollment is used to as the proxy of educational level in this study.

Table 2.32 Annual East Provinces College Enrollment (Unit: Thousand People)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
He Bei	n/a	n/a	253	351	475	576	697	774	863	981	1000	1061
Guang Dong	n/a	n/a	299.5	381.9	467.8	587.8	726.9	874.4	1008.6	1120	1216.4	1334.1
Jiang Su	273.2	359.3	451.9	585.5	700.2	859.7	994.8	1159.8	1306.2	1568.8	1607.4	1653.4
Zhe Jiang	n/a	n/a	212	224	393.1	484.6	572.8	651.4	720	778	832.2	866.5
Fu Jian	n/a	n/a	131.3	167.4	197.3	257.4	325.7	407	461.3	509.5	562.6	606.3

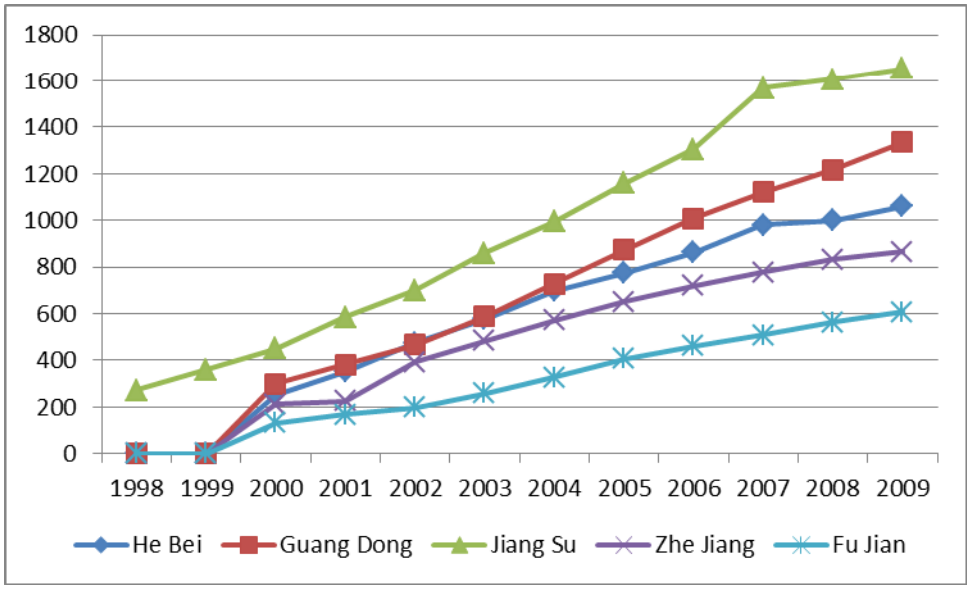

Figure 2.32 Annual East Provinces College Enrollment (Unit: Thousand People)

From Table 2.32 and Figure 2.32, it is obvious to see that people with high educational background in east region increased continuously. Among the total, Jiang Su leaded, followed by Guang Dong, He Bei, Zhe Jiang and Fu Jiang, respectively.

Table 2.33 Annual Central Provinces College Enrollment (Unit: Thousand People)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Hu Bei	n/a	n/a	346.6	453	585	722	892	1012.7	1092.3	1163.7	1185	1249
Hu Nan	n/a	193.6	253.1	331.3	419.4	537.2	639	754.9	831	898.6	952.3	1016.8
Ji Lin	n/a	n/a	n/a	230	265	300	362.2	407.3	435	470	504.1	531
Shan Xi	n/a	94	121	165	208	274	345.3	407	446.4	484.5	523	577.4
He Nan	146.4	185.5	262.4	369.1	468	557	702.8	852	974.1	1095.2	1250.2	1368.8

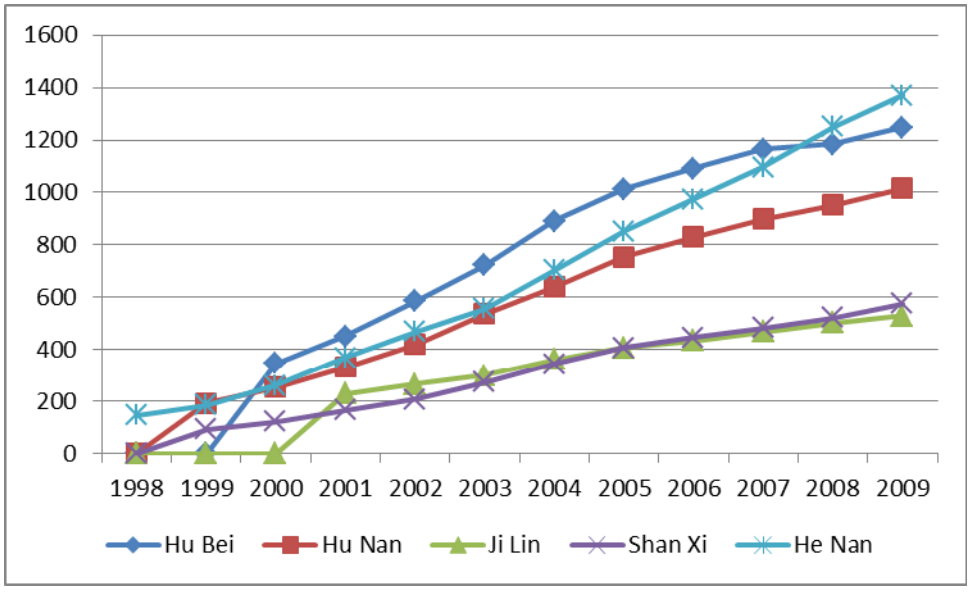

Figure 2.33 Annual Central Provinces College Enrollment (Unit: Thousand People)

From Table 2.33 and Figure 2.33, it is clear to see that people with a high educational background in central region increased continuously. Among the total, Hu Bei leaded, followed by He Nan, Hu Nan, Shan Xi and Ji Lin respectively.

Table 2.34 Annual West Provinces College Enrollment (Unit: Thousand People)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shann Xi	n/a	n/a	151	317	412	499.7	583.9	666.9	726.2	775.6	839.7	n/a
Yun Nan	n/a	n/a	90.4	119	143.4	175.3	216.3	254.7	284.2	311.1	347.7	393.6
Si Chuan	n/a	180	236	317	412	513	637	775	861	918	991	1036
Guang Xi	n/a	n/a	117.9	151.6	186.3	227.3	271.7	338.3	387.4	434.4	484.2	528.3
Inner Monglia	n/a	n/a	70.4	99.6	120.8	158.7	198.7	230.9	252.9	283.8	316.7	351.9

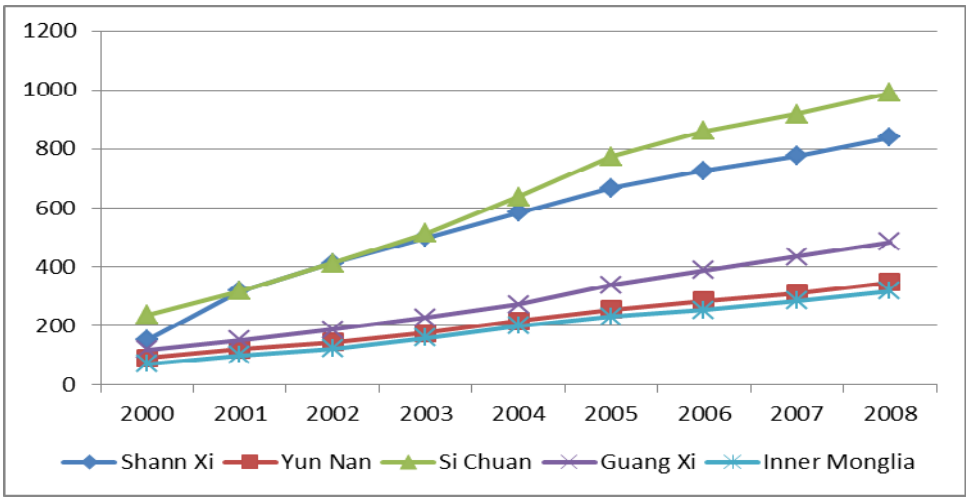

Figure 2.34 Annual West Provinces College Enrollment (Unit: Thousand People)

From Table 2.34 and Figure 2.34, it is clear to see that people with a higher educational background in west region increased continuously. Among the total, Si Chuan leaded, followed by Shann Xi, Guang Xi, Yun Nan and Inner Mongolia, respectively.

2.4.8 Provincial College Enrollment Growth Rate

Besides annual college enrollment indicates the educational level, annual college enrollment growth rate works as well. However, annual college enrollment indicates the amount of people that take higher level education. Provincial college enrollment growth rate expresses the trend of people that take higher level in the province.

Table 2.35 East Provinces College Enrollment Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
He Bei	n/a	n/a	0.387	0.353	0.213	0.210	0.110	0.115	0.137	0.019	0.061	0.178
Guang Dong	n/a	n/a	0.275	0.225	0.257	0.237	0.203	0.153	0.110	0.086	0.097	0.183
Jiang Su	0.315	0.258	0.296	0.196	0.228	0.157	0.166	0.126	0.201	0.025	0.029	0.181
Zhe Jiang	n/a	n/a	0.057	0.755	0.233	0.182	0.137	0.105	0.081	0.070	0.041	0.184
Fu Jian	n/a	n/a	0.275	0.179	0.305	0.265	0.250	0.133	0.104	0.104	0.078	0.188

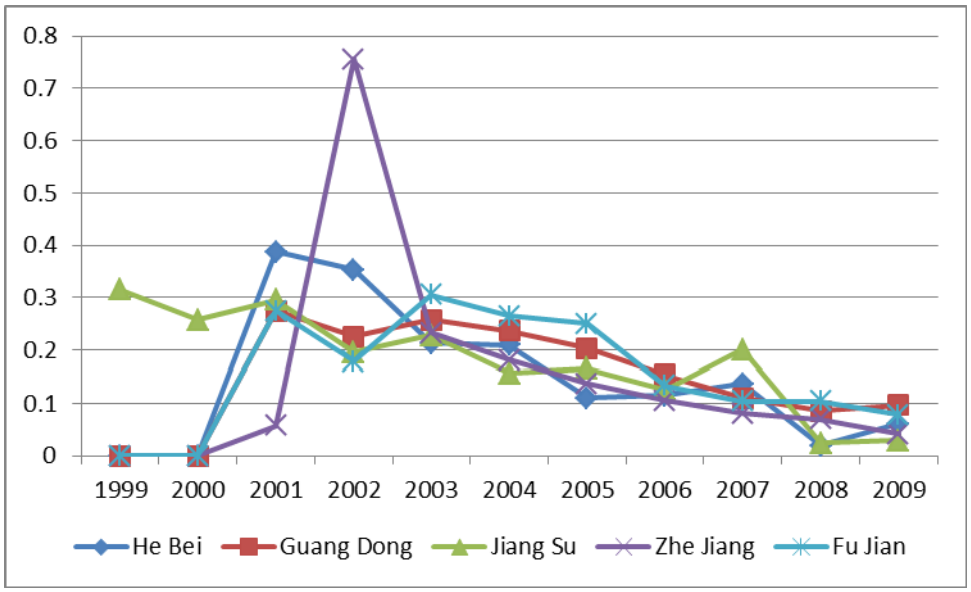

Figure 2.35 East Provinces College Enrollment Growth Rate

From Table 2.35 and Figure 2.35, it is obvious to see that the college enrollment growth rate maintained a completely positive trend in east region. It indicates that the number of people taking high level education increased annually.

Table 2.36 Central Provinces College Enrollment Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Hu Bei	n/a	n/a	0.307	0.291	0.234	0.235	0.135	0.079	0.065	0.018	0.054	0.158
Hu Nan	n/a	0.307	0.309	0.266	0.281	0.190	0.181	0.101	0.081	0.060	0.068	0.184
Ji Lin	n/a	n/a	n/a	0.152	0.132	0.207	0.125	0.068	0.080	0.073	0.053	0.111
Shan Xi	n/a	0.287	0.364	0.261	0.317	0.260	0.179	0.097	0.085	0.079	0.104	0.203
He Nan	0.267	0.415	0.407	0.268	0.190	0.262	0.212	0.143	0.124	0.142	0.095	0.229

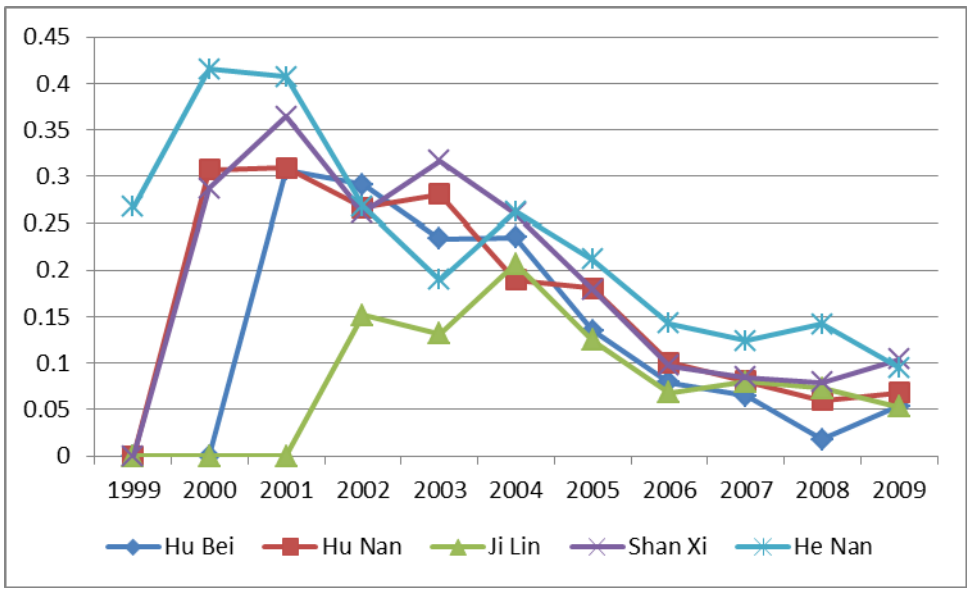

Figure 2.36 Central Provinces College Enrollment Growth Rate

From Table 2.36 and Figure 2.36, it is obvious to see that the college enrollment growth rate maintained a completely positive trend in central region. It indicates that the number of people in the region taking high level education increased annually.

Table 2.37 West Provinces College Enrollment Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Shann Xi	n/a	n/a	1.099	0.300	0.213	0.169	0.142	0.089	0.068	0.083	n/a	0.270
Yun Nan	n/a	n/a	0.316	0.205	0.222	0.234	0.178	0.116	0.095	0.118	0.132	0.179
Si Chuan	n/a	0.311	0.343	0.300	0.245	0.242	0.217	0.111	0.066	0.080	0.045	0.196
Guang Xi	n/a	n/a	0.286	0.229	0.220	0.195	0.245	0.145	0.121	0.115	0.091	0.183
Inner Monglia	n/a	n/a	0.415	0.213	0.314	0.252	0.162	0.095	0.122	0.116	0.111	0.200

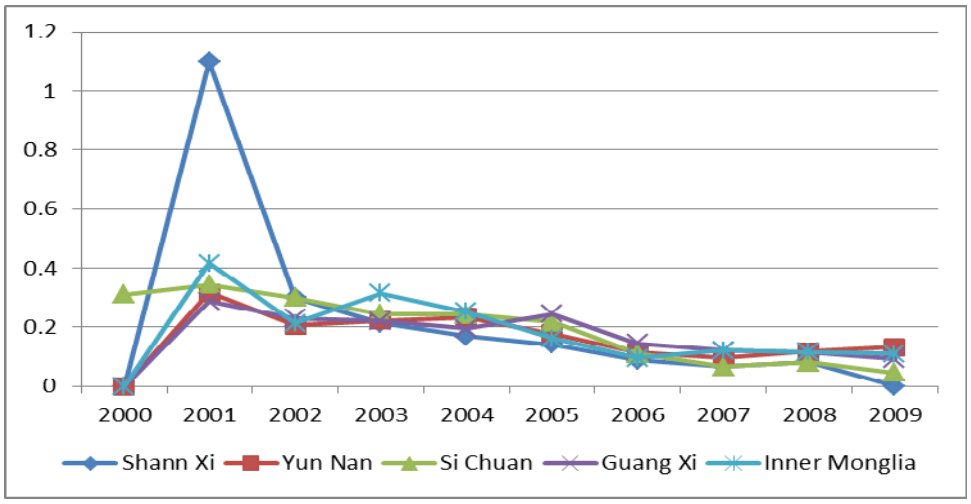

Figure 2.37 West Provinces College Enrollment Growth Rate

From Table 2.37 and Figure 2.37, it is obvious to see that the college enrollment growth rate maintained a completely positive trend in west region. It indicates that the number of people in the region taking high level education increased annually.

Table 2.38 Average Provincial College Enrollment Growth Rate

Province	**Average Annual College Growth Rate**
He Bei	0.178
Guang Dong	0.183
Jiang Su	0.181
Zhe Jiang	0.184
Fu Jian	0.188
Hu Bei	0.158
Hu Nan	0.184
Ji Lin	0.111
Shan Xi	0.203
He Nan	0.229
Shann Xi	0.270
Yun Nan	0.179
Si Chuan	0.196
Guang Xi	0.183
Inner Monglia	0.200

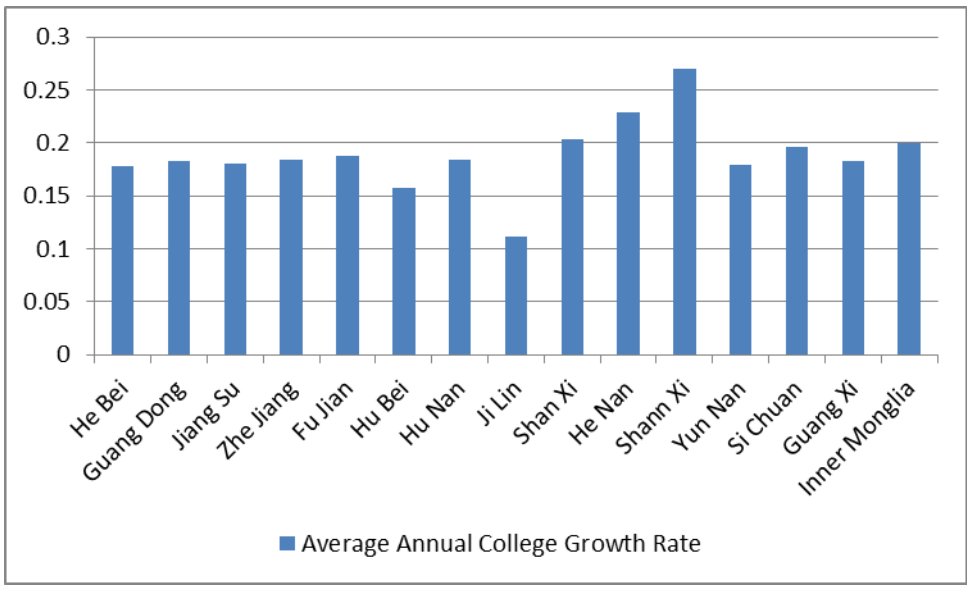

Figure 2.38 Average Provincial College Growth Rate

As a brief summary, Table 2.38 and Figure 2.38 indicate the average annual college enrollment growth rate. Among the fifteen sample provinces, Shann Xi had the highest average annual college enrollment growth rate as 27%. Ji Lin had the lowest average annual college enrollment grow rate as 11.1%.

2.4.9 Annual Provincial Disposable Income Per Capita

Provincial disposable income per capita is an economic index to designate the purchasing power of the people of the province. It is a common knowledge that the economic developments in the provinces that people have the higher disposable income per capita is advanced (Dunning, 1980, 1981; Asiedu,1998: 107-118; Kinoshita and Carnpos, 2004; Billington,1999: 65-76; Kinoshita, 1998; Kumar, 2001).

Table 2.39 Annual East Provinces Disposable Income (Unit: US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
He Bei	n/a	n/a	683.78	723.06	806.9	874.6	960.65	1111.44	1292.44	1536.61	1934.25	2155.26
Guang Dong	n/a	n/a	1120.79	1257.1	1414.28	1592.36	1757.4	1988.53	2290.86	2704.26	3270.54	3603.9
Jiang Su	726.9	789.83	821.38	891.04	988.04	1119	1266.39	1503.42	1766.5	2152.73	2688.16	3009.52
Zhe Jiang	n/a	n/a	1179.01	1258.31	1345.54	1495.76	1646.45	1802.53	2008.73	2326.41	2839.67	3159.28
Fu Jian	n/a	n/a	897.69	1004.35	1110.22	1208.17	1350.17	1503.66	1724.98	2038.04	2584.75	2866.75

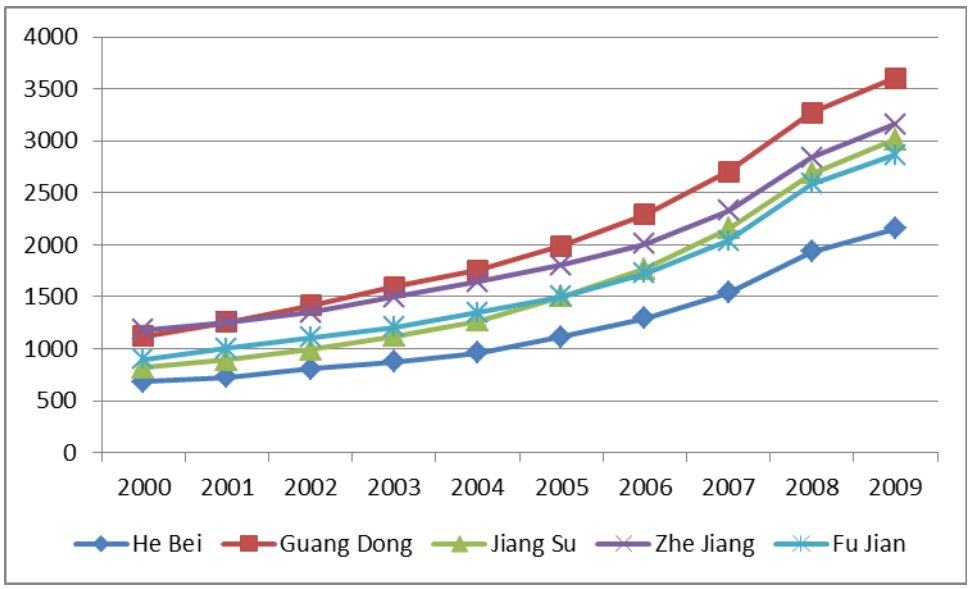

Figure 2.39 Annual East Provinces disposable Income (Unit: US Dollar)

From Table 2.39 and Figure 2.39, it is obvious to see that annual disposable income per capita in east region increased continuously. Among the total, Guang Dong pioneered, followed by Zhe Jiang, Jiang Su, Fu Jiang and He Bei, respectively. In general, annual disposable income per capita in the region positively increased.

