Chapter 6

Regional Income Inequalities in East Asia

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1. Introduction

Hill (2002) observes international income convergence, while within each country some regions have grown much faster than others. He attributes such subnational level disparities to: geographic conditions; connectivity to global economy; government policies; economies of scale; and uneven natural resource endowments. Gill and Kharas (2007) assert that the existence of certain degree of inequality is consistent with economic systems that aim to reward higher individual effort, productivity, and innovation. They claim, however, that concern for equity is not important in its own right, but is also necessary to sustain growth in coherent society. From a similar perspective of assuming certain degree of regional income inequality inevitable, ESCAP (2001) calls for government actions in preventing inequality of opportunities through investment in education and infrastructure and promoting good local governance. Although this line of arguments have broad support in the bulk of academic literature of this field, more detailed investigation is needed to draw some concrete policy implications.

2. Some general discussions on agglomeration and regional disparities

Trade induces specialization by nation sector-by-sector. This statement is based on the theory of international trade of comparative advantage which describes that a country tend to produce more and export goods that use relatively more intensively the productive factors the country is abundantly endowed. By the model which takes into consideration the linkage between intermediate goods and final production and increasing returns to scale technology, Fujita, Krugman, and Venables (1999, Chapter

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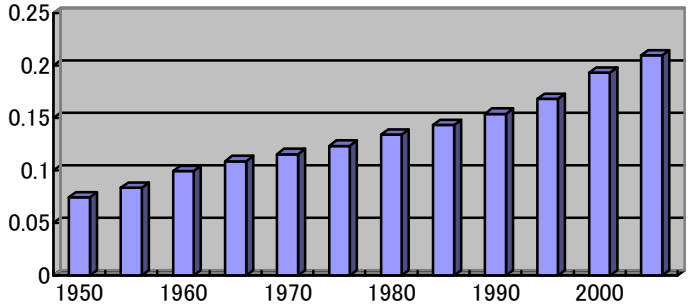
14) showed that transport cost reduction leads to sector-wise agglomeration in particular country, implying that each country can be specialized in some industry. Jones and Kierzkowski (2005), in turn, explain that with a decrease in service-link cost of coordinating sequential tasks in a production process located in different locations, international fragmentation of production is being developed, resulting in dispersion of industrial production which otherwise should have been withheld in a single plant location. Thus, various approaches to the question reach to the common understanding that the more international economic integration can promote to reduce disparities among countries.

Within a country, when industrial growth occurs accompanied by integration of the domestic market, agglomeration forces becomes relevant and concentration of production in particular places (i.e. big cities and leading regions) can emerge, constituting the core-periphery geographic pattern. Workers are generally mobile within a country responding to the difference in *real* wage. While the real wage is affected by the nominal wage and the price level, the price level in the core is reduced with agglomeration because more consumer goods are available without transportation cost. So, agglomeration attracts workers from the periphery to the core. As the demand becomes bigger in the core with the labor inflow, more firms are attracted in the core because of the scale economy. Thus, with the labor mobility this self-reinforcing mechanism results in full concentration. (Fujita, Krugman, and Venables, 1999, Chapter 5). The lack of factor mobility across nations means that agglomeration forces are not dominant at the international level (Baldwin and Wyplosz (2004)).

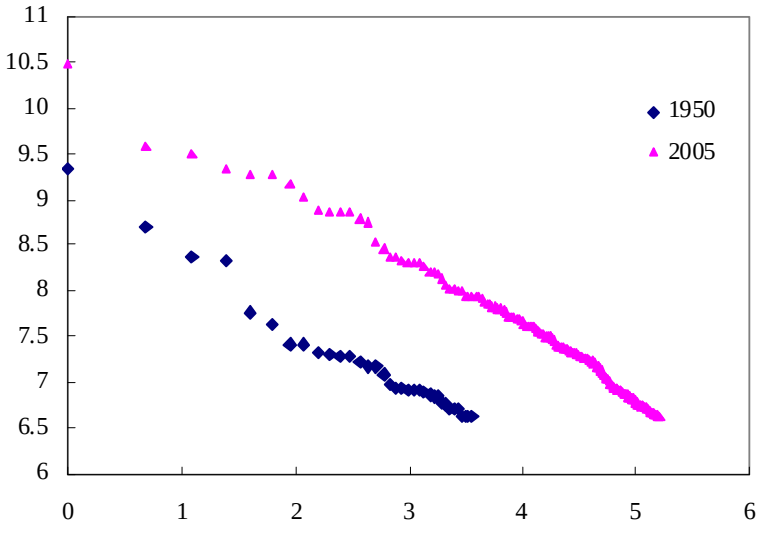
Alternatively, we may assume that workers are not quite mobile, at least in the short-run, but firms can choose their location freely. Given the scale economy in production unit, firms seek to locate in large markets (i.e. big cities, core regions). If nominal wage adjustment is efficient, concentration of firms causes wage hike in the core whereas wage should drop in the periphery where jobs are offered less. The nominal wage gap attracts firms to lower cost periphery, preventing the full concentration in the core. If, however, the wage adjustment lacks flexibility for many reasons such as minimum wage legislation and labor union resistance, then the countervailing force of agglomeration of cost differential is weak and it is more likely to result in full concentration toward the core. (Baldwin and Wyplosz (2004), Chapter 9)

Figure 1 Share of East Asia's population living in agglomerations greater than 750,000 inhabitants



(Source) Author's own calculation based on United Nations data (2006, 2007).

