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Regional Disparities in China's Economic Growth and Foreign Direct Investment

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Foreign Direct Investment

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Preface

The fact that China has exhibited unprecedented rapid economic growth in recent decades is now well acknowledged. However, there have been side effects as well, for example, increased disparity in economic growth across regions in China. The disparity in China's regional growth following the preferential policies of the government is manifested in the widening gap between the coastal areas and the inner areas which continues to show no signs of reversing. Many observers agree that China's coastal cities and provinces are rapidly approaching the medium-income level of other developed countries, but inner cities and provinces lag behind. This interregional disparity has become one of the most serious problems of China's modernization.

How to promote growth in low-income areas and narrow the gap between coastal and inland areas, has become an important concern not only for China's policymakers and central government, but has also captured the attention of economists. For example, there exist a large number of studies addressing convergence issues and disparities of China's regional growth. Without disregarding the quite different national conditions, geographical location and traditional customs

among China's provinces, as well as differences in earlier regional development strategies, one might still seek to better understand the determinants or potential factors of inter-regional disparities in growth in China.

Currently, there is no consensus or agreement on the causes of disparity among economists. Some argue that the primary reason lies in differences in regional investment level and production technology, while others suggest regional industrial structure and resources as possible reasons for interregional disparities in the growth of China's provinces. Although recent studies from domestic and foreign economists have attempted to provide some important answers to these questions, strong and consistent evidences are still lacking.

This study argues that the impact of FDI inflows has been a major cause of China's interregional disparity. The study uses cross sectional and panel models to identify the significance of FDI inflows on China's interregional disparity, as well as, to tackle convergence issues. The study makes careful analysis of data at the provincial level. In addition, such important conditional variables as geographical location and preferential policy variables as well as other factors are included in various models to better understand their effects on the growth of China's provinces.

I hope that the new evidences found in this study help provide some credibility to the regional development strategies carried out by the government. Also, I believe that this study, which is undoubtedly an excellent contribution to existing literature, will serve as a useful reference for those that aim

to acquire a better understanding of the causes of China's economic disparity across regions, as well as the role of FDI in economic progress in general.

I would like to express my gratitude to the authors, Dr. Xinzhong Lee, a visiting Chinese researcher to KERI, and Dr. Seung Rok Park, a senior research fellow here at KERI for their enormous efforts in completing this study. However, the views expressed here are those of the authors and do not necessarily represent the views of the Korea Economic Research Institute as a whole.

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Regional Disparities in China's Economic Growth and Foreign Direct Investment

Xinzhong Lee / Seung Rok Park

I . Introduction

The disparity in China's regional growth following the preferential policies of the China's government can be witnessed by the existing gaps between the coastal areas and the inner areas which continue to display no signs of reversing. China's coastal cities and provinces are thought to be rapidly approaching the medium-income level of other developed countries. The interregional disparity in China has become one of the most serious problems associated with China's modernization. How to promote growth in low-income areas and narrow the gap between coastal and inland areas has become an important issue for China's policymakers and central government.

This study makes careful analysis of data of China's provincial level through construction of cross sectional and panel models to identify the significance of FDI inflows on the interregional disparity of China, as well as on convergence issues. In addition, such important conditional variables as geographical location and preferential policy variables as well as other factors are included in various models to better understand their effects on the growth of China's provinces. New evidences, it is hoped, should help provide some credi-

bility to the regional development strategies carried out by government.

Our model estimations show that China's regional growth has displayed remarkable inequality, especially amongst eastern, middle and western regions. The GINI and Theil Index of respective regions were found to be robust. Consequently, based on these observations, this paper attempts to establish the determinants affecting interregional growth disparities in China's provinces. FDI inflows, in particular, were found to have not only a significant effect on the disparities in regional growth, but also influence the speed of convergence of provincial growth rates. As such, FDI inflows can interpret as being a major factor behind the variation and disparity of China's interregional growth. This suggests that redirecting FDI inflows have potential to help growth in western and middle provinces, and could narrow the gap between these regions and coastal provinces. Furthermore, our study shows that other variables such as geographical location and preferential policies executed by central government also have played an important role in China's regional growth.

This remainder of this paper is organized as follows. Section 2 discusses recent studies and literature on disparities in regional growth and methodology. Section 3 analyzes the disparity of regional economic growth and distribution of FDI inflows based on China's provincial data. Section 4 presents the measurements of the GINI and Theil Index, as well as other measures on the variation regarding China's regional growth. Section 5 describes the data sets for empirical analy-

sis used in this study. Section 6 describes the statistical methodology. Section 7 presents the empirical results of our econometric estimations, and Section 8 derives a few meaningful conclusions. Finally, we conclude this paper with derived policy implications.

II. Review of Literature

There are many studies on the convergence level and disparity of regional growth of China. Without disregarding the quite different national conditions, geographical location and traditional customs among China's provinces, as well as differences in China's earlier regional development strategies, one may still like to ask what the determinants or potential factors of interregional disparities in growth in China might be. Such questions have been an important concern of economists and policymakers. Some economists argue that the primary cause is regional investment level and production technology, while others suggest regional industrial structure and resources, as possible reasons for interregional disparities in the growth of China's provinces. Although recent studies from domestic and foreign economists have attempted to provide some important clues to these questions, strong and consistent evidences are still lacking. We now turn to summarize some of the more important results.

Sylvie Demurger(2001) examined the impact of geographical location and preferential policies on China's economic growth. Preferential policies are shown to have played an important role in the growth of coastal areas, whereas geographical

location factors have had a much longer lag effect on regional growth than preferential policies. Variation in the gap among China's provincial income is characteristic by weak convergence (which turns out to be statistically insignificant). This suggests that China's current constitution might impede growth convergence in China's provinces. That is, by limiting the flow of labor resources as well as capital under a Stolper-Samuelson mechanism, due to the traditional residential system and national control of the bank system, the policies in loan of state owned enterprises as well as regional trade barriers generated by local protectionism, and others factors are a critical cause of interregional disparity in China. Thus, the development strategy for western regions must continue to include physical capital, human capital and institutional capital.

J. F. Brun and J. L. Combes et al.(2001) examined the effects of the growth of coastal areas on inner areas with a model of growth spillovers with respect to coastal provinces. Unfortunately, they conclude that spillover effects generated by the strong growth of coastal areas are not sufficient to reduce disparities between China's provinces in the short run, especially between the western and coastal areas.

Chyau Tuan and Linda F. Y. Ng Tuan(2002) studied the impact of FDI inflows on the pattern of regional growth of China using an "institution and agglomeration" approach. They show that FDI inflows not only add valuable capital and foreign exchange to enable economic reform and modernization, but also major part of FDI inflows was found to have

been utilized in export-led manufacturing which has been an important factor making sustainable growth of China more reliable.

Cesare Imbriani and Filippo Reganati(1999) examined the effects of FDI inflows on the productivity of host firms, and in particular, modeled the productivity spillovers relationship to interregional differences. Their study shows that productivity spillovers have quite a different pattern in Italy, where they are concentrated only in the northwestern areas.

Gabriele Tondl(1999) examined the degree of catching-up and determinants of the uneven growth across Europe's southern region using growth theory and GMM estimation procedure. His derived results suggest that the difference in the growth of southern EU regions is largely due to employment, human capital and public investment. The impacts of private investment on growth were found to be insignificant.

Dapeng Hu and Masahisa Fujita(1996) investigated the reasons behind increasing interregional disparity in China for the period 1985 to 1994 from the perspective of globalization (measured by exports and FDI, economic liberalization indicated by the decline of the shares of state-owned enterprises and the growth of township and village enterprises and other market economic reforms) and self-agglomeration of production activities. Their results indicate that the different conditions for globalization and difference in the pace of economic reform seem to be major reasons for the increasing disparity between the coastal and inner land cities and provinces.

Shuming Bao and Mark Henry et al.(1999) identified the spatial effects of China's economic growth using the Carlino-Mills model. Their study indicates that the spatial linkages between urban centers and proximate rural areas, that is, the growth of developed economic areas such as central cities or provinces exhibit spillover effects.

Jia Hui and Komei Sasaki(1997) analyzed the Chinese regional economic system to identify the causes of and remedies for regional disparities. Their study demonstrates that the regional production technology is a minor factor causing regional disparity, while the regional investment level(capital stock) is the most important factor. They suggest that different regional investment strategies could decrease interregional disparities to a great extent.

Tingsong Jiang(1998) shows that China's interregional inequality has improved over the period 1978 to 1990 thanks to the success of rural economic reform measures such as the "household contract system", but since 1991, regional disparity has somewhat begun to widen depending on geographical location and preferential policies carried out by the government. Moreover, China's accession into the WTO might have further widened interregional growth disparity, in particular, widening the gap between coastal and inland areas.

In recent literature on the disparity of China's regional growth, various Chinese scholars also have produced many early works. Many describe the characteristics and identify the determinants of China's regional growth from different viewpoints. For example, Houkai Wei(2002) pointed out structural

characteristics of two unit patterns of regional growth in China. The two unit patterns were found to be closely related to inequality of FDI inflows in China. By empirical analysis of the effects of FDI on regional growth of China based on data for 1985 to 1999, his study suggests that the differences in growth between the developed cities and provinces in eastern areas and the less developed cities and provinces in western areas have mainly been caused by the inequitable distribution of FDI inflows. Zeng Wang and Zhaopan Ge (2002) suggest that the growth of eastern, middle and western regions converged at different equilibrium points as depicted by the new economic growth theory. But, Kunrong Shen (2001) argues that the growth of China's provinces does not reveal beta convergence based on a panel data set covering the period 1987 to 1998. That is, per capita income of China's provinces shows a decreasing tendency over time. Huifang Chen(2002) compared the growth of different economies grouped as high-, medium- and low-income countries using the endogenous growth theoretical framework. His study suggests that FDI inflows have quite a significant effect on high-income developed countries relative to medium- and low-income developing countries. Jian Wu(2002) examined the determinants of differences in regional growth among China's provinces by using the multi-dimensional variance model. He argues that the regional distribution of FDI inflows in China cannot adequately explain the disparities in interregional growth. In contrast, regional differences of domestic investment, in particular, the significant differences in the efficiency

of investment are a major reason that has lead to disparities in regional growth over the long run.

III. Disparities in Economic Growth and Distribution of FDI Inflows Based on China's Provincial Data

Disparities in economic growth in China's western, middle and eastern regions¹⁾ have been a pressing issue of China's economy since China adopted the market economy and opening-door policies. Without disregarding other factors such as geographical location and investment environmental factors such as infrastructure facilities and human capital level, the impact of different economic policies pursued by the provinces and cities by China's central government which affects most directly the foreign capital inflows has had the most critical impact to the economy. The earlier opening door policies of the coastal cities and provinces endowed them with preferential policies thereby affecting tremendously their growth rates. In contrast, the cities and provinces in western and

1) The eastern region includes nine coastal provinces, Guangdong, Guangxi, Hainan, Fujian, Zhejiang, Jiangsu, Shandong, Liaoning and Hebei, as well as three autonomous municipalities, Beijing, Tianjin and Shanghai. The middle region includes nine provinces, Heilongjiang, Jilin, Inner Mongolia, Shanxi, Henan, Anhui, Hubei, Jiangxi and Hunan. The western region includes 10 province and cities, Xinjiang, Qinghai, Sichuan, Gansu, Shaanxi, Guizhou and Yunnan, Tibet, Ningxia and Chongqing.

middle regions experienced sluggish growth, and the gap in economic levels hardly seems to be diminishing: this is known as the “Matthew” effects.²⁾

Since 1978, there has been a steady growth of FDI inflows into China, but amount of FDI to western, middle and eastern regions differ greatly(see Tables 1, 2 and Figure 1). The regional distribution of FDI inflows has been very uneven. Because of factors such as geographical location and preferential policies, FDI inflows mainly have been concentrated in southeast coastal areas of China. As Figure 1 shows, the amount of FDI inflows in eastern region has recorded higher growth than in middle-western regions, averaging over 80% of total FDI inflows from 1990 to 2001. In contrast, the shares of FDI inflows in the middle regions and western regions averaged less than 10% and 5%, respectively. The gap between the various regions, meanwhile, does not show any signs of change from 1990 to 2001. The disparities in international trade in eastern, middle and western regions also display similar patterns as FDI inflows to these regions(see Tables 3, 4 and Figure 2). The shares of international trade in eastern region in terms of total trade have averaged over 90%, steadily increasing from 89.29% in 1994 to 92.58% in 2001. In contrast, the shares of international trade of middle regions have been less than 7%, decreasing from 6.93% in 1994 to 4.87% in 2001, while the corresponding figure for western region have been less than 4%, decreasing from 3.78% in

2) The Matthew effect is a notion from the Bible, which is supposed to mean that the rich become richer while the poor become poorer.

1994 to 2.55% in 2001. Thus, the gaps of international trade flows among these regions have increased over the period 1994 to 2001.

<Table 1> Distribution of FDI Inflows in Eastern, Middle and Western Regions in China

(Unit: Ten Thousand Dollars)

Year	Total FDI Inflows	Total FDI Inflows in Eastern Region	Total FDI Inflows in Middle Region	Total FDI Inflows in Western Region
2001	4636700	4072777	420823	143100
2000	4033289	3541115	370002	122172
1999	3993482	3504974	374741	113767
1998	4528389	3949012	442022	137355
1997	4637439	3993650	485248	158541
1996	4187971	3686958	398592	102421
1995	3721549	3264139	342936	114474
1994	3326765	2922005	261269	143491
1993	2734174	2388799	242799	102576
1992	1100402	1004650	74993	20759
1991	442583	409221	19817	13545
1990	316841	297410	12260	7171

Sources: National statistic bureau, national planning committee and national information center(www.cei.gov.cn) of China.

<Table 2> Shares of FDI Inflows in Eastern, Middle and Western Regions in China

(Unit : %)

Year	Total Value	Shares of FDI Inflows in Eastern Region	Shares of FDI Inflows in Middle Region	Shares of FDI Inflows in Western Region
2001	100	87.84	9.08	3.09
2000	100	87.80	9.17	3.03
1999	100	87.77	9.38	2.85
1998	100	87.21	9.76	3.03
1997	100	86.12	10.46	3.42
1996	100	88.04	9.52	2.45
1995	100	87.71	9.21	3.08
1994	100	87.83	7.85	4.31
1993	100	87.37	8.88	3.75
1992	100	91.30	6.82	1.89
1991	100	92.46	4.48	3.06
1990	100	93.87	3.87	2.26

Source : National statistic bureau, national planning committee and national information center(www.cei.gov.cn) of China.

<Table 3> Shares of Total Trade in Eastern, Middle and Western Regions in China

(Unit : %)

Year	Total Value	Shares of Eastern Region	Shares of Middle Region	Shares of Western Region
1994	100	89.29	6.93	3.78
1995	100	89.77	6.55	3.68
1996	100	90.85	5.79	3.35
1997	100	91.67	5.36	2.97
1998	100	92.13	4.82	3.06
1999	100	92.24	4.81	2.95
2000	100	92.53	4.83	2.64
2001	100	92.58	4.87	2.55

Source : National statistic bureau, national planning committee and national information center(www.cei.gov.cn) of China.

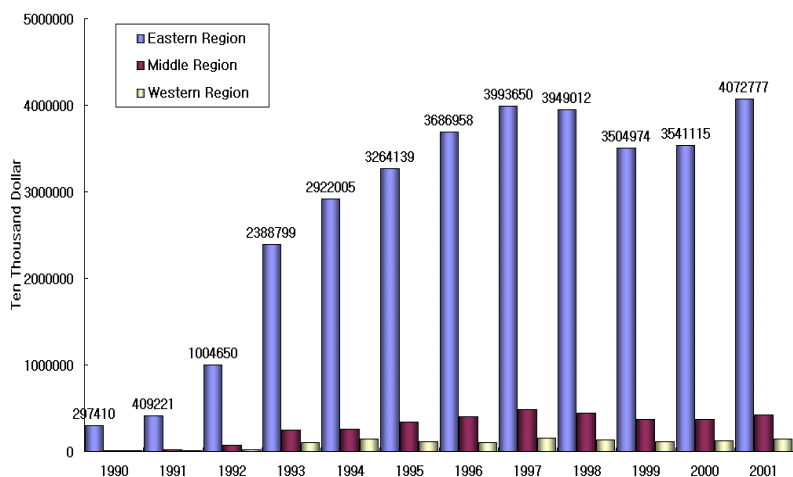
<Table 4> Total Trade in Eastern, Middle and Western Regions in China

(Unit : Ten Thousand Dollars)

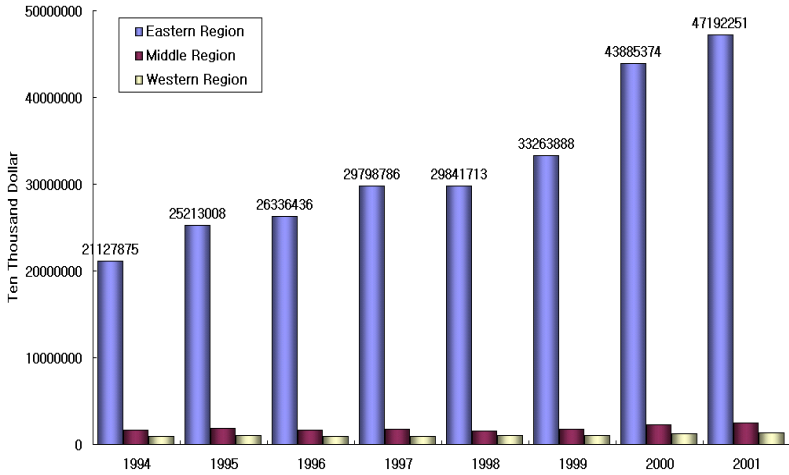
Year	Total Value	Total Trade in Eastern Region	Total Trade in Middle Region	Total Trade in Western Region
1994	23661996	21127875	1638801	895320
1995	28086311	25213008	1839629	1033674
1996	28988030	26336436	1679728	971866
1997	32505745	29798786	1742976	963983
1998	32392341	29841713	1559899	990729
1999	36062998	33263888	1733648	1065462
2000	47429628	43885374	2293209	1251045
2001	50976813	47192251	2483438	1301124

Sources : National statistic bureau, national planning committee and national information center(www.cei.gov.cn) of China.

<Figure 1> The FDI Inflows in Eastern, Middle and Western Region



<Figure 2> The Distribution of Total Trade in Eastern, Middle and Western Region



Meanwhile, growth of GDP in eastern, middle and western regions has displayed a similar trajectory as FDI inflows and international trade flows in these regions(see Tables 5, 6 and Figure 3). The shares of GDP in eastern region in total GDP have been over 50% from 1991 to 2001, and have shown an increasing tendency. In contrast, the shares of GDP in middle region have been less than 30%, decreasing from 28.62% in 1991 to 26.85% in 2001. The corresponding shares for the western region have been less than 17%, decreasing from 16.31% in 1991 to 13.55% in 2001. Thus, the gaps among these regions have also displayed an increasing tendency over the years in line with the growing tendency of international trade in these regions. The statistical characteristics in China's eastern, middle and western regions show that FDI inflows

into the various regions have been closely correlated to international trade flows and growth of GDP in these regions.

<Table 5> GDP, Population and Per Capital Income in Eastern, Middle and Western Regions in China

Year	Eastern Region			Middle Region			Western Region		
	Total GDP (100 Million Yuan)	Population (Ten Thousand)	Per Capital Income (Yuan)	Total GDP (100 Million Yuan)	Population (Ten Thousand)	Per Capital Income (Yuan)	Total GDP (100 Million Yuan)	Population (Ten Thousand)	Per Capital Income (Yuan)
1978	1801.92	39337	458.07	1064.66	34230	311.03	573.91	22269	257.72
1980	2276.43	40349	564.18	1369.08	35183	389.13	722.36	22738	317.69
1985	4551.46	43032	1057.69	2674.75	37461	714.01	1392.82	24010	580.1
1990	9263.54	47168	1963.95	5155.07	40789	1263.84	2807.6	26043	1078.06
1991	11642.94	47685	2441.64	6051.24	41320	1464.48	3447.91	26357	1308.16
1992	14593.28	48122	3032.56	7153.33	41781	1712.1	4047.68	26667	1517.86
1993	19810.5	48536	4081.61	9316.9	42215	2207.01	5091.72	26985	1886.87
1994	26543.47	48933	5424.45	12325.23	42622	2891.75	6532.99	27316	2391.63
1995	33615.4	49599	6777.44	15867.64	42994	3690.66	8140.28	27670	2941.92
1996	39703.8	49962	7946.8	19189.81	43354	4426.31	9613.22	27979	3435.87
1997	44564.07	50390	8843.83	21637.65	43704	4950.95	10754.89	28228	3810.01
1998	48114.54	50739	9482.75	23113.66	44033	5249.17	11552.05	28510	4051.93
1999	51630.7	51107	10102.47	24207.4	44341	5459.37	12002.8	28771	4171.84
2000	57739.72	53622	10767.92	26266.18	43940	5977.74	13203.47	28666	4605.97
2001	63624.36	52710	12070.64	28670.44	44791	6400.93	14471.46	29282	4942.1

Source : National statistic bureau, national planning committee and national information center(www.cei.gov.cn) of China.

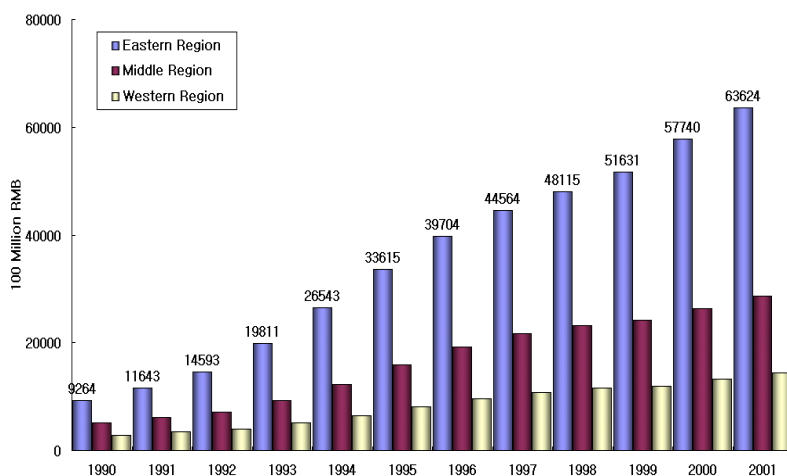
<Table 6> Shares of GDP in Eastern, Middle and Western Regions in China

(Unit : %)

Year	Total Value	Shares of GDP in Eastern Region	Shares of GDP in Middle Region	Shares of GDP in Western Region
1991	100	55.07	28.62	16.31
1992	100	56.58	27.73	15.69
1993	100	57.89	27.23	14.88
1994	100	58.45	27.16	14.4
1995	100	58.34	27.54	14.13
1996	100	57.97	27.99	14.04
1997	100	57.91	28.12	13.98
1998	100	58.12	27.92	13.96
1999	100	58.78	27.56	13.66
2000	100	59.4	27.02	13.58
2001	100	59.59	26.85	13.55

Source : National statistic bureau, national planning committee and national information center(www.cei.gov.cn) of China.

<Figure 3> The Distribution of GDP in Eastern, Middle and Western Region



From analysis of provincial data, we find the similar general characteristics in shares of FDI inflows in GDP, shares of foreign and state owned fixed asset investment in total fixed asset investment and shares of FDI trade in provincial trade. For example, Table 7 shows that most of the coastal or earlier cities and provinces that pursued open door policies have higher shares of FDI inflows in GDP than inland cities and provinces. Guangdong, Fujian, Shanghai, Jiangsu, Hainan, Jiangsu, Tianjin and Beijing, for example, all have shares over 5% in the mid-late 1990s and 2000s, while others areas recorded less than or around 1%. The shares of foreign fixed asset investment in total fixed asset investment(including Hong Kong, Macao and Taiwan firms) in coastal cities and provinces display similar results as shares of FDI inflows in these areas, and their shares average over 10% in mid-late 1990s and 2000s. In contrast, shares of state owned fixed asset investment in total fixed asset investment in China's cities or provinces show a decreasing tendency over the years. With the exclusion of around 50% shares in most middle and western areas such as Shanxi, Ganshu, Qinhai, Ningxia, Xingjian, Guizhou, Guangxi, Hubei, Jiangxi, Anhui, Heilongjiang, Jilin and Inner Mongolia, shares of state owned fixed asset investment in other cities and provinces have descended to a level of less than 50% in 2001(see Tables 8 and 9). Our data suggests that extent of China's move to the market and the transformation into a multi-economy has had an important impact on China's economy. In the aspects of international trade, the shares of exports, imports, total trade of FDI trade

in exports, imports and total trade in some coastal cities and provinces also have averaged over 50% from the mid-to-late 1990s and 2000s particularly in areas such as Tianjin, Liaoning, Shanghai, Jiangsu, Fujian, Shandong and Guangdong(see Tables 10, 11, and 12). These signals that the higher the FDI inflows and foreign fixed asset investment as well as FDI trade, the higher the relative growth of cities and provinces.

Thus, based on analysis of our data above, we summarize the determinants of the disparities of China's provinces as follows: FDI inflows have had strong effects on China's economy. In particular, the coastal areas in which FDI inflows have been heavily concentrated have experienced faster growth than inland areas. This has also directly stimulated the strong growth of international trade in the coastal areas, which has not only accelerated integration of coastal economies into the international trade and helped make China establish production nets with the rest of the world, but also has been helpful to achieve at expense of backward and forward linkages in inland areas.