Table 2.40 Annual Central Provinces Disposable Income (Unit: US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Hu Bei	n/a	n/a	667.3	707.5	820.23	884.62	969.31	1072.25	1229.53	1509.6	1892.77	2103.82
Hu Nan	n/a	702.46	751.18	819.2	840.71	927.17	1041.14	1162.31	1317.53	1615.87	1989.95	2208.86
Ji Lin	n/a	n/a	n/a	645.22	756.33	846.33	947.28	1060.61	1226.02	1483.38	1846.17	2051
Shan Xi	n/a	524.6	570.6	651.33	753.22	846.32	954.8	1087.86	1257.71	1520.11	1887.91	2049.58
He Nan	509.6	547.52	575.7	636.34	754.55	836.79	930.88	1057.84	1230.44	1508.55	1904.02	2104.49

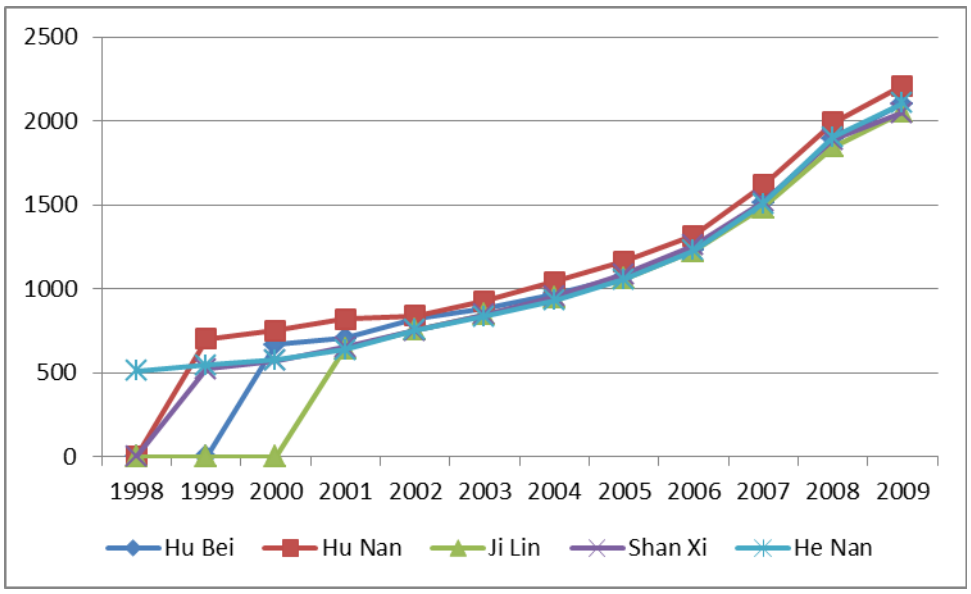

Figure 2.40 Annual Central Provinces Disposable Income (Unit: US Dollar)

From Table 2.40 and Figure 2.40, it is obvious to see that Hu Nan leads the annual disposable income in central region. The other four sample provinces including Hu Bei, Ji Lin, Shan Xi and He Nan were in the same disposable income per capital level. The overall trend of disposable income is continuously increased in the central region annually anyway.

Table 2.41 Annual West Provinces Disposable Income (Unit: US Dollar)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shann Xi	n/a	n/a	509.72	662.56	764.89	822.28	905.22	1009.52	1162.42	1414.7	1850.34	n/a
Yun Nan	n/a	n/a	763.94	821.28	921.63	923.47	1071.77	1130.83	1263.01	1511.04	1906.75	2112.17
Si Chuan	n/a	661.75	722.8	768.39	798.72	850.79	931.49	1023.43	1172.71	1458.73	1817.96	2036.02
Guang Xi	n/a	n/a	704.67	805.36	883.77	940.56	1049.9	1088.21	1241.54	1603.58	2035.69	2262.56
Inner Monglia	n/a	n/a	618.43	668.84	731.06	847.28	981.39	1115.08	1299.14	1626.97	2076.7	2320.84

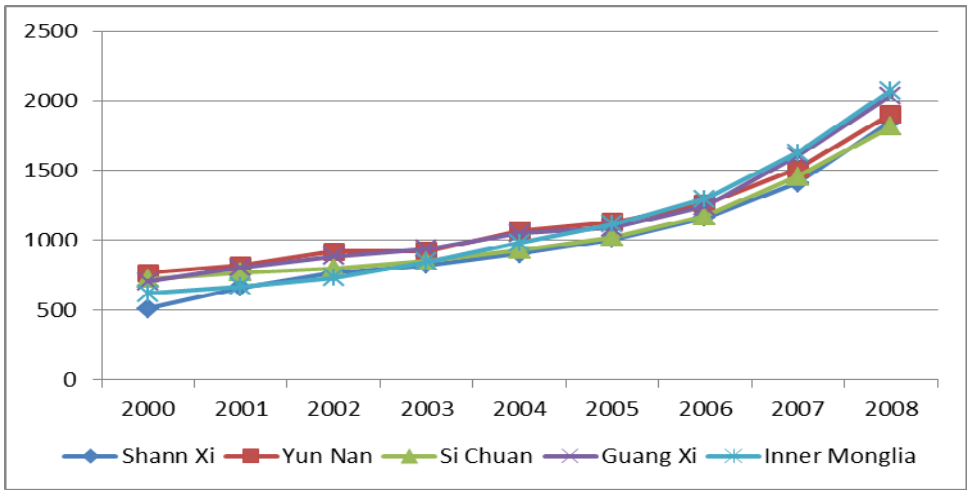

Figure 2.41 Annual West Provinces Disposable Income (Unit: US Dollar)

From Table 2.41 and Figure 2.41, it is obvious to see that the five sample provinces of west region including Shann Xi, Yu Nan, Si Chuan, Guang Xi and Inner Monglia, positioned in the same disposable income per capita level. Besides, the overall trends of disposable income per capita were continuously increased in west region annually.

2.4.10 Provincial disposable Income Per Capita Growth Rate

Besides annual disposable income volume, annual disposable income growth rate indicates purchasing power of the people as well. The difference between them is that the former directly defines the absolute disposable income value; the latter mainly describes the growth speed.

Table 2.42 East Provinces Disposable Income Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
He Bei	n/a	n/a	0.057	0.116	0.084	0.098	0.157	0.163	0.189	0.259	0.114	0.137
Guang Dong	n/a	n/a	0.122	0.125	0.126	0.104	0.132	0.152	0.180	0.209	0.102	0.139
Jiang Su	0.086	0.040	0.085	0.109	0.133	0.132	0.187	0.175	0.219	0.249	0.120	0.139
Zhe Jiang	n/a	n/a	0.067	0.069	0.112	0.101	0.095	0.114	0.158	0.221	0.113	0.117
Fu Jian	n/a	n/a	0.119	0.105	0.088	0.118	0.114	0.147	0.181	0.268	0.109	0.139

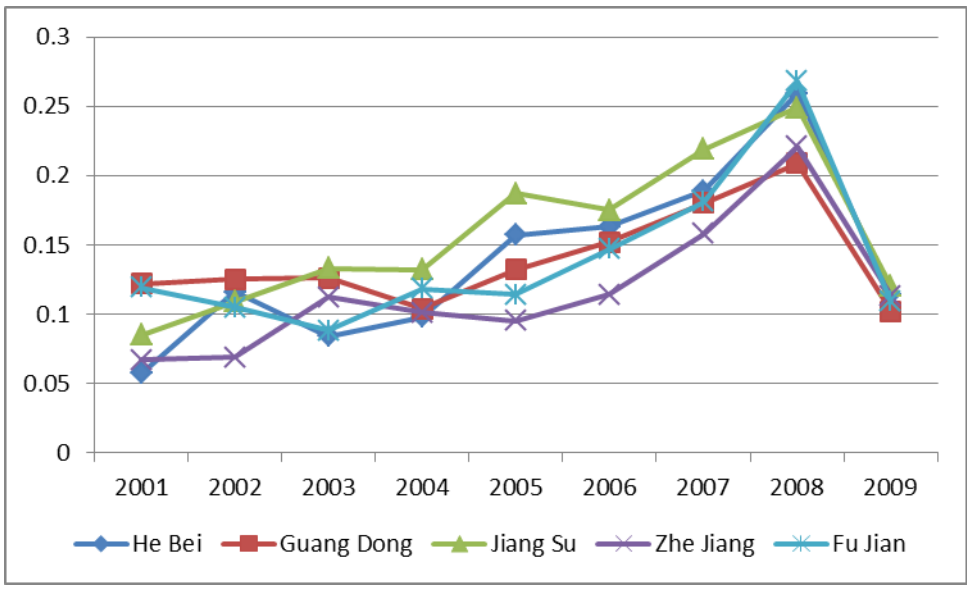

Figure 2.42 East Provinces Disposable Income Growth Rate

From Table 2.42 and Figure 2.42, it is obvious to see that the disposable income per capita growth rate in east region including Zhe Jiang, He Bei, Guang Dong, Jiang Su and Fu Jiang, maintained completely positive trends. It is noticeable that from 2001 to 2008, the overall disposable income per capita growth expressed an upward trend. However, from 2008 to 2009, the growth of disposable income growth rate in east region declined for some reasons.

Table 2.43 Central Provinces Disposable Income Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Hu Bei	n/a	n/a	0.060	0.159	0.079	0.096	0.106	0.147	0.228	0.254	0.112	0.138
Hu Nan	n/a	0.069	0.091	0.026	0.103	0.123	0.116	0.134	0.226	0.232	0.110	0.123
Ji Lin	n/a	n/a	n/a	0.172	0.119	0.119	0.156	0.210	0.245	0.111	n/a	0.156
Shan Xi	n/a	0.088	0.141	0.156	0.124	0.128	0.139	0.156	0.209	0.242	0.086	0.147
He Nan	0.074	0.051	0.105	0.186	0.109	0.112	0.136	0.163	0.226	0.262	0.105	0.139

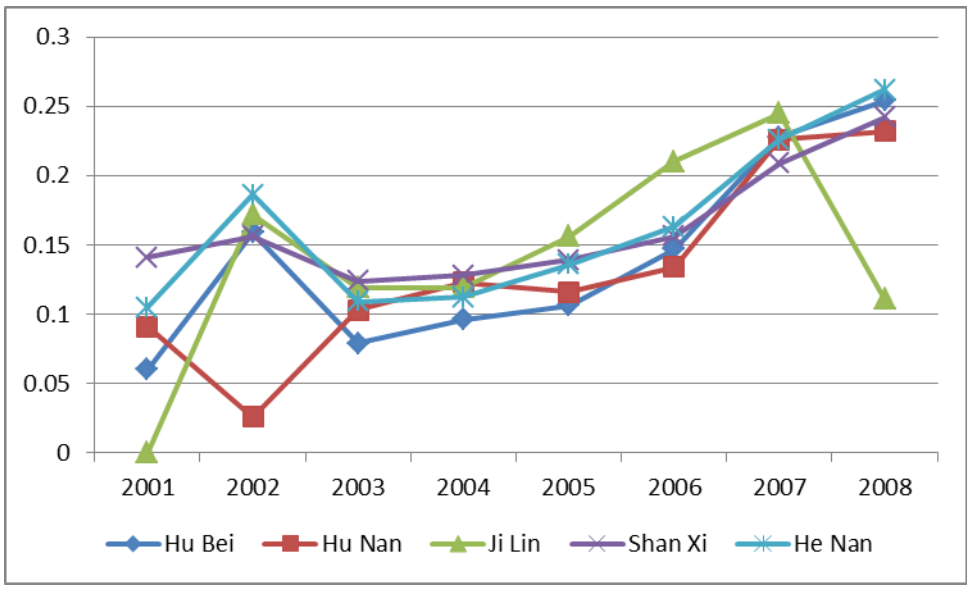

Figure 2.43 Central Provinces disposable Income Growth Rate

From Table 2.43 and Figure 2.43, it is obvious to see that the disposable income growth rate in central region maintained a completely positive trend. Among the total, four sampling provinces including Hu Nan, Hu Bei, He Nan and Ji Lin had relative undulate trend in disposable income growth. In contrast, Shan Xi maintained a relative stable growth trend.

Table 2.44 West Provinces Disposable Income Growth Rate

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Shann Xi	n/a	n/a	0.300	0.154	0.075	0.101	0.115	0.151	0.217	0.308	n/a	0.178
Yun Nan	n/a	n/a	0.075	0.122	0.002	0.161	0.055	0.117	0.196	0.262	0.108	0.122
Si Chuan	n/a	0.092	0.063	0.039	0.065	0.095	0.099	0.146	0.244	0.246	0.120	0.121
Guang Xi	n/a	n/a	0.143	0.097	0.064	0.116	0.036	0.140	0.291	0.269	0.111	0.141
Inner Monglia	n/a	n/a	0.082	0.093	0.159	0.158	0.136	0.165	0.252	0.276	0.118	0.160

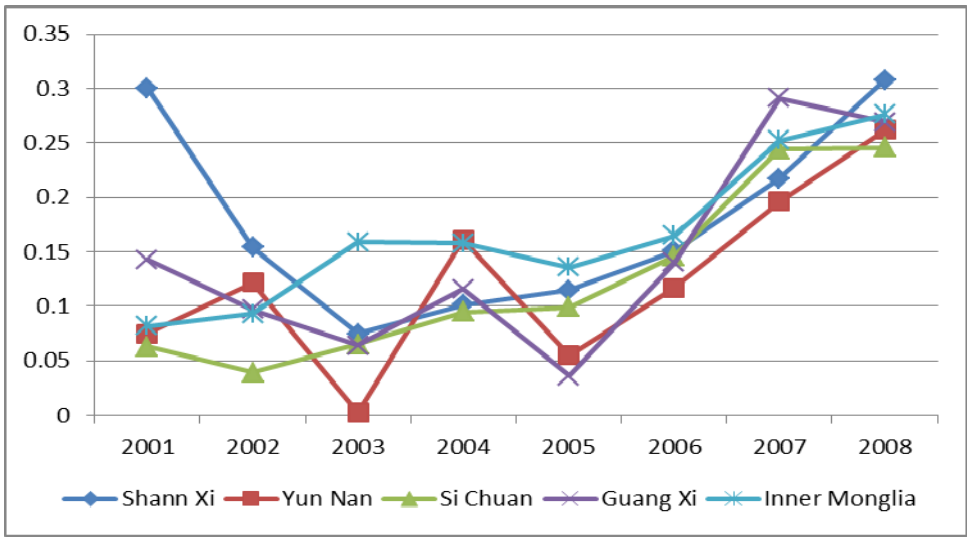

Figure 2.44 West Provinces disposable Income Growth Rate

From Table 2.44 and Figure 2.44, it is obvious to see that the disposable income per capita in west region maintained positive growth. However, all five sample provinces including Shann Xi, Yun Nan, Si Chuan, Guang Xi and Inner Monglia had an undulate disposable income per capita growth trend.

Table 2.45 Average Provincial Disposable Income Growth Rate

Province	Average Annual Income Growth Rate
He Bei	0.137
Guang Dong	0.139
Jiang Su	0.139
Zhe Jiang	0.117
Fu Jian	0.139
Hu Bei	0.138
Hu Nan	0.123
Ji Lin	0.156
Shan Xi	0.147
He Nan	0.139
Shann Xi	0.178
Yun Nan	0.122
Si Chuan	0.121
Guang Xi	0.141
Inner Monglia	0.160

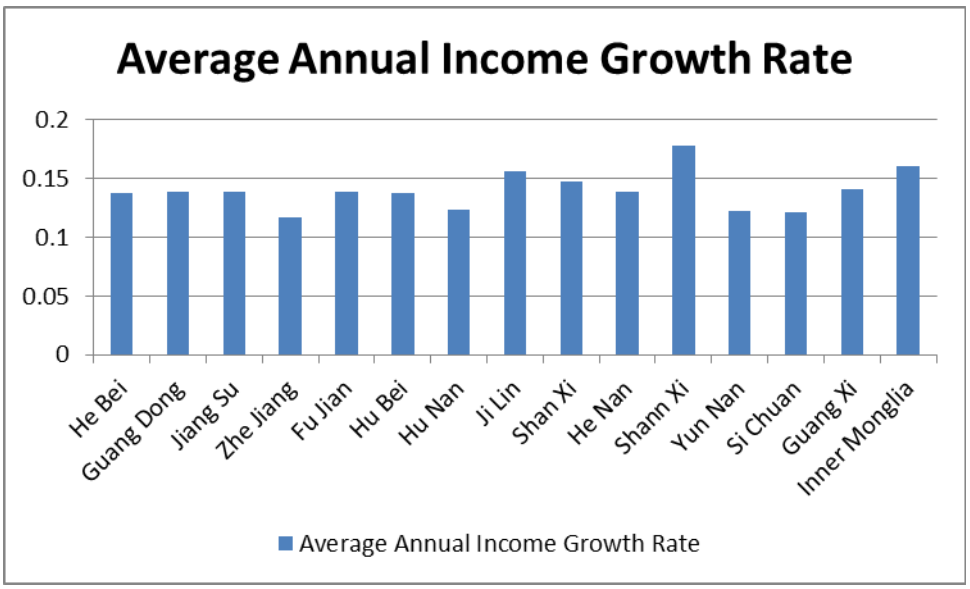

Figure 2.45 Average Provincial Disposable Income Growth Rate

As a brief summary, from Table 2.45 and Figure 2.45, it is clear to see that among the total fifteen sample provinces, Shann Xi had the highest average annual disposable income per capita growth rate as 17.8%, Zhe Jiang had the lowest average annual disposable income growth rate as 11.7%.

CHAPTER 3

LITERATURE REVIEW

3.1 Theoretical Framework

As one of the most important international transactions, the strong growth of FDI accelerated in the past years and pushed ahead the economic development of both host countries and home countries in various forms. Due to the obvious contribution of FDI inflow on the economic growth, a large number of economic paradigms and theories have been developed to explain the root causes drawing FDI from home countries to host countries. Many economists used different approaches to investigate FDI determinants under the different assumptions, molding various theories and models. Overall, there is no single theory, but an assortment of academic models attempting to illuminate FDI and the location decision of MNEs.

In this chapter, five theories and paradigms that exist in international economics literatures are present according to the era that the cited theory belonged to. The mentioned theories and paradigms include the MacDougall-Kemp Model and Macro Financial and Exchange Theories; the Theory of Industrial Organization; Product Life Cycle Hypothesis; Internalization Theory and Eclectic Paradigm of International Production Model (OLI Model), respectively.

These selected theories are thought to be the theoretical foundations of FDI determinants investigation of this study.

3.1.1 The MacDougall-Kemp Model and Macro Financial and Exchange Theories

Until about 1960s, the theoretical attempts to explain FDI were almost based on the Heckscher-Ohlin Model of the Neoclassical Trade Theory where FDI was seen as part of international capital trade (Faeth, 2009). Under the assumption of perfect

competition of Neoclassical Trade Theory, the Heckscher-Ohlin Model supposed that there were two countries differ in relative factor endowments, for instance, one was relatively capital-abundant and the rest one was relatively labor-abundant, the followed international factor price differentials made the relatively capital-abundant country exported capital to the relatively labor-abundant country. As the result, FDI outward emerged.

The MacDougall-Kemp Model --- based on theoretical models by Hobson (1914); Jasay (1960: 105-113); MacDougall (1960: 13-35) and Kemp (1964), inherited the standard Neoclassical Trade Theory with international capital movement assumption --- no taxation, full employment, perfect competition and constant returns to scale, but considered only one good and two factors of production as labor and capital (Ruffin, 1984: 237-288). In the case of capital stock, it was partly held by the home, and the host country. The capital would flow to the country providing the higher marginal return. According to the model, the country providing the higher marginal return usually would be the capital-scarce country, and the country accepting the higher marginal return usually would be the labor-scarce country.

Today, the model seemed to be too simple and has limited ability to explain most of FDI inflows and MNE behaviors (Markusen, 1984, 1997, 2001, 2002; Markusen, et al, 1995; Markusen and Venables, 1998, 2000). However, a FDI determinant arose from the model indirectly: labor cost (Table 3.1). According to the model, labor cost had negative effects on FDI inflow.

Under the same international capital movement assumption, Aliber (1970) raised an important concept in his Macro Financial and Exchange Theories: the difference in interest rates and exchange rates between home and host countries would influence the location selection decision making of MNEs. The theory offered some reason of why and how MNEs shift their international production and investment over time. According to Aliber, the differences of both exchange rate and interest rate between home and host countries were the major motivation for FDI inflow (Table 3.2). With regard to the former, Aliber argued that MNEs usually come from “harder” currencies home country and prefer to invest in the “softer” currencies host country. Thus, a country with low exchange rate would attract more FDI inflow. With regard to the latter, the interest rate issue was more complicated: the foreigner would deposit

in the host countries if the domestic banks provide higher saving rate comparing with the banks of their own countries, but they would lend only if the domestic banks provide lower lending rate comparing with the home countries' bank.

At the time of Aliber, he has never subjected his theory to rigorous empirical testing. However, the important influences of exchange rate and interest rate on FDI location decision have been acknowledged by the later economists with various empirical works.

Table 3.1 FDI Determinants According to The MacDougall-Kemp Model

Variable	**Theoretically Predicated Effect**
Labor Cost	Negative

Table 3.2 FDI Determinants According to Macro Financial and Exchange Theories

Variable	**Theoretically Predicated Effect**
Exchange Rate	Positive
Interest Rate	Positive/Negative (Base on the purpose)

3.1.2 The Theory of Industrial Organization

Hyman (1976) and Kindleberger (1969) criticized the Neoclassical approach for its limited use to explain MNE international location choice behavior. The concept of the Theory of Industrial Organization was raised by Hymer (1976) then. He argued that the perfect competition hypothesis could not explain many features of the FDI. Instead of the old concepts, he made use of imperfect competition as the assumption to clarify FDI. He explained that foreign markets were usually much more risky for foreign investors. Less information, uncertainty in various aspects, transportation obstacles, different culture and language, differences in business ethics and institutional system would be an immense challenge and obstacle for foreigners. Hymer thought any foreign investors would have to confront these disadvantages when they made the international investment decision. To overcome these disadvantages, MNEs must possess so-called Ownership Advantages as the asset to

enter foreign markets, for instance, government incentives and FDI outflow promotion policies, internal and external economies of scale, unique management experiences, product differentiation level (in the case of imperfect good markets), and new technology or patents (imperfect factor markets). He pointed out that MNEs were usually large firms with control or market power as “monopolistic advantage”. Ownership Advantages gave MNEs more power over their local counterparts to be the dominant competitor. According to his theory, FDI inflow determinants would the factors such as economic certainty, political stability, rational legal system and other regulation and similar language and culture.

Caves (1971: 1-27) succeeded Hymer’s theory and focused on the importance of MNEs’ product differentiation to do the further studies. However, Hymer thought that market imperfections are structural, arising from structural deviations from perfect competition in the final product market due to exclusive and permanent control of proprietary technology, privileged access to inputs, scale economies, control of distribution systems, and product differentiation (Pitelis, et al, 2000). Hymer argued that market imperfections only existed in the final stage of the production process. With regard to this concept, Caves had different view to Hymer. He argued that markets experience natural imperfections, even at the initial stage of production. According to Caves, one of the best choices to resolve the issues caused by natural market imperfections was that firms expand their productions overseas. The product differentiation was main monopolistic advantage MNEs had to be possessed. He further argued imperfection competition itself pushed MNEs out of home country and set up the oversea firms. Because Caves thought the market imperfection was natural, therefore, the size of the foreign market was the main determinant attracting FDI inflow. The existing product differentiation as ownership advantage was that MNEs possessed could be effectively elaborated and brought into full play. According to him, the country that possesses huge market potential would attract more FDI, to be the host country. It is notable that both Hymer’s structural market imperfections assumption and Caves’s natural market imperfections assumption were from the starting point of market failure concept. Therefore, their theories sometimes were called as Market Imperfection Theory.

Knickerbocker (1973) agreed with Hymer's imperfect competitive assumption to explain FDI. He argued that FDI cannot exist in the world of perfect competition for goods and factors. Domestic firms would have advantages over their foreign rivals in the condition of perfect competition. Because the domestic firms were naturally familiar with the factors of production and the final goods market, foreign investors had no chance of surviving in both production and marketing. If FDI is to thrived in a foreign country, it must be in the imperfection market for the factors of production and final goods. MNEs could express their ownership advantage such as production differentiation, superior marketing and distribution skills. To prove his postulation, Knickerbocker chose 187 US based MNEs that were established between 1948 and 1967 and had invested 23 countries as his study objects. He studied the international production behaviors of these risk-avoiding members under oligopolistic competitions. Knickerbocker found that the firms will follow one anothers rivals into a substantial foreign market in which one of them set up production (Barclay, 2000), and finally got to the conclusion that MNEs was the result of a "Follow-the-leader" strategy. The conclusion came from such a phenomenon: Imperfect competition attracted MNEs from country A to express their Ownership Advantages in country B; the local enterprises of country B reacted with investing the country C as new MNEs. Therefore, a complex worldwide factor movement formed which had influences on the global market and international production. It involved the economics concept that firms in oligopolistic industries tended to match each other's investment moves in foreign country to maintain their competitive balance (Rugman, 1986), benefitted from the unique assets as the ownership advantages. By the way, because of the source of his research, Knickerbocker's theory was named as the Theory of Oligopolistic Reaction.

It is worth noticing that Graham (1978: 82-99) confirmed Knickerbocker's Theory of Oligopolistic Reaction. He found the similar reaction in his study: European MNEs invested to third country to react with US FDI in their home countries. The investment mode and product differentiation approach were extremely similar with their US counter-parties.

In general, the Theory of Industrial Organization and its relative studies raised a series of potential FDI inflow determinants indirectly: market size, economic

certainty, political stability, rational legal system and other regulations, and similar language and culture (Table 3.3).

Table 3.3 FDI Determinants According to The Theory of Industrial Organization

Variable	Theoretically Predicated Effect
Market Size	Positive
Economic Certainty	Positive
Political Stability	Positive
Rational Legal System	Positive
Similar Language and Culture	Positive

3.1.3 Product Life Cycle Hypothesis

Primarily based on historical tendencies and qualitative approaches, Vernon (1966: 190-207) explained international trade and FDI location decisions from the perspective completely differently from Hymer. Vernon tried to answer a common question. Why did the firms possessed ownership advantage not just sell their monopolistic advantages to the foreigners, instead of involving into the international production process. In his Product Life Cycle Hypothesis, Vernon divided the life cycle of products into three stages: new product stage, maturing product stage and standardized product stage, explained the reasons why firms switch from product exports to international productions.

Vernon claimed that in the new product stage, the product was wholly produced in the home country and supplied in the home market to get higher profit as an innovated product. Followed by the maturing product stage, the product would be exported to other country with higher or similar income to satisfy the expanding aboard demand, say, from US export to Western Europe markets. At this stage, product standardization increased as well as the production volume, while average costs of production would be lower because of the higher demand for the product. However, the presence of monopoly profits stimulates more firms to enter the market, although these firms could not entirely compete based on the characteristics of the product. In their attempt to maintain the monopoly position, the innovating incumbent firms started to consider investing in foreign locations, such as some developed

countries. However, the initial advantages were gradually lost (Matei, 2007). In the standardized product stage, the characteristics of the product and the production process were well known by the rivals; the product became familiar to more and more customers and production process becomes accessible to other potential producers. Because of cost considerations and competitive pressure, production would shift to lower cost developing countries. When the incremental production costs in the developing country plus transportation and other costs were lower than the average production costs in the innovating country, it became worthwhile to open an oversea affiliate (Cuyvers, et al, 2008). In case of the host country with larger market, local production would serve the demands of host country, instead of exports. At the same time, the total cost of the product would be lower because of the lower factor inputs including both labor and material. The resulted lower product price continued encouraged market growth in developing countries, including the host country and the similar income neighboring countries. The life cycle of product and the comparative advantages possessed by developing countries promoted FDI inflow.

Overall, Product Life Cycle Hypothesis contributed some major FDI determinants: market size, labor cost and transportation cost. The economic researchers mostly adopted these factors extended the particular studies (Agarwal, 1980: 739-773; Parry, 1978: 173-199; Culem, 1988: 885-904; Cole, Elliot and Zhang, 2006). Empirical findings confirmed Vernon's Product Life Cycle Hypothesis.

Table 3.4 FDI Determinants According to Product Life Cycle Hypothesis

Variable	**Theoretically Predicated Effect**
Market Size	Positive
Labor Cost	Negative
Transportation Cost	Negative

3.1.4 Internalization Theory

The internalization concept was initially raised by Coase (1937). In his "Theory of the Firm", Coase compared the efficiency of various forms of transactions within the firm and came to the followed conclusion: Because of relatively less transaction costs which were used to run the economic system, such as information

sourcing, enforcement and bargaining costs, the better off of firms to respond to the market failure was internalizing transactions. Besides, it is worth noting that the concept of “transaction cost” is under the deferation

Buckley and Casson (1976) developed and applied Coase’s internalization concept into their Internalization Theory to explain FDI under three main assumptions. The first one was that firms maximize profits under imperfect competition. Secondly, markets for intermediate products and knowledge including production and marketing techniques, management skills and component parts or services were imperfect, risky and uncertainty. This resulted in higher transaction costs. Thirdly, internalization of markets of different countries engendered the existence of MNEs. Buckley and Casson thought that firms would make decisions to internalize depended on four kind of specific factors: industry-specific factors (such as product type, market structure and economic of scale), regional-specific factors (such as geographic distance and cultural differences), national-specific factors (such as political and financial factors) and firm-specific factors (such as management skills). They showed that MNEs were active in research and development (R&D) intensive industries and the referred industries had a higher degree of internalization (Faeth, 2005).

The same as the Theory of Industrial Organization, Internalization Theory was established under the same assumption: Market failure in the home country forced firms to invest overseas. In addition to the factors attracting FDI mentioned above, Casson (1987) argued that the differences of disposable income of the people and profit tax rate between home country and host country would stimulate MNEs go abroad when the future market becomes absence. Because of the nature and purpose of maximum profit of the enterprises, MNEs would select the host countries with higher disposable income level and lower tariffs and taxes.

Both the theory of Industrial Organization and Internalization Theory were established on the concept of market failure. However, there is an important difference between the two theories. The theory of Industrial Organization argued that firms firstly possessed some monopolistic advantages, then, became MNEs. Internalization Theory argued firms would become MNEs when their monopolistic advantages came to be threatened and they had to invest abroad.

Comparing with the previous studies, Buckley and Casson (1987) explained FDI determinants had more at both microeconomics and macroeconomics levels. In his late work, Casson further added rational government regulations, reduced tariffs and taxes, and market potential of host countries, as the factors to attract FDI inflow (Table 3.5).

Table 3.5 FDI Determinants According to Internalization Theory

Variable	**Theoretically Predicated Effect**
Market Size and Market Potential	Positive
disposable Income	Positive
Tariffs and Taxes	Negative
Rational Legal System	Positive
Similar Language and Culture	Positive

It is worthy pointing out an additional important contribution of the theory of Industrial Organization, Product Life Cycle Hypothesis and Internalization Theory. These theories addressed some potential FDI determinants, providing the probability of hypotheses testing systematically. As the result, regression analysis instead of descriptive analysis became a widely adopted approach from 1970s onwards.

3.1.5 Eclectic Paradigm of International Production Model (OLI Model)

Dunning (1977,1981, 1988, 1993, 1998) proposed a general framework seeking to explain FDI phenomenon and MNEs cross board production decisions: Eclectic Paradigm of International Production Model, or so-called OLI model. The model was formalized and developed from the earlier three main streams of theories which included the Theory of Industrial Organization of Hymer (1960), Product Life Cycle Hypothesis of Vemon (1966) and Internalization Theory of Buckley and Casson (1976). However, Dunning did not just summarize the previous theories. Before Dunning, the theories could not explain why MNEs would vary depending on the category of the host country such as the development level of the country; industry and sector that MNEs engaged in; and the international production of MNEs itself,

especially on the entry mode as a foreign company, for instance, enter as a joint venture with a domestic firm or wholly foreign owned firm.

The complicated OLI framework of Dunning was different from the earlier framework's sample structural. In his work, Dunning agreed with the previous theories: FDI inflow was determined by three sets of certain assets which included ownership specific advantages, location endowments advantage and internalization advantages. He claimed that MNE would seek cross border activities if it had acquired the above three certain assets not available to the enterprises in the host countries. However, he argued that ownership specific advantages, location endowments advantage and internalization advantages may vary under different country-specific, industry-specific and firm-specific situations (Table 3.6). Briefly, firm-specific ownership advantages of the MNEs were capital, technology, marketing, organizational and management skills. Country-specific location advantages of host country were factor endowments, investment incentives, tariffs, government policies, infrastructure etc. The latter or could be considered as the FDI inflow determinants.

Table 3.6 OLI Characteristics vary According to Country-, Industry- and Firm-Specific Considerations

	Country (Home – Host)	**Industry**	**Firm**
Ownership	Factor endowments (e.g. resources and skilled labor) and market size and character; government policy towards innovation, protection of proprietary rights, competition and industrial structure, government controls on inward direct investment	Degree of product or process technological intensity; nature of innovations; extent of product differentiation; production economics (e.g. if there are economies of scale); importance of favored access to inputs and/or markets	Size, extent of production, process or market diversification; extent to which enterprise is innovative, or marketing-oriented, or values security and/or stability, e.g. in sources of inputs, markets, etc.; extent to which there are economies of joint production
Location	Physical and psychic distance between countries; government intervention (tariffs, quotas, taxes, assistance to foreign investors or to own MNEs, e.g. Japanese	Origin and distribution of immobile resources; transport costs of intermediate and final goods products; industry specific tariff and non-tariff barriers; nature of	Management strategy towards foreign involvement: age and experience of foreign involvement (position of enterprise in product cycle, etc.); psychic

Table 3.6 (Continued)

	Country (Home – Host)	**Industry**	**Firm**
	government's financial aid to Japanese firms investing in South East Asian labor-intensive industries)	competition between firms in industry; can functions of activities of industry be split? Significance of 'sensitive' locational variables, e.g. tax incentives, energy and labor costs	distance variables (culture, language, legal and commercial framework); attitudes towards centralization of certain functions, e.g. R&D, regional office and market allocation etc.; geographical structure of asset portfolio and attitude to risk diversification
Internalization	Government intervention and extent to which policies encourage MNEs to internalize transactions, e.g. transfer pricing; government policy towards mergers; differences in market structures between countries, e.g. with respect to transaction costs, enforcement of contracts, buyer uncertainty, etc.; adequacy of technological, educational, communications, etc. infrastructure in Host countries and ability to absorb contractual resource transfers	Extent to which vertical and horizontal integration is possible/desirable, e.g. need to control sourcing of inputs or markets; extent to which internalizing advantages can be captured in contractual agreements (cf. early and later stages of product cycle); use made of ownership advantages; cf. IBM with Unilever-type operation; extent to which local firms have complementary advantage to those of foreign firms; extent to which local firms have complementary advantage to those of foreign firms; extent to which opportunities for output specialization and internalization division of labor exist	Organizational and control procedures of enterprise; attitudes to growth and diversification (e.g. the boundaries of a firm's activities); attitudes toward subcontracting ventures, e.g. licensing, franchising, technical assistance agreements etc.; extent to which control procedures can be built into contractual agreements

Source: Dunning, 1988b: 31.

Furthermore, Dunning (1980) claimed the FDI determinants would be varied with the purpose of FDI as well. He thought FDI had many sizes and categories, and different firms possessed different ownership advantages. Some MNEs expanded its cross-board production in order to fulfill the market demand of the host countries; some MNEs produced in the host countries but sold in the home country because of

the cheap factor cost including both material and labor cost of the host country; some MNEs produced in the host countries but sold the product to other countries for more complicated concerns such as transportation cost and capital input (Table 3.7). Dunning further argued that FDI types also determined whether sequential or only initial FDI occurs. He claimed that resource-seeking (seeking natural and physical resources including suitable land and building for the production, raw materials, components, parts; or human resources including unskilled labor and skilled labor) or market-seeking (seeking domestic, adjacent or regional markets) investment was typically initial investment; efficiency-seeking (seeking the rationalization of production to exploit economies of specialization and scope across or along value chains, for instance, product or process specialization) and strategic asset-seeking (to advance a firm's regional or global strategy or link into foreign networks of created assets, such as technology, organizational capabilities and markets) was typically sequential investment (Dunning, 1980, 1996; Faeth, 2009). In general, determinants of FDI inflow could be greatly differed by MNEs' motivations.

Table 3.7 Determinants of FDI in the OLI Framework (According to the FDI Purpose)

	Ownership Advantages	**Location Advantages**	**Internalization Advantages**
General Model	Patents / trademarks, technology, capital, economies of joint supply, international arbitraging and market access	Transport and production costs, tariff barriers, psychic distance, investment incentives, taxes, political risks	Avoidance of property right infringement, avoidance of buyer uncertainty, price discrimination, quality control assurance, effective management control
Resource-based FDI	Capital, technology and market access	Possession of resources	To ensure stability of supply at right price, market control
Import substituting manufacturing	Capital, technology, management and organizational skills, surplus R&D and other capacity, economies of scale and trademarks	Material and labor costs, markets, government policy (with respect to barrier to imports, investment incentives, etc)	Wish to exploit technology advantages, high transaction or information costs, buyer uncertainty
Export platform manufacturing	Capital, technology, management and organizational skills, surplus R&D and other	Low labor costs, incentives to local production by Host governments	Economies of vertical integration

Table 3.7 (Continued)

	Ownership Advantages	**Location Advantages**	**Internalization Advantages**
	capacity, economies of scale, trademarks and market access		
Trade and distribution	Products to distribute	Local markets, need to be near customers, after-sales servicing	Need to ensure sales outlets and protect company's name
Ancillary services	Market access (in the case of other foreign investors)	Markets	Wish to exploit technology advantages, high transaction or information costs, buyer uncertainty, need to ensure sales outlets and protect company's name
Miscellaneous	Variety, including geographical diversification (airlines and hotels)	Markets	Various (see above)

Source: Dunning, 1980: 13.

Dunning (1988) described a compressed Eclectic Paradigm of International Production Framework in order to widely spread his theory (Table 3.8).

Table 3.8 Compressed Eclectic Paradigm of International Production

The OLI framework
1. Ownership-specific advantages of an enterprise of one nationality over another ➢ Capital ➢ Technology ➢ Management & organization ➢ Marketing ➢ Synergistic economies
2. Internalization incentive advantages(i.e. to exploit or circumvent market failure) ➢ To reduce transaction costs ➢ To avoid or exploit Government intervention (quota, price control, tax differential etc)

Table 3.8 (Continued)

The OLI framework
➢ To achieve synergistic economies
➢ To control supplies of inputs
➢ To control market outlets
3. Location specific variables
➢ Political stability
➢ Government policies
➢ Investment incentives and disincentives
➢ Infrastructure
➢ Institutional framework (commercial, legal, bureaucratic)
➢ Cheap and skilled labor
➢ Market size and growth
➢ Macroeconomic conditions
➢ Natural resources

Source: Dunning, 1993.

From the compressed OLI framework, people would find that the ownership specific variables and internalization specific variables of the OLI framework were largely outside the control of host countries, but the location specific variables could be the significant FDI inflow determinants. These variables included the authorized structure, physical and institutional infrastructure, investment incentives and government policies (Table 3.9). In order to draw up effective and correct FDI promotion policies, the government of host country should consider the importance of location specific variables.

Generally, as one of the most influential frameworks for the investigation of FDI determinants (Kim, Hwang and Burghers, 1993: 275-286), OLI model is widely accepted and adopted by researchers. The academic accuracy and flexibility of the paradigm have been confirmed by countless famous empirical evidences worldwide

(Agarwal, 1980: 739-773; Kogut and Chang, 1991: 401-413; Lucas, 1993: 391-406; Loree and Guisinger, 1995: 281-299; Layton and Makin, 1993: 35-42; Pearce, 1993).

Table 3.9 Main FDI Determinants According to OLI Model

Variable	**Theoretically Predicated Effect**
Political stability	Positive
Export status	Positive
Government FDI promotion policies	Positive
Investment incentive	Positive
Infrastructure	Positive
Cheap and skilled labor	Positive
Market size and growth	Positive
Natural resources	Positive if MNEs seek
	Insignificant if MNEs no seek

3.2 Empirical Evidences on the FDI Determinants

Theoretical framework suggested there were factors that may contribute to FDI inflow, in particular market size and growth; export status; government FDI promotion policies; investment incentive; infrastructure; labor cost; the quality of labor; natural resources; disposable income level; and political stability. In the real world, MNEs invested in the locations where general environment are satisfied. People queried whether the FDI determinants of theoretical framework could explain MNEs' location making.

Empirical studies that attempt to estimate the importance of the different determinants of FDI concentrate more on attraction factors (Nonnemberg and Mendonca, 2004: 1-20). Economists and researchers have done a lot of works, aimed at examining and testing the factors which may have influences on FDI according to the theoretical framework. They adopted different research approaches, used different proxy standings for the factor, and got different conclusions. Limited by the understanding of the author and length of this report, there are only a few empirical

findings towards potential FDI determinants that are selected and presented in this sub-chapter.

3.2.1 Gross Domestic Product (GDP)

Gross domestic product (GDP) of the FDI recipient countries is often considered a main indicator of market size in FDI determinants studies. It is believed that large markets provide the MNEs the opportunity to obtain the economics of scale and make full uses of their ownership advantages to the great extent. Thus, as the proxy of market size, GDP should have influences on FDI inflow. This idea is identified by most empirical evidences: FDI inflow is significant and positively influenced by the market size of the host countries. It is worthy to note that GNP could be adopted as another proxy of market size. The followed empirical studies and the related evidences substantiated that market size that with GDP/GNP as a proxy is one of the significant determinants of FDI inflow.