<Table 7> Shares of FDI Inflows in GDP

(Unit : %)

Provinces	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991
Beijing	5.143	5.623	7.521	8.924	7.295	7.991	6.466	10.905	4.450	2.721	2.177
Tianjin	9.597	5.888	10.072	13.094	16.853	16.236	13.804	12.064	6.596	1.445	2.059
Hebei	0.994	1.105	1.888	2.779	2.313	1.999	1.602	2.062	1.351	0.488	0.281
Shanxi	1.088	1.132	2.150	1.362	1.506	0.878	0.488	0.320	0.707	0.521	0.043
Inner Mongolia	0.573	0.624	0.421	0.631	0.552	0.607	0.580	0.506	0.922	0.068	0.025
Liaoning	4.138	3.625	2.107	4.672	5.476	4.576	4.259	5.042	3.665	1.934	1.607
Jilin	1.375	1.532	1.501	2.175	2.305	2.808	3.017	2.226	2.209	0.745	0.363
Heilongjiang	0.793	0.766	0.910	1.557	2.249	1.962	2.143	1.851	1.113	0.461	0.135
Shanghai	7.175	5.748	5.821	8.084	10.424	11.290	9.809	10.809	12.046	2.443	0.865
Jiangsu	6.018	6.198	6.537	7.626	6.745	7.215	8.408	7.994	5.465	3.778	0.729
Zhejiang	2.713	2.212	1.902	2.188	2.687	3.049	2.981	3.717	3.113	0.969	0.454
Anhui	0.847	0.868	0.744	0.817	1.349	1.801	2.011	2.142	1.388	0.376	0.086
Fujian	7.625	7.248	9.385	10.611	11.596	13.143	15.630	18.989	14.612	9.967	4.032
Jiangxi	1.506	0.939	1.433	2.079	2.325	1.651	2.002	2.379	1.659	0.961	0.216
Shandong	3.088	2.879	2.441	2.546	3.460	3.674	4.489	5.681	3.885	2.519	0.636
Henan	0.671	0.909	0.943	1.172	1.406	1.189	1.331	1.498	1.057	0.229	0.193
Hubei	2.110	1.827	1.963	2.175	2.039	1.906	2.183	2.761	2.187	1.029	0.272
Hunan	1.684	1.521	1.627	2.172	2.540	2.341	1.931	1.684	1.972	0.734	0.162
Guangdong	9.276	9.665	11.403	12.566	14.318	14.991	15.920	19.234	13.498	8.899	5.808
Guangxi	1.425	2.119	2.692	3.855	4.041	3.247	3.751	5.804	5.704	1.552	0.327
Hainan	7.079	6.878	8.513	13.527	14.270	16.842	24.354	23.909	15.787	13.735	7.805
Chongqing	1.213	1.273	1.337	2.497	2.567	n/a	n/a	n/a	n/a	n/a	n/a
Sichuan	1.089	0.902	0.761	0.861	0.620	1.228	1.280	2.860	1.570	0.381	0.311
Guizhou	0.216	0.208	0.371	0.446	0.520	0.366	0.756	1.052	0.595	0.321	0.253
Yunnan	0.258	0.542	0.686	0.672	0.835	0.364	0.676	0.575	0.717	0.256	0.036
Xizhang	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Shaanxi	1.579	1.438	1.347	1.798	4.006	2.307	2.706	2.520	2.011	0.465	0.362
Gansu	0.574	0.525	0.365	0.368	0.440	1.048	0.965	1.675	0.185	0.006	0.094
Qinghai	1.004	n/a	0.159	n/a	0.101	0.045	0.083	0.150	0.170	0.043	n/a
Ningxia	0.466	0.543	1.760	0.676	0.264	0.238	0.192	0.468	0.660	0.023	0.013
Xinjiang	0.113	0.116	0.170	0.161	0.195	0.582	0.556	0.618	0.604	n/a	0.003

Source : China Statistic Year book 1993–2002 by National Statistic Bureau

<Table 8> Shares of State Owned Fixed asset Investment
in Total Fixed Asset Investment

(Unit : %)

Provinces	2001	2000	1999	1998	1997	1996	1995	1994	1993
Beijing	49.220	59.202	63.304	64.183	60.694	60.883	59.927	78.212	80.718
Tianjin	35.285	41.824	57.237	52.929	55.749	58.754	61.975	65.933	71.382
Hebei	40.572	45.556	45.833	45.666	44.999	42.892	45.281	50.074	61.872
Shanxi	61.049	63.341	66.891	72.519	74.431	74.491	75.909	76.010	77.347
Imer Mongolia	53.549	62.090	61.889	64.478	70.813	75.512	76.050	78.363	80.724
Liaoning	48.601	51.229	59.220	61.568	58.154	61.776	67.577	65.775	64.527
Jilin	52.540	52.778	60.014	60.820	61.863	69.974	65.748	65.316	73.243
Heilongjiang	55.192	54.339	75.470	79.240	79.264	75.192	73.432	81.337	85.883
Shanghai	37.941	44.230	53.176	55.366	58.090	52.100	58.572	59.108	58.384
Jiangsu	43.203	44.278	43.114	39.563	36.004	35.547	33.070	35.271	34.423
Zhejiang	36.320	37.264	37.991	36.297	34.016	32.838	29.687	30.759	31.676
Anhui	52.324	53.330	48.842	45.672	41.804	48.371	55.906	49.546	57.227
Fujian	37.125	36.611	39.433	40.799	41.849	41.449	44.909	43.402	48.899
Jiangxi	52.433	54.213	55.143	60.714	60.440	55.739	55.889	58.245	61.389
Shandong	42.145	46.140	47.403	48.070	44.054	44.615	45.834	46.540	50.044
Henan	49.420	52.881	54.627	50.643	45.893	48.014	55.908	57.891	58.636
Hubei	55.110	56.918	57.206	54.250	52.957	59.708	63.268	64.645	66.772
Hunan	49.579	51.379	52.453	50.860	49.897	51.922	57.052	51.941	56.507
Guangdong	34.739	40.089	41.762	43.583	46.019	46.231	47.877	37.375	47.558
Guangxi	53.227	53.960	51.856	49.186	46.442	49.566	53.650	49.525	60.394
Hainan	43.198	41.806	42.812	47.280	46.761	45.506	47.479	43.658	60.108
Chongqin	44.852	46.943	50.150	52.650	46.945	n/a	n/a	n/a	n/a
Sichuan	44.982	47.058	53.301	58.226	55.581	52.072	57.202	57.641	63.605
Guizhou	65.853	62.404	63.787	63.960	63.806	68.008	66.494	67.741	75.465
Yunnan	62.887	63.932	66.122	66.407	63.405	61.319	65.709	66.819	66.003
Xizhang	94.655	95.894	95.314	93.480	91.536	95.855	97.495	94.498	90.252
Shaanxi	61.949	65.602	64.234	68.700	60.957	65.029	64.569	67.432	69.949
Gansu	65.128	70.263	69.402	71.826	70.212	69.833	72.949	70.893	74.613
Qinghai	59.735	63.564	78.131	80.153	81.829	82.941	83.958	82.893	86.455
Ningxia	62.492	62.138	61.265	71.101	76.864	76.699	69.873	73.720	72.245
Xingjiang	50.040	53.969	79.478	84.424	81.304	80.438	79.128	81.810	81.448

Source : China Statistic Year book 1993-2002 by National Statistic Bureau

<Table 9> Shares of Foreign Fixed Asset Investment
in Total Fixed Asset Investment

(Unit : %)

Provinces	2001	2000	1999	1998	1997	1996	1995	1994	1993
Beijing	12.455	14.764	16.911	22.276	26.117	26.317	27.567	11.650	6.329
Tianjin	24.187	15.723	13.068	23.411	22.748	16.515	16.053	11.338	9.001
Hebei	3.263	4.509	4.460	5.292	6.293	6.170	6.281	6.345	4.575
Shanxi	5.806	7.883	9.883	6.779	5.314	2.300	2.941	1.934	2.067
Inner Mongolia	1.894	0.965	0.620	1.383	0.962	1.206	2.061	2.720	2.138
Liaoning	9.134	9.990	7.469	9.782	14.872	13.583	13.078	12.775	10.987
Jilin	4.630	5.929	5.126	8.972	12.606	10.469	12.680	11.363	3.214
Heilongjiang	1.564	1.609	1.664	2.430	4.468	4.345	3.222	3.852	1.698
Shanghai	16.614	16.405	19.814	20.665	18.547	17.035	13.035	8.470	8.700
Jiangsu	10.053	11.180	14.199	18.267	16.557	16.198	13.171	9.352	5.767
Zhejiang	5.152	4.008	3.369	7.239	9.139	8.813	7.109	6.297	4.658
Anhui	3.754	5.842	7.705	4.932	5.987	4.515	4.552	3.520	2.537
Fujian	23.004	23.029	21.564	22.741	24.986	25.625	22.648	19.823	11.642
Jiangxi	3.349	3.561	3.648	4.408	3.806	4.062	4.173	4.215	2.260
Shandong	5.752	4.043	4.166	7.008	7.497	8.623	8.954	9.088	4.380
Henan	4.084	2.882	3.442	4.409	4.680	6.132	8.075	6.819	3.441
Hubei	4.286	4.515	4.957	9.992	12.647	12.385	11.746	10.448	5.719
Hunan	3.212	3.795	2.818	3.056	4.750	4.726	5.914	3.373	2.785
Guangdong	21.528	17.712	20.930	18.755	22.215	22.416	19.553	23.580	11.291
Guangxi	4.286	4.841	7.238	7.707	7.393	7.252	10.135	9.263	9.117
Hainan	7.740	12.254	12.091	14.824	16.720	29.623	28.806	18.293	7.655
Chongqing	6.211	5.583	6.724	8.157	8.776	n/a	n/a	n/a	n/a
Sichuan	3.173	3.602	3.592	3.306	3.796	6.070	5.007	5.189	3.090
Guizhou	1.410	1.549	2.049	3.035	3.864	3.668	3.684	2.062	1.289
Yunnan	1.467	3.183	2.887	2.827	3.323	5.295	4.610	4.668	2.338
Xizhang	0.877	0.312	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Shaanxi	2.080	2.204	2.200	2.628	1.567	2.904	4.346	2.544	2.698
Gansu	1.103	1.920	3.260	3.195	4.755	8.326	3.863	4.953	2.561
Qinghai	1.039	1.489	2.305	2.206	1.232	2.150	0.245	0.525	0.065
Ningxia	1.031	1.263	2.529	1.171	1.538	3.703	2.927	2.959	0.550
Xingjiang	0.826	3.031	1.348	0.521	0.826	1.899	3.648	2.367	4.537

Source : China Statistic Year book 1993-2002 by National Statistic Bureau

<Table 10> Shares of FDI Exports in Total Exports

(Unit : %)

Provinces	2001	2000	1999	1998	1997	1996	1995	1994	1993
Beijing	27.477	23.989	14.794	12.011	12.010	12.170	6.921	5.905	29.697
Tianjin	74.830	73.956	70.930	69.537	67.314	63.451	48.899	37.641	29.459
Hebei	28.878	27.288	25.662	23.115	19.519	17.613	11.379	12.047	9.850
Shanxi	10.519	12.296	9.634	11.830	10.094	13.498	10.175	12.140	12.035
Inner Mongolia	20.562	14.222	13.969	11.147	13.885	15.267	10.441	8.866	5.493
Liaoning	57.226	57.521	53.187	47.582	38.531	36.807	28.759	26.796	22.500
Jilin	29.272	31.187	34.070	37.262	27.950	26.803	17.611	10.254	5.564
Heilongjiang	16.090	18.384	23.625	24.682	21.251	22.459	13.753	9.123	5.390
Shanghai	57.771	56.251	55.035	51.199	46.469	41.804	30.995	29.032	27.153
Jiangsu	57.638	56.093	53.858	51.511	47.581	43.709	29.992	30.913	32.331
Zhejiang	30.898	27.509	25.854	24.697	24.396	25.171	14.427	16.983	22.633
Anhui	18.890	18.413	17.388	17.484	13.247	11.838	6.989	6.921	7.981
Fujian	59.516	58.865	56.882	54.722	51.619	53.692	44.806	44.642	48.271
Jiangxi	10.811	13.611	11.025	8.512	7.038	6.957	4.283	5.334	6.679
Shandong	50.968	51.051	50.536	50.031	46.943	41.953	31.096	27.091	21.166
Henan	18.415	20.651	21.005	20.790	17.738	17.594	8.640	9.352	9.127
Hubei	27.864	22.193	20.489	14.891	17.184	18.698	9.465	9.051	10.923
Hunan	12.127	11.042	10.063	8.969	8.439	7.969	4.652	4.121	3.741
Guangdong	56.980	53.864	50.714	51.818	49.345	51.718	45.539	39.532	38.426
Guangxi	19.713	22.911	17.675	17.695	15.415	20.813	12.796	11.243	11.944
Hainan	37.644	37.943	38.366	9.957	10.885	10.360	6.257	5.574	7.703
Chongqing	8.370	9.708	12.670	13.431	n/a	n/a	n/a	n/a	n/a
Sichuan	15.162	17.583	13.882	10.653	13.325	7.467	4.016	5.287	7.207
Guizhou	10.487	9.540	9.660	11.519	13.955	11.744	6.540	6.436	6.000
Yunnan	8.803	6.904	4.098	3.369	3.881	4.078	2.732	2.646	3.196
Xizhang	2.634	3.432	2.539	3.342	8.017	11.331	3.456	2.719	1.290
Shaanxi	9.753	8.864	7.746	9.425	9.562	7.764	3.288	4.508	4.050
Gansu	11.114	9.237	7.545	10.193	9.994	8.832	5.402	4.281	6.829
Qinghai	1.033	1.804	1.013	3.229	2.565	7.271	4.631	3.366	0.013
Ningxia	16.780	13.117	11.270	13.952	16.985	13.499	5.834	5.768	15.419
Xingjiang	8.791	7.574	9.380	11.370	8.096	8.782	5.227	7.642	15.140

Source : China Statistic Year book 1993-2002 by National Statistic Bureau

<Table 11> Shares of FDI Imports in Total Imports

(Unit : %)

Provinces	2001	2000	1999	1998	1997	1996	1995	1994	1993
Beijing	13.599	13.006	14.974	14.093	11.255	10.568	6.968	7.055	48.777
Tianjin	83.397	85.758	85.568	84.701	85.607	83.147	75.697	66.437	57.000
Hebei	37.108	37.228	44.926	54.699	65.235	80.430	63.915	63.094	61.758
Shanxi	22.780	50.553	73.307	35.082	30.136	22.859	20.614	37.793	44.213
Inner Mongolia	3.522	2.638	5.057	9.317	15.718	13.988	20.181	17.484	15.890
Liaoning	67.125	74.033	70.615	64.698	67.366	58.743	53.069	51.254	47.713
Jilin	6.001	55.632	51.366	63.299	49.389	53.937	43.508	33.645	26.314
Heilongjiang	10.887	13.467	16.912	19.768	31.653	35.174	29.931	24.024	13.409
Shanghai	62.635	65.233	62.177	65.155	65.133	66.769	63.175	55.545	51.096
Jiangsu	78.075	79.153	75.494	80.077	78.493	77.673	74.730	69.035	67.011
Zhejiang	48.585	48.170	42.986	50.761	53.940	60.322	51.183	49.207	43.801
Anhui	41.885	46.632	55.394	43.370	52.503	57.916	43.528	50.259	46.189
Fujian	77.515	7.770	75.029	71.899	66.189	70.452	71.671	75.464	73.196
Jiangxi	34.196	36.368	45.721	38.745	33.344	38.292	54.347	53.211	59.326
Shandong	64.887	63.398	64.807	67.476	67.229	66.792	62.706	67.442	57.352
Henan	26.283	34.057	36.078	40.524	46.545	55.115	43.704	50.749	47.126
Hubei	45.866	47.952	51.748	61.447	60.962	63.081	51.072	48.376	53.887
Hunan	34.534	34.283	25.179	33.704	46.245	49.580	38.057	37.293	42.602
Guangdong	54.594	54.395	54.134	58.567	58.962	59.872	57.954	54.593	48.341
Guangxi	38.974	38.959	52.036	65.076	55.401	57.406	43.273	41.813	35.705
Hainan	53.728	32.021	22.340	35.217	23.591	35.464	35.662	33.374	34.563
Chongqing	30.242	28.755	24.155	61.926	n/a	n/a	n/a	n/a	n/a
Sichuan	28.182	32.157	20.434	20.490	162.240	51.142	35.029	33.335	37.299
Guizhou	8.465	7.009	5.895	6.970	16.532	20.046	26.925	30.934	28.927
Yunnan	13.747	18.105	15.576	20.807	33.986	26.439	18.820	24.181	18.386
Xizhang	1.803	14.437	10.614	13.887	42.603	39.040	11.768	2.729	2.547
Shaanxi	27.041	28.701	27.968	27.582	47.585	41.576	39.300	37.981	31.846
Gansu	11.951	11.800	18.579	26.627	25.269	20.977	14.036	27.822	23.354
Qinghai	38.982	15.148	0.715	19.649	0.083	5.911	0.834	15.270	3.292
Ningxia	8.506	15.846	25.405	25.087	33.810	47.305	9.836	28.881	17.220
Xingjiang	3.356	2.301	6.058	3.935	6.958	11.926	12.637	11.883	7.794

Source : China Statistic Year book 1993-2002 by National Statistic Bureau

<Table 12> Shares of FDI Export & Imports

(unit : %)

Provinces	2001	2000	1999	1998	1997	1996	1995	1994	1993
Beijing	16.772	15.655	14.922	13.376	11.494	11.011	6.955	6.727	45.328
Tianjin	78.922	79.823	78.213	76.845	76.322	73.549	62.157	52.462	42.755
Hebei	31.434	30.189	31.807	31.417	29.148	34.308	25.233	25.859	26.348
Shanxi	13.506	23.734	31.790	16.391	13.271	15.361	12.108	17.794	24.163
Inner Mongolia	8.774	6.924	8.739	10.316	14.598	14.622	15.300	13.063	10.806
Liaoning	61.623	64.614	60.198	53.880	49.653	45.277	37.886	36.793	32.418
Jilin	46.544	43.679	43.401	51.508	38.606	41.401	32.614	22.196	16.337
Heilongjiang	13.365	15.856	19.834	21.979	26.129	29.561	22.024	16.396	9.310
Shanghai	60.429	61.071	58.701	58.062	55.695	54.784	46.047	42.103	40.254
Jiangsu	66.584	66.133	62.823	63.138	60.052	58.640	47.878	47.360	49.563
Zhejiang	36.195	33.737	30.940	31.696	33.019	37.766	26.618	27.389	30.212
Anhui	27.388	28.319	31.341	26.581	26.946	30.670	18.179	21.308	21.989
Fujian	66.439	66.245	64.367	61.927	57.967	61.395	56.964	59.205	60.393
Jiangxi	18.325	19.589	21.793	14.066	11.351	14.387	14.923	23.709	31.631
Shandong	56.176	55.726	55.763	56.575	54.621	52.683	44.207	42.839	36.474
Henan	21.461	25.273	26.362	27.013	27.035	31.492	22.350	24.835	25.344
Hubei	36.824	32.482	34.093	33.377	34.724	39.421	26.876	23.806	30.222
Hunan	20.292	18.994	15.270	15.898	17.353	19.404	13.970	13.493	17.088
Guangdong	55.884	54.108	52.241	54.635	6.151	55.470	51.196	46.771	43.609
Guangxi	25.733	27.210	27.594	29.593	23.605	34.486	26.490	28.824	25.393
Hainan	46.342	35.713	32.180	24.133	18.322	28.159	24.138	23.777	24.750
Chongqing	17.092	18.136	19.496	37.813	n/a	n/a	n/a	n/a	n/a
Sichuan	21.533	24.173	17.412	14.985	58.066	30.580	14.804	17.002	21.703
Guizhou	9.784	8.621	8.355	9.782	14.713	13.976	13.339	15.041	15.551
Yunnan	10.655	10.844	8.424	8.903	13.632	13.821	9.402	11.443	8.060
Xizhang	2.540	4.865	6.428	9.691	35.232	35.787	11.435	2.728	1.855
Shaanxi	17.750	16.558	16.365	17.171	20.609	20.543	12.156	15.403	16.300
Gansu	11.440	9.933	9.969	13.977	13.795	13.969	8.847	11.584	14.281
Qinghai	11.362	5.791	0.955	5.138	2.333	7.116	4.040	5.415	0.820
Ningxia	13.970	13.829	14.397	15.284	19.953	19.747	6.766	14.282	9.520
Xingjiang	5.407	51.041	7.991	7.580	7.535	10.345	8.891	9.795	7.227

Source : China Statistic Year book 1993-2002 by National Statistic Bureau

IV. Measuring of GINI Index and Theil Index at China's Provincial level

1. Variation of GINI Index in China's Provinces

The Gini Index³⁾ has been widely applied as a measure of income inequality. In general, there are two different approaches of calculating the Gini Index to analyze the statistical dispersion of a distribution. One is based on discrete distributions, and the other on continuous distributions. Continuous time distributions require certain conditions on continuity, while discrete distributions do not. Basically speaking, the Gini Index can be expressed as the ratio of two regions defined by a 45 degrees line Lorenz curve in a unit box, or a function of Gini Index mean difference, or a covariance

3) Since Corrado Gini first suggested the geometric approach in 1912, the Gini Index has become one of the principal measurements of inequality in economics. Many empirical studies have used the measure, and also different derived formulations and interpretation of the Gini Index have been developed subsequently. Some of the measures developed include the Gini mean difference approach, geometric approach, covariance approach and matrix approach, each having their own set of advantages and disadvantages. For a detailed description see Kuan Xu(2003), "How Has the Literature on Gini's Index Evolved in the Past 80 Years?", Department of Economics, Dalhousie University, Halifax, Nova Scotia, Canada.

between per capita GDP and their ranks, or can be of a matrix form of a special kind. Each formulation has its own appeal depending on the specific context. In some cases, discrete distributions are easier to understand, while continuous distributions can be convenient computationally.

In this paper, we use the covariance approach suggested by Anand(1983) to estimate the GINI Index of the interregional disparity in China, which is essentially a function of the covariance between per capita GDP and their ranks.

$$GINI = \frac{2COV(Y,i)}{n\mu_y} = \frac{2}{n^2\mu_y} \sum_{i=1}^n iy_i - \frac{n+1}{n} \quad (1)$$

where, Y is an $1 \times n$ column vector, i.e., $Y = \{y_1, y_2, \dots, y_n\}$ with typical elements y_i in the vector arranged in increased order, i.e. $y_1 \leq y_2 \leq \dots \leq y_n$, with i also rank in the series. Thus, y_i can be expressed as follows:

$$y_i = \frac{x_i}{\sum_{i=1}^n x_i} \quad (2)$$

The mean of per capita GDP is given by

$$\mu_y = \frac{1}{n} \sum_{i=1}^n y_i \quad (3)$$

and its standard deviation is

$$\sigma_y = \frac{\sqrt{\frac{\sum_{i=1}^n (y_i - \mu_y)^2}{n}}}{\mu_y} \quad (4)$$

Note that the coefficient of variation for the vector Y is

$$CV = \frac{\sigma_y}{\mu_y} \quad (5)$$

2. Variation of Theil Index in China's Provinces

Psdro Conceicao et al.(2000) provides details on the Theil Index.⁴⁾ In this paper we decompose the Index into a between-group component(T_{bg} , where the subscript is a 'tag' identifying inequality of a specific grouping structure) and a within-group component(T_{wg} , again the subscript indicates the inequality of within-group structure). The Theil Index is meant to track the overall movement of inequality based on long cross sectional data. In particular, the measure captures the dynamics of overall inequality by using only the between sector component of the Theil Index. The Theil Index(H. Theil, 1967) is normally expressed as follows:

4) The Theil Index was first developed by in H. Theil(1967), and since then is often applied to measure the dispersion of wages across industries. It is also common to construct long and dense time series of inequality. See H. Theil(1967), *Economics and Information Theory*. Chicago: Rand McNally Company, as well as Psdro Conceicao, James K. Galbraith and Peter Bradford(2000).

$$T = \frac{1}{n} \sum_{p=1}^n \frac{y_p}{\mu_y} \text{Ln} \left(\frac{y_p}{\mu_y} \right) \quad (6)$$

Also equally,

$$T = \sum_{p=1}^n \frac{y_p}{Y} \text{Ln} \left[\left(\frac{y_p}{Y} \right) / \left(\frac{1}{n} \right) \right] \quad (7)$$

where Y denotes the total per capita GDP for all the provinces, that is, $Y = \sum_{p=1}^n y_p$. T denotes the Theil index, y_p is per capita GDP in province p , which is represented by the number of individuals in the sample. μ_y is the expected value of per capita GDP, that is, $\mu_y = \frac{1}{n} \sum_{p=1}^n y_p$. Furthermore, $T = T_{bg} + T_{wg}$; where, T_{bg} can be written as follows:

$$T_{bg} = \sum_{j=1}^m \frac{y_j}{Y} \text{Ln} \left[\left(\frac{y_j}{Y} \right) / \left(\frac{n_j}{n} \right) \right] \quad (8)$$

and y_j denotes the total per capita GDP of group j . m denotes the total number of groups, and j indicates a group rather than an individual. n_j represents the number of individuals in group j . Y denotes the sum of all the groups of y_j , that is, $Y = \sum_{j=1}^m y_j$, and it is equal to $Y = \sum_{p=1}^n y_p$. Note that the structure of equation (8) is exactly the same as that of equation (7), which defines inequality among individuals. That is, the structure of the Theil Index measuring inequality between groups assumes similar characteristics between individuals, and this is often referred to as having a self-similar nature of the Theil Index. In addition, there is yet another level to measure of inequality,

that is, the within group component of overall inequality, which is expressed as follows:

$$T_{wg} = \sum_{j=1}^m \frac{y_j}{Y} T_j \quad (9)$$

where, T_j denotes the Theil Index of group j . y_i denotes the total per capita GDP of group j and Y has the same value as T_{bg} 's, that is, $Y = \sum_{j=1}^n y_j$. Thus, this formula enables us to explore inequality of the within group component. In fact, we apply this measure to empirically quantify the overall disparity within groups. That is, the shares that represent each group's per capita GDP in total per capita GDP are multiplied by the Theil Indexes of each group, which is actually a weighted average of the Theil indexes for each group.