Scaperianda and Mauer (1969) using two series of data that included the data of 1951-1958 and the data of 1951-1964, investigated the impacts of European Economic Community (EEC) creation on US FDI inflow to Europe. He found that the creation of EEC had no significant impacts on US MNEs international production behaviors. Goldberg (1972: 692-299) investigated the same subject in a different way. They divided the studied 1952-1966 period into two periods: pre- and post-EEC and found a significant relationship between EEC GNP and FDI inflow which is measured by the annual change in book value of US based enterprises in the EEC. From their study, GNP of the host countries could be a FDI determinant. Lunn (1980: 93-101) used least squares regression as the estimation technique and the absolute change in the EEC's GNP as the proxy to repeat the same object analysis. His investigation got the conclusion that market size positively influences the MNEs location decision behavior. Sebastian (1995) also studied the US investment in the EEC, he used multiple regression as the estimation technique, found that FDI inflow was determined by the market size of the host countries as well.

Wheeler and Mody (1992: 57-76) using the fixed effect model as the estimation technique, studied US manufacturing MNEs (most of them were electronics enterprises) in 42 countries during 1982-1988, found that there were a lot

of factors that could be potential FDI inflow determinants. Among these, market size that measured GDP of the host countries significantly increased manufacturing MNEs overseas investment. Culem (1988: 885-904) performed a study to examine the bilateral FDI flows between industrialized countries. He found that MNEs were attracted to countries which have a large market size. Barrel and Pain (1996: 200-207) investigated US based FDI in Europe during 1970s and 1980s. They used GNP of the host countries as the proxy of the market size, and concluded that GNP of the host countries significantly affects the FDI inflow. Their evidences indicated that a 1% increase in host GNP increased investment by 83%. Love and Lage-Hidalgo (2000: 1259-1267) studied US based FDI in Mexico. He used Mexican GDP per capita as the proxy of the market size, and found that US FDI inflow to Mexico increased along with market size. Milner and Pentecost (1996: 605-615) studied US based MNEs' investment location selection behavior in 48 manufacturing sectors in UK. They used cross-sectional regression as the estimation technique and found that market size of the host country was important to attract FDI inflow.

Moore (1993: 120-137) investigated German based FDI from five manufacturing sectors in the other countries, found that market size of the host countries positively affects the FDI inflow. Bajo-Rubio and Sosvilla-Rivero (1994: 104-120) studied FDI inflow in Spain. The results of cointegration analysis indicated that market size of Spain increased FDI inflow. Brainard (1993b) studied FDI inflow in US, confirmed that market size significant affects FDI inflow. Hanson, Mataloni and Slaughter (2001) studied FDI outflow. Their evidences appealed that the larger market size of host countries negatively affected FDI inflow.

3.2.2 Disposable Income

Disposable income per capita is another proxy of market size. Different from GDP that expresses the overall economic status of the host countries, such as government expenditure; disposable income per capita focuses on the private consumption and purchasing power of the people in the host countries. Growth in disposable income generated demand for consumer goods. It is expected that disposable income per capita positively affect FDI inflow. Some of the followed empirical studies and the related evidences substantiated that market size that

represent by disposable income per capita and GDP per capita is one of the significant determinants of FDI inflow, while the other empirical studies found that the effects to be statistically insignificant. It is worth noting that GDP per capita could be adopted as another proxy of market size/ private consumption.

Altominte (1998) using the random effects probit model as the estimation technique and GDP per capita as the proxy to study the FDI inflow in ten central Europe countries, found that GDP per capita was unexpectedly insignificant on FDI inflow. Resmini (1999) investigated the same subject in a different way. He used generalized least squares regression as the estimation technique and found that GDP per capita significantly affected FDI inflow in a positive way.

Kinoshita and Carnpos (2004) studied FDI inflow in 25 European countries during 1990-1998. He used the fixed effects model and GMM as the estimation technique and found that GDP per capita was important to attract more FDI inflow.

Brainard (1993b) studied FDI inflow in US. He used both GDP and desposable income per capita as the proxies of market size. He found that both variables significantly affect FDI inflow in US. He explained that US is a large country, both government expenditure and private consumption and purchasing power are huge. Thus, they both significantly increase FDI inflow.

Zhang (2002) studied FDI inflow in Guangdong and Fujian province in China. He used the fixed effects model and the random effects model as the estimation technique to study Hong Kong based manufacturing MNEs in 12 cities of the province during 1990-1998 and found that there are lots of factors that could be potential FDI inflow determinants. Among these the market size that was measured by disposable income of the recipient cities significantly increased manufacturing MNEs overseas investment.

Chen (2007) performed a study to examine the relationship between FDI inflow in Shangdong province in China and disposable income per capita. He used least square regression as the estimation technique to study Japanese FDI inflow in the province during 1998-2006. His empirical evidences indicated that disposable income per capita was unexpectedly insignificant on FDI inflow. Li (2008) investigated the same subject in a different way. He used the fixed effect model as the estimation technique, and selected five industries to be the studying sectors. His

empirical evidences indicated that disposable income per capita positively affects FDI inflow in Shangdong province.

Su (2001) investigated FDI inflow in China during 1981-2000. In his study, he used disposable income per capita as the proxy of market size, along with the other variables. From his empirical work, it was found the income per capita effects to be statistically insignificant.

3.2.3 Trade Openness

It is believed that the high trade openness level is one of the important factors encouraging FDI inflow, in particular export-seeking FDI (Buckley and Casson, 1981: 75-87; Markusen, 1984: 205-266; Horstman and Markusen, 1992: 109-129). However, Helpman and Krugman (1985) argued that vertical FDI complements trade. Thus, the high level of trade openness negatively affects FDI inflow. General, in empirical works, there is mixed evidence related to the significance of trade openness.

Trade openness in empirical research is usually described as the ratio of trade (imports plus exports) to GDP. However, the ratio of export to GDP was used to be the proxy of trade openness at times as well.

Wheeler and Mody (1992: 57-76) used fixed effect model as the estimation technique, studied US manufacturing MNEs (most of them were electronics enterprises) in 42 countries during 1982-1988 and found that there are lots of factors including trade openness that could be potential FDI inflow determinants. However, trade openness of the host countries appeared to be statistically insignificant.

Culem (1988: 885-904) performed a study to examine the bilateral FDI flows in six European countries. He used the generalized least squares model as the estimation technique and export to GDP as the proxy of trade openness and found that MNEs were attracted to countries which have high trade openness. Jun and Singh (1996: 67-115) investigated US based FDI in 31 European countries during 1970-1993. They used export value of the host countries as the proxy of the trade openness level, and concluded that trade openness of the host countries significantly affects the FDI inflow. Lansbury, Pain and Smidkova (1996: 104-113) studied the FDI outflow of 14 home countries and FDI inflow of 3 host countries during 1991-1993. In the study, the ratio of trade (imports plus exports) to GDP was adopted as the proxy of the

trade openness level and the Panel estimation model was used as the estimation model. Empirical work found that FDI inflow in three host country increased along with trade openness. Holland and Pain (1998) studied MNEs' investment location making behavior in 11 host countries during 1990-1995. They used panel data as the data set and the ratio of trade (imports plus exports) to GDP was adopted as the proxy of the trade openness level and found that the trade openness of the host country was important to attract FDI inflow.

Resmini (1999) investigated FDI inflow in the 10 host countries during 1990-1995, found that trade openness of the host countries positively affects the FDI inflow. Akinkugbe (2003) investigated FDI inflow in 71 developing host countries and 89 developed host countries during 1970-2000 a comprehensive FDI determinants study. He used the random effect model as the estimation technique and trade to GDP as the proxy of trade openness and found that MNEs were attracted to countries which have high trade openness. Addison and Heshmati (2003) studied FDI inflow in 39 host Europe countries during 1992-1999. The empirical work used pooled ordinary least squares regression as the estimation technique and trade to GDP as the proxy. This confirmed that the market size significantly affects FDI inflow. Galego, Vierira and Vierira (2004: 74-91); Brada and Tomsik (2003) studied the same object with Addison and Heshmati, and their evidences revealed that high level trade openness of host countries positively affect FDI inflow.

3.2.4 Transportation Infrastructure

Dunning (1980, 1981) put forth the hypothesis that FDI inflow responds positively to the host country's infrastructure once MNEs grow large enough to allow economies of scale and efficient utilization of resources. Good quality infrastructure encourages FDI inflow. Although Dunning argues that the transportation cost has positive influences on FDI inflow, Markusen and Maskus (2002: 694-707) advocated that transportation cost discourage FDI inflow. Furthermore, it is rare to see that transportation infrastructure as an independent variable in overseas FDI determinant studies (except China) while China's economists laid stresses on this factor in their

empirical work. Transportation infrastructure was thought to be one of the important FDI determinants by most China's local economists.

In the mentioned China's empirical works, transportation costs of the region or country is often used to be the proxy of the infrastructure, while in the other empirical works, the total length of the road represented the transportation infrastructure. It is worth noting that in most of China's empirical works, the transportation costs are calculated as annual total freight. In practice, the calculation method of the annual total weight is to use annual total transported goods (use ton as the unit) times annual total transportation length (use kilometers as the unit). In the empirical works, there is mixed evidence related to the significance of transportation cost and infrastructure in general.

Liao and He (2008) put forth the hypothesis that transportation cost has positive influence on attracting FDI inflow. They used the fixed effect model as the estimation technique and the annual total freight as the proxy of transportation infrastructure to investigate Hong Kong based MNEs investment behavior in 11 coastal provinces and found that MNEs were attracted to provinces which have high transportation cost. Liao and He explained that most FDI in coastal provinces are market-oriented FDI. High transportation cost indicated the economic development level in the province and encouraged FDI inflow.

Ma and Zhou (2009) studied FDI inflow in 31 provinces in China during 1981-2006. They used ordinary least square regression as the estimation technique and total freight as the proxy of transportation infrastructure. They found that infrastructures of the FDI recipient provinces effects to be statistically insignificant.

Lin and Lin (2006) investigated FDI inflow in three regions in China during 1988-2005. They adopted ordinary least square regression as the estimation technique and the total length of the road as the proxy of transportation infrastructure. The empirical evidences revealed that transportation infrastructure negatively affects FDI inflow. Lin and Lin explained that the empirical results were caused by the uneven economic development level in China. In coastal region, high transportation cost indicated the high economic development; in inland region, high transportation cost increased the operation costs of MNEs.

Jing (2009) studied the same subject with Lin and Lin. Different from the former, he used the fixed effects model as the estimation technique. His study

concluded that transportation infrastructure was statistically insignificant towards the location decision making behaviors of MNEs.

Mei (2009) performed a study to examine Japanese FDI inflow in15 provinces (which 8 provinces are in coastal region and the rest 7 are inland) in China during 1986-2008). She used the fixed effects model as the estimation technique, and annual total freight as the proxy of the transportation infrastructure. The empirical evidence concluded that transportation infrastructure only influenced the FDI location decision for coastal region.

Zhu (2011) studied FDI inflow in three regions in China during 1991-2009. He used the ordinary random effects model as the estimation technique and the total length of the road as the proxy of transportation infrastructure. The empirical evidences showed that transportation infrastructure positively affects FDI inflow.

3.2.5 Labour Quality

Nonnemberg and Mendonca (2004) advocated that availability of skilled workers with higher educational level can significantly boost the international competitiveness of a host country, which plays a key role in attracting FDI inflow. Nowadays, followed by the economic growth and technology advance, the demand for skilled labour is increased. Skilled labour engaged in almost capital-extensive industries that MNEs invest, for instance, high technology industries, banking and finance industries, and the other capital-extensive industries. It is believed that skilled labour with higher educational level did better work, comparing with unskilled labors. Labour quality is thought to be linked with educational level. There is evidence that a more highly educated populace does in fact attract FDI.

The number of the universities and the annual college enrollment is often used to be the proxy of educational level and labour quality of FDI recipient in the empirical studies.

Mody and Srinivasan (1998: 778-799) studied and compared Japan-based and US-based MNEs overseas investment behavior, and found that as increasing amounts of FDI becomes skill-seeking and efficiency-seeking, access to an educated and skilled workforce becomes essential.

Ma and Zhou (2009) studied FDI inflow in 31 provinces in China during 1981-2006. They used ordinary least square regression as the estimation technique and the number of universities as the proxy of educational level and quality of labour. They found that the number of universities in the FDI recipient provinces positively affected FDI inflow.

Lu (2001) investigated FDI inflow in three regions in China during 1988-1999. They adopted ordinary least square regression as the estimation technique and the annual college enrollment as the proxy of transportation infrastructure. Educational level turned out to be more important to FDI inflow. Huang (2009) studied FDI inflow in three regions in China during 1988-2008. Different from Lu, he used fixed effects model as the estimation technique. His study concluded that educational level in eastern region positively influences in FDI inflow in eastern region while it was statistically insignificant towards the location decision making behaviors of MNEs in both western and central regions. Huang indicated that increasing amounts of FDI becomes skill-seeking and efficiency-seeking FDI in eastern region while the trend was not obvious in western and central regions.

3.2.6 Interest Rate

Aliber (1970) argued that the increase in the interest rate in FDI host countries indicated the increased borrowing costs for foreign investors, while the increase in the interest rate can help raise the domestic savings, increase the purchasing power of the people living in FDI recipient countries. Thus, interest rate and FDI inflow could be positively or negatively related.

Kinoshita and Campos (2004) used panel data to analyze 25 transition economies between 1990 and 1998. They reached the conclusion: the interest rate in FDI host countries positively affect FDI inflow in transition economies.

Cushman (1988: 322-336) studied U.S. bilateral trade flows in European countries. He found a positive relationship between US FDI outflow and the interest rate of the host countries. In addition, the empirical evidence revealed that US FDI outflow and the interest rate of the home country (in this case, US) have a negative relationship.

Chen (2009) investigated FDI inflow in China during 1980-2008, he used the average annual interest rate to be the independent variable, and fixed effects model as the estimation technique in his study. The empirical evidence concluded that interest rate has positive influence on attracting FDI inflow. Lin (2010) again confirmed that interest rate positively affect FDI inflow.

Zhou and Xu (2011) studied Hong Kong based FDI inflow in coast region within 1980-2010. They used both fixed effects model and random effects model as the estimation technique in their investigation. Unexpectedly, empirical evidence revealed that FDI inflow and interest rate is insignificantly related.

3.2.7 Exchange Rate

Hanson, Mataloni and Slaughter (2001); Ekholm, Forslid and Markusen (2003) argued that MNEs could be benefited by exchange rate. Froot and Stein (1991: 1191-1217) argued that appreciation of the home countries currency relative to that of host country will reduce the cost of capital and encourage MNEs to invest more in the currency depreciated countries. Thus, home countries' exchange rate appreciation would have positive effects on FDI inflow.

Kopits (1979: 99-111) used cross-section data to investigate US MNEs from 15 manufacturing industries in Canada since 1962. The empirical evidences revealed that host countries' exchange rate appreciation, negatively affects FDI inflow.

Cushman (1988: 322-336) examined U.S. bilateral trade flows in Europe countries. From the study of US inward FDI from the UK, France, Germany, Canada and Japan, he found that US exchange rate appreciation has negative influence to FDI inflow from the mentioned countries. Contrary, US exchange rate appreciation encourage US based MNEs invest overseas.

Mody (1997) observed that MNEs would move their international production from the higher cost countries to lower cost countries. The permanent depreciation of currency in the host countries empirically encouraged FDI inflow. Furthermore, Caves (1996) pointed out that newer and smaller MNEs were more sensitive to the currency depreciation in the host countries than the others.

Froot and Stein (1991: 1191-1217) studied annual and quarterly US inward FDI data, found that exchange rate deprecation reduced FDI in US. FDI and the other foreign assets were significantly affected by the exchange rate.

Chen (1999) used monthly and annual FDI inflow data in China to investigate US based MNEs investment behavior in China. She adopted multiple regression as the estimation technique and found that FDI inflow was determined by the exchange rate as well. Empirical evidence revealed that currency depreciation in China did attract foreign investors.

Xiao and Zhen (2006) investigated FDI inflow in western region in China during 1990-2007. They adopted both the fixed effect model and the random effect model to be the estimation technique. The empirical results showed that currency depreciation in China encourage FDI inflow.

3.2.8 Inflation Rate

Inflation rate acts as a proxy for the level of economic stability. Considering that foreign investors prefer to invest in more stable economies, that reflect a lesser degree of uncertainty, it is reasonable to expect that inflation rate would have a negative impact on direct investment. The higher the inflation rate, the more it is likely to defer FDI.

Shahrudin, Yusof and Satar (2010: 235-245) studied FDI inflow in Malaysia They used the panel data for the period 1970-2008, adopted both the fixed effect model and the random effect model to be the estimation technique. The empirical results revealed that inflation rate negative affected FDI inflow in Malaysis in both long run and short run.

Kirkpatrick, Parker and Zhang (2004) investigated FDI inflow in developing countries. They found that higher inflation rate in developing countries would be an obstacle to attracting FDI inflow.

Singhania and Gupta (2011: 64-82) examined FDI inflow in India. According to his empirical result, the inflation rate decides the final value of the returns of the investment on the money invested in a host country. Thus, MNEs prefer to invest in lower inflation rate countries.

Ming and Yang (2009) investigated Hong Kong based MNEs investment location behavior in Guangdong and Fujian provinces in the period of 1980-2008. They used least square regression as the estimation technique and got the empirical results that inflation rate was statistically insignificant. Lan and Zhou (2010) used the fixed effect and the random effect models to be the estimation technique and studied Hong Kong based MNEs investment in coastal region. They got the opposite conclusion that inflation rate negatively affect FDI inflow in coastal region in China.

3.3 Chinese Empirical Studies of Regional FDI Determinants

As the largest net receipts of FDI inflow in the developing world, China is the emphasis of the empirical studies of FDI determinants. Besides the aggregate FDI, the uneven regional/provincial FDI inflow states interested many scholars. Internationally, lots of economists focus on how and why some regions in China can perform remarkably in attracting MNEs, and some regions cannot. Domestically, in order to raise the overall competition ability in inviting more MNEs to invest in the country, and decrease or even eliminate the regional/provincial differences in attracting FDI inflow, Chinese government encourages regional/provincial FDI determinants studies as well. As a result, the relative empirical studies are published, and explain MNEs' expanded international production selection behaviors in different regions/provinces to a certain degree.

Na and Lightfoot (2006: 262-278) tested five likely FDI determinants in 30 provinces of China in 2002. As their understanding, China has many country specific advantages that are supposed to be predominantly significant as animation of the determinants of FDI. They argued that macro-determinants, especially, market size present by GDP, GDP per capita, GNP, or GNP per capita would have great influence on FDI inflow. Furthermore, other macro factors such as taxes, political risk, exchange rates, would make effect on FDI inflow as market size does. Besides mentioned macro factors, in their works, they argued that micro factors such as labor costs could be an important potential FDI determinants. To this end, they argued the educational level and infrastructure would be chief potential FDI determinant. In the conclusion of their initial study, Na and Lightfoot suggested the Chinese government to consider the importance of the development of skilled-labor towards the standard of

capital-intensive FDI in China. According to them, this was the most suitable approach to improve the particular situation of each region to attract MNEs. This means increasing funding for higher education, and infrastructure, while also encouraging more openness in state-owned enterprises.

Boearmans, Roelfsema and Zhang (2011) argued that the potential regional/provincial FDI determinants could be summarized as four types; “institutional quality”, “labor costs”, “market size” and “geography”. They adopted the China Statistical Yearbook that was published by the National Bureau of Statistics of China from 1995 to 2007 as database, and took the number of investments of foreign funded enterprises (FFE) as the dependent variables to measure the extensive and intensive scales of FDI. The conventional factor-based approach regression result showed that “labor cost” and “geography” presented by logistics are two major factors driving foreigners into China to operate their production. Therefore, according to their empirical results, they suggested that the Chinese government continues to adopt the dominant strategies of making use of cheap and disciplined labor.

Huang (2009) described FDI growth in both Yangzi River Delta Economic Area and Pearl River Delta Economic Area in detail. According to Huang, Pearl River Delta Economic Area has obviously slowed more than Yangzi River Delta Economic Area in attracting FDI inflow. It directly indicated a forming trend that MNEs prefer northern China to southern China, indirectly showed that inland region or has probabilities to transfer foreign funding and management experiences in the near future. Besides geographic factors, Huang argued that market size, input costs, domestic infrastructure for business and FDI promotion policies are other significant factors that MNEs would consider. In the study, Huang described the complete development trace of both Yangzi River Delta Economic Area and Pearl River Delta Economic Area, analyzed the differences between two economic areas. According to him, the former has larger market size and better domestic infrastructure for business comparing with the latter. In addition, he raised some new concepts. In the earlier stage of attracting FDI, Pearl River Delta Economic Area had the absolute geographic advantage since most investors were from Hong Kong. After then, the cheaper labor costs of Pearl River Delta Economic Area indeed attracted more investors worldwide. However, Yangzi River Delta Economic Area had more efficient workers.

Furthermore, following by the expanding of services sector in China, FDI preferred skilled labors to unskilled labors. Usually, skilled labors got higher pay, but worked more efficient. Thus, Pearl River Delta Economic Area did not actually possess the competitive advantages of labor costs as Yangzi River Delta Economic Area did. With regard to FDI promotion policies, Huang thought that it has less influence on large size MNEs comparing the medium-small sized MNEs in the long run. However, FDI promotion polices such as tax reduction indeed encouraged MNEs into the region. In the end of the study, Huang suggested that inland regions should improve the overall situation to attract large size MNEs.

Chen (2009) studied FDI inflow in 29 provinces during the 1993-2005, drafted a method to investigate the interaction between FDI and GDP, domestic investment and other important macroeconomic variable for instance domestic infrastructure in the various regions. The empirical results show that GDP can attract FDI into the short run and long run. However, domestic infrastructure has no influence on attracting FDI inflow. In the paper, Chen used nominal GDP to represent economic growth and market size, and annual transport freight to represent domestic infrastructure. Because domestic infrastructure has no significant influences on MNEs' production locational decision, the author did not suggest the government put the focus on this aspect.

Liu (2006) presented on how the regional characteristics affected FDI into the regions of China. Panel data was used in the study. Pooled regression model, fixed effect model and random effect model were performed in order to find out the potential region/provincial FDI determinants. The results showed that market demand and market size, agglomeration infrastructure, degree of industrialization, level of foreign investment and degree of openness had positive relationship with FDI, while labor cost is found to have negative effects on FDI. Liu argued that FDI inflow was slowed down in China. Liu argued that economic growth, higher productivity and the opening up of new sectors to foreign investors can be viewed as a possible method for attracting FDI inflow in inland region of China.

Yu (2006) studied the investment behaviors of Japanese enterprises in China during year of 1997 to 2006 to find out the regional FDI determinants. In the report, Yu indicated that Japanese enterprises preferred to invest in southern region to central

and west region to a greater extent. He used elasticity analysis to study the relationship between FDI inflow and six factors including GDP, wage, trade openness, educational level, infrastructure for business, and privatization level. The empirical results got from the ordinary least square regression was that GDP, trade openness, privatization level had positive influences on Japanese FDI inflow; wage had a negative influence however. The other two factors including educational level and infrastructure for business had no significant effects. Yu explained that most Japanese enterprises were labor-intensive, so education level and infrastructure were not chief FDI determinants for them.

Chen (1999) compared FDI inflow in Guang Dong and Guang Xi, argued that FDI promotion policies had a strong influence in attracting FDI inflow. Besides, culture differences had less influence on FDI.

Liu and Li (2006) analyzed US based MNEs' locational selection behaviors in regions of China. Liu ran the fixed effect model and random effect model to explore the potential region FDI determinants. In his model, dependent variables is the annual regional FDI inflow, independent variables included economic growth and market size present by GDP, regional infrastructure for business, trade openness, disposable income, educational level, risk factors such as inflation rate. As the empirical result, GDP, trade openness, infrastructure for business and disposable income are discovered to have positive relationship with FDI, while inflation rate is found to have negative effects on FDI. Liu argued that most US based MNEs are capital-intensive companies, preferring to invest in the relative developed areas. Therefore, the east region that possessed larger market size, higher disposable income, wider trade openness and better infrastructure for business would be undoubtedly selected. However, if the Chinese government makes real effort to improve the overall investment circumstances, central and west region still have the chance to attract more US based FDI inflows.

CHAPTER 4

ESTIMATION METHODOLOGY AND EMPIRICAL RESULTS

4.1 Data

To analyze the factors exert pull on regional and provincial FDI inflow in China, find out the potential FDI determinants, and answer the research questions, secondary statistics released by ministry of commerce in China and verified by UNCTAD will be used. Secondary data has advantages such as international comparable and complete nationwide.

Because of the nature of FDI as one sort of long run international capital movement, less observation and lack of degree of freedom will affect the accurateness of the research. In the report, the panel data estimation is selected to capture the dynamic behaviors of the parameters and to provide more efficient estimation and information of the parameters. The ordinary least square (OLS) method can provide consistent and efficient estimates of intercept α and slope β (Vijayakumar, Sridharan and Rao, 2010). In practice, the advantage with panel data is that they allow the researchers to test and relax some of the assumptions, and allow for greater flexibility in modeling the differences in behavior across individuals (Matyas and Sevestre, 1996). The dynamic approach offers advantages to OLS method and also improves efforts to examine the FDI growth links using panel procedures (Carkovic and Levine, 2002).

Accurate and internationally comparable FDI statistics constitutes the transparency of the country's FDI real status. In order to analysis FDI determinants in China, regional and provincial FDI inflow data and the data used to explain the FDI used in the study are summarized from the releases of Government Annual Working Report of sampled provinces. Aggregate FDI inflow data released by National Bureau of Statistics of China and Ministry of Commence in China is used. The other

aggregate data used to explain FDI are summarized from National Bureau of Statistics of China. Data prior to 1998 would not be used, since the definition of FDI in each province was different and was often confused with foreign portfolio investment. The dataset is available for the period 1998 to 2009. Finally, it is notable that the data used to explain regional and provincial FDI determinants have not been used previously.

Table 4.1 Provincial FDI Inflow (Unit: Billion US Dollar)

Province	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
He Bei	n/a	n/a	1.02	0.75	0.82	1.11	1.62	1.91	2.01	2.42	3.42	3.6
Guang Dong	n/a	n/a	12.237	12.972	11.334	7.822	10.012	12.364	14.511	17.126	19.167	19.535
Jiang Su	6.65	6.4	6.42	7.35	10.37	10.364	10.2	13.186	17.43	21.89	25.12	25.32
Zhe Jiang	n/a	n/a	1.61	2.21	3.16	4.98	6.68	7.72	8.89	10.37	10.07	9.9
Fu Jian	n/a	n/a	2.28	2.4	2.5	2.6	2.23	2.608	3.22	4.061	5.672	5.737
Hu Bei	n/a	n/a	0.944	1.211	1.402	1.557	2.071	2.185	2.449	2.766	3.245	3.658
Hu Nan	n/a	0.654	0.682	0.81	1.031	1.489	1.418	2.072	2.593	3.271	4.005	4.598
Ji Nin	n/a	n/a	n/a	0.338	0.317	0.318	0.453	0.661	0.761	0.885	0.993	1.14
Shan Xi	n/a	0.189	0.21	0.234	0.25	0.22	0.09	0.28	0.47	1.34	1.16	0.49
He Nan	0.618	0.495	0.544	0.359	0.452	0.561	0.874	1.23	1.845	3.062	4.033	4.799
Shann Xi	n/a	n/a	0.2885	0.352	0.411	0.466	0.527	0.628	0.925	1.195	1.37	n/a
Yun Nan	n/a	n/a	0.128	0.065	0.112	0.084	0.142	0.187	0.302	0.395	0.777	0.91
Si Chuan	n/a	0.454	0.437	0.582	0.659	0.582	0.701	0.887	1.208	1.493	2.480	3.063
Guang Xi	n/a	n/a	0.504	0.384	0.417	0.419	0.296	0.375	0.447	0.684	0.971	1.035
Inner Monglia	n/a	n/a	0.112	0.187	0.228	0.368	0.627	1.186	1.741	2.149	2.651	2.984

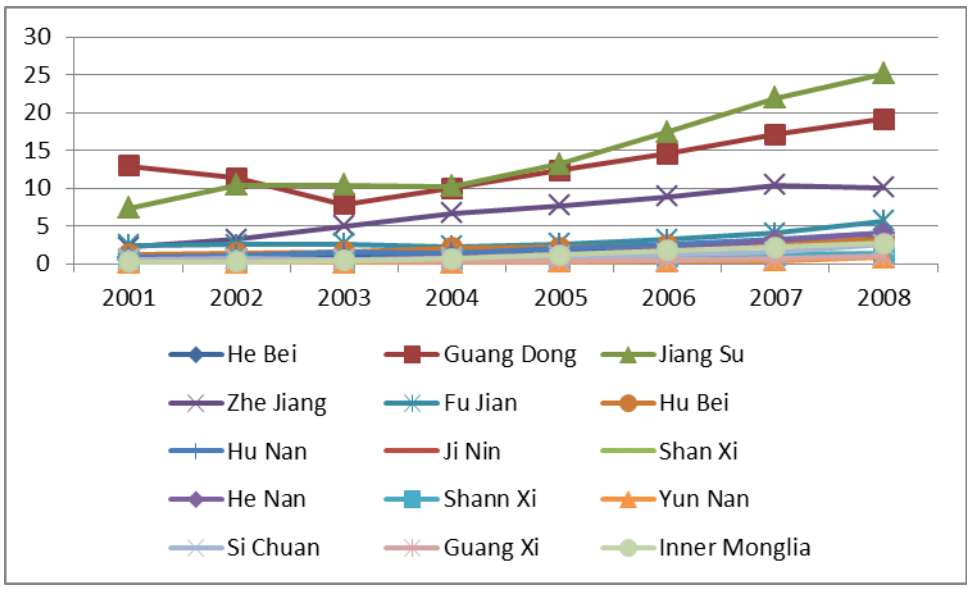

Figure 4.1 Provincial FDI Inflow (Unit: Billion US Dollar)

Table 4.2 Provincial FDI Inflow Growth Rate

Province	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
He Bei	n/a	n/a	-0.265	0.093	0.354	0.459	0.179	0.052	0.204	0.413	0.053	0.171
Guang Dong	n/a	n/a	0.060	-0.126	-0.309	0.279	0.234	0.173	0.180	0.119	0.019	0.070
Jiang Su	-0.037	0.003	0.144	0.410	-0.001	-0.015	0.292	0.321	0.255	0.147	0.007	0.139
Zhe Jiang	n/a	n/a	0.372	0.429	0.575	0.341	0.155	0.151	0.166	-0.028	-0.016	0.238
Fu Jian	n/a	n/a	0.052	0.041	0.040	-0.142	0.169	0.234	0.261	0.396	0.011	0.118
Hu Bei	n/a	n/a	0.282	0.157	0.110	0.330	0.055	0.120	0.129	0.173	0.127	0.165
Hu Nan	n/a	0.042	0.187	0.272	0.444	-0.047	0.461	0.251	0.261	0.224	0.148	0.224
Ji Nin	n/a	n/a	n/a	-0.062	0.003	0.424	0.459	0.151	0.162	0.122	0.148	0.176
Shan Xi	n/a	0.042	0.187	0.272	0.444	-0.047	0.461	0.251	0.261	0.224	0.148	0.224
He Nan	-0.199	0.098	-0.340	0.259	0.241	0.557	0.407	0.500	0.659	0.317	0.189	0.244
Shann Xi	n/a	n/a	0.282	0.157	0.110	0.330	0.055	0.120	0.129	0.173	0.127	0.165
Yun Nan	n/a	0.042	0.187	0.272	0.444	-0.047	0.461	0.251	0.261	0.224	0.148	0.224
Si Chuan	n/a	n/a	n/a	-0.062	0.003	0.424	0.459	0.151	0.162	0.122	0.148	0.176
Guang Xi	n/a	0.042	0.187	0.272	0.444	-0.047	0.461	0.251	0.261	0.224	0.148	0.224
Inner Monglia	-0.199	0.098	-0.340	0.259	0.241	0.557	0.407	0.500	0.659	0.317	0.189	0.244

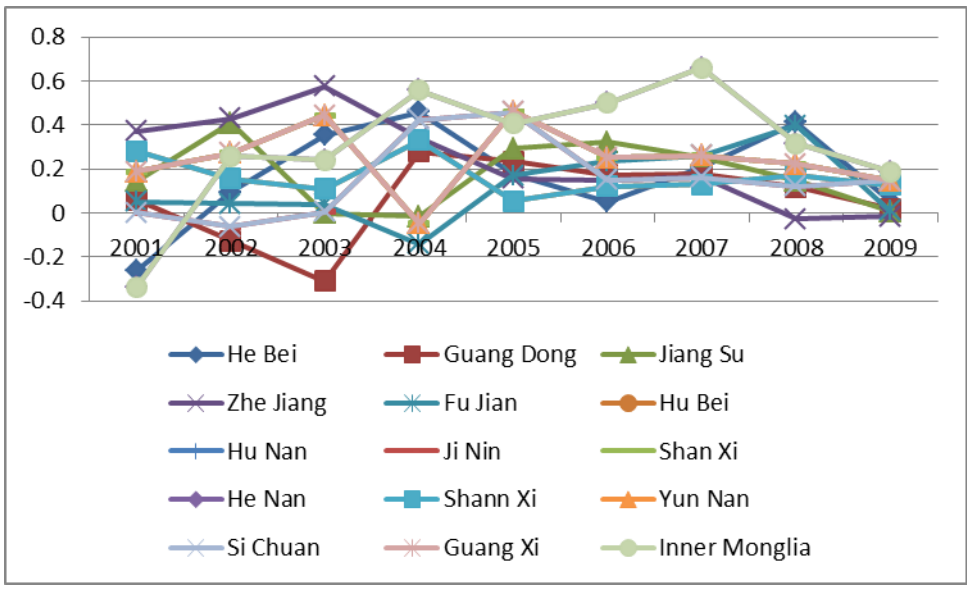

Figure 4.2 Provincial FDI Inflow Growth Rate

China is a huge country. From Table 4.1, Table 4.2, Figure 4.1 and Figure 4.2, it is obvious that both annual FDI inflow value and growth rate varies greatly by the provinces of the country. It can be regarded as evidences of some particular factors' influences on FDI inflow annually. To find out the particular factors pull exerted on FDI, the panel data set would be used. It is planned to firstly explore potential provincial FDI determinants and regional FDI determinants. After that, continue to investigate the potential factors likely to affect FDI inflow into the particular province and particular region, respectively.

4.2 Estimation Model and Empirical Results

4.2.1 Model 1 --- Ordinary Least Square Method (All Coefficients Constant Across Time and Individuals)

Theoretically, there are a series of factors that work together to pull exert on regional/provincial FDI inflow. It is so called the determinants of FDI inflow at region and province level. The collected data from 15 provinces combined with 12 year periods conduct a panel data aims to discover the potential FDI determinants. However, it is needed to notice that the data of different provinces is collected from

different time periods. Therefore, the panel used in the study is an unbalanced panel data.

In this study, level analysis would be used to be the methodology to investigate the potential FDI determinants and expresses the relation between FDI inflow and potential at real level.

Usually, estimation of panel data regression models have two approaches: Fixed Effects (FE) Approaches and Random Effects (RE) Approaches. In the dissertation, both of the two approaches will be operated and compared. According to the usual practices, the Fixed Effect Approach would be adopted to begin with. However, the estimation of the model depends on the assumptions made about the intercept, the slope coefficients, and the error term. There are several possibilities here (Gujarati, 2008: 640).

In the first place, the model is estimated under the assumption that the intercept and slope coefficients are constant across time and space and the error term captures differences over time and individuals. In the dissertation, “Model 1” is named to indicate the said estimation model.

Secondly, a model is estimated and assumed the slope coefficients are constant but the intercept varies over individuals. Theoretically, this model is called a Fixed Effects Regression Model. In the dissertation, “Model 2” is named to indicate the said estimation model.

Thirdly, a model is estimated and assumed that all coefficients (the intercept as well as slope coefficients) vary over individuals. It is an extended model to use interactive term, or so-called slope dummies manner to account for differences in slope coefficients. In the dissertation, “Model 3” is named to indicate the said estimation model.

Strategically, according to the assumption of Model 1, the potential aggregate FDI determinants would be found out. This model has the assumption that the intercept and slope coefficients are constant across time and space. Thus, theoretically and statistically, the simplest and possibly native approach is to disregard the space and time dimensions of the pooled data and just estimates the usual Ordinary Least Square Method --- OLS regression (Gujarati, 2008: 641).

The followed is the estimation of model 1, where the selected broad range of factors as independent variables likely to be the potential factors, generally explain the FDI inflow:

Model 1 (OLS Regression Model)

$fdi_{it} = f(gdp_{it}, openness_{it}, transport_{it}, college_{it}, income_{it}, exchange_t, interest_t, inflation_t)$ (1)

Where,

fdi_{it} = annual provincial fdi of province i at time t

gdp_{it} = annual provincial GDP at current price of province i at time t

$openness_{it}$ = annual trade openness at current price of province i at time t, formulated by $(export_{it}+import_{it})/ gdp_{it}$

$transport_{it}$ = annual total transportation freight (ton-kilometers) of province i at time t

$college_{it}$ = annual college enrollment of province i at time t

$income_{it}$ = annual disposable income of people of province i at time t

$exchange_t$ = annual exchange rate at time t (in the study, the adopted exchange rate is the average quarterly exchange rate of the year)

$interest_t$ = annual interest rate at time t (in the study, the adopted interest rate is the average quarterly borrowing rate of the year)

$inflation_t$ = annual inflation rate at time t

As a brief summary, market size is represented by gdp_{it}, trade openness is represented by $openness_{it}$, infrastructure quality and provincial trade volume is represented by $transport_{it}$, skilled labor is represented by $college_{it}$, individual disposable income and purchasing power is represented by $income_{it}$, market risk can be represented by $exchange_t$ and $interest_t$, both market and political uncertainty can be represented by $inflation_t$. Unit measurements are in Appendix A.

Theoretically and empirically, GDP is the most important index (Dunning, 1980, 1981; Scaperianda and Maue,1969; Goldberg, 1972: 692-299; Wheeler and Mody, 1992: 57-76; Culem, 1988: 885-904). In the study, GDP represents local market size. Thus, GDP is expected to increase FDI, or at least have positive

influence on horizontal FDI. As the larger market size, the larger market demand. In contrast, if most FDI inflow in the region/province is vertical FDI, GDP would have less influence on FDI inflow. Trade openness is the index which indicates the international trading intensity of the country (Dunning, 1980, 1981; Buckley and Casson, 1981: 75-87; Markusen, 1984: 205-266; Horstman and Markusen, 1992: 109-129). Statistically, it is ratio of total export plus import firstly, then divided by GDP. According to most economists (Holland and Pain, 1998), if FDI focuses on local market tends to be a horizontal FDI, trade openness should not be an important determinant. In contrast, export-oriented vertical FDI would be greatly affected by export volume with a positive re-action. Transportation infrastructure is thought a factor has influence on FDI inflow (Dunning, 1980, 1981). Total transportation freight (ton-kilometers) is widely adopted by most China's economists as the proxy of the transportation infrastructure (Liao and He 2008; Ma and Zhou 2009; Lin and Lin 2006; Jing, 2009). It directly specifies the total annual usage of three types of ways including highway, railway and waterway. Statistically, the proxy is measured by the total length of three types of ways (kilometer), times by the weight (ton) of transported products in one year. According to many Chinese version economics literature, it is a significant measurement to point out both the quality and quantity of the transportation infrastructures. Furthermore, it can represent the local business development level as well. Accordingly, total transportation freight (ton-kilometers) should have a positive effect on FDI inflow. Education level which present labor quality is another potential FDI inflow determinant although the influences of educational level on FDI are quite complicated. (Nonnemberg and Mendonca, 2004; Mody and Srinivasan, 1998: 778-799; Ma and Zhou, 2009; Lu, 2001). It could be both positive and negative. However, a positive sign indicates that the industry that FDI engaging in, requires white-collar more; negative relationship indicate that blue-collar is needed more. There is third possibility that there is no relationship within educational level and FDI inflow. It could be explained as the result of labor needs for both types equal to the end. As a macroeconomics index, disposable income per capita is expected to have the positive effects on FDI inflow (Dunning, 1980, 1981; Altominte, 1998; Kinoshita and Carnpos: 2004; Brainard, 1973; Zhang, 2002; Chen, 2007). The higher income standard, the higher purchasing power, resulted by the more FDI inflow. High inflation rate undoubtedly would reduce FDI (Kirkaptrick, Park and Zhang, 2004; Ming and Yang, 2009). Therefore, the coefficient of inflation

rate should be negative. High exchange rate will depreciate currency of the host countries, reduce the total cost of capital of MNEs (Froot and Stein, 1991: 1191-1217; Kopits, 1979: 99-111; Cushman,1988: 322-336; Mody, 1997). Accordingly it is expected that exchange rate positively affect FDI inflow. With regard to the interest rate, it confronts more complicated status. Interest rate can affect FDI positively or negatively (Aliber, 1970; Cushman, 1988: 322-336; Chen, 2009). If MNEs fund source in home country, the high interest rate would negatively affect FDI inflow in host countries. Therefore, the sign of coefficient of interest rate could be positive or negative, or have no significant effect in attracting FDI inflows. The followed Table 4.3 presents the OLS results.

Table 4.3 Determinants of Regional FDI Inflows: Model 1

Independent Variable	**Coefficient**	**p value**
gdp	0.036***	0.000
openness	0.480***	0.000
transport	-0.004**	0.032
college	0. 133*	0.086
income	0.005	0.431
exchange	14.987**	0.036
interest	2.869	0.107
inflation	-1.222	0.291
_cons	-157.042**	0.019
Adj R-squared	0.8011	

Note: *, **, and *** represent that the parameters estimated are significant at the 10%, 5%, and 1% respectively.

From the result of the analysis, four independent variables; gdp, openness, college and exchange, have the expected positive sign, indicating the positive relationship with FDI inflow. However, transport as one independent variable, has unexpected negative sign.

Anyway, OLS model assumes that the intercept value of every region and every province are the same. It also assumes that the slope coefficients of the independent variables are all identical for all regions and provinces. Obviously, these

are highly restricted assumptions. It is worthy to take into account the specific nature of each region and province.

4.2.2 Model 2 --- Fixed Effect Model (Slope Coefficients Constant but Intercept Varies Cross Individuals)

Unlike OLS regression (Model 1), Fixed Effect Model (Model 2) is estimated under the assumption of specific provinces to have specific nature, and where the selected broad range of factors as independent variables likely to be the potential factors to explain the particular regional and provincial inflow. The approach is expected to find out the significant determinants of FDI, and measure the level of differences of unspecified nature between particular regions and provinces. Besides the specified independent variables that have been used, the added dummy variables indicate the unspecified nature of each particular region and province as well.