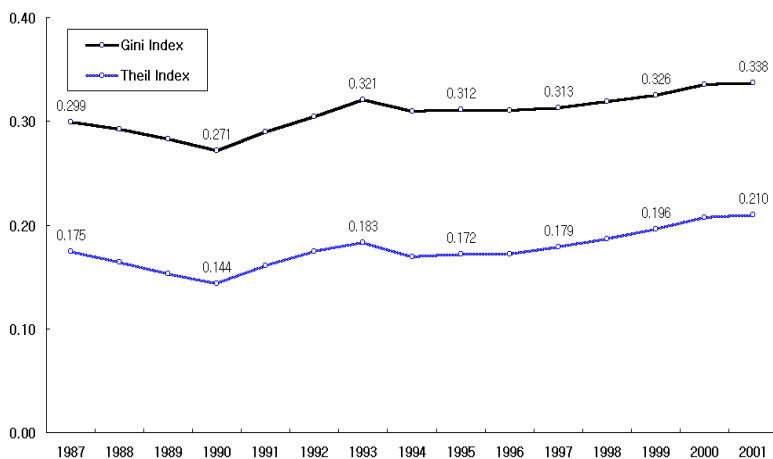
Table 13 presents all indexes of variation of per capita GDP of China's provinces based on time series and cross sectional data. The Gini Index in China displays an increasing tendency over the years, and reaches 0.3376 in 2001 from 0.2991 in 1987. The Theil Index in China also displays a similar growth trajectory as the Gini Index (see Figure 4) and approximately gradually increases to 0.2096 in 2001 from 0.1747 in 1987. Both indexes indicate that the disparity of regional growth in China has continually enlarged over time. Furthermore, we divide the economic regions into three parts — eastern, middle and western regions based on different geographical location — and depending on preferential policy endowed by central government. The T_{bg} of Theil Index is

used to measure the inequality of growth among regions of China. That is, T_{bg} indicates the variation of growth in eastern, middle and western regions in China. T_{bg} has a value in 1987 of 0.0658, and increases to 0.1103 in 2001. Just as the property of the Theil Index shows, the results of T_{bg} display a similar nature, compared to the results of the total Theil index of China, which indicates the inequality of growth of China's regions. The T_{wg} index, which indicates inequality of growth within regions, shows different results with that of T_{bg} and the Theil Index. Most of the T_{wg} values uniformly range between 0.075 and 0.109 over the period 1987 to 2001, and display little variation. The ratio of T_{bg} to T_{wg} also indicates further that variation of T_{bg} is greater than that of T_{wg} , particularly after 1993. For example, the values of the ratio of T_{bg} to T_{wg} range from 1.231 to 1.114 over the period 1993 to 2001, but the values of ratio turn out to be between 0.604 and 0.784 for the period 1987 to 1992. This suggests that growth inequality within regions is less than that among regions in China after 1993. The turning point that characterizes growth is 1993, which corresponds to the important event of Deng Xiaoping's visit to southern coastal areas in earlier 1992. Since then, the inequality of growth among eastern, middle and western regions has shown an increasing tendency over time(see Figure 5). For example, since 1993, the Theil Index has been over 0.3 compared to values around 0.2 before 1992, while T_{bg} has registered over 0.17 compared corresponding values of around 0.16 before 1992.

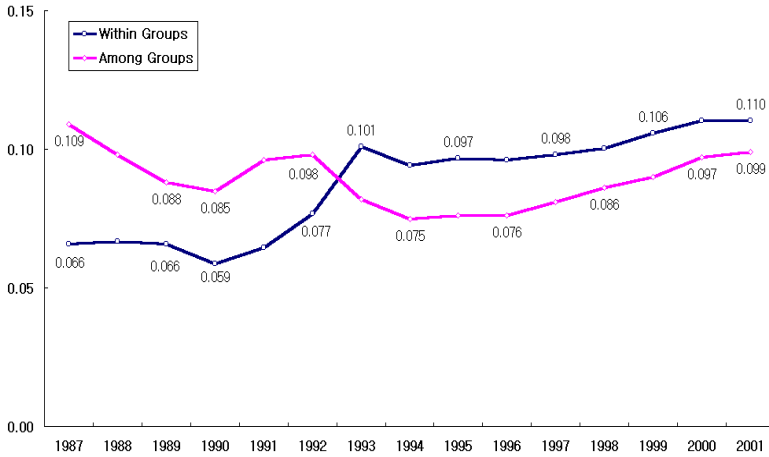
<Table 13> Inequality of Per Capita GDP in China from 1987 to 2001
(Unit : Yuan/Person)

Year	Mean	Median	S.D.	C.V.	Min.	Max.	Ratio (MAX/MIN)	Gini Index	Theil Index	T_{bg}	T_{wg}	T_{bg}/T_{wg}
1987	1246	951	871.313	0.699	546	4396	8.0513	0.2991	0.175	0.066	0.109	0.604
1988	1526	1224	1027.335	0.673	683	5161	7.5564	0.2926	0.164	0.067	0.098	0.682
1989	1689	1372	1091.642	0.646	750	5489	7.3187	0.2829	0.153	0.066	0.088	0.747
1990	1850	1503	1158.737	0.626	810	5910	7.2963	0.2714	0.144	0.059	0.085	0.692
1991	1998	1588	1329.170	0.665	890	6675	7.5000	0.2900	0.161	0.064	0.096	0.671
1992	2413	1835	1681.792	0.697	1009	8652	8.5748	0.3042	0.175	0.077	0.098	0.784
1993	3224	2367	2247.453	0.697	1034	11700	11.3153	0.3211	0.183	0.101	0.082	1.231
1994	4287	3177	2868.770	0.669	1553	15204	9.7901	0.3097	0.169	0.094	0.075	1.256
1995	5328	3901	3602.423	0.676	1853	18943	10.2229	0.3115	0.172	0.097	0.076	1.272
1996	6226	4691	4219.029	0.678	2093	22275	10.6426	0.3103	0.172	0.096	0.076	1.266
1997	6856	4736	4780.841	0.697	2215	25750	11.6253	0.3133	0.179	0.098	0.081	1.211
1998	7374	5068	5269.162	0.715	2342	28253	12.0636	0.3190	0.186	0.100	0.086	1.167
1999	7802	5350	5755.558	0.738	2475	30805	12.4465	0.3255	0.196	0.106	0.09	1.176
2000	8592	5872	6522.635	0.759	2662	34547	12.9778	0.3358	0.207	0.110	0.097	1.138
2001	9377	6463	7165.620	0.764	2895	37382	12.9126	0.3376	0.210	0.110	0.099	1.114

<Figure 4> Variation of GINI and Theil Index



<Figure 5> Variation of Theil Index for Within-groups and Among-groups



Moreover, the results of other indicators such as the coefficient of variation, the mean as well as the standard deviation, and the ratio of maximum to minimum of per capita GDP display similar trajectories as the Gini and Theil Index, demonstrating the fact that the disparity of growth in China's regions has increased over the years. The results of interregional growth disparities in China are rather robust.

The variations of growth in China's provinces based on the time series data from 1987 to 2001 are provided in Table 14. The results show that the variations of growth in China's provincial groups among eastern, middle and western regions are very different. The Theil Index of provincial groups in eastern provinces is calculated at over 0.2, and values in middle and western provinces are less than 0.2. The Gini Index also show similar features as the Theil Index, and most

<Table 14> Variation of Per Capita GDP in China's Provinces

(Unit : Yuan/Person)

Provinces	Mean	Median	Maximum	Minimum	Ration (MAX/MIN)	Std. Dev.	C.V.(S.D./Mean)	GINI Index	Theil Index
Beijing	11940.07	10265	25523	3336	7.6508	7345.5	0.6152	0.3355	0.1788
Tianjin	9397.13	8164	20154	2682	7.5145	6032.14	0.6419	0.3484	0.1959
Hebei	3987.33	3376	8362	921	9.0793	2630.9	0.6598	0.3589	0.211
Liaoning	6208.87	6103	12041	1917	6.2812	3478.02	0.5602	0.3079	0.1514
Shanghai	17409.47	15204	37382	4396	8.5036	11675.0800	0.6706	0.365	0.2162
Jiangsu	6203.93	5785	12922	1462	8.8386	4083.29	0.6582	0.3583	0.2134
Zhejiang	6841.87	6149	14655	1470	9.9694	4746.04	0.6937	0.3769	0.2374
Fujian	5877.2	5386	12362	999	12.3744	4235.21	0.7206	0.3914	0.2604
Shandong	4987.27	4473	10465	1131	9.2529	3323.48	0.6664	0.363	0.2176
Guangdong	8646.91	9513	13730	2823	4.8636	3774.08	0.4365	0.2373	0.0954*
Guangxi	2649.33	2772	4668	607	7.6903	1576.25	0.595	0.3199	0.182
Hainan	4031.73	4820	7135	939	7.5985	2294.12	0.569	0.3087	0.1683
Middle region									
Shanxi	3086.4	2819	5460	962	5.6757	1673.32	0.5422	0.2952	0.1439
Inner Mongolia	3297.07	3013	6463	1025	6.3054	1866.32	0.5661	0.307	0.1533
Jilin	3892.93	3703	7640	1269	6.0205	2212.13	0.5682	0.3097	0.1552
Heilongjiang	4691.07	4427	9349	1335	7.003	2897.21	0.6176	0.3333	0.1853
Anhui	2778.87	2521	5221	842	6.2007	1692.24	0.609	0.3272	0.1812
Jiangxi	2713.33	2376	5221	729	7.1619	1655.05	0.61	0.3321	0.1811
Henan	2891.87	2475	5924	756	7.836	1865.53	0.6451	0.3501	0.2022
Hubei	3834.2	3341	7813	1031	7.5781	2437.28	0.6357	0.3454	0.195
Hunan	3046.27	2701	6054	818	7.401	1896.25	0.6225	0.3388	0.1884
western region									
Chongqing	4954.6	4826	5654	4452	1.27	467.04	0.0943	0.0465	0.0035*
Sichuan	2694.27	2516	5250	702	7.4786	1633.39	0.6062	0.3308	0.1812
Guizhou	1587.33	1553	2895	546	5.3022	814.09	0.5129	0.2802	0.1266
Yunnan	2654.2	2490	4866	653	7.4518	1573.51	0.5928	0.3234	0.1747
Xizhang	2452.4	1984	5307	863	6.1495	1444.37	0.589	0.3164	0.1566
Shaanxi	2511.27	2344	5024	794	6.3275	1475.28	0.5875	0.318	0.1644
Gansu	2213.2	1925	4163	764	5.449	1206.45	0.5451	0.2972	0.1409
Qinghai	2997.07	2910	5735	1018	5.6336	1555.54	0.519	0.2849	0.1288
Ningxia	2845	2685	5340	922	5.7918	1518.57	0.5338	0.2922	0.1376
Xinjiang	5032.27	5167	7913	2047	3.8657	1987.61	0.395	0.2153	0.0757*

* note : The sample size of both Guangdong and Xinjiang provinces is only 11, because data from 1990 to 1987 are unavailable. Data on Congqin are only five year's starting in 1997 because it became an individual city separate from Sichuan in 1996.

of the Gini Index values of eastern provinces are over 0.3, but less than 0.2 for western provinces. The values of GINI index for middle regions lie between the value for eastern and western provinces. Most of the coefficients of variations in eastern provinces are over 0.6, while the CV values are around 0.5, thereby the CV values range between the corresponding values for eastern and western provinces. The other variables such as the mean, the standard deviation and the ratio of maximum to minimum also show similar features.

Variations in the growth of China's provinces have also displayed significant characteristics. Specifically, the variations of growth in eastern provinces have historically been greater than that the middle provinces and likewise variations in growth of middle provinces somewhat lie between that of eastern and western provinces. On the other hand, data show that variances are higher the faster the growth of provinces.

V. Data Description

In the analyses of this paper, the data was compiled from the China statistical yearbooks, and cover the period from 1987 to 2001. For some years data are unavailable. When building the empirical models, especially, the cross section model, we adopt slightly different data. For instance, Congqin city is separated from Sichuan provinces in 1996, and then becomes a single city. So we only measure the Gini Index and other indices according to the available data ranging from 2001 to 1997. Similarly, the cross sectional model is also based on data for a single year across areas. When data is available, then that year's data is considered and included in the observed sample. In the panel model, because most of data involved concerning the cost of labor, employment and human capital are unavailable prior to 1992, we only consider the period between 1993 and 2001. In addition, in the cross-sectional model, we adopt as the initial years 1987 and 1992 according to the available data and taking into consideration the turning point 1992 of China's economy.

In addition to the above, we introduce a data set that is distinct and separate. For example, in the cross sectional and panel models in this paper, geographical location and prefer-

ential policy index variables can be assigned discrete values such as “1”, “2”and “3” to describe the effects of policy and geographical location. By doing so, we transfer the qualitative information to quantitative data allowing it to be treated in the quantitative analysis of the model.

VI. Statistical Methodology

The analysis of the impact of FDI inflows on growth was first examined for cross-provincial convergence. The traditional model estimates the characteristics of the distribution of income to explore growth inequalities by calculating beta or sigma convergence. This is based on the consideration that factor mobility eliminates income differentials, such as labor migration to regions or provinces with higher wages, and capital inflows into regions with lower wages where higher profit can be expected. Thus, factor movements represent the equilibrating tendencies in income levels. Despite the fact that such differences exist in the absence of factor mobility, free trade and investment liberalization can lead to convergence. With regard to this point, studies based on Barro and Sala-I-Martin⁵⁾ has often been cited. Nevertheless, such conclusions can be obtained only if some assumptions typical of neo-classical economic theory such as perfect competition and homogeneity of production factors sustain. Thus, the issue regarding the convergence, that is whether different economies across regions or countries might converge or diverge

5) See Barro Robert and Sala-I Martin. 1995, *Economic Growth*, Mankiw-Hill, Inc.

<Table 15> The Arguments of Convergence and Divergence Theories

Unconditional Convergence	Conditional Convergence	Divergence
Traditional neo-classic trade theory : <ul style="list-style-type: none"> • Factor mobility • Regional division of labor 	Abramowitz (1986): <ul style="list-style-type: none"> • Social capabilities • Technological proximity 	Cumulative causation (Myrdal, 1957; Hirshman, 1957): <ul style="list-style-type: none"> • Capital attracts labor • Labor increases demand • Demand attracts capital
Traditional growth theory: <ul style="list-style-type: none"> • Decreasing returns to capital • Capital flows 	Neo-Schumpeterian/ Evolutionary approaches: <ul style="list-style-type: none"> • Path-dependent accumulation of technological knowledge • Partial tacitness and specificity of economically useful knowledge 	Regional economies of scale: <ul style="list-style-type: none"> • Static • Dynamic(learning by doing, development of specific know-how)
Technological gap (Gershenkron, 1962): <ul style="list-style-type: none"> • Technological backwardness as a potential in itself 		New economic geography: <ul style="list-style-type: none"> • Agglomeration economies (labor market pooling, supply of intermediate goods, knowledge spillovers)

Sources : Robert, Barro and Martin, Sala-I(1995), as well as Godinho, Manuel Miria and Mamede, Ricardo Pais(1999)

in income levels remains controversial(Godinho, Manuel Miria, 1999). Some interpretations are given in Table 15.

In this study, estimation of sigma convergence shows that the dispersion of per-capita GDP reduces over time. This aggregate convergence framework is consistent with the neoclassical framework where each region or province has shown converge to a common rate or level. Beta convergence tells whether poorer economies tend to grow faster than wealthier ones. Traditional beta convergence is relevant when regional economies are not very different in their structures and output. In the case of China, relevant studies by Chinese economist include Wang Zheng et al.(2002). But, most studies show that the differences across regions to be stationary and

growth rates turn out to be approximately the same in the long run e.g. Robert Solow et al.(1956). In contrast, aggregate convergence is consistent with the neo-classical framework whereby regions and provinces, while with different initial positions, seem to converge to the same level of income (wage convergence) and the same level of inequality(see Adriana Marina, 2000). Moreover, the speed of convergence is influenced by the regional specific characteristics(see Somik Lall et al., 2000).

Therefore, reduction in the disparity among regions or provinces can be explained on the assumption of decreasing returns to capital, an important assumption of neo-classical economic theory. That is, the poorer economies with lower capital intensity catch up to richer economies with higher capital intensity through factor mobility or FDI. Thus, by examining the convergence speed and empirical verification across China's regions, it is possible to capture some evidences of long-term growth and disparity among the different provinces.

1. Cross Sectional Model

We examine the level of inequality in China's provinces by modeling income convergence based on Barro and Sala-i-Martin's neo-classical growth theory with different combined variables and initial level of growth in order to compare the results obtained in the case of specific conditional variables. The equation for the growth convergence analysis which is

used to estimate the speed of convergence β per capita GDP based on cross sectional data in China's provinces is as follows:

$$\frac{\ln(y_{i,t}) - \ln(y_{i,t_0})}{T} = \alpha - \left(\frac{1 - e^{-\beta T}}{T}\right) \ln(y_{i,t_0}) + u_{i,t} \quad (10)$$

where y_{i,t_0} denotes the initial level of the provincial economy i at time t_0 ; T denotes the length for the period of time; $y_{i,t}$ denotes per capita GDP in provincial economy i at the end of period. β denotes the speed of convergence per capita GDP.

In the equation, the term on the left hand side refers to the average growth rate of per capita GDP y_i in period T , which is related to the initial per capita GDP y_{i,t_0} . The stochastic term is represented by $u_{i,t}$. The coefficient $\frac{(1 - e^{-\beta T})}{T}$ tends to decline over time, which reflects the dynamics in the neo-classical growth model. β presents the speed of convergence, which indicates the rate provincial economy i moves towards its steady state income. In the calculation, we always use efficient b to substitute for this term. Thus, $\beta = -\frac{\ln(1 - bT)}{T}$. The intercept denotes the common steady state, that is, $\alpha = X + \left(\frac{1 - e^{-\beta T}}{T}\right) \ln(y_i^0 + X(t - T))$ where X represent the exogenous growth of technology with respect to steady state growth rate, and Y_i^0 denotes the steady state per capita GDP.

If it is assumed that there exist different steady state growth rates for different provincial economies in China, that is, in the case of conditional convergence, then we have the follow-

ing equation:

$$\frac{(\ln(y_{i,t}) - \ln(y_{i,0}))}{T} = \alpha - \left(\frac{1 - e^{-\beta T}}{T}\right) \ln(y_{i,0}) + X_{i,t} + D_{i,t} + u_{i,t} \quad b > 0 \quad (11)$$

where $X_{i,t}$ represents the set of the other determinants affecting growth of China's provinces, and which determine the level of growth as well as the steady state. We refer to these collectively as the conditional variables. Thus, for $X_{i,t}$ set of variables, we are refer to stock variables or to continuous variables such as FDI inflows, education level, extent of marketing of economy, proportions of employment in population, and so on. $D_{i,t}$ denotes the regional dummy variables or discrete variables such as geographical location and preferential policies and so on. These variables can be interpreted as capturing specific regional characteristics. Besides, the assumption is made that the residuals are standard normal distributed with mean $\mu_{i,t} = 0$ and standard deviation $\sigma_{i,t} = 1$, and the errors have no systematic correlation. In general, the spatial correlation should be considered in regional studies, because regional growth is possibly influenced by the growth of neighboring regions, that is, through spillovers of growth. Thus, the dummy variables introduced could absorb the spatial correlation as an alternatively approximate method (see Gabriele Tondl, 1999).

2. Panel Data Model

In recent literature, panel data analysis has become popular in estimating growth across regions and countries (see Nazrul Islam, 1995 and Gabriele Tondl, 1999). It is commonly assumed that fixed effects exist, which determine the individual steady state of per capita GDP in regions or countries. In panel data econometrics, in addition to those unobservable individual factors absorbed by the conditional variables $X_{i,t0}$, fixed effects such as the cross-sectional error term $u_{i,t}$ can be decomposed into $u_{i,t} = \epsilon_{i,t} + \eta_i$, where η_i denotes the fix individual component, and $\epsilon_{i,t}$ is the random error component. Thus, conventional cross-sectional methods neglect terms η_i , and empirical evidence show that this bias possibly affects the magnitude of estimations that is not negligible. In this study, the equation for convergence estimation considering the fixed effects is improved as follows:

$$\ln(y_{i,t}) - \ln(y_{i,t-1}) = -c \ln(y_{i,t-1}) + \lambda X_{i,t-1} + \gamma D_{i,t} + \eta_i + \omega_t + \epsilon_{i,t} \quad c > 0 \quad (12)$$

where η_i denotes the individual fixed effects, which is constant over all observation and therefore replaces the common intercept. Hence, the fixed effect η_i presents the steady state per capita GDP. $X_{i,t-1}$ is a row vector of determinants affecting growth, and λ is the coefficient of vector $X_{i,t-1}$. $D_{i,t}$ represents the dummy variable vector and γ is the coefficient of vector $D_{i,t}$. ω_t denotes the time-specific effect in

period t , which is useful to model the time-specific effects to capture the aggregate shocks that could possibly be present in a some period. The error term $\mathbf{E}_{i,t}$ is a random normal distribution $N(0, \sigma^2)$. The equation above can be expressed as a dynamic panel data model with per capita GDP as the dependent variable as follows:

$$\text{Ln}(y_{i,t}) = d\text{Ln}(y_{i,t-1}) + \lambda X_{i,t-1} + \gamma D_{i,t} + \eta_i + \omega_t + \varepsilon_{i,t} \quad d > 0 \quad (13)$$

where $d=1+c$. This equation can be used to estimate the convergence rate and effects of FDI inflows and other determinants on the disparity of growth, and may help explain how per capita GDP influences the level of growth as well as identifying other variables affecting growth.

3. Description of $X_{i,t-1}$ and $D_{i,t}$ Condition Variable Vector

$X_{i,t-1}$ is a very important variable vector, which captures unobservable individual factors, and is also known as the conditional variables. In this model, $X_{i,t-1}$ is a set of endogenous variable. $D_{i,t}$ represents the dummy variables vector that captures regional characteristics. These variables are constructed as follows: 1) cost-related factors such as relative real wage rates, relative interest rates, and foreign exchange rates; 2) investment environment improving factors such as openness of economy and liberalization; 3) macro-economic factors such as output growth, human skills avail-

ability, human capital and the quality of infrastructure; 4) development strategy of the host country such as preferential policies, such as monetary policy, trade related policy, and fiscal and government policy; and 5) geographical location factors, such as convenience of transporting and natural harbor that benefit trade and investment such as areas around the Yangtze River and coastal cities or provinces.

According to the various types of variables shown above, those constituting $X_{i,t-1}$ and $D_{i,t}$ variable sets are described as follows: 1) FDI: the shares of FDI inflows in GDP; 2) Marketing: the shares of state-owned-firms industrial output in total industrial output; 3) Geographical location: Coastal cities or provinces are assigned a value “3”, middle cities or provinces are a value “2”, and western cities or provinces are “1”. Note that the area near the Yangtze River has a weight value added 1, and preferential policies endowed by central government(see Tables 16 and 17); 4) Openness: (exports + imports) / GDP; 5) Income: average annual real wage; 6) Education level denotes secondary school enrollment plus high education enrollment divided by number of total employment. This shows per employee education level; 7) Agriculture factors: we use the primary industrial employee as a measurement of this indicator, that is, it denotes the number of employment in the primary industries is divided by the total employment; 8) Manufacturing factors: we use the secondary industrial employee as measuring this factor, that is, it denotes the number of employment in the secondary industries is divided by total employment; 9) Service industries denote the

ratio of employee in tertiary industries to total employment and indicates the level of economic development: The more developed economy, the higher shares of tertiary industries are; 10) Preferential policy index: This indicator is constructed based on the characteristics of the preferential policies adopted in differently historic phases in the coastal and inland cities or provinces carried out by central government. The schedule of preferential policies executed since China's opening door to the world is presented in Table 16, and the results assigned are shown in Table 17. The preferential policy index is a weighted value for the different areas according to this schedule, where it is assigned a weight value "3" representing the Specifically Economic Zones(SEZs) and Pudong New Zones in Shanghai(PDNZs); similarly, it is assigned a weight value "2" for the Economic Technology Developing Zones (ETDZs) and Border Economic Cooperation Zones(BECZs); also, it is assigned a weight value "1" for the Coastal Opening Cities(COCs), Coastal Opening Economic Zones(COEZs), Opening Coastal Strip Zones(OCSZs), the Opening Cities around the Yangtze River(OCYRs), the Main Coastal Harbor Cities Opening Zones(MCHCOZs) and the Inland Provinces and Capital Cities(IPACCs); 11) Infrastructure level: this includes government expenditure on education, communication, length of roadway, energy power as well as output of industry and agriculture. We only consider the variable as per KM numbers of cars.

<Table 16> Schedule of the Preferential Policies Executed
in China's Provinces and Cities

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

Sources : Based on China Foreign Investment Report Series by Chinese Academy of Social Sciences, as well as Wing Thye Woo(2002).

<Table 17> Preferential Policy Index and Weight Value of Geographical Location of China's Provinces (Discrete Value)

Provinces	2001	2000	99	98	97	96	95	94	93	92	91	90	89	88	87	Geographical Location
Beijing	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	3
Tianjin	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
Hebei	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	3
Shanxi	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	2
Inner Mongolia	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2
Liaoning	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	3
Jilin	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2
Heilongjiang	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2
Shanghai	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	4
Jiangsu	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
Zhejiang	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
Anhui	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	4
Fujian	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Jiangxi	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	4
Shandong	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
Henan	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	2
Hubei	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	3
Hunan	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	3
Guangdong	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Guangxi	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	3
Hainan	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	3
Chongqing	2	2	2	2	2	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2
Sichuan	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	1
Guizhou	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Yunnan	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	1
Xizhang	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Shaanxi	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Gansu	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Qinghai	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Ningxia	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Xinjiang	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	1

VII. Main Empirical Results of the Study

The results of the cross sectional model of per capita GDP convergence with conditional variable are represented in Table 18. The results are based on the initial years of 1987 and 1992, respectively. Both models display a high level of significance, and R-squared values are over 0.96, and F-statistic values are all acceptable. The coefficients on the conditional variables are highly statistically significant at the 1% or 5% levels. Conditional variables such as Preferential Index, Ratio of Student of High Education to Total Employment, Per Car Length of Road way, Geographical Location, Shares of Employee of Secondary Industries in Total Employment and Shares of Employee of Secondary Industries in Total Employment have positive effects on per capita GDP. This implies that the benefit of geographic location such as being in the coastal and Yangtze River areas, high educational level, preferential policies endowment, developed infrastructure as well as high employment rates are helpful to the growth of per capita GDP of provinces. The Market index has a negative effect on per capita GDP suggesting therefore that the higher shares of state-owned enterprises tend to deter the growth of provinces. Convergence speeds based on the initial

<Table 18> Cross Section Model of Per Capita GDP Convergence with Conditional Variables

Variable	Initial Year 1987		Initial Year 1992	
	Coefficient	t-statistic	Coefficient	t-statistic
C	3.942 ³⁾	11.873	3.548 ³⁾	9.984
Initial Level of Per Capita GDP for Lagging one	0.763 ³⁾	14.941	0.750 ³⁾	16.185
Preferential Index	0.130 ³⁾	7.159	0.049 ³⁾	4.326
Marketing Index	-1.023 ³⁾	-18.242	-0.978 ³⁾	-8.093
Ratio of Student of High Education to Total Employment	0.001 ³⁾	5.122	0.001 ²⁾	2.081
Per Car Length of Road way	0.173 ³⁾	3.222	0.302 ³⁾	5.964
Geographical Location	0.025 ²⁾	2.454	0.023 ³⁾	2.990
Shares of Employee of Secondary Industries in Total Employment	0.231	1.171	0.718 ³⁾	3.723
Adjusted R-squared	0.966		0.963	
F-statistic	35800000		1248177	

Note : 1) means "significant" at the level of 10%.