Model 2 (Fixed Effect Model):

$fdi_{it} = f (gdp_{it}, openness_{it}, transport_{it}, college_{it}, income_{it}, exchange_t, interest_t, inflation_t$ region) (2)

and

$fdi_{it} = f (gdp_{it}, openness_{it}, transport_{it}, college_{it}, income_{it}, exchange_t, interest_t, inflation_t$ province) (3)

Where,

fdi_{it} = annual provincial fdi of province i at time t

gdp_{it} = annual provincial GDP at current price of province i at time t

$openness_{it}$ = annual trade openness at current price of province i at time t, formulated by $(export_{it}+import_{it})/ gdp_{it}$

$transport_{it}$ = annual total freight ton-kilometers of province i at time t

$college_{it}$ = annual college enrollment of province i at time t

$income_{it}$ = annual disposable income of province i at time t

$exchange_t$ = annual exchange rate at time t (in the study, the adopted exchange rate is the average quarterly exchange rate of the year)

$interest_t$ = annual interest rate at time t (in the study, the adopted interest rate is the average quarterly borrowing rate of the year)

$inflation_t$ = annual inflation rate at time t

region = dummy variable represent the FDI receipt region, taking a value of 1 in the relevant region and 0 otherwise. (East is taken to be reference region.)

province = dummy variable represent the FDI receipt province, taking a value of 1 in the relevant province and 0 otherwise. (Jiang Su is taken to be reference province.)

As a brief summary, market size is represented by gdp_{it}, trade openness is represented by $openness_{it}$, infrastructure quality and provincial trade volume is represented by $transport_{it}$, skilled labor is represented by $college_{it}$, individual disposable income and purchasing power is represented by $income_{it}$, market risk can be represented by $exchange_t$ and $interest_t$, both market and political uncertainty can be represented by $inflation_t$. Finally, the most important, all the unspecified regional variables captured by "region" dummy and unspecified provincial variables captured by "province" dummy variable.

As discussed earlier, GDP is expected to increase FDI inflow volume, or at least have a positive influence on horizontal FDI in general. The larger the market size, the larger the market demand. In contrast, if most MNEs prefer vertical FDI to horizontal FDI, GDP would not be a significant determinant because the goods are not traded in the country. Trade openness is the ratio of total export plus import, then, divided by GDP. It indicates the trading intensity of the country. If FDI focus on local market as a horizontal FDI, international trading volume should not be an important determinant. In contrast, export-oriented vertical FDI inflow would be affected by international trading volume with a positive re-action. Total transportation freight (ton-kilometers) is a variable represented by total usage of three types of ways including highway, railway and waterway. It is measured by the total kilometer of three types of ways, then times by the weight of transported products in one year. According to some Chinese economists, it is a very important measurement to represent the state of transportation infrastructure including both transportation quality and quantity, and it represents overall trading amount (business level) as well.

According to this understanding, total transportation freight (ton-kilometers) should have positive effect on FDI inflow. The relationship within educational level and FDI could be positive or negative. Positive indicates that the industry that FDI engaging in, required white-collar more, negative relationship indicates that blue-collar is needed more. There is another possibility that there is no relationship within educational level and FDI. It could be explained by the ideas that the needs for both level labor are equal. Disposable income per capita usually has positive effect on FDI inflow. People believe that the higher income, the more FDI inflow. High inflation rate undoubtedly would reduce FDI. Therefore, the coefficient of inflation rate should be negative. Higher exchange rate depreciated currency of the host countries, reduce the total cost of capital of MNEs. Accordingly exchange rate is expected to positively affect FDI inflow. With regard to the interest rate, it confronts more complicated status. Interest rate can affect FDI positively or negatively. If MNEs fund source in home country, the high interest rate would negatively affect FDI inflow in host countries. Therefore, the sign of coefficient of interest rate could be positive or negative, or have no significant effect in attracting FDI inflows. The empirical results of Model 2 are as followed (Table 4.4 and Table 4.5). Unit Measurement presented in Appendix A.

Table 4.4 Determinants of Regional FDI Inflows: Model 2

Independent Variable	**Coefficient**	**p value**
gdp	0.036***	0.000
openness	0.442***	0.000
transport	-0.005***	0.009
college	0.169**	0.036
income	0.003	0.627
exchange	12.542*	0.083
interest	2.754	0.120
inflation	-1.150	0.322
central	-10.107*	0.056
west	-6.586	0.223
_cons	-126.714*	0.065
Adj R-squared	0.8826	

Note: *, **, and *** represent that the parameters estimated are significant at the 10%, 5%, and 1% respectively.

From the result of the empirical analysis, it is clear to see that four independent variables; gdp, openness, college and exchange have the expected positive sign. But the fifth independent variable; transport has an unexpected negative sign. Meanwhile, three regions; east region (as reference region), central region and west region have significant coefficient of intercepts all represented by dummy variables. The differences between regions indicate the said regions have some unspecified and particular nature to deal with the FDI inflow.

Table 4.5 Determinants of Provincial FDI inflows: Model 2

Independent Variable	**Coefficient**	**p value**
gdp	(0.037)***	0.000
openness	(0.529)***	0.000
transport	0.003	0.281
college	(-0.153)*	0.082
income	0.003	0.696
exchange	(13.060)**	0.035
interest	(2.131)*	0.066
inflation	-0.312	0.687
guangdong	(-69.312)***	0.000
zhejiang	(-52.457)***	0.000
fujian	(-50.423)***	0.000
hebei	(-57.942)***	0.000
hubei	(-30.158)***	0.001
hunan	(-31.111)***	0.001
jilin	(-36.902)***	0.000
shanxi	(-39.100)***	0.000
henan	(-50.830)***	0.000
shaanxi	(-31.352)***	0.001
yunnan	(-38.372)***	0.000
sichuan	(-43.017)***	0.000
guangxi	(-39.356)***	0.000
innermongo~a	(-36.250)***	0.000
_cons	(-96.763)*	0.089
Adjust R-square	0.9517	

Note: *, **, and *** represent that the parameters estimated are significant at the 10%, 5%, and 1% respectively.

From the provincial analysis results, it is shown that four independent variables; gdp, openness, interest rate and exchange rate have positive signs. But the

independent variable, college has an unexpected negative sign. All fifteen provinces including Jiang Su (as reference province) have significant coefficient of intercepts represent by dummy variables. The differences between provinces indicate the said provinces have some unspecified and particular nature to deal with the FDI inflow.

Table 4.6 Summary of Determinants of FDI Inflows: Model 1 and Model 2

Independent Variable	**Model 1(OLS)**		**Model 2 (FE Region)**		**Model 2 (FE Province)**	
	Coefficient	p value	Coefficient	p value	Coefficient	p value
gdp	0.036***	0.000	0.036***	0.000	0.037***	0.000
openness	0.480***	0.000	0.442***	0.000	0.529***	0.000
transport	-0.004**	0.032	-0.005***	0.009	0.003	0.281
college	0.133*	0.086	0.169**	0.036	-0.153*	0.082
income	0.005	0.431	0.003	0.627	0.003	0.696
exchange	14.987	0.036	12.542*	0.083	13.060**	0.035
interest	2.869	0.107	2.754	0.120	2.131*	0.066
inflation	-1.222	0.291	-1.150	0.322	-0.312	0.687
guangdong					-69.312***	0.000
zhejiang					-52.457***	0.000
fujian					-50.423***	0.000
hebei					-57.942***	0.000
hubei					-30.158***	0.001
hunan					-31.111***	0.001
jilin					-36.902***	0.000
shanxi					-39.100***	0.000
henan					-50.830***	0.000
shaanxi					-31.352***	0.001
yunnan					-38.372***	0.000
sichuan					-43.017***	0.000
guangxi					-39.356***	0.000
innermongo~a					-36.250***	0.000
central			-10.107*	0.056		
west			-6.586	0.223		
_cons	-157.042*	0.019	-126.714*	0.065	-96.763*	0.089
Adjust R-square	0.8011		0.8826		0.9517	

Note: *, **, and *** represent that the parameters estimated are significant at the 10%, 5%, and 1% respectively.

Table 4.6 is the summary of the coefficients of independent variables as potential determinants of FDI inflows of Model 1 and Model 2. It is obvious to catch

on, that the empirical results of model 1 and model 2 (excluding dummy variables) are very similar. In order to find out the best model, it is usual to run the formal test of the two models. In relation to model 2, model 1 is a restricted model in that it imposes a common intercept on all the sectors. Therefore, the restricted F test can be run to check it.

1. For the regional part

H_o: Dcentral=Dwest=0

$$\text{F value}(2,144) = \frac{(\text{R-square ur} - \text{R-square r})/2}{(1-\text{R-square ur})/144}$$

$$= \frac{0.04075}{0.000815}$$

$$= 50.00$$

So, H_o is rejected. Fixed effect model can explain the regional FDI inflow better than OLS.

2. For the provincial part

H_o: Di=0 (i. province)

$$\text{F value}(14,132) = \frac{(\text{R-square ur} - \text{R-square r})/14}{(1-\text{R-square ur})/132}$$

$$= \frac{0.0106}{0.000366}$$

$$= 28.96$$

So, H_o is rejected. Fixed effect model can explain the provincial FDI inflow better than OLS.

4.2.3 Comparing with Fixed Effect Model and Random Effect Model

The study is expected to observe the relationship between FDI and potential determinants. The panel data set used for the study includes 3 region or 15 provinces as cross-sectional units. Each cross-sectional has different number of time series observations, from 1998 to 2009 (Table 4.7). Thus, it is an unbalanced panel.

Table 4.7 Descriptive Statistics for Model 2

Variable	Obs	Mean	Std. Dev.	Min	Max
fdi	155	34.11	50.23	0.65	253.20
gdp	155	1093.34	990.45	169.10	5722.89
export	155	329.86	716.71	8.39	4040.97
transport	155	1913.73	1301.01	355.69	5981.60
college	155	55.64	35.49	7.04	165.34
income	155	1320.13	641.42	111.44	3603.90
exchange	155	7.92	0.53	6.83	8.28
interest	155	5.24	0.95	3.50	6.60
inflation	155	2.12	2.11	-1.40	5.90
central	155	0.34	0.48	0.00	1.00
east	155	0.34	0.47	0.00	1.00
west	155	0.32	0.47	0.00	1.00
year	155	2004.24	3.04	1998.00	2009.00
province	155	7.94	4.31	1.00	15.00
hubei	155	0.06	0.25	0.00	1.00
hunan	155	0.07	0.26	0.00	1.00
jilin	155	0.06	0.23	0.00	1.00
shanxi	155	0.07	0.26	0.00	1.00
henan	155	0.08	0.27	0.00	1.00
hebei	155	0.06	0.25	0.00	1.00
jiangsu	155	0.08	0.27	0.00	1.00
zhejiang	155	0.06	0.25	0.00	1.00
fujian	155	0.06	0.25	0.00	1.00
shaanxi	155	0.06	0.23	0.00	1.00
yunnan	155	0.06	0.25	0.00	1.00
sichuan	155	0.07	0.26	0.00	1.00
guangxi	155	0.06	0.25	0.00	1.00
innermongo~a	155	0.06	0.25	0.00	1.00
guangdong	155	0.06	0.25	0.00	1.00

So far, it is well known that the fixed effect model is better than OLS to explain FDI inflow phenomenon. However, there is another approach to estimate a panel data regression: Random Effect Model Approaches. Since the purpose of the study is to find out the regional determinants or provincial determinants, the fixed effect model is more suitable than the random effect model. Statistically, the popular approach is running the random effect model is to activate Hausman Test to determine

if the random effect model can explain the dependent variables as well as the fixed effect model. According to Hausman Test, the approach is to run two types of model excluding dummy variable firstly (Table 4.8).

Table 4.8 Coefficient Difference Summary (Within Fixed Effect and Random Effect) Level Analysis

	coefficient			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fixed	random	Difference	S.E.
gdp	0.0372152	0.0363757	0.0008396	0.0013355
openness	0.5294308	0.4821246	0.0473062	0.0752134
transport	0.0027609	0.0019393	0.0008216	0.0010609
college	-0.152512	-0.1030518	-0.0494602	0.0387875
wage	0.0029513	0.0031849	-0.0002336	0.002881
exchange	13.05988	13.22333	-0.1634452	1.821935
interest	2.130892	2.207594	-0.0767022	0.2060064
inflation	-0.31169	-0.3477422	0.0360522	0.1608977
Chi-Square Statistic = 2.48				
Prob = .9287				

Both models show that four coefficients are statistically significant. It means that these variables can be potential FDI determinants, although they are different variables in different models. Base on the found coefficients, the hypothesis is set according to the concept of Hausman's Specification Test.

Ho: Random Effect can explain IV as well as Fixed Effect Model

Ha: Random Effect cannot explain IV as well as Fixed Effect Model

Statistically, Hausman's Specification Test is based on the idea that under the hypothesis of no correlation, both OLS in the fixed effect model and GLS in the random effect model are consistent, but OLS is inefficient. Whereas under the alternative, OLS is consistent, GLS is not. Therefore, under the null hypothesis, the two estimates should not differ systematically, and a test can be based on the difference. The other essential ingredient for the test is the covariance matrix of the difference vector b-B:

$$Var(b-B) = Var(b) + Var(B) – Cov(b, B) - Cov(b, B).$$

Hausman's essential result is that the covariance of an efficient estimator with its difference from an inefficient estimator is zero, which implies that

$$Cov[(b-B), B] = Cov(b, B) – Var(B) = 0$$

(Greene, 2003:301)

According to the computation result, it is obvious that the null hypothesis that all the differential intercepts are equal to zero, cannot be rejected. Both fixed model and random effect model can explain FDI. However, the purpose of the study is focus on the difference among the province/region. Thus, the results from the fixed effect model would be selected as the main concepts. However, the random effect model would be considered in some cases of level analysis.

The empirical results of the model 2 (Table 4.4) indicate that as the eastern region as the reference sector, the potential determinants which to explain regional FDI are market size, trade openness, annual total transport freight (ton-kilometers), college enrollment rate, exchange rate and central dummy variable, are statistically significant, or could be the potential regional FDI determinant. Market size, trade openness, annual total freight ton-kilometers, college enrollment, exchange rate have a positive relationship with FDI. Central region has significant difference from eastern region.

The empirical results of the model 2 (Table 4.5) indicate that the potential determinants which to explain provincial FDI. Market size, trade openness, college enrollment, exchange rate, interest rate and all the provincial dummy variables, are statistically significant, or could be the potential regional FDI determinants. GDP, trade openness, exchange rate and interest rate have a positive relationship with FDI, college enrollment has a negative relationship with FDI. The significant difference level exists among the provincial dummy variables indicates the provinces all have the unspecific nature.

From the four tables hereinbefore, GDP, trade openness, college enrollment, exchange rate and interest rate are statistically significant coefficients. These data will be kept and utilized to do the further investigation.

4.2.4 Model 3 (All Coefficients Constant Across Individuals)

Model 2 aims to find out the significant factors to explain regional and provincial FDI inflow. However, it is possible that researchers want to study how these factors affect individual region and individual province. Statistically, it means that the intercepts and the slope coefficients are different for all individual, or cross-section, units. This is to say determinants have different influence on attracting FDI inflow. Interactive term as slope dummies can be used to account for differences in slope coefficients (Gujarati, 2008: 645). To do this in the context of baseline function, what we have to do is multiply each of the regional dummies and provincial dummies by each of the statistically significant variables. Thus, the following Model 3 is set as the estimation models including interactive terms.

Model 3 Fixed Effects Model Including Interactive Terms

$fdi_{it} = f(gdp_{it}, openness_{it}, transport_{it}, college_{it}, income_{it}, exchange_t, interest_t, inflation_t,$ region, interative terms for region) (4)

and

$fdi_{it} = f(gdp_{it}, openness_{it}, transport_{it}, college_{it}, income_{it}, exchange_t, interest_t, inflation_t,$ province, interactive terms for province) (5)

fdi_{it} = annual provincial fdi of province i at time t

gdp_{it} = annual provincial GDP at current price of province i at time t

$openness_{it}$ = annual trade openness at current price of province i at time t, formulated by $(export_{it}+import_{it})/ gdp_{it}$

$transport_{it}$ = annual total transport freight (ton-kilometers) of province i at time t

$college_{it}$ = annual college enrollment of province i at time t

$exchange_t$ = annual exchange rate at time t (in the study, the adopted exchange rate is the average quarterly exchange rate of the year)

$interest_t$ = annual interest rate at time t (in the study, the adopted interest rate is the average quarterly borrowing rate of the year)

$inflation_t$ = annual inflation rate at time t

region = dummy variable represent the FDI receipt region, taking a value of 1 in the relevant region and 0 otherwise. (East is taken to be reference region.)

province = dummy variable represent the FDI receipt province, taking a value of 1 in the relevant province and 0 otherwise. (Jiang Su is taken to be reference province.)

interactive terms for region = dummy slope represent the FDI receipt region

interactive terms for province = dummy slope represent the FDI receipt province

In summary, market size or growth is represented by gdp_{it}, trade openness is by $openness_{it}$, infrastructure and domestic trade is by $transport_{it}$, skilled labor is by $college_{it}$, purchasing power is by $income_{it}$, market risk by $exchange_t$ and $interest_t$, both market and political uncertainty by $inflation_t$. Finally, the most important, all the unspecified regional variables captured by "region" and "interactive terms for region" dummy slope"; meanwhile, unspecified provincial variables captured by "province" and "interactive terms for province" dummy variable. The unit measurement presented in Appendix A.

An estimation model including interactive terms aims to find out how potential determinants affect the particular regional and provincial FDI inflow. Due to the number of the observation of this study is 155, for the concern of degree freedom, not every independent variable is taken to be interactive terms. In this study, the rule setting to select interactive term is based on the result of model 2. The independent variables possessing significant coefficients would be selected.

According to the results of model 2, gdp, openness, transport, and college are selected to be the interactive term in the regional model; and gdp, openness, and college are selected to be the interactive term in the provincial model.

The empirical results got from Model 3 are showed as follows (Table 4.9 and Table 4.10).

Table 4.9 Determinants of Regional FDI Inflows: Model 3

Independent Variable	Coefficient	p value
gdp	0.036***	0.000
central gdp	-0.030***	0.001
west gdp	-0.041***	0.000
openness	0.046***	0.000
central openness	-0.303	0.630
west openness	-0.508	0.603
transport	-0.011***	0.000
central transport	0.007	0.342
west transport	0.020***	0.000
college	0.087***	0.000
central college	-0.060***	0.001
west college	-0.086***	0.000
income	-0.004	0.541
exchange	9.908**	0.048
interest	2.117	0.762
inflation	-1.031	0.328
central	-2.143	0.845
west	-6.558	0.594
_cons	-0.681	0.992
Adjusted R-square	0.9095	

Note: *, **, and *** represent that the parameters estimated are significant at the 10%, 5%, and 1% respectively. The numbers in parentheses are p-value.

According to Table 4.9, it is found that the coefficients of reference region GDP, central GDP, west GDP, reference region openness, reference region transport, west transport, college, interest rate are statistically significant. At the same time, the coefficients of dummy region are no longer significant. Statistically it means that gdp, openness, transport, education level, interest rate could be the potential determinants to explain FDI inflow phenomenon.

Table 4.10 Determinants of Provincial FDI Inflows: Model 3

Independent Variable	Coef.	p value
gdp	0.018*	0.084
guangdong gdp	-0.001	0.934
zhejiang gdp	-0.017	0.176
fujian gdp	0.013	0.784
hebei gdp	-0.011	0.430
hubei gdp	-0.025	0.113
hunan gdp	-0.017	0.360
jilin gdp	-0.033	0.304
shanxi gdp	-0.029	0.312
henan gdp	-0.006	0.731
shaanxi gdp	-0.033	0.197
yunnan gdp	-0.053	0.240
sichuan gdp	-0.011	0.457
guangxi gdp	-0.032	0.371
innermongo~a gdp	-0.027	0.334
openness	-0.432*	0.092
guangdong openness	-0.087	0.803
zhejiang openness	1.240**	0.022
fujian openness	0.448	0.587
hebei openness	0.286	0.846
hubei openness	-1.245	0.500
hunan openness	-1.353	0.667
jilin openness	0.689	0.462
shanxi openness	1.144	0.195
henan openness	-0.649	0.838
shaanxi openness	0.159	0.941
yunnan openness	-0.629	0.660
sichuan openness	1.702	0.604
guangxi openness	1.692	0.552
innermongo~a openness	-0.137	0.957
transport	0.001	0.731
college	1.087***	0.001
guangdong college	-1.181**	0.036
zhejiang college	-0.151	0.797
fujian college	-1.260	0.325
hebei college	-1.026**	0.022
hubei college	-0.699*	0.086
hunan college	-0.680	0.126
jilin college	-0.696	0.313
shanxi college	-0.911*	0.096
henan college	-1.021**	0.026
shaanxi college	-0.855**	0.037
yunnan college	-0.147	0.883

Table 4.10 (Continued)

Independent Variable	Coef.	p value
sichuan college	-1.144***	0.008
guangxi college	-1.037	0.177
innermongo~a college	-0.016	0.982
income	-0.008	0.236
exchange	10.328***	0.002
interest	2.029	0.280
inflation	0.612	0.224
guangdong	156.643***	0.000
zhejiang	-53.245***	0.001
fujian	-7.625	0.850
hebei	-18.518	0.115
hubei	-11.947	0.255
hunan	-14.644	0.375
jilin	-25.442	0.117
shanxi	-24.968***	0.006
henan	-21.940**	0.084
shaanxi	-17.956	0.486
yunnan	-11.585	0.324
sichuan	-24.196	0.108
guangxi	-22.134	0.221
innermongo~a	-20.613	0.573
_cons	98.221	0.232
Adjust R-square	0.9877	

Note: *, **, and *** represent that the parameters estimated are significant at the 10%, 5%, and 1% respectively. The numbers in parentheses are p-value.