2) means "significant" at the level of 5%.

3) means "significant" at the level of 1%.

For the null hypothesis, H0: Coefficient =0.

year of 1987 and 1992 are 3.942 and 3.548, respectively. The former is greater than latter suggesting that the lower the level of per capita GDP, the higher the catch-up effect.

Table 19 shows the results of the cross sectional models of per capita GDP convergence conditional of FDI inflows. Both models display a high level of statistical significance, and R-squared values are over 0.9, and F-statistic values are all over 100. Ratios of FDI inflows to GDP have positive effects on per capita GDP, and the coefficient of this variable in the

model at the initial level of 1987 is statistically significant at the 5% level. This result shows that the contributions of variables related to FDI inflows by the initial level of 1987 are obviously higher than that by the initial level of 1992. For instance, the coefficient of variables related to FDI inflow is 2.610 in the model at the initial level of 1987, and is 0.466 in the model at the initial level of 1992. Besides, with or without considering FDI inflows, there are the different convergence speeds, and convergence speeds of the former are obviously greater than that of the latter, i.e. convergence speed of 1.082(initial year 1987) compared to 1.09(initial year 1992) when considering FDI inflows, and 0.763(initial year 1987) and 0.750 initial year 1992) without FDI. The results show that FDI inflows help promote growth of middle and western provinces-FDI inflows can shorten the gap between the poorer and richer provinces.

<Table 19> Cross Section Model of Per Capita GDP Convergence with only Conditional Variables FDI Inflows

Variable	Initial Year 1987		Initial Year 1992	
	Coefficient	t-statistic	Coefficient	t-statistic
C	1.363 ²⁾	2.723	0.646	1.430
Initial Level of Per Capita GDP for Lagging one	1.082 ³⁾	15.078	1.090 ³⁾	18.298
Ratio of FDI inflows to GDP	2.610 ²⁾	2.310	0.466	0.504
Adjusted R-squared	0.903		0.931	
F-statistic	122.157		184.352	

Note : 1) means "significant" at the level of 10%.

2) means "significant" at the level of 5%.

3) means "significant" at the level of 1%.

For the null hypothesis, H0: Coefficient =0.

The results of our models with panel data analysis of per capita GDP convergence without fixed effects and with fixed effects for the period 1993 to 2001 are represented in Table 20. Both models are highly statistically significant, and R-squared values are over 0.95, while F-statistics are all large enough. Most variables show expected effects on per capita GDP with coefficients statistically significant at the 5% or 1% levels. The derived results in Table 20 have similar results as in Table 18, and most results are consistent with the assumptions of models. The geographic location, higher human capital level, preferential policies endowed, the developed infrastructure as well as high employment rate are found to help promote the growth of per capita GDP of provinces. The Marketing level value of provincial economies have negative effects on per capita GDP implying that the higher shares of private or other enterprises help enhance the growth of provinces. The ratios of FDI inflows to GDP contribute more to per capita GDP than other conditional variables. In the model without fixed effects, the contribution of the FDI inflows ratio to per capita GDP is 0.137, with convergence speed 0.839. This can be contrasted with the model with fixed effects, which has contributions of the FDI inflows ratio to per capita GDP at 0.280 with convergence speed 0.663.

<Table 20> Panel Data Model of Per Capita GDP Convergence With Fixed Effects and Without Fixed Effects over 1993 to 2001

Variable	Without fixed effects		With fixed effects	
	Coefficient	t-statistic	Coefficient	t-statistic
C	15.601 ³⁾	2.632		
Initial Level of Per Capita GDP for Lagging one	0.839 ³⁾	42.321	0.633 ³⁾	32.761
Ratio of FDI inflows to GDP for Lagging one	0.137	1.515	0.280 ³⁾	2.788
Openness of Market for Lagging one	0.024 ²⁾	2.377	0.026 ²⁾	2.205
Marketing Index	-0.034 ²⁾	-2.069	-0.069 ³⁾	-4.354
Preferential Index	0.039 ³⁾	5.826	0.042 ³⁾	2.762
Ratio of Student of High Education to Total Employment for Lagging one	0.001 ³⁾	9.938	0.001 ³⁾	5.907
Annual Wage for Lagging one	0.000	1.352	0.000	1.302
Employment Rate for Lagging one	0.014	0.214	0.465 ³⁾	3.126
Time Variable	-0.007 ²⁾	-2.366	0.016 ³⁾	4.864
Shares of Employee of Tertiary Industries in Total Employment for Lagging one	-0.543 ³⁾	-5.939		
Geographical Location	0.019 ³⁾	5.333		
Shares of Employee of Secondary Industries in Total Employment for Lagging one	0.324 ³⁾	5.393		
Adjusted R-squared	1.000		0.987	
F-statistic	211213.1		580065.3	
Durbin-Watson stat	1.908		2.127	

Note : 1) means "significant" at the level of 10%.

2) means "significant" at the level of 5%.

3) means "significant" at the level of 1%.

For the null hypothesis, H0: Coefficient = 0.

VIII. Conclusions

This paper empirically investigates the determinants of interregional disparities of China based on China's provincial data, as well as the relationship between regional disparities and the distribution of foreign direct investment inflows in China. By applying different frameworks, the dynamic effects of FDI inflows on growth are analyzed in detail. Specifically, cross sectional models with conditional variables and panel data models without and with fixed effects are applied for data for the period 1993 to 2001.

In order to compare the contributions of FDI inflows to China's provincial growth with other determinants, we construct conditional variables such as Preferential Index, Ratio of Student of High Education to Total Employment, Per Car Length of Road way, Geographical Location, Openness of Market, Shares of Employee of Secondary Industries in Total Employment and Shares of Employee of Secondary Industries in Total Employment. These were found to have positive effects on per capita GDP suggesting that the benefits of geographic location such as location around the coastal and Yangtze River areas, high educational level, and preferential policies endowed, as well as developed infrastructure and high

employment rates help promote the growth of per capita GDP of provinces.

The Marketing level value of provincial economies has negative effects on per capita GDP implying that the higher shares of private or other typical enterprises are helpful to enhance the growth of provinces. The ratios of FDI inflows to GDP were found to have a larger contribution to per capita GDP than other conditional variables. Meanwhile, FDI inflows also have significant effects on growth convergence speed of provinces, and the presence of strong convergence trends at the provincial data level both based on cross sectional and panel data models are present. The results also show that FDI inflows are helpful to the growth of middle and western provinces, that is, FDI inflows can narrow the gap between the poorer and richer provinces.

We find that the uneven distributions of FDI inflows in China's regions are a crucial factor resulting in the disparity of growth across provinces. In particular, international trade due to FDI has become an important contributor of China's international trade. Moreover, the geographical location and preferential policies by central government also play an important role in determining the regional growth of China.

IX. Policy Implications

On the basis of the analysis in this paper on the disparity of interregional growth using the Gini and Theil Indices, we have empirically investigated the determinants of regional growth. Specifically, we find evidence of the important of FDI inflows to growth relative to that of other determinants. The distribution of FDI inflows was seen to be closely associated with the disparities in inter regional growth of China, and FDI inflows have had significant effects on the convergence speed of growth of provinces. Our analysis further shows that FDI Inflows are one of most important factors affecting regional inequality. The following policy implications follow:

- (1) The regional distribution of FDI and international trade has been closely associated with disparity of inter-regional growth. FDI inflows and international trade representing to some degree the economic openness of markets have had significant effects on the speed of convergence of growth in China's provinces, implying that investment and trade liberalization can promote regional growth. Thus, policies related to promoting FDI inflows and boosting international trade in China's

regions can be helpful to decrease inequality of regional growth in China.

- (2) Geographical location has displayed strong effects on convergence speed of regional growth in China. Thus, in order to narrow the gap of growth between the geographical disadvantage and advantage areas, investment in transportation and telecommunication should be improved to enhance the accessibility of the middle-western regions to international market. The improvement of infrastructure conditions can help absorb some of the FDI inflows to China and also promote exports in these regions.
- (3) Preferential policies have also had an enormous impact on China's regional economic growth. The special policies in developed regions should also be extended to middle-western regions, where the central government can play an important role in decision making. This should help reduce transaction costs and boost private capital as well as FDI inflows to middle-western regions.
- (4) The Marketing index displays negative effects on growth of China's provinces, implying that reducing the shares of state owned enterprises(SOEs) could be necessary to realize the full economic liberalization and promote the development of market economies. The middle-western

regions also should reform SOEs as has been done in eastern regions so as to accelerate regional growth and bridge the difference between eastern and middle-western regions.

- (5) Variables such as human capital, employment and the cost of labor in our model were found to have important effects on regional growth, and act as key factors resulting in disparities in interregional growth mainly attributable to higher human capital that is favorable to absorbing the full effect of investment inflows. Future policies should stress research and development(R&D) and basic education. Regarding the cost of labor, the middle-western regions have stronger competitive advantage over eastern regions. Transfer payments can also be increased by adopting policies related to improving the infrastructure in middle-western regions such as the deregulation of electricity, energy, mineral resources, railway transportation and telecommunication sectors, and so on. In addition, every year, a large amount of labor migrates from the countryside to urban area, and consequently the government should consider training and other consulting services to enable a more productive allocation of labor resources.

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Appendix

<Appendix 1> Exports of FDI Trade of China's Provinces
(10 thousand dollars)

Provinces	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	33890	49256	70939	98814	115424	126273	146514	287108	323871
Tianjin	60609	101300	198729	295097	352987	382367	449079	637925	710297
Hebei	16540	27741	32607	54219	63223	72029	80044	101240	114229
Shanxi	4898	7939	11625	12582	11387	10567	8088	15209	15445
Inner Mongolia	2663	4206	5217	7950	9100	5861	7468	13798	12894
Liaoning	116289	162200	237075	317895	352803	383276	436131	624463	629968
Jilin	6703	14006	19315	26049	26059	27875	34709	39197	42787
Heilongjiang	9091	11337	16042	24264	27811	22427	22612	26679	25935
Shanghai	178275	265848	401810	544661	700243	816461	1034641	1426102	1595857
Jiangsu	150378	206638	293600	506970	670710	804595	985907	1445340	1664217
Zhejiang	97787	103339	110982	202352	246044	268295	332775	534851	709930
Anhui	6263	7242	9736	15549	20504	26439	29143	39993	43112
Fujian	248904	287056	354323	450087	529863	544915	588818	759713	828809
Jiangxi	4102	4296	4463	5920	7840	8659	9989	16298	11233
Shandong	88896	158898	253751	385182	514760	522517	585026	792766	923578
Henan	6850	9575	11728	21802	22717	24677	23679	30889	31396
Hubei	13406	15528	18737	28523	33007	25428	30986	42956	50064
Hunan	4256	6360	6839	10781	12211	11504	12900	18250	21256
Guangdong	1436698	1984452	2576243	3069026	3678155	3918329	3939790	4951011	5437384
Guangxi	10668	14508	21778	26412	35135	31925	22044	34112	24353
Hainan	7086	5312	5777	6822	8697	7616	28669	30464	30039
Chongqing	n/a	n/a	n/a	n/a	n/a	6905	6213	9666	9228
Sichuan	8331	9539	9115	13118	16993	12476	15805	24517	23997
Guizhou	1202	1957	2895	4169	6199	4468	3456	4012	4423
Yunnan	2546	2554	3435	4257	4405	3780	4240	8113	10952
Xizhangan	134	122	30	235	300	159	219	389	217
Shaanxi	2976	4318	4170	8427	11743	11082	8914	11612	10808
Gansu	1496	1485	1946	2414	3592	3514	2392	3833	5294
Qinghai	1	425	602	825	299	336	88	202	154
Ningxia	974	630	983	2088	3162	2935	2791	4294	5904
Xinjiang	5681	3230	3095	4146	4613	8499	9636	9120	5877

<Appendix 2> Exports of China's Provinces

(10 thousand dollars)

Provinces	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	1 525 23	114 118	8 342 05	1 024 977	81 197 5	961 103	105 129 3	9903 52	119 681 3	11 786 87
Tianjin	1 839 57	205 737	2 691 21	406 407	46 508 2	524 387	54 987 4	6331 34	86 257 8	9 492 11
Hebei	1 947 93	167 916	2 302 66	286 561	30 783 9	323 902	31 161 7	3119 14	37 100 0	3 955 59
Shanxi	371 94	40 699	653 97	114 255	9 321 2	112 812	8 932 1	839 51	12 368 7	1 468 24
Inner Mongolia	567 08	48 483	474 41	49 968	5 207 3	65 540	5 257 9	534 60	9 701 7	627 07
Liaoning	5 840 63	516 834	6 053 20	824 357	86 368 3	915 645	80 549 9	8199 88	108 563 2	11 008 45
Jilin	1 152 40	120 472	1 365 97	109 673	9 718 8	93 233	7 480 9	1018 77	12 568 3	1 461 71
Heilongjiang	1 869 64	168 677	1 242 72	116 640	10 803 9	130 872	9 086 3	957 14	14 511 8	1 611 92
Shanghai	6 485 90	656 564	9 157 22	1 296 379	130 287 9	1 506 897	159 467 4	1 8799 58	253 523 3	27 623 67
Jiangsu	4 002 40	465 117	6 684 50	978 926	115 987 2	1 409 624	156 199 7	1 8305 82	257 668 3	28 873 54
Zhejiang	3 573 20	432 052	6 084 99	769 242	80 391 8	1 008 533	108 633 5	1 2871 44	194 427 5	22 976 36
Anhui	670 20	78 472	1 046 41	139 305	13 135 2	154 783	15 121 4	1676 07	21 719 8	2 282 26
Fujian	4 381 99	515 636	6 430 20	790 795	83 826 9	1 026 480	99 579 4	1 0351 66	129 060 7	13 925 84
Jiangxi	647 64	61 415	805 39	104 194	8 509 7	111 394	10 173 2	906 06	11 974 1	1 039 04
Shandong	4 025 52	419 987	5 865 36	816 017	91 812 7	1 096 569	104 438 5	1 1576 45	155 288 4	18 120 67
Henan	816 41	75 053	1 023 80	135 745	12 391 9	128 071	11 869 8	1127 30	14 957 8	1 704 91
Hubei	1 158 21	122 731	1 715 60	197 968	15 254 9	192 075	17 075 7	1512 29	19 355 5	1 796 72
Hunan	1 137 34	113 765	1 543 38	147 015	13 529 4	144 697	12 826 1	1281 87	16 527 1	1 752 81
Guangdong	33 325 31	3 738 838	50 198 50	5 657 260	593 409 9	7 453 952	756 176 6	7 7686 79	919 177 0	95 426 09
Guangxi	884 11	89 317	1 290 38	170 198	12 690 1	227 924	18 041 5	1247 21	14 889 1	1 235 36
Hainan	897 57	91 992	952 98	92 323	6 584 9	79 901	7 649 2	747 25	8 028 9	797 97
Chongqing	n/a	n/a	n/a	n/a	n/a	75 562	5 141 1	490 38	9 956 6	1 102 55
Sichuan	1 223 49	115 595	1 804 30	226 951	17 569 0	127 529	11 711 2	1138 51	13 943 7	1 582 72
Guizhou	206 59	20 033	304 08	44 269	3 549 8	44 421	3 878 7	357 75	4 205 6	421 77
Yunnan	612 98	79 653	965 26	125 734	10 438 0	113 511	11 221 4	1034 55	11 750 9	1 244 06
Xizhang	93 59	10 391	44 87	868	207 4	3 742	475 8	86 27	1 133 4	82 37
Shaanxi	623 47	73 488	957 90	126 844	10 853 9	122 814	11 758 2	1150 84	13 100 5	1 108 19
Gansu	265 43	21 908	346 87	36 027	2 733 1	35 940	3 447 5	317 03	4 149 5	476 32
Qinghai	85 16	7 630	126 27	12 999	1 134 7	11 659	1 040 5	86 86	1 120 0	149 13
Ningxia	65 25	6 317	109 23	16 849	1 546 8	18 616	2 103 7	247 65	3 273 7	351 84
Xingjiang	433 35	37 523	422 64	59 211	4 721 0	56 978	7 475 1	1027 34	12 041 3	668 49

<Appendix 3> Imports of FDI Trade of China's Provinces
(10 thousand dollars)

Provinces	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	124063	147672	186628	224022	233856	281772	366197	489739	540603
Tianjin	109458	189617	301237	406855	435524	433255	536476	731364	723888
Hebei	48317	53892	67248	89623	56380	60779	65629	56907	66116
Shanxi	10884	6988	5354	5295	6404	7645	32841	26667	10769
Inner Mongolia	8051	7875	10041	7402	6564	4073	3841	4358	4958
Liaoning	159907	214465	262974	319087	387294	303372	389683	605234	590609
Jilin	34227	47939	65711	61045	45500	57211	61309	73077	10473
Heilongjiang	21633	28465	36517	48086	36586	21961	20990	20674	19296
Shanghai	405426	494631	719781	942116	959476	1005314	1232266	1914952	2083843
Jiangsu	307817	350171	487284	706739	748251	858550	977768	1572741	1754914
Zhejiang	105540	142807	195379	270804	224223	202419	233593	404142	477217
Anhui	20981	26136	26768	52581	43561	35535	53863	54786	56030
Fujian	357321	434621	468563	502316	524501	517316	545272	64602	674669
Jiangxi	32826	26692	15283	10129	7284	8871	18643	15516	16821
Shandong	176614	253187	362652	466395	448976	423077	433596	599802	702925
Henan	26333	31043	38092	40183	28409	22156	22424	26807	28303
Hubei	53935	49840	72753	84286	78273	69101	60303	61729	81661
Hunan	25355	22664	21644	25421	20646	16822	16960	29467	34706
Guangdong	1979877	2536046	2744113	3027696	3272863	3173178	3391787	4252685	4425844
Guangxi	41592	73032	60094	43459	32524	39368	26340	21228	21889
Hainan	55233	60323	51086	56898	26607	34453	10495	15529	50992
Chongqing						32192	17353	22723	22118
Sichuan	40077	43142	42401	101001	88862	18884	27177	37007	42737
Guizhou	4138	5093	5966	2616	3059	1671	1119	1678	1902
Yunnan	6897	16118	16759	21309	18482	10854	9744	11545	10238
Xizhang	216	1644	2454	6086	5886	1000	851	245	19
Shaanxi	18441	17557	16287	27418	23933	24129	23910	23823	25792
Gansu	4203	4340	3358	4202	3008	2746	1658	1824	3616
Qinghai	82	401	20	86	1	269	15	723	2174
Ningxia	674	1840	503	1659	1348	717	1787	1831	1539
Xinjiang	3202	5177	7321	5565	3854	3059	4471	2439	3702

<Appendix 4> Imports of China's Provinces

(10 thousand dollars)

Provinces	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	164 177	25 4346	20 9322 1	26 785 36	2 119 858	207 7749	19 9931 5	24 455 99	3 765 376	397 5444
Tianjin	116 422	19 2031	2 8540 8	3 979 51	489 323	50 8750	5 1151 0	6 269 60	852 822	86 7998
Hebei	51 065	7 8236	8 541 6	1 052 14	111 430	8 6426	1 1111 5	1 460 81	152 862	17 8172
Shanxi	17 360	2 4617	1 849 0	2 59 73	23 164	2 1250	2 179 2	4 47 99	52 751	4 2724
Inner Mongolia	34 282	5 0668	4 504 1	4 97 55	52 918	4 1761	4 371 5	7 59 55	165 188	14 0763
Liaoning	225 921	33 5146	4 1843 3	4 955 33	5 43 188	57 4907	4 6890 3	5 518 44	81 7516	87 9870
Jilin	83 058	13 0070	1 4248 3	1 510 31	113 178	9 2126	9 038 2	1 193 57	131 359	17 4514
Heilongjiang	113 497	16 1335	1 1848 7	1 220 05	136 709	11 5584	1 1109 2	1 241 16	153 519	17 7234
Shanghai	518 792	79 3464	8 9049 9	11 393 53	1 411 006	147 3101	15 4294 9	19 818 54	2 935 569	332 6948
Jiangsu	295 360	45 9352	5 0723 5	6 520 62	909 889	95 3275	10 7216 1	12 951 59	1 986 953	224 7739
Zhejiang	141 282	24 0956	2 9021 6	3 817 30	448 933	41 5689	3 9876 5	5 434 17	838 987	98 2225
Anhui	29 880	4 5424	5 200 3	6 14 96	90 789	8 2969	8 193 5	9 72 37	117 486	13 3771
Fujian	367 207	48 8172	5 7593 3	6 537 65	712 990	79 2429	7 1950 2	7 267 53	831 439	87 0368
Jiangxi	31 228	5 5332	5 016 3	2 81 21	26 452	2 1845	2 289 6	4 07 76	42 664	4 9190
Shandong	182 587	30 7949	3 7541 4	5 783 35	698 278	66 7830	6 2700 4	6 690 53	946 092	108 3304
Henan	34 282	5 5878	6 117 0	8 71 59	72 907	6 1036	5 467 4	6 21 55	78 712	10 7685
Hubei	56 645	10 0089	1 0302 6	1 424 53	133 615	12 8396	1 1245 6	1 165 33	128 731	17 8041
Hunan	49 474	5 9516	6 077 3	5 68 73	51 273	4 4645	4 991 1	6 73 59	85 951	10 0498
Guangdong	3 147 784	409 5654	46 4536 5	47 349 66	5 056 907	555 0782	54 1803 8	62 655 62	7 818 118	810 6860
Guangxi	45 402	11 6488	1 7466 2	1 388 72	75 704	5 8707	6 049 5	5 06 19	54 488	5 6163
Hainan	85 607	15 9805	1 8074 8	1 432 49	160 437	11 2783	9 783 1	4 69 79	48 497	9 4908
Chongqing	n/a	n/a	n/a	n/a	n/a	9 0748	5 198 5	7 18 41	79 024	7 3136
Sichuan	68 352	10 7448	1 2942 0	1 210 45	197 492	5 4772	9 216 2	1 329 96	115 083	15 1644
Guizhou	10 947	1 4305	1 646 4	2 21 58	13 050	1 8503	2 397 4	1 89 83	23 942	2 2468
Yunnan	33 818	3 7512	6 665 5	8 90 50	80 596	5 4382	5 216 6	6 25 56	63 767	7 4472
Xizhang	9 033	8 479	6 024 9	2 08 54	15 589	1 3816	7 20 1	80 18	1 697	1 054
Shaanxi	35 807	5 7906	4 622 6	4 14 43	65 947	5 0295	8 748 0	8 54 92	83 003	9 5381
Gansu	13 586	1 7997	1 559 9	2 39 25	20 031	1 1904	1 031 3	89 24	15 458	3 0256
Qinghai	984	2 491	2 62 6	23 98	1 455	1 201	1 369	20 99	4 773	5 577
Ningxia	2 316	3 914	6 37 1	51 14	3 507	3 987	2 85 8	70 34	11 555	1 8093
Xinjiang	18 810	4 1084	4 356 8	5 79 35	46 662	5 5388	7 773 2	7 38 01	105 991	11 0299

<Appendix 5> Exports & Imports of FDI Trade of China's Provinces
(10 thousand dollars)

Provinces	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	157953	196928	257567	322836	349280	408045	512711	776847	864474
Tianjin	170067	290917	499966	701952	788511	815622	985555	1369289	1434185
Hebei	64857	81633	98855	143842	119603	132808	145673	158147	180345
Shanxi	15782	14927	16979	17877	17791	18212	40929	41876	26214
Inner Mongolia	10714	12081	15258	15352	15664	9934	11309	18156	17852
Liaoning	276196	376665	500049	636982	740097	686648	825814	1229697	1220577
Jilin	40930	61945	85026	87094	71559	85086	96018	112274	149260
Heilongjiang	30724	39802	52559	72350	64397	44388	43602	47353	45231
Shanghai	583701	760479	1121591	1486777	1659719	1821775	2266907	3341054	3679700
Jiangsu	458195	556809	780884	1213709	1418961	1663145	1963675	3018081	3419131
Zhejiang	203327	246146	306361	473156	470267	470714	566368	938993	1187147
Anhui	27244	33378	36504	68130	64065	61974	83006	94779	99142
Fujian	606225	721677	822886	952403	1054364	1062231	1134090	1405740	1503478
Jiangxi	36928	30988	19746	16049	15124	17530	28632	31814	28054
Shandong	265510	412085	616403	851577	963736	945594	1018622	1392568	1626503
Henan	33183	40618	49820	61985	51126	46833	46103	57696	59699
Hubei	67341	65368	91490	112809	111280	94529	91289	104685	131725
Hunan	29611	29024	28483	36202	32857	28326	29860	47717	55962
Guangdong	3416575	4520498	5320356	6096722	6951018	7091507	7331577	9203696	9863228
Guangxi	52260	87540	81872	69871	67659	71293	48384	55340	46242
Hainan	62319	65635	56863	63720	35304	42069	39164	45993	80961
Chongqing						39097	23566	32389	31346
Sichuan	48408	52681	51516	114119	105855	31360	42982	61524	66734
Guizhou	5340	7050	8861	6785	9258	6139	4575	5690	6325
Yunnan	9443	18672	20194	25566	22887	14634	13984	19658	21190
Xizhang	350	1766	2484	6321	6186	1159	1070	634	236
Shaanxi	21417	21875	20457	35845	35676	35211	32824	35435	36600
Gansu	5699	5825	5304	6616	6600	6260	4050	5657	8910
Qinghai	83	826	622	911	300	605	103	925	2328
Ningxia	974	2470	1486	3747	4510	3652	4578	6125	7443
Xinjiang	5681	8407	10416	9711	8467	11558	14107	115559	9579

<Appendix 6> Exports & Imports of China's Provinces

(10 thousand dollars)

Provinces	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Beijing	316700	348464	2927426	3703513	2931833	3038852	3050608	3435951	4962189	5154131	5251000
Tianjin	300379	397768	554529	804358	954405	1033137	1061384	1260094	1715400	1817209	2275000
Hebei	245858	246152	315682	391775	419269	410328	422732	457995	523862	573731	667000
Shanxi	54554	65316	83887	140228	116376	134062	111113	128750	176438	194098	231000
Inner Mongolia	90990	99151	92482	99723	104991	107301	96294	129415	262205	203470	244000
Liaoning	809984	851980	1023753	1319890	1406871	1490552	1274402	1371832	1903148	1980715	2174000
Jilin	198298	250542	279080	260704	210366	185359	165191	221234	257042	320685	371000
Heilongjiang	300461	330012	242759	238645	244748	246456	201955	219830	298637	338426	435000
Shanghai	1167382	1450028	1806221	2435732	2713885	2979998	3137623	3861812	5470802	6089315	7264000
Jiangsu	695600	924469	1175685	1630988	2069761	2362899	2634158	3125741	4563636	5135093	703000
Zhejiang	498602	673008	898715	1150972	1252851	1424222	1485100	1830561	2783262	3279861	4196000
Anhui	96900	123896	156644	200801	222141	237752	233149	264844	334684	361997	148000
Fujian	805406	1003808	1218953	1444560	1551259	1818909	1715296	1761919	2122046	2262952	284000
Jiangxi	95992	116747	130702	132315	111549	133239	124628	131382	162405	153094	169000
Shandong	585139	727936	961950	1394352	1616405	1764399	1671389	1826698	2498976	2895371	3394000

Provinces	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Henan	11 592 3	13 093 1	163 550	222 904	196 826	1 891 07	1 733 72	17 488 5	22 829 0	278 176	32 000
Hubei	17 246 6	22 282 0	274 586	340 421	286 164	3 204 71	2 832 13	26 776 2	32 228 6	357 713	395 000
Hunan	16 320 8	17 328 1	215 111	203 888	186 567	1 893 42	1 781 72	19 554 6	25 122 2	275 779	288 000
Guangdong	648 031 5	783 449 2	966 521 5	1 039 226	10 991 006	11 300 473 4	12 979 80 4	140 342 41	1700 988 8	1 764 946 9	2 211 000
Guangxi	13 381 3	20 580 5	303 700	309 070	202 605	2 866 31	2 409 10	17 534 0	20 337 9	179 699	243 000
Hainan	17 536 4	25 179 7	276 046	235 572	226 286	1 926 84	1 743 23	12 170 4	12 878 6	174 705	187 000
Chongqin	n/a	n/a	n/a	n/a	n/a	1 663 10	1 033 96	12 087 9	17 859 0	183 391	179 000
Sichuan	19 070 1	22 304 3	309 850	347 996	373 182	1 823 01	2 092 7 4	24 684 7	25 452 0	309 916	447 000
Guizhou	3 160 6	3 433 8	46 872	66 427	485 48	629 24	627 61	5 475 8	6 599 8	64 645	69 000
Yunnan	9 511 6	11 716 5	163 181	214 784	184 976	1 678 93	1 643 80	16 601 1	18 127 6	198 878	223 000
Xizhang	1 839 2	1 887 0	64 736	21 722	176 63	175 58	11 959	1 664 5	1 303 1	9 291	13 000
Shaanxi	9 815 4	13 139 4	142 016	168 287	174 486	1 731 09	2 050 6 2	20 057 6	21 400 8	206 200	223 000
Gansu	4 012 9	3 990 5	50 286	59 952	473 62	478 44	447 8 8	4 062 7	5 695 3	77 888	88 000
Qinghai	9 500	10 121	15 253	15 397	128 02	128 60	11 77 4	1 078 5	1 597 3	20 490	20 000
Ningxia	884 1	10 231	17 294	21 963	189 75	226 03	238 9 5	3 179 9	4 429 2	53 277	44 000
Xinjiang	6 214 5	7 860 7	85 832	117 146	938 72	1 123 66	1 524 8 3	17 653 5	22 640 4	177 148	269 000

<Appendix 7> FDI Inflows of China's Provinces

(10 thousand dollars)

Provinces	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Beijing	31846	27695	24495	34985	66694	137157	107999	155290	159286	216800	197525	168368	176818	172464
Tianjin	8134	3493	13261	10778	61368	101499	152093	215273	251135	211361	176399	116601	213348	158195
Hebei	2685	3935	5656	11309	39654	52340	54668	83022	110308	142868	104202	67923	66989	78271
Shanxi	882	340	380	5384	8643	3170	6383	13808	26893	24451	39129	22472	23393	21164
Inner Mongolia	n/a	1064	166	520	8526	4007	5781	7186	7325	9082	6456	10568	10703	17701
Liaoning	n/a	24373	36239	51642	127913	144014	142461	173782	236635	219045	106173	204446	251612	341168
Jilin	335	1760	3164	7534	27527	24192	40802	45155	40227	40917	30120	33701	33766	24468
Heilongjiang	2312	2449	2085	7217	23232	34759	51686	56691	73485	52639	31828	30086	34114	35511
Shanghai	42212	17401	14519	49361	316025	247309	289261	394094	422536	360150	283665	316014	429159	427229
Jiangsu	9464	12416	21922	146324	284371	376315	519082	521009	543511	663179	607756	642550	691482	1018960
Zhejiang	5181	4843	9229	23978	103175	115026	125806	152050	150345	131802	123262	161266	221162	307610
Anhui	478	961	1067	5466	25764	37000	48256	50661	43443	27673	26131	31847	33672	38375
Fujian	32880	29002	47116	142364	287444	371318	404390	408455	419710	421211	402403	343191	391804	383837
Jiangxi	587	621	1949	9972	20817	26168	28888	30126	48103	46496	32080	22724	39575	108197
Shandong	13132	15084	21639	100342	187413	255242	268898	263355	277556	220274	225878	297119	352093	473404

Provinces	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Henan	4266	1049	3799	5316	30491	38673	47855	52356	69204	61654	52135	56403	45729	40463
Hubei	2295	2900	4664	20313	54053	60186	62512	68079	84866	97294	91488	94368	118860	142665
Hunan	643	1116	2543	13271	43746	33114	50773	74530	91702	81816	65374	67833	81011	90022
Guangdong	115644	146000	194288	370111	755576	946343	1026011	1175407	1263495	1201994	1165750	1128091	1193203	1133400
Guangxi	4594	2866	3185	18201	88456	83633	67263	66313	88579	88613	63512	52466	38416	41726
Hainan	10707	10302	17672	45255	70710	91809	106207	78908	70554	71715	48449	43080	46691	51196
Chongqing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	41802	43107	23893	24436	25649	19576
Sichuan	n/a	1604	8091	11214	57141	92174	54159	44090	24846	37248	34101	43694	58188	55583
Guizhou	747	468	1409	1979	4294	6363	5703	3138	4977	4535	4090	2501	2829	3821
Yunnan	740	261	351	2875	9702	6500	9769	6537	16566	14568	15385	12812	6457	11169
Xizhang	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Shaanxi	9719	4191	3176	4553	23430	23880	32407	32609	62816	30010	24197	28842	35174	36005
Gansu	17	85	478	35	1195	8776	6392	9002	4144	3864	4104	6235	7439	6121
Qinghai	n/a	n/a	n/a	68	324	241	164	100	247	n/a	459	n/a	3649	4726
Ningxia	233	25	18	35	1190	727	390	555	671	1856	5134	1741	1680	2200
Xinjiang	n/a	537	22	n/a	5300	4830	5490	6390	2472	2167	2404	1911	2035	1899

<Appendix 8> GDP of China's Provinces

(100 Million Yuan RMB)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
exchange rate	372.21	372.21	376.59	478.38	532.27	551.49	576.19	861.87	835.07	831.42	828.98	827.91	827.96	827.84	827.77
Beijing	326.82	410.22	455.96	500.82	598.9	709.1	863.54	1084.03	1394.89	1615.73	1810.09	2011.31	2174.46	2478.76	2845.65
Tianjin	220	259.64	283.34	310.95	342.75	411.24	536.1	725.14	920.11	1102.4	1235.28	1336.38	1450.06	1639.36	1840.1
Hebei	521.92	701.33	822.83	896.33	1072.07	1278.5	1690.84	2187.49	2849.52	3452.97	3953.78	4256.01	4569.19	5088.96	5577.78
Shanxi	257.2	316.7	376.3	429.3	468.5	570	704.7	853.77	1092.48	1308.01	1480.13	1486.08	1506.78	1643.81	1779.97
Inner Mongolia	212.27	270.81	292.69	319.31	359.66	421.68	532.71	681.92	832.88	984.78	1099.77	1192.29	1268.2	1401.01	1545.79
Liaoning	719.12	881.02	1003.81	1062.74	1200.1	1472.95	2010.82	2461.78	2793.37	3157.69	3582.46	3881.73	4171.69	4669.06	5033.08
Jilin	297.49	368.67	391.65	425.28	463.47	558.06	717.95	936.78	1129.2	1337.16	1446.91	1557.78	1660.91	1821.19	2032.48
Heilongjiang	454.6	551.98	630.61	715.23	824.23	864.04	1203.22	1618.63	2014.53	2402.58	2708.46	2798.89	2897.41	3253	3561
Shanghai	545.46	648.3	696.54	756.45	893.77	1114.32	1511.61	1971.92	2462.57	2902.2	3360.21	3688.2	4034.96	4551.15	4950.84
Jiangsu	922.33	1208.85	1321.85	1416.5	1601.38	2136.02	2998.16	4057.39	5155.25	6004.21	6680.34	7199.95	7697.82	8582.73	9511.91
Zhejiang	603.71	765.76	843.72	897.99	1081.75	1365.06	1909.49	2666.86	3524.79	4146.06	4638.24	4987.5	5364.89	6036.34	6748.15
Anhui	442.35	546.94	616.25	658.02	663.6	801.16	1069.84	1488.47	2003.58	2339.25	2669.95	2805.45	2908.58	3038.24	3290.13
Fujian	279.24	383.21	458.4	522.28	622.02	787.71	1133.49	1685.34	2160.52	2583.83	3000.36	3286.56	3550.24	3920.07	4253.68
Jiangxi	262.9	325.83	376.46	428.62	479.37	572.55	723.06	948.16	1205.11	1517.26	1715.18	1851.98	1853.65	2003.07	2175.68

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Shandong	n/a	n/a	n/a	n/a	1810.54	2196.53	2779.49	3872.18	5002.34	5960.42	6650.02	7162.2	7662.1	8542.44	9438.31
Henan	609.6	749.09	850.71	934.65	1045.73	1279.75	1662.76	2224.43	3002.74	3661.18	4079.26	4356.6	4576.1	5137.66	5640.11
Hubei	517.77	626.52	717.08	824.38	913.38	1088.39	1424.38	1878.65	2391.42	2970.2	3450.24	3704.21	3857.99	4276.32	4662.28
Hunan	469.44	584.07	640.8	744.44	833.3	997.7	1278.28	1694.42	2195.7	2647.16	2993	3118.09	3326.75	3691.88	3983
Guangdong	n/a	n/a	n/a	n/a	1780.56	2293.54	3225.3	4240.56	5381.72	6519.14	7315.51	7919.12	8464.31	9662.23	10647.71
Guangxi	2415.6	3132.8	383.44	449.06	518.59	646.6	893.58	1241.83	1497.56	1697.9	1817.25	1903.04	1953.27	2050.14	2231.19
Hainan	57.3	77.13	91.4	102.49	120.51	181.71	258.08	330.95	364.17	389.53	409.86	438.92	471.23	518.48	545.96
Chongqing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1179.09	1350.1	1429.26	1479.71	1589.34	1749.77
Sichuan	n/a	n/a	n/a	n/a	1382.96	1624.51	2096.48	2777.88	3534	2985.15	3320.11	3580.26	3711.61	4010.25	4421.76
Guizhou	165.5	211.79	235.84	260.14	295.9	339.91	416.07	521.17	630.07	713.7	792.98	841.88	911.86	993.53	1084.9
Yunnan	2290.3	301.09	363.05	451.67	517.41	618.69	779.21	973.97	1206.68	1491.62	1644.23	1793.9	1855.74	1955.09	2074.71
Xizhang	17.71	20.25	21.86	27.7	30.53	33.29	37.28	45.84	55.98	64.76	76.98	91.18	105.61	117.46	138.73
Shaanxi	244.96	314.48	358.37	404.3	466.93	540.52	671.37	816.58	1000.03	1175.38	1300.03	1381.53	1487.61	1660.92	1844.27
Gansu	159.52	191.84	216.84	242.8	271.39	317.79	372.24	451.66	553.35	714.18	781.34	869.75	931.98	983.36	1072.51
Qinghai	43.38	54.96	60.37	69.94	75.1	87.52	109.62	138.24	165.31	183.57	202.05	220.16	238.39	263.59	300.95
Ningxia	39.63	50.29	59.21	64.84	71.78	83.14	103.82	133.97	169.75	193.62	210.92	227.46	241.49	265.57	298.38
Xinjiang	148.51	192.72	217.42	274.01	335.91	402.31	505.63	673.68	825.11	912.15	1050.14	1116.67	1168.55	1364.36	1485.48

<Appendix 9> Total Fixed Asset Investment of China's Provinces
(100 Million Yuan RMB)

Provinces	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	418.53	653.71	864.85	889.66	989.71	1124.62	1171.16	1280.46	1513.32
Tianjin	219.41	332.52	396.55	438.51	500.67	571.05	576.45	610.94	705
Hebei	471.88	671.39	907.75	1182.59	1425.98	1591.76	1770.47	1816.79	1912.53
Shanxi	235.07	276.16	270.64	311.77	376.74	454.93	477.57	548.16	663.58
Inner Mongolia	207.67	229.75	251.32	262.05	278.65	316.76	348.22	423.64	503.63
Liaoning	737.34	897.59	865.49	881.67	986.62	1057.7	1119.47	1267.68	1421.19
Jilin	264.12	302.21	320.27	362.99	361.17	431.78	500.02	603.51	701.7
Heilongjiang	338.59	412.27	517.62	568.64	669.86	770.05	751.66	832.64	963.58
Shanghai	708.14	1201.62	1597.89	1996.88	1981.48	1966.38	1855.76	1869.38	2004.64
Jiangsu	1155.52	1330.74	1764.76	1963.06	2174.97	2450.37	2441.88	2569.97	2823.2
Zhejiang	803.74	1115.51	1482.62	1611.44	1608.56	1801.74	1958.05	2349.95	2834.94
Anhui	294.02	375.57	476.1	609.79	677.85	722.61	703.45	803.97	893.37
Fujian	399.33	564.35	683.02	779.76	880.88	1053.01	1084.66	1112.2	1172.91
Jiangxi	201.29	246.03	282.54	317.32	329.45	400.6	454.44	516.08	631.84
Shandong	950.68	1129.07	1308.62	1528.5	1742.53	1935.58	2220.57	2531.1	2788.68
Henan	475.17	628.82	783.14	1039.41	1209.5	1289.7	1206.83	1377.74	1544.06
Hubei	392.74	578.78	785.09	935.22	1023.5	1156.76	1239.14	1339.2	1486.55
Hunan	344.38	455.02	523	684.14	667.39	796.89	883.94	1012.24	1174.3
Guangdong	1857.04	2416.56	2315.83	2363.18	2291.05	2644.13	2937.02	3145.13	3484.43
Guangxi	280.26	391.66	403.15	476.42	479.8	562.32	578.76	583.34	655.63
Hainan	201.82	218.77	182.08	181.01	161.48	173.37	194.78	198.87	213.32
Chongqing	n/a	n/a	n/a	n/a	375.57	492.97	525.26	572.59	697.03
Sichuan	591.34	744.45	901.42	1113.17	926.34	1145.33	1224.4	1418.04	1617.52
Guizhou	101.61	136.27	161.79	193.55	222.3	278.41	311.93	396.98	536.01
Yunnan	262.99	317.47	390.45	456.27	538.6	660.43	663.97	683.96	738.45
Xizhang	18.26	20.9	35.13	29.43	34.5	41.26	53.56	64.05	83.26
Shaanxi	222.42	249.57	310.18	343.71	393.16	517.57	587.79	653.67	773.43
Gansu	101.51	134.88	145.76	206.95	242.08	301.45	355.51	395.4	460.37
Qinghai	46.29	47.64	53.11	77.67	88.44	108.78	117.15	151.14	196.35
Ningxia	45.47	53.73	62.17	72.1	85.84	106.75	128.1	157.52	191.08
Xingjiang	261.65	293.57	331.97	388.67	446.99	514.77	526.65	610.39	706

<Appendix 10> Fixed Asset Investment from Hong Kong,
Macao and Taiwan

(100 Million Yuan RMB)

Provinces	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	2.07	10.86	52.51	79.78	97.77	169.6	132.65	124.19	125.02
Tianjin	0.85	6.5	19.34	17.34	12.49	22.53	18.12	15.02	60.08
Hebei	3.16	11.1	10.18	15.16	11.43	25.63	17.64	27.88	27.68
Shanxi	1.82	0.44	0.53	0.93	0.95	4.14	9.87	11.16	13.29
Inner Mongolia	0.22	0.89	0.79	0.17	0.16	0.97	1.12	1.35	8.19
Liaoning	7.62	17.22	22.25	31.18	47.76	41.23	32.54	72.99	65.83
Jilin	0.33	0.37	0.28	2.85	2.07	17.2	12.29	17.74	7.73
Heilongjiang	3.94	8.8	8.89	7.21	7.42	12.12	8.47	7.56	6.88
Shanghai	15.86	10.68	31.16	53.4	107	118.66	119.52	86.36	84.25
Jiangsu	24.54	36.2	62.97	71.25	71.34	94.6	75.32	88.16	78.76
Zhejiang	14	18.94	28.64	30.43	27.94	49.43	38.02	45.14	74.41
Anhui	2.28	1.69	2.39	6.33	3.42	13.36	9.52	11.67	12.25
Fujian	26.57	42.54	61.7	91.54	118.82	162.4	132.28	130.63	179.06
Jiangxi	2.09	2.44	2.31	3.74	5.37	10	7.23	8.64	11.73
Shandong	13.39	37.41	37.55	23.73	23.86	29.63	24.55	38.62	68
Henan	4.26	16.61	35.85	29.46	21.25	35.03	27.71	26.32	41.33
Hubei	5.98	11.09	33.6	43.77	54.78	54.99	34.34	36.77	36.9
Hunan	2.42	4.98	7.46	10.95	8.37	13.65	11.91	13.69	20.18
Guangdong	75.19	156.8	197.93	259.94	265.09	356.79	400.4	416.34	553.73
Guangxi	5.19	4.56	9.37	10.27	7.38	14.58	13.89	13.49	17.91
Hainan	5.84	15.81	13.95	10.12	6.49	9.65	6.71	12.14	10.89
Chongqing	na	na	na	na	17.5	24.55	20.62	19.11	26.25
Sichuan	7.29	5.66	18.32	19.69	5.09	24.94	22.2	23.66	26.26
Guizhou	0.43	0.39	0.57	0.85	0.63	4.23	3.46	2.9	3.47
Yunnan	1.94	4.77	5	5.59	6.29	9.79	14.18	13.25	7.07
Xizhang	na	na	na	na	na	na	na	0.18	0.13
Shanxi	0.4	0.53	2.45	1.9	1	6.43	7.6	6.7	9.65
Gansu	0.01	0.92	1.48	2.96	2.48	3.88	7.01	3.53	2.44
Qinghai	0.01	0.18	0.11	1.2	0.31	1.35	1.88	0.63	0.43
Ningxia	0.04	0.27	0.47	0.58	0.74	0.48	0.55	0.28	0.85
Xingjiang	0.01	1.38	5.59	3.15	1.9	2.36	6.49	16.97	2.65

<Appendix 11> Foreign Fixed Asset Investments Without Hong Kong,
Macao and Taiwan

(100 Million Yuan RMB)

Provinces	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	24.42	65.3	185.9	154.35	160.71	80.92	65.4	64.86	63.47
Tianjin	18.9	31.2	44.32	55.08	101.4	111.16	57.21	81.04	110.44
Hebei	18.43	31.5	46.84	57.8	78.31	58.61	61.33	54.03	34.73
Shanxi	3.04	4.9	7.43	6.24	19.07	26.7	37.33	32.05	25.24
Inner Mongolia	4.22	5.36	4.39	2.99	2.52	3.41	1.04	2.74	1.35
Liaoning	73.39	97.45	90.94	88.58	98.97	62.23	51.07	53.65	63.98
Jilin	8.16	33.97	40.33	35.15	43.46	21.54	13.34	18.04	24.76
Heilongjiang	1.81	7.08	7.79	17.5	22.51	6.59	4.04	5.84	8.19
Shanghai	45.75	91.1	177.13	286.77	260.5	287.69	248.18	220.32	248.81
Jiangsu	42.1	88.25	169.47	246.73	288.78	353.01	271.4	199.17	205.06
Zhejiang	23.44	51.3	76.76	111.59	119.06	80.99	27.94	49.05	71.65
Anhui	5.18	11.53	19.28	21.2	37.16	22.28	44.68	35.3	21.29
Fujian	19.92	69.33	92.99	108.27	101.28	77.06	101.62	125.5	90.76
Jiangxi	2.46	7.93	9.48	9.15	7.17	7.66	9.35	9.74	9.43
Shandong	28.25	65.2	79.62	108.08	106.78	106.01	67.96	63.7	92.4
Henan	12.09	26.27	27.39	34.28	35.35	21.83	13.83	13.39	21.73
Hubei	16.48	49.38	58.62	72.06	74.66	60.59	27.08	23.7	26.82
Hunan	7.17	10.37	23.47	21.38	23.33	10.7	13	24.72	17.54
Guangdong	134.48	413.03	254.89	269.78	243.86	139.11	214.33	140.71	196.41
Guangxi	20.36	31.72	31.49	24.28	28.09	28.76	28	14.75	10.19
Hainan	9.61	24.21	38.5	43.5	20.51	16.05	16.84	12.23	5.62
Chongqing	n/a	n/a	n/a	n/a	15.46	15.66	14.7	12.86	17.04
Sichuan	10.98	32.97	26.81	47.88	30.07	12.93	21.78	27.42	25.07
Guizhou	0.88	2.42	5.39	6.25	7.96	4.22	2.93	3.25	4.09
Yunnan	4.21	10.05	13	18.57	11.61	8.88	4.99	8.52	3.76
Xizhang	0.02	n/a	n/a	n/a	n/a	0.3	n/a	0.02	0.6
Shaanxi	5.6	5.82	11.03	8.08	5.16	7.17	5.33	7.71	6.44
Gansu	2.59	5.76	4.15	14.27	9.03	5.75	4.58	4.06	2.64
Qinghai	0.02	0.07	0.02	0.47	0.78	1.05	0.82	1.62	1.61
Ningxia	0.21	1.32	1.35	2.09	0.58	0.77	2.69	1.71	1.12
Xinjiang	11.86	5.57	6.52	4.23	1.79	0.32	0.61	1.53	3.18

<Appendix 12> Foreign Fixed Asset Investments With Hong Kong,
Macao and Taiwan

(100 Million Yuan RMB)

Provinces	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	26.49	76.16	238.41	234.13	258.48	250.52	198.05	189.05	188.49
Tianjin	19.75	37.7	63.66	72.42	113.89	133.69	75.33	96.06	170.52
Hebei	21.59	42.6	57.02	72.96	89.74	84.24	78.97	81.91	62.41
Shanxi	4.86	5.34	7.96	7.17	20.02	30.84	47.2	43.21	38.53
Inner Mongolia	4.44	6.25	5.18	3.16	2.68	4.38	2.16	4.09	9.54
Liaoning	81.01	114.67	113.19	119.76	146.73	103.46	83.61	126.64	129.81
Jilin	8.49	34.34	40.61	38	45.53	38.74	25.63	35.78	32.49
Heilongjiang	5.75	15.88	16.68	24.71	29.93	18.71	12.51	13.4	15.07
Shanghai	61.61	101.78	208.29	340.17	367.5	406.35	367.7	306.68	333.06
Jiangsu	66.64	124.45	232.44	317.98	360.12	447.61	346.72	287.33	283.82
Zhejiang	37.44	70.24	105.4	142.02	147	130.42	65.96	94.19	146.06
Anhui	7.46	13.22	21.67	27.53	40.58	35.64	54.2	46.97	33.54
Fujian	46.49	111.87	154.69	199.81	220.1	239.46	233.9	256.13	269.82
Jiangxi	4.55	10.37	11.79	12.89	12.54	17.66	16.58	18.38	21.16
Shandong	41.64	102.61	117.17	131.81	130.64	135.64	92.51	102.32	160.4
Henan	16.35	42.88	63.24	63.74	56.6	56.86	41.54	39.71	63.06
Hubei	22.46	60.47	92.22	115.83	129.44	115.58	61.42	60.47	63.72
Hunan	9.59	15.35	30.93	32.33	31.7	24.35	24.91	38.41	37.72
Guangdong	209.67	569.83	452.82	529.72	508.95	495.9	614.73	557.05	750.14
Guangxi	25.55	36.28	40.86	34.55	35.47	43.34	41.89	28.24	28.1
Hainan	15.45	40.02	52.45	53.62	27	25.7	23.55	24.37	16.51
Chongqing	n/a	n/a	n/a	n/a	32.96	40.21	35.32	31.97	43.29
Sichuan	18.27	38.63	45.13	67.57	35.16	37.87	43.98	51.08	51.33
Guizhou	1.31	2.81	5.96	7.1	8.59	8.45	6.39	6.15	7.56
Yunnan	6.15	14.82	18	24.16	17.9	18.67	19.17	21.77	10.83
Xizhang	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.73
Shaanxi	6	6.35	13.48	9.98	6.16	13.6	12.93	14.41	16.09
Gansu	2.6	6.68	5.63	17.23	11.51	9.63	11.59	7.59	5.08
Qinghai	0.03	0.25	0.13	1.67	1.09	2.4	2.7	2.25	2.04
Ningxia	0.25	1.59	1.82	2.67	1.32	1.25	3.24	1.99	1.97
Xinjiang	11.87	6.95	12.11	7.38	3.69	2.68	7.1	18.5	5.83

<Appendix 13> Per Capita GDP of China's Provinces

(Yuan / Person)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	3336	4124	4509	4878	5781	6805	8240	10265	13073	15044	16735	18482	19846	22460	25523
Tianjin	2682	3117	3353	3621	3944	4696	6075	8164	10308	12270	13796	14808	15976	17993	20154
Hebei	921	1219	1409	1465	1545	1843	2682	3376	4444	5345	6079	6525	6932	7663	8362
Shan xi	n/a	1168	1367	1528	1467	1744	2352	2819	3569	4220	4736	5040	4727	5137	5460
Inner Mongolia	1025	1291	1377	1478	1642	1906	2382	3013	3639	4259	4691	5068	5350	5872	6463
Liaoning	1917	2285	2574	2698	3027	3693	5015	6103	6880	7730	8525	9333	10086	11226	12041
Jilin	1269	1559	1635	1746	1718	2071	2868	3703	4414	5163	5504	5916	6341	6847	7640
Heilongjiang	1335	1602	1808	2028	2099	2433	2343	4427	5465	6468	7243	7544	7660	8562	9349
Shanghai	4396	5161	5489	5910	6675	8652	11700	15204	18943	22275	25750	28253	30805	34547	37382
Jiangsu	1462	1891	2038	2103	2143	2858	4308	5785	7299	8447	9344	10021	10665	11773	12922
Zhejiang	1470	1842	2009	2122	2310	2850	4431	6149	8075	9455	10515	11247	12037	13461	14655
Anhui	842	1026	1136	1182	1052	1253	1672	2521	3357	3881	4390	4576	4707	4867	5221
Fujian	999	1349	1589	1763	1803	2264	3649	5386	6833	8136	9258	10369	10797	11601	12362
Jiangxi	729	891	1013	1134	1212	1439	1835	2376	2984	3715	4155	4484	4661	4851	5221
Shandong	1131	1395	1595	1815	1876	2307	3222	4473	5758	6834	7590	8120	8673	9555	10465