According to Table 4.10, it is found that the coefficients of reference province GDP, reference province openness, zhejiang openness, reference province college, guangdong college, hebei college, hubei college, henan college, shaanxi college, sichuan college, interest rate, guangdong dummy, zhe jiang dummy variable, shanxi dummy variable and hennan dummy variable are significant. But the coefficient of reference province is not significant.

Before making the final analysis, a summary of determinants of FDI inflow is useful. The results are shown as followed (Table 4.11 and Table 4.12).

Table 4.11 Summary of Determinants of Regional FDI Inflows: Model 2 and Model 3

	Model 2		Model 3	
Independent Variable	**Coefficient**	**p value**	**Coefficient**	**p value**
gdp	0.036***	0.000		
east gdp			0.036***	0.000
central gdp			-0.030***	0.001
west gdp			-0.041***	0.000
openness	0.442***	0.000		
east openness			0.446***	0.000
central openness			-0.303	0.630
west openness			-0.508	0.603
transport	-0.005***	0.009		
east transport			-0.011***	0.000
central transport			0.007	0.342
west transport			0.020***	0.000
college	0.169**	0.036		
east college			0.087***	0.000
central college			-0.060***	0.001
west college			-0.086***	0.000
income	0.003	0.627	-0.004	0.541
exchange	12.542*	0.083	9.098**	0.048
interest	2.754	0.120	2.117	0.762
inflation	-1.150	0.322	-1.031	0.328
central	-10.107*	0.056	-2.143	0.845
west	-6.586	0.223	-6.558	0.594
_cons	-126.714*	0.065	-0.681	0.992
Adjusted R-square	0.8826		0.9095	

Note: *, **, and *** represent that the parameters estimated are significant at the 10%, 5%, and 1% respectively. The numbers in parentheses are p-value.

Table 4.12 Summary of Determinants of Provincial FDI Inflows: Model 2 and Model 3

	Model 2		Model 3	
Independent Variable	**Coef.**	**p value**	**Coef.**	**p value**
gdp	0.037***	0.000		
jiangsu gdp			0.018*	0.084
guangdong gdp			-0.001	0.934
zhejiang gdp			-0.017	0.176
fujian gdp			0.013	0.784
hebei gdp			-0.011	0.430
hubei gdp			-0.025	0.113

Table 4.12 (Continued)

	Model 2		Model 3	
IV	**Coef.**	**p value**	**Coef.**	**p value**
hunan gdp			-0.017	0.360
jilin gdp			-0.033	0.304
shanxi gdp			-0.029	0.312
henan gdp			-0.006	0.731
shaanxi gdp			-0.033	0.197
yunnan gdp			-0.053	0.240
sichuan gdp			-0.011	0.457
guangxi gdp			-0.032	0.371
innermongo~a gdp			-0.027	0.334
openness	0.529***	0.000		
jiangsu openness			-0.432*	0.092
guangdong openness			-0.087	0.803
zhejiang openness			1.240**	0.022
fujian openness			0.448	0.587
hebei openness			0.286	0.846
hubei openness			-1.245	0.500
hunan openness			-1.353	0.667
jilin openness			0.689	0.462
shanxi openness			1.144	0.195
henan openness			-0.649	0.838
shaanxi openness			0.159	0.941
yunnan openness			-0.629	0.660
sichuan openness			1.702	0.604
guangxi openness			1.692	0.552
innermongo~a openness			-0.137	0.957
transport	0.003	0.281	0.001	0.731
college	-0.153*	0.082		
jiangsu college			1.087***	0.001
guangdong college			-1.181**	0.036
zhejiang college			-0.151	0.797
fujian college			-1.260	0.325
hebei college			-1.026**	0.022
hubei college			-0.699	0.086
hunan college			-0.680	0.126
jilin college			-0.696	0.313
shanxi college			-0.911*	0.096
henan college			-1.021**	0.026
shaanxi college			-0.855**	0.037
yunnan college			-0.147	0.883
sichuan college			-1.144***	0.008
guangxi college			-1.037	0.177
innermongo~a college			-0.016	0.982
income	0.003	0.696	-0.008	0.236

Table 4.12 (Continued)

	Model 2		Model 3	
IV	**Coef.**	**p value**	**Coef.**	**p value**
exchange	13.060**	0.035	10.328***	0.002
interest	2.131*	0.066	2.029	0.280
inflation	-0.312	0.687	0.612	0.224
guangdong	-69.312***	0.000	156.643***	0.000
zhejiang	-52.457***	0.000	-53.245***	0.001
fujian	-50.423***	0.000	-7.625	0.850
hebei	-57.942***	0.000	-18.518	0.115
hubei	-30.158***	0.001	-11.947	0.255
hunan	-31.111***	0.001	-14.644	0.375
jilin	-36.902***	0.000	-25.442	0.117
shanxi	-39.100***	0.000	-24.968***	0.006
henan	-50.830***	0.000	-21.940**	0.084
shaanxi	-31.352***	0.001	-17.956	0.486
yunnan	-38.372***	0.000	-11.585	0.324
sichuan	-43.017***	0.000	-24.196	0.108
guangxi	-39.356***	0.000	-22.134	0.221
innermongo~a	-36.250***	0.000	-20.613	0.573
_cons	-96.763*	0.089	98.221	0.232
Adjust R-square	0.9517		0.9877	

Note: *, **, and *** represent that the parameters estimated are significant at the 10%, 5%, and 1% respectively. The numbers in parentheses are p-value.

From the summary, it seems that Model 3 is better to explain both the regional FDI inflow and the provincial FDI inflow. Thus, this study would analyze the potential FDI determinants according to the empirical results from Model 3. However, Model 2 also can be a comparison to be an aggregate index, comparing Model 3 studied the individual influence from each region and each province.

With regard to empirical results concerned regional FDI, it is found that gdp, trade openness, transport infrastructure, educational level, exchange rate and interest rate have influence on FDI inflow. As the most important index, GDP and FDI have positive relationships, it indicates that market size is an important factor to attract FDI; in central region, GDP has less effect on FDI, but there is still a positive relationship between both of them. However, according to the result, in west region, GDP has a negative effect on FDI. It may indicate FDI is export oriented in the

region. Trade openness has the positive effects on FDI as well as GDP. This trend is very strongly shown in eastern region. It indicates that there is possibly a large amount of export-oriented FDI existing in eastern region. In both central and west region, this kind of positive relationship is exists, but the level is reduced. The empirical results of openness in these two regions are insignificant. The transport infrastructure has negative effect on east region, it maybe viewed that the percentage of FDI of the total investment is reduced by comparing domestic business. The factor has no significant effect on central region. However, it has strong effects on west region. It indicates that west region FDI could be market-oriented. Educational level coefficient is significant at the 1 percent level. It indicates that on average, high education levels have positive effects on FDI inflow. It means that more skilled labor, more FDI inflow. Quality of labor could be a potential determinant of FDI. Disposable income level has no influence on FDI inflow. From both model 2 and model 3, it seems that income is not a significant factor to pull FDI into the regions. Exchange rate is another potential FDI determinant. Because it is an aggregate variable --- as a whole country, China has a same exchange rate. So, we need to discuss it based on both model 2 and model 1. From model 2, it could be found that exchange rate has a positive effect on FDI. Because of the depreciation of Yuan it is expected that export was benefited. It is obvious that the higher the exchange rate, the higher the FDI inflow. In model 3, this kind of effect still exists, but not so significantly. It suggested that compared with the above mentioned factor, the exchange rate is not so significant. The next concerned factor is interest rate. It is still an aggregate variable. Therefore, model 2 and model 3's results are discussed. Both models indicate a positive relationship between them. It is possible that China pursues high interest rate development strategies, and encourages saving. MNEs save their profit in China and can get higher interest rates compared with saving the money in their home countries. At the same time, MNEs would usually loan the money from their home countries' bank because of the same concern --- interest rate. Therefore, it is not strange that interest rates have positive effects on FDI inflow. The last one is inflation rate. In both Model 2 and Model 3, inflation rate has insignificant effects on FDI inflow. It is notable that in model 3, the coefficients of both dummy variables are insignificant. In general, the empirical results indicate that the factors including

market size, trade openness, transportation status, education level, interest rate, exchange rate and inflation rate can explain FDI phenomenon more effective. Therefore, the unspecified factors become less important.

From the results concerning regional FDI, it is found that gdp, trade openness, educational level, exchange rate and interest rate have influences on FDI inflow.

Model 3 shows that because the difference between provinces, it is difficult to use the introduced independent variables in explanation. Model 2 has the same trend. The highly significant dummy variables indicate that there are some unspecified factors existing between provinces. However, model 2 indicates that GDP, trade openness, transportation status, education level, interest rate and exchange rate can explain FDI phenomenon more effective, although inflation rate is insignificant. The most interesting matter in the models is the education level. In model 2, it has not such a significant negative effect on FDI inflow. It is opposite with regional model which has strongly positive effects on FDI inflow. However, when looking into the provincial model, it would be found that there are a lot of provinces attracting FDI inflow with skilled labor with different levels, including Jiangsu, Hebui, Hubei, Hunan, Jinlin, Shanxi, Jiangxi, Shaanxi, Yuannan, Guangxi and Inner Mongolia; but the rest provinces attract FDI inflow with unskilled labor with different level, including Guangdong, Zhejing, Fujian and Sichuan. However, because of the FDI size of the latter four provinces, the differences appeared.

Table 4.13 Summary of the Sign of the Potential Determinants

Independent Variable	**Region**	**Province**
gdp	positive	positive
openness	positive	positive
transport	negative	insignificant
college	insignificant	positive
income	insignificant	insignificant
exchange	positive	positive
interest	insignificant	positive
inflation	insignificant	insignificant

To the end, the empirical result of the study is summarized in Table 4.13. It is obvious to see that GDP as the proxy of market size, openness as the proxy of trade

openness and exchange rate have absolutely and statistically positive effects on FDI inflow at both regional level and provincial level. The other factors have different influences on FDI based on the varied situations. Transport as the proxy of transportation infrastructure has a negative sign at regional level while insignificant at provincial level. College as the proxy of labor quality is insignificant at regional level while has a positive sign at provincial level. Interest rate is insignificant at regional level while has a positive sign at provincial level as well.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Identifying FDI determinants in China is a complicated and boundless subject. The purposes of this study are to first investigate the FDI determinants and then find out the possibility of existed regional and provincial FDI determinants.

To focus on the issue, the author first used a twelve-year panel data of 1998-2009 with four econometric analysis tools including the ordinary least square method, fixed effects model, random effects model and fixed effects model with interactive terms. Then according to the related econometric test and results, chose the results of fixed effect models and fixed effect models with interactive teams to be the empiric findings in the study. The results of the fixed effect models indicated the FDI trends in China as a whole country, while the results of the fixed effects model with interactive terms indicted the FDI trends by region and province probably associated with a selection of potential determinants.

Eight sets of potential determinants are included in the study: provincial market size that is proxied by GDP, the provincial trading intensity that is indicated by trade openness, the provincial infrastructure that is proxied by the provincial total freight ton-kilometers, the provincial skilled labour quantity and educational level that is proxied by college enrolment, the provincial purchasing power that measured by average disposable income and the risk indicators including interest rate, exchange rate and inflation rate.

In general, the findings indicated that China’s potential market was a significant determinant for FDI inflow in China as a whole, which was in line with both theoretical framework and previous empirical studies. Regionally, market size positively impacted on FDI inflow in both eastern and central regions while it slightly

reduced the attractiveness of western region as a FDI destination. The results implicitly indicated that most of the FDI in eastern and central regions are market-seeking FDI while it is possible that most of the FDI in western regions are source-seeking FDIs.

Trade openness played a key role on attracting FDI inflow in general. Regionally, it also positively impacts on FDI inflow in eastern region while having no effect on FDI of central and western regions.

Unexpectedly, transportation infrastructure had negative effects on MNEs' investment decision. Regionally, it also had a negative impact in eastern region while it had positive impact in Western region and had no effect on central region.

Educational levels had positive effects on the decision makings of the foreign investors in general. Regionally, it has also positively impacted on FDI in three regions.

Disposable income per capita, interest rate and inflation rate were not significant in attracting foreign investors, whereas exchange rate positively impacted on FDI.

5.2 Suggestions

According to the empirical findings of the study, the factors such as market size, trade openness, the quantity of skilled labour and minimum wage, have positive effects on regional/provincial FDI in China.

Successful attraction of FDI should be followed by the successful implement of investment policies and FDI promotion strategies.

Uneven FDI inflow in different regions and provinces is caused by various factors. It was found from the empirical findings that market size, trade openness, the quantity of skilled labour, and deposable income per capita have positive effect on province-level FDI inflow in China. The differences among the regions and provinces reveal the relationship between the mentioned factors and MNEs' international production activities as well. Therefore, some policy adjustment can help to attract more FDI into different provinces in China.

In east provinces, the unique coastal geography itself ensures the convenience of transportation, especially on sea. Vertical FDI or/and export-platform oriented FDI would be further encouraged if the transportation infrastructure gets further completion and perfection.

At the same time, the relatively developed economies help the horizontal FDI expanding in east region. According to UNCTAD, most FDI are market-seeking FDI. Thus, relatively huge and mature market would attract more high technology or high price-level production based FDI inflow. Right now, the largest parts of FDI in China are still intra FDI inflow, the majority of source countries are Asia countries. It illustrates the obvious differences of the consuming standards between China and developed countries. However, this kind of difference is relatively small between east provinces and developing countries. If China wants to attract more OECD countries to invest in the country, the first job to do should be the appropriate east region promotion. For instance, submitting the financial incentive for specified industry/sector which China would benefit from; or founding China-foreign co-operative organization to push the research and development of high technology products.

With regard to inner region where including both central and west provinces, the most important thing that the government should do is to improve infrastructure at all aspects, enforce the promotion of SEZs in the area and extend the financial incentive period for specific industry/sector in SEZs. Compared with east provinces, central and west provinces have the unique comparative advantage as well. For instance, the cheap labour cost. Along with the economic growth, the minimum wage in east region is higher than the other regions. It is possible that some existed labour-intensive MNEs would select inner region to set up their China based-affiliates if the extra transportation cost within the country is acceptable. The other comparative advantage of inner region is the labour force. Because of the loosened restrictions of migration within China, a large amount of people, including skilled and unskilled labour, have worked in MNEs in east provinces. These people found that it is easier to involve themselves into similar international production. Meanwhile, because of the birth-control policies' effectiveness in east provinces, it is estimated that the labour shortage of the area would be seen within fifteen years. The same concern will not appear in inner region in the near future, at least not for twenty-five years (Jiang, 2005: 1-24).

When taking into consideration the country's' security, the China government didn't encourage international merger and acquisition in the past. The most FDI entry mode is green field investment. However, according with the economic growth of the country, many state-owned enterprises call for real innovation. Amongst these, some cases need large amounts of capital and some entail advance technological innovations or superior management approaches. All of these requirements actually could be fulfilled by FDI. If China government can loosen some rules about international merger and acquisition of state-owned enterprises, some problems can be easily solved.

China is a large country, many MNEs are mixed purposes. It means that they are not purely market-oriented, or purely export-oriented. Therefore, sometimes they would set up more than one affiliate in different regions because of the transaction cost concerns. Even in the case of a FDI purely local market-oriented, if its products are well-known and well marketed in the country, it is possible that MNEs desires to set up new factories to fit the nearby market demands. Banking services give us a good example. In both cases, complicated value chains and management styles are formed. For instance, head office is based in east region, and factories are set in inner area. Chinese government could create an attractive investment climate to attract these large sized FDI inflows, the small sized FDI would follow for the agglomerative effects.

As the most active approach of international capital movement, FDI inflow acts as the important role for the economic growth of the regions and countries. China benefited from FDI inflow for decades because of its market size, trade openness, quantity and quality of the labour and well performed FDI promotional policies. If it maintains the growth speed, enhances the infrastructure building; more FDI inflow can be expected in the coming years.

BIBLIOGRAPHY

Addison, T. and A. Heshmati, A. 2003. **The New Global Determinants of FDI Inflows to Developing Countries: the Importance of ICT and Democratisation.** Helsinki: UNU/WIDER New Economy in Development.

Agarwal, J. P. 1980. **Determinants of Foreign Direct Investment: a Survey.** Weltwirtschaftliches Archiv. 106: 739-773.

Akinkgbe, O. 2003. **Flow of Foreign Direct Investment to Hitherto Neglected Developing Countries.** WIDER Discussion Paper No. 2003/2, World Institute for Development Economic Research, Tokyo: United Nations University.

Alfaro, L.; Chanda, A.; Kalemli-Ozcan, S. and Sayek, S. 2006. **How Does Foreign Direct Investment Promote Economic Growth? Exploring the Effects of Financial Markets on Linkage.** Retrieved February 12, 2009 from https://www.docs.google.com/viewer?a=v&q=cache:dnMxvB5w4OAJ:www.hbs.edu/research/pdf/07-013.pdf+Alfaro,+Chanda,+Kalemli-Ozcan,+Sayek,&hl=en&gl=th&pid=bl&srcid=ADGEESihExTnf4SSXNdNUA0Cxt9I39-0ofJxnkPlECFlf0pN8CBvKShGWYqZ8Hq8cK7NEMnn-BfCPkNyK3U6nwQjcvaUaQ0lOAIKodf7M5Jgt1gczCn4ee_KOoa7quYx9gJwPgIWw_rO&sig=AHIEtbQnTYVBD3cKNF7Nn9giGPY3bE9K2A

Aliber, Robert Z. 1970. **A Theory of Direct Foreign Investment.** Cambridge, MA: MIT Press.

Altomonte, C. 1998. **FDI in the CEEC's and the Theory of Real Options: an Empirical Assessment.** LICOS Discussion Paper 76, Leuven: Centre for Transition Economics.

Amiti, M. and Javorcik, B. S. 2008. Trade Costs and Location of Foreign Firms in China. **Journal of Development Economics.** 85(1): 129-149.

Asiedu, E. 2002. On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different? **World Development.** 30 (1): 107-118.

Bajo-Rubio, O. and Sosvilla-Rivero, S. 1994. An Econometric Analysis of Foreign Direct Investment in Spain, 1964-1989. **Southern Economic Journal.** 106: 104-120.

Banga, R. 2003. **Impact of Government Policies and Investment Agreements on FDI Inflows.** Working Paper, No. 116. Indian Council for Research on International Economic Relations, New Delhi, November 2003

Barclay, Lou A. 2000. **Foreign Direct Investment in Emerging Economies: Corporate Strategy and Investment Behavior in the Caribbean.** London: Roultledge.

Barrell, R. and Pain, N. 1996. An Econometric Analysis of US Foreign Direct Investment. **Review of Economics and Statistics.** 78: 200-207.

Barry, F. and Bradley, J. 1997. FDI and Trade: The Irish Host-Country Experience. **Economic Journal.** 107: 1798-1811.

Billington, N. 1999. **The Location of Foreign Direct Investment: an Empirical Analysis. Applied Economics.** 31: 65-76.

Bloomberg News. 2010. **China Overtakes Japan as World's Second-Biggest Economy.** Retrieved October 3, 2010 from http://www.bloomberg.com/news/2010-08-16/china-economy-passes-japan-s-in-second-quarter-capping-three-decade-rise.html

Boremans, M.; Roelfsema, H. and Zhang, Y. 2011. **Regional determinants of FDI in China: a New Approach with Recent Data.** Retrieved December 31, 2011 from http://www.hogeschoolutrecht.academia.edu/MartijnBoermans/Papers/116831/Regional_determinants_of_FDI_in_China_A_new_approach_with_recent_data

Borensztein, E.; DeGregorio, J. and Lee, J-W. 1998. How Does Foreign Direct Investment Affect Economic Growth? **Journal of International Economics.** 115-135.

Brada, J. C. and Tomsik, V. 2003. **Reinvested Earning Bias, the Five Percent Rule and the Interpretation of the Balance of Payments-with An Application to Transition Economies.** CEPR Working Paper No. 543. London: Centre for Economic and Policy Research.

Brainard, S. L. 1993a. **A Simple Theory of Multinational Corporations and Trade with a Trade-off Between Proximity and Concentration.** NBER Working Paper 4269. Cambridge, MA: Cambridge, MA: National Bureau of Economic Research.

Brainard, S. L. 1993b. **An Empirical Assessment of the Factor Proportions Explanation of Multinationals Sales.** NBER Working Paper 4580. Cambridge, MA: National Bureau of Economic Research.

Buckley, P. J. and Casson, M. 1976. **The Future of the Multinational Enterprise.** London: Macmillan.

Buckley, P. J. and Casson, M. 1981. The Optimal Timing of Foreign Investment. **Economic Journal.** 91: 75-87.

Casson, M. C. 1987. **The Firm and the Market: Studies in Multinational Enterprise and the Scope of the Firm.** Cambridge, MA: MIT Press.

Carkovic, M. and Levine, R. 2002. **Does Foreign Direct Investment Accelerate Economic Growth?.** University of Minnesota, Working Paper.

Caves, Richard E. 1971. International Corporations: The Industrial Economics of Foreign Investment. **Economica.** 38: 1-27.

Caves, Richard E. 1996. **Multinational Enterprise and Economic Analysis.** Cambridge: Cambridge University Press.

Chan, K. W. J.; Henderson, V. and Tsui, K. Y. 2008. Spatial Dimensions of Chinese Economic Development. In **China's Great Economic Transformation.** T. G. Rawski and L. Brandt eds. Cambridge: Cambridge University Press.