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Henan	756	910	1012	1091	1141	1377	1867	2475	3313	4032	4430	4712	4894	5444	5924
Hubei	1031	1228	1383	1556	1584	1827	2565	3341	4162	5122	5899	6300	6514	7188	7813
Hunan	818	999	1074	1288	1280	1487	2053	2701	3470	4130	4643	4953	5105	5639	6054
Guangdong	n/a	n/a	n/a	n/a	2823	3575	4938	6380	7973	9513	10428	11143	11728	12885	13730
Guangxi	607	770	927	1066	1058	1318	2031	2772	3543	4081	4356	4076	4148	4319	4668
Hainan	939	1241	1444	1589	1645	2126	3815	4820	5225	5500	5698	6022	6383	6894	7135
Chongqin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4452	4684	4826	5157	5654
Si chuan	702	861	960	1134	1180	1356	1911	2516	3177	3763	4029	4339	4452	4784	5250
Guizhou	546	683	750	810	890	1009	1034	1553	1853	2093	2215	2342	2475	2662	2895
Yunnan	653	845	1003	1224	1147	1334	2006	2490	3044	3715	4042	4355	4452	4637	4866
Xizhang	863	964	1021	1276	1388	1486	1642	1984	2392	2732	3194	3716	4262	4559	5307
Shaanxi	794	1004	1124	1241	1292	1458	1041	2344	2843	3313	3707	3834	4101	4549	5024
Gansu	764	905	1007	1099	1133	1314	1600	1925	2288	2901	3137	3456	3668	3838	4163
Qinghai	1018	1260	1365	1558	1592	1821	2337	2910	3430	3748	4066	4367	4662	5087	5735
Ningxia	922	1143	1317	1393	1451	1635	2123	2685	3328	3731	4025	4270	4473	4839	5340
Xingjiang	n/a	n/a	n/a	n/a	2047	2458	2980	3953	4764	5167	5904	6229	6470	7470	7913

<Appendix 14> Population of China's Provinces at the end of 2002

(10 thousand persons)

Provinces	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Beijing	1081	1086	1086	1094	1102	1112	1125	1251	1259	1240	1246	1257	1382	1383	1423
Tianjin	n/a	n/a	884	909	920	928	935	942	948	953	957	959	1001	1004	1007
Hebei	5795	5881	6159	6220	6275	6334	6388	6437	6484	6525	6569	6614	6744	6699	6735
Shanxi	2807	2853	2899	2942	2979	3012	3045	3077	3109	3141	3172	3204	3297	3272	3294
Inner Mongolia	2094	2122	2163	2184	2207	2232	2260	2284	2307	2326	2345	2362	2376	2377	2379
Liaoning	n/a	n/a	3967	3990	4016	4042	4067	4092	4116	4138	4157	4171	4238	4194	4203
Jilin	n/a	n/a	2483	2509	2532	2555	2574	2592	2610	2628	2644	2658	2728	2691	2699
Heilongjiang	3466	3510	3543	3575	3608	3640	3672	3701	3728	3751	3773	3792	3689	3811	3813
Shanghai	n/a	n/a	1337	1340	1345	1349	1356	1415	1419	1457	1464	1474	1674	1614	1625
Jiangsu	6438	6536	6767	6844	6911	6967	7021	7066	7110	7148	7182	7213	7438	7355	7381
Zhejiang	n/a	n/a	4168	4202	4236	4266	4294	4319	4343	4435	4456	4475	4677	4613	4647
Anhui	n/a	n/a	5675	5761	5834	5897	5955	6013	6070	6127	6184	6237	5986	6328	6338
Fujian	n/a	n/a	3037	3079	3116	3150	3183	3237	3261	3282	3299	3316	3471	3440	3466
Jiangxi	3684	3746	3810	3865	3913	3966	4015	4063	4105	4150	4191	4231	4140	4186	4222
Shandong	8009	8181	8493	8570	8610	8642	8671	8705	8738	8785	8838	8883	9079	9041	9082

Provinces	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Henan	8317	8491	8649	8763	8861	8949	9027	9100	9172	9243	9315	9387	9256	9555	9613
Hubei	5185	5259	5439	5512	5580	5653	5719	5772	5825	5873	5907	5938	6028	5975	5988
Hunan	n/a	n/a	6128	6209	6267	6311	6355	6392	6428	6465	6502	6532	6440	6596	6629
Guangdong	n/a	n/a	6346	6439	6525	6607	6689	6868	6961	7051	7143	7270	8642	7783	7859
Guangxi	4088	4150	4261	4324	4380	4438	4493	4543	4589	4633	4675	4713	4489	4788	4822
Hainan	n/a	n/a	663	674	686	701	711	724	734	743	753	762	787	796	803
Chongqing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3042	3060	3075	3090	3097	3107
Sichuan	n/a	n/a	10804	10897	10998	11104	11214	11325	11430	8430	8493	8550	8329	8640	8673
Guizhou	3127	3171	3268	3315	3361	3409	3458	3508	3555	3606	3658	3710	3525	3799	3837
Yunnan	3594	3648	3731	3782	3832	3885	3939	3990	4042	4094	4144	4192	4288	4287	4333
Xizhang	212.3	215.9	222	226	228	232	236	240	244	248	252	256	262	263	267
Shaanxi	3140	3198	3316	3363	3405	3443	3481	3514	3543	3570	3596	3618	3605	3659	3674
Gansu	2148	2185	2255	2285	2314	2345	2378	2438	2467	2494	2519	2543	2562	2575	2593
Qinghai	434.2	440.2	448	454	461	467	474	481	488	496	503	510	518	523	529
Ningxia	n/a	n/a	470	480	487	495	504	513	521	530	538	543	562	563	572
Xingjiang	1426	1454	1529	1555	1581	1605	1632	1661	1689	1718	1747	1774	1925	1876	1905

<Appendix 15> Number of Enrollment Students in Institute of High Education of
China's Provinces at the end of 2002

(Person)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	135974	143546	141562	139914	136940	139978	158906	175203	182173	190033	196082	212984	235140	280282	336484
Tianjin	50657	53071	52804	51039	49898	52127	60247	66672	68080	71354	73830	78651	90450	119117	153998
Hebei	69242	73047	75051	76018	74349	84083	104287	120297	126290	126645	135974	144383	176702	252571	350518
Shanxi	49121	49450	51203	51309	51516	55717	62156	66417	67420	68842	71138	76128	94120	125023	165034
Inner Mongolia	30654	32634	33112	32175	31107	31779	37290	38606	36715	38191	39474	42470	49732	71868	99613
Liaoning	113832	120510	122543	123314	124777	134671	155554	171284	179412	182684	188159	199223	235819	307931	372336
Jilin	68695	72933	73125	72806	72536	75686	86261	95242	100785	105026	110167	117892	139595	181019	217849
Heilongjiang	74678	78879	79224	79908	79340	85149	96343	108722	113523	116379	115767	125140	157063	210146	271435
Shanghai	122529	128163	126091	121251	116925	119532	131034	140396	144082	147926	154073	165123	186307	226798	279966
Jiangsu	140228	147705	147915	146894	144734	152716	180173	201534	208620	220575	239074	265953	329825	451844	585528
Zhejiang	60072	60419	61045	60327	59822	62226	73586	87428	92857	96480	102302	113543	138564	192371	293078
Anhui	61161	63139	64492	62448	61986	65947	80951	87088	86039	89414	96006	104944	133025	191824	252226
Fujian	54102	57059	56787	55624	54243	57179	64065	69255	71686	73401	78082	85147	102589	137859	167377
Jiangxi	52055	52152	53402	56608	56383	59294	70537	77976	81999	84592	88293	94103	110873	148589	196455
Shandong	95891	101281	103928	105822	107093	130188	151758	156879	160398	169184	176094	180795	213679	325317	449360

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Henan	75747	79882	80119	80372	81790	89496	104367	117053	122388	127948	136120	146365	185486	273404	369149
Hubei	124116	130048	130386	130355	129889	137168	156023	170128	182703	189909	196771	210119	257875	357728	453277
Hunan	83364	87297	88833	88210	88626	95389	111086	123053	130363	135759	143654	156665	193553	265849	331301
Guangdong	92778	97224	100393	95929	92655	97432	116757	137458	151788	164017	174740	185047	220810	306019	381926
Guangxi	34523	37524	37757	37762	36868	42026	50951	57945	60032	63528	70561	77483	90286	123729	151604
Hainan	n/a	9133	9475	7652	7631	8498	10232	11719	12041	12452	12783	13532	14569	19193	26050
Chongqing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	71189	83187	96569	126279	161648
Sichuan	133752	140760	140361	141007	141329	150139	177888	198407	200862	208435	150077	151905	180256	245648	316701
Guizhou	25975	27264	27636	26970	25741	26685	29305	32328	34676	35747	38472	42554	56454	79833	108159
Yunnan	41086	44985	45114	43525	43095	45357	49559	51331	51427	54043	57439	62368	73902	95893	119039
Xizhang	1801	1736	1973	2025	1961	2239	2813	3239	3878	3412	3200	3447	4021	5475	6793
Shaanxi	91792	97955	98647	95417	94300	100694	117307	126872	128285	134868	139308	148879	179447	244723	313718
Gansu	30985	33039	33186	32805	33048	34591	40514	45169	45480	47578	50678	54014	62637	82577	110898
Qinghai	6847	7012	6408	6202	6037	6315	6906	7170	7332	7780	8202	8691	9347	13485	17918
Ningxia	7317	7673	7878	7992	7898	8475	9604	10502	10686	10484	10958	11312	13121	17463	23154
Xinjiang	29801	30403	31661	31015	31145	33600	39107	43266	44409	44393	45695	46717	54058	81043	108066

<Appendix 16> Number of Enrollment Students in Secondary School of
China's Provinces at the end of 2002

(10 thousand persons)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	52.27	46.93	43.33	40.91	43.22	47.65	53.22	58.38	62.82	64.93	62.62	60.99	63.49	69.14	72.01
Tianjin	37.51	35.4	33.57	34.57	36.72	38.15	38.91	41.04	45.63	49.36	50.33	52.31	54.27	57.06	59.24
Hebei	243.69	225.44	207.98	207.61	222.21	239.26	247.76	273.6	310.24	350.09	389.35	416.08	447.43	481.75	501.76
Shanxi	163.76	161.17	149	145.08	143.36	142.26	138.44	142.52	150.97	161.33	170.09	177.4	186.86	199.75	214.31
Inner Mongolia	116.54	112.7	107.78	106.62	106.13	104.81	99.01	103.06	109.35	113.86	116.02	117.9	122.2	130.73	139.38
Liaoning	204.88	196.22	183.04	181.09	188.77	196.95	191.16	192.21	200.83	202.98	195.02	188.49	196.17	216.7	232.34
Jilin	133.45	129.77	120.18	119.57	124.02	129.8	129.46	126.64	128.74	128.71	129	127.89	133.68	143.12	148.81
Heilongjiang	206.3	199.1	185	180.1	179	176.1	166.4	168.5	179.1	188.6	198.1	215.2	235.65	248.74	252.06
Shanghai	48.21	45.68	46.1	48.31	51.24	54.77	57.69	65.56	72.4	76.23	74.43	73.85	77.46	80.35	81.08
Jiangsu	281.17	272.97	274.52	281.97	288.64	294.64	293.98	304.66	316.75	323.55	320.69	324.24	340.89	373.65	415.11
Zhejiang	182.95	169.74	163.34	169.62	180.75	188.38	185.02	194.02	210.54	223.65	222.74	217.67	228.15	249.55	263
Anhui	226.63	222.55	216.19	218.18	223.38	227.61	231.05	249.43	281.53	297.28	310.23	322.41	339.85	358.32	372.66
Fujian	118.32	107.47	100.64	104.85	113.13	123.36	127.97	136.21	155.25	181.85	207.36	220.05	228.14	233.5	238.3
Jiangxi	178.35	177.62	175.42	181.06	186.26	186.21	182.8	182.66	193.27	208.63	223.59	234.87	246.84	259.22	273.28
Shandong	379.54	373.53	363.74	367.3	372.98	382.49	395.28	427.15	470.46	512.22	541.38	571.54	620.43	678.6	702.18

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Heran	373.51	362.64	349.05	352.56	357.66	359.78	362.96	384.8	417.86	454.48	480.21	512.51	568.86	638.15	683.39
Hubei	244.84	226.37	209.9	211.56	219.7	227.32	227.5	236.89	247.59	262.67	280.49	298.16	318.09	350.93	382.47
Hunan	267.17	251.88	249.62	253.78	257.03	252.87	250.45	265.35	285.41	305.22	323.24	336.23	356.05	391.73	425.59
Guangdong	252.6	244.23	235.73	234.03	238.28	255.02	277.19	307.38	339.46	373.19	400.85	423.61	443.91	460.69	489.7
Guangxi	130.63	131.43	131.91	140.88	149.08	159.83	164.11	176.69	194.05	216.35	235.28	252.37	267.02	285.63	288.69
Hainan	32.57	30.33	26.42	25.2	24.76	26.17	24.71	29.57	31.71	34.28	36.75	38.35	41.24	43.58	44.61
Chongqin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	101.27	100.29	108.37	128.26	147.79	154.03
Sichuan	291.08	286.61	282.35	289.2	285.35	272.46	248.15	256.2	270.55	276.57	274.82	290.89	336.46	391.98	428.27
Guizhou	102.35	98.63	93.31	96.54	100.23	103.99	100.55	103.08	108.43	113.47	121.54	127.1	138.63	157.2	184.6
Yunnan	117.35	119.38	119.53	123.95	128.84	131.66	126.79	124.27	127.25	133.43	142.31	152.15	167.44	185.97	200.46
Xizhang	2.39	2.34	2.32	2.13	2.18	2.33	2.57	2.87	3.27	3.5	3.84	3.98	4.42	5.52	7.17
Shaamxi	179.71	161.32	135.6	132.64	135.07	137.33	129.62	134.24	145.07	157.21	169.01	183.6	204.41	230.52	254.75
Gansu	111.4	107.48	99.46	96.49	96.01	94.01	87.28	88	91.53	96.64	102.1	107.98	118.59	131.47	145.98
Qinghai	24.86	23.78	21.85	21.75	21.81	21.36	19.84	19.19	19.39	19.29	19.46	19.5	20.72	22.47	24.46
Ningxia	27.32	27.67	27.68	28.44	29.12	28.78	26.77	27.23	27.23	27.82	-	-	29.45	31.83	33.48
Xingjiang	104.64	99.37	89.32	86.31	80.67	78.31	71.86	72.36	74.98	80.39	87.67	95.84	106.24	113.29	122.86

<Appendix 17> Length of Roadway of China's Provinces

(Km)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	9103	9124	9218	9648	10259	10827	11260	11532	11811	12084	12306	12498	12825	13597	13891
Tianjin	3918	3940	3983	4007	4068	4088	4117	4156	4243	4264	4287	4335	8844	8946	9647
Hebei	41577	42299	42992	43640	47464	47034	49195	50496	51630	54146	56009	57263	58162	59152	62615
Shanxi	29428	29875	30193	30784	31040	31554	32210	32693	33644	35911	44043	48560	52807	55408	56993
Inner Mongolia	41984	42800	43080	43274	43396	43704	43789	44202	44753	45744	49992	58430	63824	67346	70408
Liaoning	37134	38049	38648	40109	40195	41548	41638	42763	43434	43753	44041	44483	45020	45547	46603
Jilin	24688	24966	25326	26468	27110	27192	28373	29581	31321	32098	33075	33812	34516	35216	39747
Heilongjiang	46090	46617	47045	49617	47188	47880	48023	48356	48819	48987	49631	49766	49928	50284	62979
Shanghai	2681	2728	2904	3050	3165	3625	3677	3721	3787	3881	3961	4104	4231	4325	6078
Jiangsu	23818	24183	24609	24772	24929	25325	25505	25891	25970	26659	27102	27331	27749	28198	58866
Zhejiang	n/a	n/a	n/a	30195	30700	30281	32249	33170	34121	34924	36127	38533	40266	41605	44005
Anhui	28581	28667	30075	30126	30448	30571	30728	30876	35178	36182	37481	39264	40857	44493	65807
Fujian	38148	39124	40030	41011	41745	41882	43557	44608	46574	47196	47680	48021	50202	51073	53547
Jiangxi	31878	32216	32877	33203	33561	33986	34207	34556	34915	34963	35234	36867	36918	37138	60314
Shandong	37530	38759	39783	40772	41937	43134	46033	50255	54243	57271	59260	64145	67847	70686	71128

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Henan	39713	40622	41170	43150	44199	45049	46487	47704	49707	50907	55015	57172	60330	64453	69041
Hubei	46991	47204	47335	47511	47661	47892	48008	48349	48728	49757	50779	52989	55389	57850	85757
Hunan	56930	57090	57209	57460	57693	58110	58421	58803	59125	59554	59761	60071	60416	60848	66593
Guangdong	53218	53820	54361	54671	55307	55883	61569	75716	84567	89631	91862	92713	95610	102604	104798
Guangxi	33928	35400	35945	36214	36660	37291	38495	39550	40904	42696	45378	51073	51378	52910	54752
Hainan	12794	12816	12903	12902	12922	12937	12937	13015	14808	14897	15246	16920	17124	17401	20667
Chongqin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27045	27210	28086	29252	30654
Si chuan	n/a	n/a	n/a	97155	97234	98920	99342	100002	100724	101646	76066	81646	89318	90875	108724
Guizhou	29823	30445	30716	31157	31404	31889	32092	32398	32487	32700	33211	33604	33973	34643	34617
Yunnan	49879	52534	54732	56536	58123	60045	63086	65578	68236	70279	73821	76957	102405	109560	163953
Xizhang	21695	21695	21834	21842	21944	21842	21842	21842	22391	22391	22455	22455	22475	22503	35537
Shaanxi	37698	37896	37939	37986	38193	38318	38536	39058	39620	40200	41202	42202	43212	44006	45273
Gansu	34187	34354	34613	34708	34776	34822	34875	34984	35194	35338	35594	35865	36212	39344	39844
Qinghai	16578	16675	16686	16732	16769	16854	16963	17061	17223	17383	17640	17936	18268	18679	23328
Ningxia	7704	8106	8106	8200	8200	8200	8301	8324	8554	8738	9048	9487	10015	10171	10899
Xingjiang	25049	25406	25374	25425	25697	26024	27961	28611	30298	31609	32053	32762	33484	34585	80947

<Appendix 18> Length of Railway of China's Provinces

(Km)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	876	876	876	876	876	1018	1020	1020	1020	1067	1069	1069	1141	1140.9	1160.6
Tianjin	-	-	-	3679	3702	470	502	502	503	526	526	527	530	531.2	697.2
Hebei	-	-	-	3659	3599	2978	3183	3230	3228	3603	3616	3624	3619	3631.9	4570.9
Shanxi	2230	2258	2356	2330	2332	2331	2331	2330	2435	2485	2504	2504	2511	2510.8	3050.2
Inner Mongolia	-	-	-	4990	4990	5073	5073	5072	5073	5073	5078	5077	5012	5011.1	6038.2
Liaoning	3539	3558	3558	3702	3758	3563	3558	3557	3568	3568	3569	3558	3558	3556.4	3782.8
Jilin	3482	3488	3488	3472	3473	3473	3473	3487	3480	3480	3480	3474	3476	3474.4	3561.6
Heilongjiang	5020	5121	5124	5395	5316	4988	4942	4943	4943	4943	4948	4948	5013	5013.2	5503.2
Shanghai	245	259	259	259	259	235	247	246	256	256	244	248	260	256.5	256.5
Jiangsu	713	713	713	748	748	744	747	747	747	751	751	757	757	757.1	897.7
Zhejiang	1092	1093	833	846	850	903	903	937	938	938	942	942	795	793.7	1220.8
Anhui	-	-	-	1540	1540	1672	1672	1753	1754	1821	1836	1836	1833	1842.9	2220.4
Fujian	1028	1028	1029	1034	1028	1015	1015	1024	1024	1025	1068	1068	874	873.9	1284.8
Jiangxi	-	-	-	1642	1642	1583	1583	1581	1581	2116	2125	2125	2161	2152.6	2415.3
Shandong	2042	2042	2042	2041	2042	2048	2048	2048	2048	2351	2351	2351	2364	2401.6	2855.4

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Henan	-	-	-	3536	3384	2131	2133	2133	2136	2338	2355	2355	2353	2353.1	3593.9
Hubei	1598	1598	1596	1634	1655	1692	1693	1693	1693	2016	2017	2028	2031	2030.8	2212.5
Hunan	2302	2302	2302	2631	2631	2273	2279	2281	2292	2293	2293	2299	2307	2312.7	2757.9
Guangdong	-	-	-	1287	1366	686	686	682	684	777	782	774	774	693.8	1923.2
Guangxi	-	-	-	2291	2291	1670	1682	219	219	1725	1973	2014	2013	2012.3	2710.7
Hainan	214	214	214	214	214	219	219	1670	1670	219	219	219	219	219	219
Chongqin	-	-	-	-	-	-	-	-	-	-	554	591	591	598	632.6
Si chuan	-	-	-	2725	2684	2877	2877	2881	2881	2881	2327	2289	2290	2333.3	2505.2
Guizhou	1410	1410	1408	1408	1408	1423	1411	1423	1423	1423	1640	1648	1654	1641.7	1643.7
Yunnan	-	-	-	1695	1684	1592	1592	1592	1592	1592	1897	1855	1873	1872.5	1946.3
Xizhang	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shaanxi	2097	2102	2103	2458	2471	1826	1826	1826	1957	1939	1938	1941	1941	2204.6	2873.8
Gansu	-	-	-	1884	1884	2220	2220	2219	2322	2322	2322	2322	2323	2318	2664.8
Qinghai	-	-	-	1095	1095	1095	1095	1095	1095	1095	1095	1092	1092	1091.9	1297
Ningxia	421	421	421	421	421	429	453	459	714	714	712	712	712	716.1	786.6
Xingjiang	-	-	-	1578	1578	1343	1343	1343	1343	1343	1341	1341	1849	2309.9	2774.4

<Appendix 19> Discount Value of Fixed Asset Investment of China's Provinces

(100 Million Yuan RMB)

Provinces	1978	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	10.96	25.38	57.87	78.66	91.62	84.78	178.49	225.57	245.3	304.3	384.94	400.53	430.93	469.68
Tianjin	6.1	17.56	47.65	54.43	67.63	71.73	97.52	137.4	174	184.9	209.05	217.54	269.58	313.01
Hebei	20.81	44.17	98.31	129.76	159.88	187.51	258.96	296.37	397.7	513.9	568.08	651.67	717.61	797.47
Shanxi	13.04	26.09	60.27	76.44	98.87	104.03	108.4	134.58	160.9	176.2	200.09	197.15	213.5	237.78
Inner Mongolia	6.01	20.58	43.72	50.61	60.38	67.32	85.2	101.16	113.4	132	166.54	177.42	172.95	193.66
Liaoning	28.72	68.03	147.37	178.45	210.58	237.74	283.25	339.87	465	523.7	616.74	709.16	776.07	839.64
Jilin	9.68	24.79	57.5	69.15	80.72	91.03	119.47	160.5	185.3	237.6	251.39	269.4	325.76	343.22
Heilongjiang	17.12	51.61	104.86	112.31	156.67	139.92	198.65	276.98	343.1	386.9	411.97	435.87	422.94	550.96
Shanghai	10.6	26.16	92.93	126.62	160.36	158.49	241.31	332.29	364.2	407.7	489.77	580.89	635.73	722.64
Jiangsu	19.98	48.8	186.92	217.55	280.87	331.02	452.89	710.45	771.3	912.2	1034.88	1148.29	1303.16	1488.65
Zhejiang	11.3	35.07	89.08	106.59	137.05	170.63	257.66	299.86	346.7	439.3	487	572.71	767.78	875.99
Anhui	11.38	31.33	74.4	81.92	100.15	141.82	181.58	225.29	280.9	291.3	368.75	398.73	433.07	467.23
Fujian	5.85	18.38	51.27	63.37	79.88	115.61	157.39	233.83	290.3	352.5	397.48	433.03	496	560.82
Jiangxi	8.19	17.82	33.85	44.06	55.87	60.81	97.04	127.74	155.1	209.9	251.6	300.73	351.41	418.62
Shandong	22.72	71.22	182.12	220.78	266.92	385.99	561.55	655.73	827.8	1118.1	1317.45	1374.08	1616.66	1904.35

Provinces	1978	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Henan	16.23	53.62	119.13	141.93	184.36	236.01	301.73	343.01	482.4	554.1	597.37	619.96	708.22	791.61
Hubei	13.7	29.26	97.92	122.35	152.36	137.74	170.66	283.65	369.9	525.5	613.56	685.77	669.88	701.65
Hunan	12.78	28.23	58.88	75.18	100.15	132.9	177.69	240.05	341.6	407.8	415.79	433.88	578.46	600.74
Guangdong	22.36	63.54	172.81	215.25	294.7	397.84	550.53	782.34	1020.1	1126.6	1251.72	1436.78	1641.14	1731.46
Guangxi	7.26	16.09	41.51	50.03	60.53	67.3	86.86	134.5	158.2	187.1	188.03	194.97	215.33	258.06
Hainan	-	-	8.94	10.8	17.5	29.16	34.31	45.86	54.7	64.7	68.01	73.65	83.49	88.64
Chongqin	-	-	-	-	-	-	-	-	-	-	207.25	226.32	261.39	268.91
Si chuan	31.79	67.38	128.66	161.39	226.3	261.74	349.67	437.99	490.1	464.7	574.33	612.28	642.46	734.68
Guizhou	3.94	11.36	29.6	32.63	39.72	45.32	54.11	71.82	81	90.5	98.53	113.6	128.72	160.1
Yunnan	3.42	9.03	36.28	50.57	64.47	87.21	114.54	131.95	199.8	217.3	215.43	283.71	287.11	319.34
Xizhang	£	1.04	2.12	2.3	2.24	2.92	3.85	6.08	6.4	11.4	27.87	24.13	28.85	32.05
Shaanxi	8.02	16.85	48.97	55.01	70.22	90.22	106.74	137.31	155.6	185.2	197.14	241.44	267.26	332.74
Gansu	5.54	14.32	23.67	27.13	38.06	46.65	58.2	70.82	92.3	101.2	108.19	118.06	186.02	192.61
Qinghai	1.52	3.21	9.86	7.38	14.32	14.57	19.37	26.48	25.7	32.3	34.95	38.74	59.91	54.34
Ningxia	1.84	4.36	9.52	10.68	12.84	15.28	18.8	25.79	28.5	33.4	37.46	43.37	49.73	58
Xingjiang	3.08	8.03	26.85	32.75	46.51	64.83	80.46	121.06	154.6	172.8	189.88	195.18	231.3	270.63

<Appendix 20> Number of Total Employee of China's Provinces

(10 thousand persons)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	-	-	-	-	659.3	668.6	659	681.7	669.5	661	661	624.3	621.9	622.1	629.5
Tianjin	-	-	-	-	471.6	472.1	478	490.5	489.7	485	492	427	421.1	406.7	410.5
Hebei	-	-	-	-	3109.8	3179.3	3241	3303.7	3367.3	3391	3415	3382.9	3399.9	3441.2	3379.6
Shanxi	-	-	-	-	1373.7	1402.7	1414	1447.9	1460.4	1478	1483	1429	1434.3	1419.1	1412.9
Inner Mongolia	891	909.7	910.3	924.6	963	979.4	999	1012.1	1024.5	1043	1050	1006.8	1017	1016.6	1013.3
Liaoning	1835.4	1858.6	1874.8	1897.3	1932.6	1954.1	1952	2009.2	2034	2031	2063	1818.2	1796.4	1812.6	1833.4
Jilin	-	-	-	-	1185.9	1224.5	1230	1250.2	1254.5	1258	1237	1127.4	1102.8	1078.9	1057.2
Heilongjiang	1333.3	1358.6	1395	1436.2	1476.1	1477.1	1492	1524.3	1552.4	1567	1659	1723	1679.9	1635	1631
Shanghai	-	-	-	-	773	764.1	740	763.2	768	764	770	670	677.3	673.1	692.4
Jiangsu	-	-	-	-	3720	3729.4	3743	3756.4	3765.4	3748	3746	3635	3595.8	3558.8	3565.4
Zhejiang	-	-	-	-	2595.9	2625.2	2659	2694	2700.7	2702	2700	2651.1	2660.9	2700.5	2772
Anhui	2563.3	2665.9	2723.9	2807.6	2891.2	2982.7	3049	3119.4	3206.8	3246	3322	3311	3312.5	3372.9	3389.7
Fujian	1237.7	1281.1	1301.8	1348.4	1436.5	1489.9	1521	1551.6	1567	1594	1613	1621.9	1630.9	1660.2	1677.8
Jiangxi	-	-	-	-	1844.9	1870.3	1893	2008.4	2059.2	2064	2078	1971.3	1961.3	1935.3	1933.1

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Shandong	3766	3887	3940.3	4043.2	4310.1	4405.1	4473	4546.3	4625.4	4650	4707	4657.2	4698.6	4661.8	4671.6
Henan	-	-	-	-	4274.2	4386.6	4481	4608.9	4696.7	4829	5017	4999.6	5205	5571.7	5516.6
Hubei	-	-	-	-	2556.8	2567	2607	2672.8	2707	2692	2709	2616.3	2572.4	2507.8	2452.5
Hunan	-	-	-	-	3251.5	3308.8	3361	3440.2	3506.1	3547	3591	3498.5	3496.1	3462.1	3438.8
Guangdong	-	-	-	-	3324.9	3397	3480	3569.1	3656.8	3691	3784	3737.4	3760.5	3861	3962.9
Guangxi	1961	2012	2046	2109	2170.8	2217.4	2277	2336.4	2382.5	2417	2452	2470.9	2481.5	2530.4	2543.4
Hainan	280.8	292	298.4	304.6	316.1	321.2	320	335.5	335.3	335	331	320.8	326.2	333.7	339.7
Chongqing	-	-	-	-	-	-	-	-	-	-	1690	1645.1	1639.4	1636.5	1624
Sichuan	-	-	-	-	6075.4	6202.5	6221	6256.8	6335.3	6295	4618	4534.7	4482.3	4435.8	4414.6
Guizhou	1435.9	1501.3	1570.8	1651.8	1701.4	1741.8	1770	1825.6	1857.1	1892	1927	1946.3	1975.9	2045.9	2068.2
Yunnan	-	-	-	-	2021.2	2065.2	2106	2147.3	2186.3	2214	2248	2270.3	2273.4	2295.4	2322.5
Xizhang	107.8	107.2	107.6	107.9	109.7	111	113	112.7	113.7	118	120	118.4	122.2	123.4	124.6
Shaanxi	-	-	-	-	1668.7	1699.6	1718	1746.7	1774.4	1798	1812	1802	1780.9	1812.8	1784.6
Gansu	-	-	-	-	1091.7	1112.7	1131	1151	1159.4	1175	1186	1175.6	1185.6	1182.1	1187.2
Qinghai	-	-	-	-	211.6	216	217	222.9	226	232	235	230.4	241.2	238.6	240.3
Ningxia	190.9	197.4	203.5	211.2	218.7	224.4	230	235.5	243.6	250	260	259.5	270.8	274.4	278
Xinjiang	-	-	-	-	624.2	635.7	646	649.7	662.2	672	691	678.3	669.6	672.5	685.4

<Appendix 21> Number of Employee in the Primary Industries of China's Provinces

(10 thousand persons)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	91.8	88.4	91.1	90.7	90.8	84.6	78	73.9	70.7	72	71	71.2	74.3	72.7	70.6
Tianjin	94.1	91.2	93.5	93.6	94.3	92.5	89	85.6	82.8	82	81	80.9	82.6	80.9	82.2
Hebei	1615.6	1659.6	1739.1	1820.5	1905.3	1874.7	1857	1780.5	1729.3	1635	1634	1649.7	1653.3	1678.2	1675.4
Shanxi	580.9	592	611	632.8	642.8	646.6	642	637.4	636	640	638	644.4	659.1	662.7	662.4
Inner Mongolia	490.3	490	491.3	515.5	537.9	532.3	534	533.3	536.7	547	545	542.6	555.4	553.7	546.4
Liaoning	630.7	625.1	638.2	646	666.3	657.2	631	627.8	632.7	645	664	668.3	675.6	683.3	681.7
Jilin	465.8	511.6	549	564.8	572.4	591.3	578	575.7	561.6	559	552	543.9	544.4	541.6	535.9
Heilongjiang	529.8	522.9	550.5	568.7	565.8	547.8	569	562.3	571.8	566	653	831.7	812.5	808.5	808.3
Shanghai	-	-	-	-	-	72.3	68	68.5	71	71	77	80	93.5	88	86.6
Jiangsu	-	-	-	-	-	1730.4	1657	1621.2	1569.2	1557	1560	1555.7	1529	1502.7	1474.6
Zhejiang	1272	1282.2	1330.7	1358.3	1367	1352.4	1248	1195.7	1154.3	1131	1115	1109.1	1080.1	1021	990.8
Anhui	1784.8	1826.5	1883.1	1943.7	1990.6	2013.1	1961	1922.1	1945.4	1969	1979	2007.3	2007.5	2017.9	1991.1
Fujian	-	-	-	-	-	839	820	796.7	789.8	788	783	787.5	789.9	778.2	768.8
Jiangxi	1098.3	1111.6	1146.4	1193.1	1224.2	1177.2	1089	1127.2	1141.3	1134	1121	1098.6	1082.6	1004.4	997.9

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Shandong	2423	2471	2524	2582.1	2697.2	2644.6	2610	2543.3	2515.7	2488	2511	2498.9	2485.9	2473.7	2444.2
Henan	-	-	-	-	-	2965	2915	2869.3	2819.2	2827	2915	2952	3310.2	3569	3482.5
Hubei	-	-	-	-	-	1512.9	1479	1433.4	1383.4	1349	1318	1284.7	1259.1	1204.8	1186.4
Hunan	-	-	-	-	-	2287.3	2206	2159.5	2153.3	2128	2116	2100.9	2111.5	2104.4	2079.6
Guangdong	1605.1	1607.1	1632.4	1651.7	1645.3	1583.2	1497	1464.2	1370.4	1467	1528	1530.5	1550.7	1588.5	1584.2
Guangxi	1528.6	1548	1574.8	1613.8	1643.2	1627.9	1594	1588.9	1582.5	1599	1609	1623	1622.4	1574.5	1572.9
Hainan	202	207.2	210.2	213	217.7	215	208	204.5	203.5	202	203	197.7	198.8	204.4	204.9
Chongqin	-	-	-	-	-	-	-	-	-	-	967	948	958.9	925.2	887.9
Si chuan	-	-	-	-	-	4332.1	4148	4039.6	3996	3920	2872	2824.4	2747.1	2643.4	2595.8
Guizhou	1115.4	1172.5	1228.6	1292.3	1329.6	1359	1374	1364.9	1368.5	1382	1389	1394.2	1432.9	1377.9	1373.8
Yunnan	1411.1	1454.4	1503.2	1537.8	1588.8	1607	1630	1642.1	1656.2	1666	1678	1684.4	1677.1	1695.9	1710.5
Xizhang	-	-	-	-	-	87.7	88	87.9	87.8	90	91	90.3	92.7	91	89.5
Shaanxi	905	950	973	1010	1054	1069.1	1061	1055.4	1056.1	1053	1053	1055.2	1016.4	1010.2	994
Gansu	-	-	-	-	-	708.4	692	679.5	676.6	681	689	692.5	698.2	706.1	705.3
Qinghai	113.9	115.9	120.4	123.7	127.1	130.6	131	133.7	135.4	140	141	141.1	146.9	145.3	144.3
Ningxia	-	-	-	-	-	138.7	140	141.2	143.5	144	151	152.3	158.5	158.6	157.1
Xingjiang	-	-	-	-	-	375.4	375	370.8	376.5	379	392	391.3	385.2	387.9	388.2

<Appendix 22> Number of Employee in the Secondary Industries of China's Provinces

(10 thousand persons)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	264.1	267.6	266.2	281.6	279.7	279.6	278	275.9	268.5	253	252	220.5	209.3	201.6	210.6
Tianjin	-	-	-	-	-	233.4	235	237.7	237	231	226	177.2	171.7	166.8	161.4
Hebei	653.2	690.3	674.3	680.1	690	722.5	772	832.6	879.2	942	940	884	876.3	874.2	859.1
Shanxi	371	381.9	379.5	382.6	390.8	405.8	419	439.9	435.7	435	424	373.1	363.5	353.4	346.5
Inner Mongolia	188	200.1	199.1	201.4	208.8	218	213	222.8	225	224	213	179.7	172.5	167.4	161.9
Liaoning	770.7	784.2	777.1	778.2	788.5	772	780	773.3	771.7	750	725	523.9	491.9	476.9	461.3
Jilin	313.9	324.9	329.7	334.4	339.2	334.4	344	343.1	335.6	330	316	235.4	223.4	206.3	196.2
Heilongjiang	482.3	496.2	493.2	504.7	530	540.2	523	535.8	529.8	535	512	386.7	375.9	347.3	338.7
Shanghai	-	-	-	-	-	434.5	407	405.4	395	373	352	293	299.8	288.3	288.7
Jiangsu	1213.7	1251	1215.4	1208	1200.4	1220.7	1247	1250.3	1271.9	1247	1219	1104.6	1075.1	1057.3	1071.5
Zhejiang	-	-	-	-	-	723	782	831.1	848.1	849	835	785.1	789.9	833.6	893
Anhui	408.4	438.1	435.5	442	455.7	481.5	501	546.3	574.6	564	554	510.4	509.8	532.4	551.6
Fujian	253.7	269.1	275.5	277.1	300.8	326.7	341	371.1	371	383	399	330.6	390.5	407	420.9
Jiangxi	-	-	-	-	-	351.1	341	365	373.1	369	370	303.8	292.7	279.1	276.1

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Shandong	854	905	903	922.6	958.7	1001.1	1044	1098.6	1159.6	1161	1158	1097.4	1101.1	1101.7	1117.3
Henan	616	659	659	671	689	724	790	864.7	928.7	988	1011	957.8	912.6	977.1	997.3
Hubei	517.8	527.3	514.8	512.5	508.4	526.9	542	574.7	596.5	591	590	511.3	495.3	459.6	443.3
Hunan	-	-	-	-	-	488.2	512	549.8	573	584	582	508.8	509.7	507.5	496.7
Guangdong	-	-	-	-	-	890.1	923	1002.5	1047.2	1034	1047	1004.4	985.5	1011.8	1083.6
Guangxi	193.3	205	202.8	206.5	215.1	234.9	249	268.3	282	283	281	265.5	256.5	257.1	257.3
Hainan	26.8	27	29.3	28.9	30.9	34.1	33	40	39.3	39	38	32.7	31.7	32	32.8
Chongqin	-	-	-	-	-	-	-	-	-	-	291	253.9	249.3	251.1	249.4
Si chuan	574.3	600.2	583.6	578.1	602.8	897.5	957	989	1008.6	1014	717	643.6	633.8	641.9	645.7
Guizhou	180.5	185.8	163.2	169.1	177.7	175.2	162	181.3	185	188	193	180	185.2	189.4	193.6
Yunnan	182.9	183.3	183.9	184.8	191.7	198.1	201	211.4	216.7	219	220	215.2	211.9	210.4	207.9
Xizhang	-	-	-	-	-	4.8	5	4.9	5.2	6	6	6.7	6	7.2	8.1
Shaanxi	311	299	298	302	314	320.5	328	333.1	341.3	341	339	300.1	304	299.1	297.4
Gansu	-	-	-	-	-	187.1	194	203.2	203.2	204	196	177.9	169.3	163.3	159.3
Qinghai	38.1	38.6	38	38.9	39.3	39.5	41	39.8	41	40	40	34.9	33.7	31.9	31.1
Ningxia	35.2	36.7	37.6	38.5	40.1	41.2	43	45.2	46.5	48	49	45.9	46.4	49.7	50.7
Xingjiang	96.8	101.5	101.9	107.4	110.6	112.7	119	122.1	124.3	121	118	105	98.9	92.7	92.2

<Appendix 23> Number of Employee in the Tertiary Industries of China's Provinces

(10 thousand persons)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	242.3	228.1	236.6	254.8	263.5	278.1	286	331.8	330.2	335	338	332.5	338.3	347.9	348.3
Tianjin	-	-	-	-	-	138.6	144	167.1	169.8	172	185	168.8	166.8	159	166.9
Hebei	-	-	-	-	-	464.7	587	690.4	758.7	814	841	848.8	870.3	888.9	845.1
Shanxi	-	-	-	-	-	300.7	331	370.4	388.7	403	422	411.3	411.7	402.9	404
Inner Mongolia	212.7	219.6	219.9	207.7	216.2	210.1	219	255.8	262.6	272	293	284.4	289.1	295.5	305.1
Liaoning	434	449.3	459.5	473.1	483.5	483.1	470	608	629.3	636	674	625.9	628.9	652.3	690.4
Jilin	253	269.7	263.5	270.2	283.1	281.6	263	331.4	357.5	368	370	347.9	335	330.9	325.1
Heilongjiang	321.2	339.5	351.3	362.8	386.1	380.4	337	426.1	450.8	467	494	504.4	491.5	479.1	484
Shanghai	222	231.4	232.4	233.4	244.3	230.9	252	289.2	302.1	321	341	297.3	284	296.8	317.1
Jiangsu	563.1	597.3	589.7	616	629.1	591.2	802	884.9	924.4	943	967	974.5	991.7	998.8	1019.3
Zhejiang	-	-	-	-	-	428.2	578	666.9	698.5	722	751	757	790.9	845.8	888.2
Anhui	370.1	401.3	405.3	421.9	430.8	364.5	535	650.7	686.9	714	789	793.2	795.1	822.6	847
Fujian	242.4	255.6	261.4	284.3	306.1	247.4	315	383.5	406.1	422	432	504	450.5	475	488.1
Jiangxi	230.8	243.3	247	254.8	261.6	266.4	420	516.4	544.7	562	586	569	586	651.8	659.1

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Shandong	489	511	514	538.5	563.4	595.2	772	904.3	950.3	1001	1039	1061	1111.5	1086.3	1110.1
Henan	570	609	565	582	606	566.9	725	875	948.8	1014	1092	1090	982.2	1025.5	1036.9
Hubei	410.5	429.9	437	450.2	458.8	442.7	544	664.8	727	753	801	820.3	818	843.4	822.8
Hunan	-	-	-	-	-	388.4	583	731	779.8	835	893	888.9	874.9	850.2	862.6
Guangdong	-	-	-	-	-	645.7	917	1103	1239.1	1190	1210	1202	1224.3	1260.7	1295.1
Guangxi	239.1	259	268.7	288.2	312.5	260.9	394	478.8	517.8	535	563	582.5	602.6	698.8	713.2
Hainan	51.9	57.7	58.9	62.8	69.5	64	59	91	92.2	94	90	90.4	95.7	97.2	102
Chongqin	-	-	-	-	-	-	-	-	-	-	432	443.2	431.2	460.2	486.7
Si chuan	-	-	-	-	-	659.2	1054	1227.8	1330.9	1361	1028	1067	1101.4	1150.5	1173.1
Guizhou	140	143	179	190.4	194.2	164.2	208	278.8	303.4	323	346	372.1	357.9	478.6	500.9
Yunnan	183.5	189.2	193.6	200.1	209	221.6	255	293.6	313.2	329	350	371	384.4	389.2	404.1
Xizhang	-	-	-	-	-	17.5	17	19.9	20.4	22	23	21.5	23.5	25.2	27
Shaanxi	233	245	258	264	272	265.8	305	358	376.8	404	420	446.7	460.5	503.6	493.2
Gansu	214.8	191.6	206.2	206.7	204.8	157.8	231	268.2	279.4	290	301	305	318.2	312.7	322.6
Qinghai	-	-	-	-	-	41.9	41	49.3	49.7	51	54	54.1	60.6	61.4	64.9
Ningxia	35.9	38.1	40.3	41.2	43	40	43	49.1	53.4	58	60	61.2	65.9	66.1	70.2
Xingjiang	123.3	126	129	131.8	139	144.8	127	157.2	161	172	181	182.2	185.6	191.9	205

<Appendix 24> Average Real Wage of All the Staffs of China's Provinces

(Yuan RMB)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	1787	2107	2312	2653	2877	3402	4510	6523	8144	9579	11019	12451	14054	16350	19155
Tianjin	1651	1975	2262	2438	2724	3118	4003	5364	6501	7643	8238	9946	11056	12480	14308
Hebei	1394	1688	1821	2019	2156	2485	3034	4185	4839	5286	5692	6302	7022	7781	8730
Shanxi	1427	1661	1902	2111	2267	2530	3025	3997	4721	5183	5320	5641	6065	6918	8122
Inner Mongolia	1331	1548	1685	1846	2012	2339	2796	3675	4134	4716	5124	5792	6347	6974	8250
Liaoning	1469	1784	1982	2180	2371	2715	3248	4269	4911	5269	5591	7161	7895	8811	10145
Jilin	1366	1630	1755	1888	2045	2308	2700	3666	4430	5370	5664	6551	7158	7924	8771
Heilongjiang	1357	1578	1739	1850	2070	2295	2661	3375	4145	4564	4889	6238	7094	7835	8910
Shanghai	1893	2276	2608	2917	3375	4273	5646	7405	9279	10663	11425	13580	16641	18531	21781
Jiangsu	1471	1796	1918	2129	2302	2800	3613	4974	5943	6603	7108	8256	9171	10299	11842
Zhejiang	1493	1841	2031	2220	2422	2884	4201	5597	6619	7413	8386	9759	11201	13076	16385
Anhui	1264	1494	1646	1827	1959	2264	2770	3793	4609	5175	5492	6117	6516	6989	7908
Fujian	1381	1647	1930	2162	2420	2777	3477	4889	5857	6684	7559	8531	9490	10584	12013
Jiangxi	1215	1446	1562	1729	1842	2154	2497	3450	4211	4852	5089	5384	6749	7014	8026

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Shandong	1427	1782	1920	2149	2292	2601	3149	4338	5145	5809	6241	6854	7656	8772	10008
Henan	1258	1470	1628	1825	1964	2269	2646	3546	4344	4924	5225	5781	6194	6930	7916
Hubei	1333	1580	1713	1903	2081	2370	2934	4051	4685	5099	5401	6436	6991	7565	8619
Hunan	1458	1713	1862	2038	2177	2526	3142	4104	4797	5100	5326	6558	7269	8128	9623
Guangdong	1681	2250	2678	2929	3358	4027	5322	7117	8250	9127	9698	11032	12245	13823	15682
Guangxi	1478	1760	1859	2049	2262	2634	3368	4468	5105	5397	5542	6208	6776	7651	9075
Hainan	–	1416	1663	1982	2194	2720	3138	4488	5340	5476	5664	6248	6865	7408	8321
Chongqin	–	–	–	–	–	–	–	–	–	–	5502	6433	7182	8020	9523
Si chuan	1340	1597	1796	2011	2194	2458	2960	4028	4645	5156	5626	6577	7249	8323	9934
Guizhou	1337	1547	1694	1947	2090	2406	2840	3870	4475	4917	5206	5775	6595	7468	8991
Yunnan	1439	1715	1880	2130	2328	2686	3751	4514	5149	6231	7037	7667	8276	9231	10537
Xizhang	2612	2824	2927	3178	3355	3448	4067	7115	7382	11087	10098	10987	12962	14976	19144
Shaanxi	1409	1680	1856	2042	2198	2434	2890	3803	4396	4882	5184	6029	6931	7804	9120
Gansu	1680	1949	2207	2407	2566	2902	3418	4796	5493	5882	6182	6809	7427	8560	9949
Qinghai	2041	2305	2438	2632	2752	3098	3800	4976	5753	6513	7091	8011	9081	10050	12906
Ningxia	1593	1829	2041	2252	2408	2722	3128	4270	5079	5635	6073	6822	7392	8590	10442
Xingjiang	1681	1895	2055	2289	2455	2742	3238	4253	5348	5987	6644	7121	7611	8717	10278

<Appendix 25> Consumer Price Index of China's Provinces

(%)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	108.6	120.4	117.2	105.4	111.9	109.9	119	124.9	117.3	111.6	105.3	102.4	100.6	103.5	103.1
Tianjin	106.8	116.9	114.7	103	110.2	111.4	117.6	124	115.3	109	103.1	99.5	98.9	99.6	101.2
Hebei	107.8	118	118.7	100.6	103.4	106.1	113.8	122.6	115.2	107.1	103.5	98.4	98.1	99.7	100.5
Shanxi	107.4	120.9	119.5	102.2	104.8	107.3	115.1	125.2	116.9	107.9	103.1	98.6	99.6	103.9	99.8
Inner Mongolia	107.8	116.3	115.3	102.3	104.6	107.4	114.1	122.9	117.5	107.6	104.5	99.3	99.8	101.3	100.6
Liaoning	108.6	119.3	118.2	103.3	105.6	106.7	115.2	124.3	116.1	107.9	103.1	99.3	98.6	99.9	100
Jilin	107.6	120.3	117.2	104.9	106.8	108	112.6	120.6	115.2	107.2	103.7	99.2	98	98.6	101.3
Heilongjiang	109.4	118	114.6	105.7	107.4	109.2	114.8	121.9	116.1	107.1	104.4	100.4	96.8	98.3	100.8
Shanghai	108.1	120.1	115.9	106.3	110.5	110	120.2	123.9	118.7	109.2	102.8	100	101.5	102.5	100
Jiangsu	109.2	121.9	117.1	103.2	104.9	106.6	118.2	123.2	115.8	109.3	101.7	99.4	98.7	100.1	100.8
Zhejiang	108.8	121.5	118.2	102.1	103.5	107.5	119.8	124.8	116.6	107.9	102.8	99.7	98.8	101	99.8
Anhui	109.1	120.9	117.2	102.7	106.1	108.2	114.7	126.9	114.8	109.9	101.3	100	97.8	100.7	100.5
Fujian	109.4	126.5	118.9	99.3	103.5	105.9	115.4	125.3	115.2	105.9	101.7	99.7	99.1	102.1	98.7
Jiangxi	106.6	121.8	118.5	102.1	102.8	105.7	114.6	126.9	116.9	108.4	102	101	98.6	100.3	99.5

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Shandong	108.2	118.7	117.3	103.4	104.9	106.8	112.7	123.4	117.6	109.6	102.8	99.4	99.3	100.2	101.8
Henan	106.3	119.4	118.7	100.7	102.3	105.4	110.4	125.2	116.5	110.5	103.5	97.5	96.9	99.2	100.7
Hubei	107.5	119	116.3	104.2	104.9	109.6	118.4	125.3	120	109.4	103.2	98.4	97.8	99	100.3
Hunan	109.8	125.6	118.2	100.4	104.4	110.7	116.8	125.3	119	107.7	102.8	100.2	100.5	101.4	99.1
Guangdong	111.2	129.4	122.1	97.5	101.2	107.3	121.6	121.7	114	107	101.9	98.2	98.2	101.4	99.3
Guangxi	108.2	120.8	121.1	101.1	102.8	105.9	122	126	118.4	106.5	100.8	97	97.7	99.7	100.6
Hainan	109.8	128.1	128.4	102.1	103.9	108.7	123.3	126.7	113.5	104.3	100.8	97.3	98.3	101.1	98.5
Chongqin	-	-	-	-	-	100	100	100	100	100	103.1	96.4	99.3	96.7	101.7
Si chuan	107.6	119.9	119.8	103.8	103	107.4	116.8	124.6	118.5	109.3	105.1	99.6	98.5	100.1	102.1
Guizhou	107.1	119.8	118.3	101.8	104.4	107.8	116	122.8	121.4	109.1	103.4	100.1	99.2	99.5	101.8
Yunnan	107	119.8	118.6	102.8	103.1	108.9	121.3	119.2	121.3	108.7	104.3	101.7	99.7	97.9	99.1
Xizhang	-	-	-	-	-	100	113.4	100	100	100	100	100	100	99.9	100.1
Shaanxi	-	-	-	102.4	106.6	110.3	113.1	126.7	119	109.7	104.8	98.4	97.8	99.5	101
Gansu	107.6	119.1	117.9	103.2	104.9	107.2	115.4	123.7	119.8	110.2	102.9	99	97.6	99.5	104
Qinghai	-	-	-	105.1	107.6	108	113.2	121.8	118	110.8	104.8	100.7	99.5	99.5	102.6
Ningxia	107.3	117.1	117.2	107.1	106.3	108.3	114.3	123.1	117.1	106.8	103.8	100	98.7	99.6	101.6
Xingjiang	107.2	114.7	116	105	108.6	108.6	113	126.7	119.7	110.5	103.7	100.2	97.4	99.4	104