Chen, Bing. 2009. **The Relationship Between Investment Rate and FDI Inflow in China.** Hebei: Tiaocha. (In Chinese)

Chen, C. 1996. Regional Determinants of Foreign Direct Investment In Mainland China. **Journal of Economic Studies.** 23: 18-30.

Chen, Jia Jia. 1999. **Multinational Enterprises In China.** Wei-Hui: Fudan Press.

Chen, Mei Hong. 2007. **Japanese Based FDI In Shanghai From 1998-2006**. Wei-Hui: Bao. (In Chinese)

Cheng, L. K. and Kwan, Y. K. 2000. What Are the Determinants of the Location of Foreign Direct Investment? The Chinese Experience. **Journal of International Economics.** 51: 379-400.

Chinacity. 2009. **30 Years of Reform and Opening up China to Attract Foreign Investment and the Impact of Development.** Retrieved January 31, 2011 from http://www.chinacity.org.cn/csfz/fzzl/42220.html

Cho, Joong-Wan. V. 2003. **Foreign Direct Investment: Determinants, Trends in Flows and Promotion Policies.** Investment Promotion and Enterprise Development Bulletin for Asia and the Pacific. Pp. 99-112.

Coase, R. H. 1937. The Nature of the Firm. **Economica.** 4: 386-405.

Cole, M.; Elliott, R. and Zhang, J. 2006. **Corruption, Governance and FDI Location in China: a Provincial-Level Analysis.** Department of Economics, University of Birmingham, Discussion Papers.

Culem, D. G. 1988. The Locational Determinant of Direct Foreign Investment Among Industrialised Countries. **European Economic Review.** 32: 885-904.

Cushman, D. O. 1988. Exchange-Rate Uncertainty and Foreign Direct Investment in the United States. **Weltwirtschaftliches Archiv.** 124: 322-336.

Cuyvers, L.; Plasmans, J.; Soeng, R.; and Van, Daniel DenBulcke. 2008. **Determinants of Foreign Direct Investment in Cambodia: Country-Specific Factor Differentials.** Retrieved May 5, 2007 from http://www.webhost.ua.ac.be/cas/PDF/CAS61.pdf

Das, S. 1987. Externalities and Technology Transfer through Multinational Corporations: a Theoretical Analysis. **Journal of International Economics.** 22: 171-182.

Dullien, S. 2005. **China's Changing Competitive Position: Lessons from a Unit-Labor Cost- Based REER**. International Trade 0502016, EconWPA.

Dunning, J. H. 1979. Explaining Changing Pattern of International Production: In Defence of Eclectic Theory. **Oxford Bulletin of Economics and Statistics.** 41: 269-296.

Dunning, J. H. 1980. Toward and Eclectic Theory of International Production: Some Empirical Tests. **Journal of International Business Studies.** 11: 9-31.

Dunning, J. H. 1958. **American Investment in British Manufacturing.** London: George Allen & Irwin.

Dunning, J. H. 1973. The Determinants of International Production. **Oxford Economic Papers.** 25: 289-336.

Dunning, J. H. 1977. Trade, Location of Economic Activity and the MNE: a Search for an Eclectic Approach. In **The International Allocation of Economic Activity.** B. Ohlin, et al. eds. London: Holmes and Meier. Pp. 395-418.

Dunning, J. H. 1979. Explaining Changing Pattern of International Production: in Defence of Eclectic Theory. **Oxford Bulletin of Economics and Statistics.** 41: 269-296.

Dunning, J. H. 1980. Toward and Eclectic Theory of International Production: Some Empirical Tests. **Journal of International Business Studies**. 11: 9-31.

Dunning, J. H. 1981. **International Production and the Multinational Enterprise.** London: Allen and Unwin.

Dunning, J. H. 1988a. The Eclectic Paradigm of International Production: a Restatement and Some Possible Extensions. **Journal of International Business Studies.** 9: 1-31.

Dunning, J. H. 1988b. **Explaining International Production.** London: Allen and Unwin.

Dunning, J. H. 1992. **Multinational Enterprises and the Global Economy.** Reading, MA: Addison-Wesley

Dunning, J. H. 1993. MNEs, the Balance of Payments and the Structure of Trade. In **Multinational Enterprises and the Global Economy.** J. H. Dunning ed. Reading, MA: Addison-Wesley

Dunning, J. H. 2005. The Evolving World Scenario. In **What's Next? Strategic Views on Foreign Direct Investment.** S. Passow and M. Runnbeck, eds. ISA in cooperation with UNCTAD and WAIPA. Pp.12-17.

Ekholm, K.; Forslid, R. and Markusen, J. R. 2003. **Export-Platform Foreign Direct Investment.** NBER Working Paper 9517. Cambridge, MA: National Bureau of Economic Research.

Estrin, S.; Hughes, K. and Todd, S. 1997. **Foreign Direct Investment in Central and Eastern Europe.** Royal Institute of International Affairs.

Faeth, Isabel. 2009. Determinants of Foreign Direct Investment :A Tale of Nine Theoretical Models. **Journal of Economic Surveys.** 23, 1 (February): 165-196.

Froot, K. A. and Stein, J. 1991. Exchange Rate and Foreign Direct Investment: An Imperfect Capital Markets Approach. **The Quarterly Journal of Economics.** 106: 1191-1217.

Fu, X. 2008. Foreign Direct Investment, Absorptive Capacity and Regional Innovation Capabilities: Evidence from China. **Oxford Development Studies.** 36 (1): 89-110.

Galego. A.; Vierira, C. and Vierira, I. 2004. The CEEC as FDI Attractors, A Menace to the EU Periphery? **Emerging Markets Finance and Trade.** 40 (5): 74-91.

Ghai, Y. 2000. **Autonomy and Ethnicity: Negotiating Competing Claims in Multi-ethnic States.** Cambridge: University Press. Pp. 92-97.

Ghazali, Ahmad. 2010. **Analyzing the Relationship Between Foreign Direct Investment Domestic Investment and Economic Growth for Pakistan.** Retrieved July 23, 2010 from http://www.eurojournals.com/ IRJFE_47_11.pdf

Goldberg, M. A. 1972. The Determinants of US Direct Foreign Investment in the EEC: Comment. **American Economic Review.** 62: 692-699.

Goodman, D. and Segal, G. 1994. **China Deconstructs: Politics, Trade, and Regionalism.** New York: Rutledge.

Graham, E. M. 1978. Transatlantic Investment by Multinational Firms: A Realistic Phenomenon? **Post Keynesian Economics.** 1: 82-99.

Greene, W. H. 2003. **Econometric Analysis.** 5th ed. Upper Saddle River, N.J.: Prentice Hall.

Grossman, G. and Helpman, E. 1990. Comparative Advantage and Long-Run Growth. **American Economic Review.** 80: 796-815.

Gujarati, D. 2008. **Basic Econometrics.** 4th ed. New York: McGraw-hill.

Hanson, G. H.; Mataloni, R. J. and Slaughter, R. J. 2001. **Expansion Strategies of U.S. Multinational Firms.** NBER Working Paper 8433. Cambridge, MA: National Bureau of Economic Research.

Head, K. and Ries, J. 1996. Inter-city Competition for Foreign Investment: Static and Dynamic Effects of China's Incentive Areas. **Journal of Urban Economics.** 40 (1): 38-60.

Helpman, E. and Krugman, P. R. 1985. **Market Structure and Foreign Trade.** Cambridge, MA: MIT Press.

Hobson, C. K. 1914. **The Export of Capital.** London: Constable.

Holland, D. and Pain, N. 1988. **The Diffusion of Innovations in Central and Eastern Europe: a Study of the Determinants and Impact of Foreign Direct Investment.** NIESR Discussion Papers No. 137. London: National Institutes of Economic and Social Research.

Horstman, I. J. and Marksusen, J. R. 1992. Endogenous Market Structures in International Trade (Natura Facit Saltum). **Journal of International Economics.** 32:109-129.

Huang, Tao. 2009. **FDI in China, a Brief Summary.** Zhong Guo: Ren Bao. (In Chinese)

Hymer, S. H. 1976. **The International Operations of National Firms: a Study of Direct Investment.** Cambridge, MA: MIT Press.

Jasay, A. E. 1960. **The Social Choice between Home and Overseas Investment. Economic Journal.** 70: 105-113.

Jiang, Xuetong. 2005. **China's Foreign Direct Investment History.** Beijing: Beijing University Press.

Jing, Xin. 2009. **International Firms in China.** Guangdong: Zhoubao. (In Chinese)

Jun, K. W. and Singh, H. 1996. The Determinants of Foreign Direct Investment in Developing Countries. **Transnational Corporations.** 5 (2): 67-115.

Kemp, M. C. 1964. **The Pure Theory of International Trade.** Englewood Cliffs: Prentice Hall.

Kim, W. C.; Hwang, P. and Burghers, W. P. 1993. Multinationals' Diversification and the Risk-Return Trade-Off. **Strategic Management Journal.** 14: 275-286.

Kindleberger, C. P. 1969. **American Business Abroad: Six Lectures on Foreign Direct Investment.** New Haven: Yale University Press

Kinoshita, Y. 1998. **Micro-determinants of Japanese Foreign Direct Investment In Asia.** Eastern Economic Association and Japan Economic Seminar at Columbia University.

Kinoshita, Y. and Campos, N. 2004. **Estimating the Determinants of Foreign Direct Investment Inflows: How Important are Sampling and Omitted Variable Biases?** CEPR-WDI Transition Conference.

Kirkpatrick, C.; Parker, D. and Zhang, Y. F. 2004. **Foreign Direct Investment in Infrastructure in Developing Countries: Does Regulation Make a Difference?.** Retrieved February.12, 2009 from http://www.unctad. org/en/docs/iteiit20061a6_en.pdf

Knickerbocker, F. T. 1973. **Oligopolistic Reaction and Multinational Enterprise.** Boston: Harvard University Press.

Kogut, B. and Chang, S. J. 1991. Technological Capabilities and Japanese Foreign Direct Investment in the United States. **Review of Economics and Statistics.** 73: 401-413.

Kopits, G. F. 1979. Multinational Diversification. **Economic International.** 32: 99-111.

Kumar, N. 2001. **Infrastructure Availability, Foreign Direct Investment Inflows and Their Export-orientation: A Cross-Country Exploration.** Research and Information System for Developing Countries, New Delhi, November 2001.

Lajuni, Nelson; Ooi, AivYee and Ghazali, Mohd Ghazali. 2008. Capital Controls: Impact on Foreign Direct Investment and Portfolio Investment in Malaysia 1991-2004. **Global Journal of Business Research.** 2 (1): 17-24.

Lan, Fang and Zhou Dong Yang. 2010. **Foreign Direct Investment in Coastal Region.** Zhejiang: University Press. (In Chinese)

Lankes, Hans-Peter and Venables, A. J. 1996. Foreign Direct Investment in Economic Transition: the Changing Pattern of Investments. **Economics of Transition.** 4, 2 (October): 331-347.

Lansbury, M.; Pain, N. and Smidkova, K. 1996. Foreign Direct Investment in Central Europe since 1990: An Econometric Study. **National Institute Economic Review.** 156. (1): 104-113.

Layton, A. P. and Makin, T. 1993. Estimates of the Macroeconomic Impact of Foreign Investment in Australia. **International Economic Journal.** 7: 35-42.

Li, Jiang. 2008. **Japanese Firms Invest in Shanghai, China.** Shanghai: Jingji Zhou Kai. (In Chinese)

Liao, Ming and He, Zhe Tang. 2008. **FDI in Coastal Region of China**. Beijing: China News September. (In Chinese)

Lin, Lu Hui. 2010. **Interest Rate Effects on Export in China.** Jilin: Jilin Bao, (In Chinese)

Lin, Xiao Hong and Lin, Qiao Lan. 2006. **A Study of FDI Determinants in China.** Shanghai: Wen-Hui Bao. (In Chinese)

Liu, T. and Li, K. 2006. Disparity in Factor Contributions Between Coastal and Inner Provinces in Post-reform China. **China Economic Review.** 17: 449-470.

Loree, D. W. and Guisinger, S. E. 1995. Policy and Non-policy Determinants of U.S. Equity Foreign Direct Investment. **Journal of International Business Studies.** 26: 281-299.

Love, J. H. and Lage-Hidalgo, F. 2000. Analysing the Determinants of US Direct Investment in Mexico. **Applied Economics.** 32: 1259-1267.

Lu, Jian Xian. 2001. **Twelve Years FDI in China during 1988-1999.** Guangdong: Ming Bao Press. (In Chinese)

Lucas, R. B. 1993. On the Determinants of Foreign Direct Investment: Evidence from East and Southeast Asia. **World Development.** 21: 391-406.

Lunn, J. 1980. Determinants of US Direct Investment in the EEC: Further Evidence. **European Economic Review.** 13: 93-101.

Ma, Ling Ling and Zhou, Xue Chun. 2009. **FDI in China (1981-2006).** Beijing: University Press.

MacDougall, G. D. A. 1960. The Benefits and Costs of Private Investment from Abroad: a Theoretical Approach. **Economic Record.** 36: 13-35.

Madariaga, N. and Poncet, S. 2007. FDI in Chinese Cities: Spillovers and Impact on Growth. **The World Economy.** 30 (5): 837-862.

Markusen, J. R. 1984. Multinationals, Multi-Plant Economies, and the Gains from Trade. **Journal of International Economics.** 16: 205-266.

Markusen, J. R. 1997. **Trade Versus Investment Liberalisation.** NBER Working Paper No. 6231. Cambridge, MA: National Bureau of Economic Research.

Markusen, J. R. 2001. Contracts, Intellectual Property Rights, and Multinational Investment in Developing Countries. **Journal of International Economics.** 53: 189-204.

Markusen, J. R. 2002. **Multinational Firms and the Theory of International Trade.** Cambridge, MA: MIT Press.

Markusen, J. R. and Masku, K. E. 2002. Discriminating among Alternative Theories of the Multinational Enterprise. **Review of International Economics.** 10: 694-707.

Markusen, J. R.; Melvin,J. R.; Kaempfer, W. H. and Maskus, K. E. 1995. **International Trade-Theory and Evidence.** Boston, MA: McGraw-Hill.

Markusen, J. R. and Venables, A. J. 1998. Multinational Firms and the New Trade Theory. **Journal of International Economics.** 46: 183-203.

Markusen, J. R. and Venables, A. J. 2000. The Theory of Endowment, Intra-Industry, and Multinational Trade. **Journal of International Economics.** 52: 209-234.

Markusen, J. R.; Venables, A. J.; Konan, D. E. and Zhang, K. H. 1996. **A Unified Treatment of Horizontal Direct Investment, Vertical Direct Investment, and the Pattern of Trade in Goods and Services.** NBER Working Paper No.5696. Cambridge, MA: National Bureau of Economic Research.

Matie, K. B. 2007. **Rationalization of Government Structures Concerned with Foreign Direct Investment Policies in South Africa.** Retrieved November 8, 2008 from http://www.jstor.org/pss/3502140

Matyas, L. and Sevestre, P. 1996. **The Econometrics of Panel Data: a Handbook of the Theory With Applications.** Ordrecht: Kluwer Academic Publishing.

Mei, Yu. 2009. **Japanese Based FDI in China.** Shanghai: Fudang University Press. (In Chinese)

Milner, C. and Pentecost, E. 1996. Locational Advantage and US Foreign Direct Investment in the UK. **Applied Economics.** 28: 605-615.

Ming, Han and Yang, Guang. 2009. **Hong Kong Investment in China.** Ningxia: Ningxia University Press. (In Chinese)

Mody, Ashoka. 1997. **Infrastructure Strategies in East Asia: The Untold Story.** Washington: DC: World Bank.

Mody, Ashoka and Srinivasan, Krishna. 1998. Japanese and United States Firms as Foreign Investors: Do they march to the same tune?. **Canadian Journal of Economics, Canadian Economics Association.** 31, 4 (November): 778-799.

Moore, M. O. 1993. Determinants of German Manufacturing Direct Investment: 1980-1988. **Weltwirtschaftliches Archiv.** 129: 120-137.

Na, L. and Lightfoot, W. S. 2006. Determinants of Foreign Direct Investment at the Regional Level in China. **Journal of Technology Management.** 1 (3): 262-278.

Nonnenberg, M. and Mendonca, M. 2004. **The Determinants of Direct Investment in Developing Countries.** Working Paper, Institute of Applied Economic Research.

Parry, T. G. 1978. Structure and Performance in Australian Manufacturing With Special Reference to Foreign-Owned Enterprises. In **Growth, Trade and Structural Change in an Open Australian Economy.** W. Kasper and T. G. Parry, eds. Kensington, Australia: Centre for Applied Economic Research, University of New South Wales. Pp.173-199.

Pearce, R. D. 1993. **The Growth and Evolution Multinational Enterprise: Patterns of Geographical and Industrial Diversification.** Cheltenham: Edward Elgar.

Pitelis, C. and Roger, S. 2000. **The Nature of the Transnational Firm.** 2nd ed. New York: Routledge.

Resmini, L. 1999. **The Determinants of Foreign Direct Investment into the CEECs: New Evidence from Sectoral Patterns.** LICOS Discussion Paper No. 83. Leuven: Centre for Transition Economics.

Ruffin, R. J. 1984. International Factor Movements. In **Handbook of International Economics.** R.W. Jones and P. B. Kenen, eds. Amsterdam: North Holland. Pp. 237-288.

Rugman, Alan M. 1986. **New Theories of the Multinational Enterprise.** London: Croom Helm.

Santiago, C. E. 1987. The Impact of Foreign Direct Investment on Export Structure and Employment Generation. **World Development.** 15: 317-328.

Scaperlanda, A. E. and Mauer, L. J. 1969. The Determinants of US Direct Investment in the EEC. **American Economic Review.** 59: 558-568.

Schneider, F. and Frey, B. S. 1983. Economic and Political Determinants of Foreign Direct Investment. **World Development.** 13: 161-175.

Sebastian, Miguel. 1995. **Spain in the EU, Fifteen Years May not Enough.** Retrieved January 11, 2011 from http://www.ces.fas.harvard.edu/publications/docs/pdfs/Sebastian96.pdf

Shahrudin, N.; Yusof, Z. and Satar, N. 2010. **Determinants of Foreign Direct Investment in Malaysia: What Matters Most?.** Retrieved July 7, 2011 from http://www.bizresearchpapers.com/18.%20Zarinah.pdf

Shenzhen City. 2008. **Shenzhen City Yearly Report.** Guangdong: Government Report. (In Chinese.)

Singhaniam, M. and Gupta, A. 2011. Determinants of Foreign Direct Investment In India. **Journal of International Trade Law and Policy.** 10 (1): 64-82.

Su, Xiao Ming. 2001. **FDI in China-1981-2000.** Beijing University Press. (In Chinese)

Vernon, R. 1966. International Investment and International Trade in the Product Cycle. **Quarterly Journal of Economics.** 80: 190-207.

Vijayakumar N.; Sridharan, P. and Rao, K. 2010. Determinants of FDI in BRICS Countries: a Panel Analysis. **International Journal of Business Science and Applied Management.** 5, (3): 1-15.

Walsh, J. and Yu. J. 2010. **Determinants of Foreign Direct Investment: A Sectoral and Institutional Approach.** IMF Working Paper, WP/10/187, International Monetary Fund, 2010.

Whalley, J. and Xian, X. 2006. **China's FDI and Non-FDI Economies and the Sustainability of Future High Chinese Growth.** Working Paper 12249, NBER Working Paper Series National Bureau of Economic Research.

Wheeler, D. and Mody, A. 1992. International Investment Location Decisions: The Case of US Firms. **Journal of International Economics.** 33: 57-76.

UNCTAD. 2006. **World Investment Report.** New York: FDI from Development and Transition Economies: Implication for Development.

UNCTAD. 2009. **World Investment Report.** New York: Transnational Corporations, Agriculture Product and Development.

Xiao, He and Zhen, Mei Li. 2006. **FDI in Western Region in China.** Shanxi: Shanxi University Press.

Xu, Di Xin. 1981. China's Special Economic Zones. **Beijing Review.** 50: 1-10. (In Chinese)

Yu, Ping Hua. 2006. **Japanese Investment in China.** Beijing Shi: Yamgar Press.

Yue, C. J. 2003. **Does Higher Educated People Earn More Money in the Labor Market in China?.** 4th ed. International Conference on the Chinese Economy-The Efficiency of China's Economic Policy. 23-24 October, 2003.

Yunshi, M. and Jing, Y. 2005. (October 11). Overseas Investment Trends Change with Times. **China Daily**: 1.

Zhang, Kevin H. 2006. **China as the World Factory.** New York: Rutledge.

Zhang, Xue Lin. 2002. **FDI in Guangdong and Fujian.** Fujian: Xiamen University (In Chinese)

Zhao, H. and Zhu, G. 2008. Location Factors and Country-of-Origin Differences: An Empirical Analysis of FDI in China. **Multinational Business Review.** 8 (1): 14, 60.

Zhou, Jun Jun. 2011. **Regional FDI Study-a Case in China's Development.** Sichuan: Sichuan University Press. (In Chinese)

Zhou, Xia Hai and Xu, Lan Lan. 2011. **Hong Kong Based FDI in Mainland China.** Guangdong: Guangdong University Press. (In Chinese)

APPENDICES

APPENDIX A

Unit of Measurement of Variables

Variable	Unit of Measurement
FDI	Billion US Dollar
GDP	Billion US Dollar
Trading Openness	-
Transportation	Billion Km-Ton
College	Thousand people
Disposable Income	US Dollar
Interest Rate	Percent
Exchange Rate	Percent
Inflation Rate	Percent

Note: * Unit of Measurement of Trading Openness is a ratio.

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