<Appendix 26> Fixed Asset Investment Price Index of China's
Provinces

(%)

Province s	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	107.3	112.2	126.6	116.2	113.9	108.2	102.7	100.8	99.9	101	100.6
Tianjin	-	119.4	122.9	111.9	107.6	102.5	100.8	98.9	99.2	99.9	99.7
Hebei	106.8	129.3	124.8	110	106.9	103.9	101.5	97.8	99.4	101.1	99.9
Shanxi	107.8	116.8	124.8	108.3	106.8	104.9	101.5	98.8	99.7	101.8	101.7
Inner Mongolia	107.1	109.3	124.5	106.7	103.9	105.3	99.7	101.7	101.9	101.9	100.8
Liaoning	108.2	120.9	136.4	117.4	104.9	102.2	102.3	99.8	100	101.1	100.4
Jilin	111.9	116.4	128.8	107.3	109.6	102.9	104.4	100.8	102.2	102	101.1
Heilongjiang	107.6	113.5	127.9	109	106.5	103.4	102.7	100.8	99.7	101.5	100.1
Shanghai	107.3	112.9	131.4	108.8	103.1	106.9	100.5	98.4	98.1	100	100.7
Jiangsu	104.5	112.1	138.8	114.6	107.4	103.2	99.2	98.4	98.3	101.1	100.8
Zhejiang	-	-	138.8	112.4	107.2	101.3	99.5	97.6	98.2	100.3	100.4
Anhui	114.8	119.8	123	120.1	106.5	103.4	101.3	100	99.3	101.6	99.5
Fujian	108.6	114.9	134.1	107.3	104.8	104.7	101.1	98	98.5	100.2	99.5
Jiangxi	110.4	110.1	129.8	114.6	107.2	105.8	101.4	102.1	98.6	101.4	98.9
Shandong	112.4	119.4	122.1	115.8	106.6	103.1	100.4	99.2	99.6	102.4	101.4
Henan	109.4	119.8	126.7	106	105.9	103.9	102.9	98.7	98	102.9	100.4
Hubei	108.3	117	127.4	107.9	105	104	102.1	100.5	99.5	101.7	100.1
Hunan	108.1	116.4	129.5	113.5	109.5	104.9	101.8	102.7	100.5	102.3	101.3
Guangdong	-	124.6	-	-	-	-	-	-	-	-	100.2
Guangxi	101.7	117.9	131.2	112.3	103.4	103.6	100.3	99.9	96.1	101.4	102
Hainan	-	-	-	-	-	-	-	-	-	101.8	100.3
Chongqing	-	-	-	-	-	-	101.7	98.7	100.5	102.5	100.8
Sichuan	108.1	113.9	133.2	107.3	101.2	104.8	102.2	97.5	100.5	100.9	101.5
Guizhou	110.6	120.2	126.9	113.1	107.6	105.4	101.4	100	99.4	102.2	100.4
Yunnan	112.1	117.6	135.4	113.6	104	104.3	105.4	101.8	100.7	101.6	101
Xizhang	-	-	-	-	-	-	-	-	-	-	-
Shaanxi	112.9	119.1	129.5	111.7	107.9	107.8	105.3	101.8	101.2	103.6	103.6
Gansu	116.5	117.4	126.2	112.6	109.4	104.9	102.7	100.3	101	103.3	102
Qinghai	-	115.1	125.9	108.4	105.3	103.5	103	98.5	100.1	101.6	100.3
Ningxia	110.4	117.3	123	112.6	109.3	107.4	102.2	102.1	99.7	104.5	101.5
Xinjiang	114.8	116.9	126.5	112.3	106.2	105.6	103.2	102	99	103.6	102.5

<Appendix 27> Amounts of Vehicls of China's Provinces

(Number)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	272290	312174	353315	384451	-	341015	416047	481279	577214	614021	775946	890141	951400	1041200	1144734
Tianjin	100090	102198	113245	124292	140484	160909	203287	232802	267951	323383	364743	400182	436700	478900	447913
Hebei	234158	275527	316161	355487	398152	460722	546167	650506	726375	693954	773356	810332	910800	1041300	1198784
Shanxi	160646	180518	206136	232665	259157	283622	322367	346024	332886	384126	423831	457691	492700	550100	593676
Inner Mongolia	-	106371	116000	127260	141239	155055	177586	187108	221228	210427	254465	291942	332400	361100	433033
Liaoning	268076	306138	335906	370494	407621	461769	529570	615689	639049	634831	675365	665128	877100	786100	855678
Jilin	118871	143784	159830	162738	157714	187978	218706	233085	236147	267955	331436	337106	342800	404200	434844
Heilongjiang	151867	222574	239428	257759	254334	273118	323454	355088	363608	401161	472111	461988	492700	545200	563340
Shanghai	121791	124666	134997	147692	158227	184290	230040	270155	307050	466354	538378	582678	425500	491900	550073
Jiangsu	198320	234085	256419	276813	306701	352832	411269	464548	511903	470927	519930	561129	639200	745100	871191
Zhejiang	112565	127409	147667	153611	171971	201714	245743	294554	359214	374366	415829	478297	575900	680600	855642
Anhui	121105	136780	141032	153655	168866	190109	210164	211063	244639	281047	283630	308044	325700	386700	451711
Fujian	83405	92218	102413	110208	121247	137272	166299	210404	200765	201300	221808	248062	278200	321300	366707
Jiangxi	94415	104645	109118	110432	113032	127850	151137	171186	168979	173524	190167	209206	224000	247000	271555

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Shandong	285984	323755	349759	373210	426608	505569	581741	686549	761992	829585	847457	900443	981300	1123000	1276662
Henan	215966	249182	286114	307914	333841	343214	384016	452291	469337	514094	603453	680875	765900	847300	924636
Hubei	167070	182399	197110	203177	215218	239877	268292	308971	348915	379013	414288	432206	464600	475500	523262
Hunan	148780	169056	180989	187524	203538	229094	265534	321074	352394	374846	381216	415764	427300	461000	504344
Guangdong	271763	324195	366505	402086	476170	607585	824424	982044	1147348	1163339	1234317	1355074	1438000	1729100	1919150
Guangxi	96160	112550	121027	124223	132645	157643	193274	227769	248960	237054	252123	272507	281300	291300	354273
Hainan	23896	27795	30766	32121	36600	49201	66659	86335	91269	98712	95074	90620	95900	90100	82750
Chongqing	-	-	-	-	-	-	-	-	-	157152	173862	165958	188400	211300	254725
Sichuan	-	-	-	-	-	-	-	-	-	-	-	-	687800	764900	853924
Guizhou	73869	85477	92134	94505	101943	106404	115740	139758	144804	165508	180048	196792	217100	240900	283291
Yunnan	106821	123796	136987	150734	167501	192269	238836	291062	333869	388068	471020	532014	578000	600200	682155
Xizang	18322	19626	22731	24821	24966	27071	27969	28158	29403	30543	35044	38044	38700	45000	51633
Shaanxi	104994	114475	131115	140248	150067	165655	189701	214737	245205	265299	269907	303305	340200	364700	453396
Gansu	80858	93312	97449	104930	115292	122259	132374	144075	151377	165022	171173	191241	206800	222000	238657
Qinghai	31892	33898	35904	40771	42626	44481	49475	54468	57582	65689	71865	77561	83500	87100	86001
Ningxia	22632	25336	28107	30982	33363	37445	41557	46419	49888	57556	60073	67516	77900	85400	90711
Xingjiang	100174	108473	115526	122932	137600	157285	187995	213365	236869	250226	285229	313655	351700	369700	401957

<Appendix 28> Average Real Wages of State Owned Firms of
China's Provinces

(Yuan RMB)

Provinces	1995	1996	1997	1998	1999	2000	2001
Beijing	8238	9645	10907	12348	14162	16431	11063
Tianjin	6963	8072	8689	10237	11082	12721	8345
Hebei	5208	5653	6066	6592	7354	8146	5746
Shanxi	5094	5596	5791	5935	6310	7249	4927
Inner Mongolia	4407	4996	5462	5979	6580	7261	5525
Liaoning	5452	5894	6226	7604	8370	9221	6354
Jilin	4803	5765	6017	6814	7368	8121	5765
Heilongjiang	4461	4985	5323	6536	7435	7792	4917
Shanghai	9578	11015	11733	13746	16852	18865	13693
Jiangsu	6441	7186	7745	8872	9855	11109	7543
Zhejiang	6952	7734	8847	10480	12232	14465	12208
Anhui	4994	5600	6039	6628	7092	7471	5106
Fujian	5790	6609	7621	8682	9867	11170	9098
Jiangxi	4427	5050	5303	5473	6930	7249	5149
Shandong	5585	6356	6817	7469	8389	9656	6235
Henan	4677	5265	5643	6204	6594	7453	5726
Hubei	4991	5411	5741	6783	7381	7989	5677
Hunan	5082	5412	5683	6797	7522	8401	6877
Guangdong	8540	9494	10032	11294	12624	14387	9040
Guangxi	5226	5525	5654	6243	6805	7663	6388
Hainan	5230	5365	5468	5970	6586	7146	6207
Chongqing			5828	6732	7541	8390	6614
Sichuan	4952	5476	5996	7044	7771	8909	6575
Guizhou	4672	5125	5434	5819	6695	7594	6218
Yunnan	5286	6419	7237	7882	8449	9422	7203
Xizhang	7572	11519	10524	11462	13566	15566	6236
Shaanxi	4639	5142	5452	6257	7162	8043	5293
Gansu	5747	6131	6445	7129	7806	8916	6728
Qinghai	6161	6946	7623	8511	9664	10744	6101
Ningxia	5273	5819	6206	7020	7654	8913	7166
Xinjiang	5431	6067	6709	7167	7614	8731	8197

<Appendix 30> Added Value of Transportation, Store and Telecommunication of China's Provinces
(100 Million Yuan RMB)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	17.7	19.03	18.72	23.96	29.61	35.49	37.58	61.51	83.55	113.78	135.79	154.45	167.54	190.12	218.53
Tianjin	14.46	16.61	21.3	30.25	26.99	35.66	47.6	66.55	86.14	98.91	113.63	133.16	155.82	178.83	203.98
Hebei	24.03	34.08	41.5	46.43	55.18	65.44	115.34	126.94	179.41	225.65	276.61	313.4	359.85	415.79	498.81
Shanxi	18.7	22.2	22.7	25	26.28	30.66	56.2	70.54	87.98	101.98	111.31	123.8	137.67	146.01	157.2
Inner Mongolia	12.77	14.3	18.63	20.69	25.47	29.91	46.14	53.56	67.12	83.43	98.05	106.05	116.64	142.59	162.79
Liaoning	52.73	64.12	79.59	83.89	65.79	72.99	127.43	160.2	176.86	194.56	224.03	271.96	314.48	350.46	394.5
Jilin	15.15	18.56	22.18	21.11	25.48	31.45	39.98	54.47	70.07	86.27	110.3	109.37	121.77	119.1	129.06
Heilongjiang	26.37	36.28	40.53	34.48	41.72	52.22	56.9	70.7	86.37	104.09	143.16	160.06	169.95	203.13	239.1
Shanghai	34.89	42.08	49.31	62.44	70.34	95.93	119.21	148.44	169.76	204.32	227.88	244.42	271.97	315.42	344.85
Jiangsu	43.25	59.62	62.66	63.64	74.6	91.43	144.11	187.19	253.52	314.91	369.54	435.77	484.86	557.37	644.87
Zhejiang	29.47	36.24	43.39	45.01	45.66	55.63	110.33	147.17	204.59	234.89	288.93	321.75	364.9	428.3	503.68
Anhui	23.99	29.9	30.44	32.36	26.17	32.16	54.65	77.3	86.79	104.46	126.66	152.29	162.94	179.85	195.3
Fujian	19.37	32.5	42.6	48.56	30.61	46.27	101.91	139.04	196.53	245.68	298.72	347.25	392.88	444.13	468.49
Jiangxi	14.54	20.3	21.03	25.18	18.2	21.06	39.43	55.93	73.32	101.64	115.41	145.4	167.74	194.98	216.1
Shandong	47.45	55.5	66.55	81.87	47.38	82.31	151.35	214.36	297.71	364.71	424.36	442.2	490.9	553.17	668.49

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Henan	30.08	42.02	51.18	59.65	51.47	60.2	103.82	113.06	164.03	216.12	268.26	299.63	333.49	391.88	442.07
Hubei	18.94	23.03	33.05	37.25	44	53.43	68.85	87.46	114.92	138.41	167.68	195.56	215.85	256.94	282.45
Hunan	20.13	24.12	26.81	32.27	40.22	48.2	72.47	99.63	132.39	168.88	195.38	216.49	240.4	277.69	294.9
Guangdong	53.2	65.22	79.02	101.61	113.51	140.88	188.95	272.27	353.17	497.68	629.34	688.83	745.15	908.45	1073.81
Guangxi	11.53	15.72	20.44	25.79	21.6	35	61.16	69.52	93.02	111.95	120.06	125.04	145.3	160.87	187.66
Hainan	3.23	4.01	4.76	6.02	6.32	8.52	17.84	22.6	24.54	27.64	31.7	35.03	42.37	46.97	50.76
Chongqing	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	72.43	78.93	87.22	98.19	109.48
Sichuan	24.64	30.45	38.82	48.71	47.97	58.53	87.44	108.94	135.09	164.45	135.78	196.27	220.25	249.39	313.78
Guizhou	7.74	9.78	12.36	11.69	12.57	16.62	24.82	17.13	21.11	24.22	20.72	25.04	51.33	64.59	75.37
Yunnan	11.8	14.57	18.47	19.82	11.82	12.35	30.41	38.72	49.33	66.87	76.02	88.9	107.95	119.77	139.01
Xizhang	-	-	-	-	1.73	1.84	1.82	1.82	2.77	3.54	4.09	5.08	7.37	2.12	4.79
Shaanxi	13.1	19.43	22.52	30.54	31.55	36.94	48.33	60.08	74.1	93.1	106.78	115.42	130.32	156.18	188.91
Gansu	10.67	10.94	11.82	12.01	13.36	14.78	15.03	20.22	25.64	28.4	34.87	39.32	42.89	50.07	56.55
Qinghai	1.47	1.76	1.93	4.1	3.72	4.12	6.47	7.02	8.97	10.56	12.14	13.67	16.21	19.19	23.11
Ningxia	2.46	2.65	3.33	3.49	4.74	5.08	5.19	6.14	8.39	11.69	14.33	16.11	18.03	19.31	22.95
Xinjiang	7.73	11.6	12.9	19.73	19.92	29.16	31.78	42.24	55.34	66.75	75.67	92.03	108.88	121.79	118.6

<Appendix 31> Total Industrial Values of State Owned Enterprises and Controled Shares by
State Owned of China's Provinces

(100 Million Yuan RMB)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	305.99	369.54	435.29	448.71	508.04	584.38	760.27	906.57	1026.46	887.01	984.53	1324.36	1465.62	1742.66	1893.83
Tianjin	281.53	330.74	373.78	387.01	417.97	470.79	627.96	648.06	692.16	587.86	636.94	761.53	732.13	856.86	974.41
Hebei	340.56	407.53	498.37	532.22	613.07	748.69	1020.93	1214.53	1446.68	1344.38	1387.5	1524.72	1618.68	1797.35	1880.67
Shanxi	197.57	243.69	296.49	316.52	358.86	418.12	537.12	627.7	804.69	750.53	752.19	722.25	33.23	837.87	954.25
Inner Mongolia	119.79	144.85	179.77	192.25	223.11	260.55	366.65	418.39	495.64	452.56	464.84	481.56	543.71	598.08	633.25
Liaoning	668.19	778.64	930.45	959.07	1091.36	1292.83	1798.1	1966.44	2188.52	1947.05	2040.1	2100.17	2208.77	2827.94	2928.95
Jilin	258.05	314.54	361.34	380.39	431.13	526.13	671.13	798.65	890.53	870.07	949.86	988.35	1118.62	1377.42	1505.03
Heilongjiang	454.31	527.61	619.3	668.42	767.55	847.37	1019.67	1256.98	1464.34	1387.01	1468.16	1448.78	1560.75	2071.08	1957.2
Shanghai	790.3	895.98	1027.78	1091.76	1234.31	1353.49	1559.46	1802.85	2028.26	1678.62	1649.39	2587.68	2817.44	3205.11	3409.72
Jiangsu	582.51	707.18	851.4	921.67	1014.96	1274.76	1599.45	1959.99	2498.02	2244.68	2214.06	2653	2817.57	3067.86	3111.63
Zhejiang	282.7	345.99	413.69	435.01	515.12	621.58	793.99	936.01	1137.27	947.82	977.17	1245.78	1183.56	1292.72	1194.74
Anhui	242.12	299.01	363.7	375.44	423.61	505.04	698.21	792.4	999.04	954.57	856.2	974.9	996.23	1044.54	1113.23
Fujian	139.55	184.98	226.95	225.17	247.98	290.93	384.57	422.58	503.14	450.37	433.55	679.04	759.05	854.95	873.94
Jiangxi	184.09	234.31	268.07	271.75	306.5	372.58	478.05	582.49	681.29	623.61	644.61	654.35	691.55	737.36	768.53
Shandong	521.66	645.4	812.67	885.01	1011.25	1263.46	1646.52	2012.72	2600.54	2423.77	2513.03	2695.73	2871.61	3486.54	3645.14

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Henan	351.14	437.69	524.58	557.48	634.74	775.11	1011.45	1194.87	1600.75	1561.15	1559.69	1656.96	1689.77	1880.99	2037.31
Hubei	434.92	510.31	592.95	596.53	682.16	817.97	1100.65	1342.44	1563.21	1428.9	1442.01	1647.28	1749.64	1929.02	2038.47
Hunan	297.72	367.23	429.96	441.73	488.04	575.57	700.29	855.74	1022.13	962.7	945.82	907.92	948.85	1077.47	1135.6
Guangdong	442.66	529.1	635.37	713.88	906.72	1118.86	1371.58	1562.24	1709.89	1544.58	1559.93	2631.19	3025.68	3126.12	3236.65
Guangxi	154.59	184.53	225.03	239.59	281.36	357.57	481.24	592.16	670.21	578.53	569.35	626.03	636.77	664.36	648.57
Hainan	-	20.35	25.57	29.38	35.27	48.62	69.49	82.43	78.76	71.2	81.48	132.37	134.09	136.89	144.02
Chongqing	-	-	-	-	-	-	-	-	-	-	525.47	562.35	611.63	653.58	654.61
Sichuan	489.45	591.25	708.06	728.43	838.11	1003.38	1260.08	1499.67	1783.37	1570.84	1159.52	1255.86	1200.66	1249.62	1337.99
Guizhou	100	124.89	151.14	162.98	182.62	221.46	272.87	321.99	373.05	376.08	400.24	423.81	453.49	500.76	535.98
Yunnan	140.25	180.08	225.87	258.18	292.37	353.13	503.46	696.63	838.2	802.07	784.69	839.61	801.26	854.89	929.8
Xizhang	1.54	0.77	2.14	2.28	2.54	2.7	3.63	4.58	6.57	6.96	7.8	10.6	11.2	12.62	12.37
Shaanxi	185.25	232	278.69	296.61	339.59	385.11	496.09	585.08	719.01	671.48	672.09	717.4	801.91	927.07	1038.37
Gansu	135.46	166.68	197.43	214.55	243.01	275.27	373.11	459.53	547.45	486.23	517.95	543.38	525.24	642.22	710.94
Qinghai	26.1	35.04	44.64	45.47	49.25	55.17	77.89	106.39	124.82	106.6	117.94	132.13	143.44	174.72	169.46
Ningxia	25.97	33.24	43.12	47.52	52.28	62.1	92.98	106.54	136.01	125.88	130.81	152.94	151.09	174.58	192.74
Xinjiang	96.11	103.55	129.39	145.46	178.85	208.37	311.06	444.19	589.67	517.96	580.48	539.01	567.92	751.19	741.09

<Appendix 32> Total Industrial Values of State Owned Enterprises and Non-State Owned Enterprises
with Sales Over 5 Million Yuan Enterprises of China's Provinces

(100 Million Yuan RMB)

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Beijing	399.09	495.65	602.66	625.9	730.21	860.42	1168.35	1605.41	1733.98	1632.17	1773.76	1816.48	1999.97	22565.38	2908.8
Tianjin	359.1	431.14	493.58	524.53	578.66	697.91	1065.83	1293.79	1725.28	1666.26	1782.35	2062.69	2261.49	2606.38	294.04
Hebei	476.17	577.44	705.87	754.96	892.38	1116.29	1608.76	2039.84	2589.91	2727.35	3062.04	2719.1	2994.58	3426.05	3766.85
Shanxi	254.42	315.6	390.12	423.95	468.74	550.93	738.9	886.69	1121.02	1127.22	1210	1106.72	1096.83	1216.86	1396.73
Inner Mongolia	144.46	175.42	219.63	231.41	266.7	312	445.71	542.39	648.58	643.72	707.58	574.63	640.68	748.97	830.32
Liaoning	913.94	1080.28	1277.31	1301.68	1493.73	1825.63	2611.41	3221.14	3544.29	3354.61	3644.88	3147.86	3390.14	4249.46	4480.32
Jilin	328.29	398.43	459.04	478.24	539.35	662.93	890.43	1084.79	1233.54	1232.57	1355.5	1225.47	1366.92	1679.91	1876.65
Heilongjiang	539.64	626.3	730.34	779.31	888.83	983.13	1233.14	1609.82	1951.27	1967.72	2141.9	1739.73	1854.57	2460.88	2365.44
Shanghai	1005.87	1180.73	1373.48	1477.04	1747.59	2153.76	2861.01	3757.97	4703.63	4329.52	4692.73	5191.43	5452.91	6204.52	7003.9
Jiangsu	1261.39	1605.76	1891.9	2061.29	2377.85	3352.73	4888.59	6808.33	8987.48	7919.25	8222.37	8053.03	8915.04	10452.87	11747.83
Zhejiang	660.4	850.84	993.49	1047.88	1315.16	1713.37	2543.73	3432.9	4497.98	4009.4	4130.56	4702.43	5191.56	6603.65	7882.47
Anhui	334.74	415.02	503.53	528.64	602.65	743.43	1100.01	1547.39	2063.11	2293.14	2709.15	1480.76	1533.9	1661.44	1824.64
Fujian	212.77	296.02	367.46	393.65	475.03	605.49	970.05	1277.11	1747.1	1804.16	2084.46	2037.52	2210.28	2616.12	2945.02
Jiangxi	230.35	291.91	335.79	343.14	390.58	480.65	673.71	913.3	990.72	964.02	1073.19	819.79	854.65	2932.21	1016.0
Shandong	826.18	1073.34	1371.21	1516.83	1761.82	2250.53	3310.17	5048.91	5686.6	5871.32	6397.38	6398.39	6944.52	8311.53	9377.37

Provinces	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Henan	452.96	552.92	669.89	713.08	825.99	1037.33	1461.98	1994.94	2763.79	2906.89	3119.26	3036.3	3109.18	3494.96	3843.18
Hubei	593.1	694.76	807.46	816.49	924.96	1111.82	1587.3	2205.97	2785.71	2957.72	3396.47	2733.06	2834.35	3064.43	3239.51
Hunan	399.51	489.05	569.1	586.67	654.82	790.54	1064.4	1356.28	1646.55	1758.7	1884.99	1287.43	1414.12	1627.94	1811.22
Guangdong	763.48	963.92	1204.68	1379.98	2018.62	2696.47	4085.36	5565.48	7189.25	7490.49	8400.19	9738.56	10538.17	12480.93	14035.35
Guangxi	189.71	231.66	279.76	298.92	354	457.04	690.24	934.81	1140.21	1057.19	1091.41	928.67	911	1003.24	1059.23
Hainan	-	24.58	31.6	36.09	45.74	60.71	104.41	135.77	154.77	165.93	186.74	187.6	188.67	202.87	219.5
Chongqing	-	-	-	-	-	-	-	-	-	-	921.6	766.79	858.55	962.32	1072.83
Sichuan	645.64	786.43	934.59	980.58	1137.46	1395.47	2011.22	2709.05	3229.64	2926.87	2299.95	1918.37	1895.82	2076.96	2304.51
Guizhou	115.05	143.23	173.28	188.39	211.5	255.2	321.31	395.66	476.41	514.11	575.49	507.91	551.93	631.64	696.63
Yunnan	172.72	216.33	271.01	307.97	350.36	420.37	603.83	832.79	1038.8	1016.53	1056.01	1017.29	988.53	0633.6	1157.41
Xizhang	1.76	1	2.44	2.63	2.91	3.23	4.14	5.51	8.28	9.73	10.97	12.83	14.98	16.43	17.88
Shaanxi	222.26	278.9	335.96	359.6	414.67	477.32	643.43	781.5	948.69	952.73	1037	926.58	1035.88	1184.58	1338.2
Gansu	151.68	186.82	223.78	248.16	281.55	323.53	444.92	566.86	694.16	653.36	730.65	661.56	667.53	840.58	951.21
Qinghai	30.17	39.81	50.62	51.14	55.56	61.83	87.59	120.28	142.46	127.28	147.41	148.18	160.77	196.08	194.16
Ningxia	31.62	40.42	51.97	56.87	62.63	74.14	111.22	139.12	182.65	180.2	193.56	183.2	197.66	239.11	268.84
Xingjiang	112.32	122.74	153.73	174.24	218.61	250.01	361.85	559.52	764.67	627.61	708.1	606.78	631.84	852.01	876.57

Abstract

This paper empirically investigates the determinants of inter-regional disparity caused in China based on provincial data. In particular, we take a closer look at the relationship between interregional growth disparity and the distribution of China's foreign direct investment inflows. The study finds that the contributions of FDI inflows to growth are as important, if not more, than other determinants of growth. That is, the distribution of FDI inflows has been a primary factor behind the disparity of regional growth in China, and in fact, FDI inflows have had a significant effect on the convergence speed of provincial growth rates. Our empirical estimations further suggest that international trade brought by FDI firms is an important contributor enhancing China's international trade. The geographical location and preferential policies executed by the central government has also played an important role in China's regional growth.

Key words : Regional growth, Disparity, Foreign direct investment, China.