Figure 2 Rank size rule of East Asian large agglomerations (population over 750,000)



(Source) Author's own calculation based on United Nations (2006, 2007).

Table 1: Ranking of East Asian cities by population

	1950		2005	
1	Japan	Tokyo	Japan	Tokyo
2	China	Shanghai	China	Shanghai
3	China	Beijing	Indonesia	Jakarta
4	Japan	Osaka-Kobe	Japan	Osaka-Kobe
5	China	Tianjin	China	Beijing
6	China	Shenyang	Philippines	Manila
7	Hong Kong	Hong Kong	Korea	Seoul
8	China	Chongqing	China	Guangzhou
9	Philippines	Manila	China	Shenzhen
10	China	Guangzhou	China	Wuhan
11	China	Zibo	Hong Kong	Hong Kong
12	Indonesia	Jakarta	China	Tianjin
13	Thailand	Bangkok	Thailand	Bangkok
14	China	Wuhan	China	Chongqing
15	Myanmar	Rangoon	Vietnam	Ho Chi Minh City
16	Vietnam	Ho Chi Minh City	China	Shenyang
17	China	Tianmen	Singapore	Singapore
18	Singapore	Singapore	China	Dongguan
19	Korea	Seoul	Vietnam	Ha Noi
20	China	Harbin	Indonesia	Bandung
21	Japan	Kyoto	Myanmar	Rangoon
22	China	Xiantao	China	Chengdu
23	Japan	Nagoya	China	Xi'an, Shaanxi
24	China	Nanjing, Jiangsu	China	Harbin
25	Japan	Fukuoka-Kitakyushu	China	Nanjing, Jiangsu
26	Korea	Pusan	Korea	Pusan
27	China	Qingdao	China	Guiyang
28	China	Liuan	Japan	Nagoya
29	China	Yongzhou	China	Dalian
30	China	Taian, Shandong	China	Changchun
31	China	Huai'an	Indonesia	Surabaya
32	China	Chengdu	China	Zibo
33	China	Changchun	China	Kunming
34	China	Suining, Sichuan	China	Hangzhou
35	Japan	Sapporo	China	Qingdao

(Source) United Nations (2007)

Industries are attracted to big cities not only because of the large demand there but also by spillover of knowledge and information which make firms more productive. Lucas (1988) gave accounts that the high land rents in cities, and the fact that people are

willing to pay that, prove that the way people interact within cities, each emphasizing his own originality and uniqueness, has to do with the existence of external productivity effects.

In fact, rapid urbanization is indeed a spectacular feature of East Asia. According to the United Nations (2006), 21.0% of East Asia's people reside in 182 urban agglomerations with greater than 750,000 inhabitants. This ratio has increased steadily from 8.4% in 1955, when only 35 such agglomerations existed (Figure 1).

Next, we construct the ranking of East Asian cities by population size for 1950 and 2005 (see Table 1). Selecting cities with populations greater than 750,000, we can include 35 cities in 1950, while the list comprised 182 cities in 2005. Figure 2 depicts the relationship between cities population sizes (log-transformed) and their rank numbers (log-transformed). They are remarkably placed on a straight line of almost identical slope ($\approx$-0.75) for the two years. This resembles the famous regularity known as the rank size rule to pertain in the context of the hierarchical urban system of a particular country. It is striking to see that the random growth of East Asian large cities evolves according to the same kind of regularity. The slope is in East Asian system of cities is however significantly below what the rank size rule predicts (= - 1). This means that the population size of the city one rank below of each one is bigger than what the rank size rule predicts. That is, the East Asian system of cities is much more dispersed than what is generally known for that within one country[1].

Looking more closely, although most of the 20 largest cities in 2005 have remained in the ranking since 1950, Shenzhen and Dongguan of Guangdong Province neighboring Hong Kong, which were not even included in the list in 1950, are ranked respectively at 9th and 18th. Including the two cities, 119 Chinese cities newly entered the list in 2005. It is also noteworthy that the ranks of Jakarta, Manila, and Seoul arose respectively from 12th to 3rd, 9th to 6th, and 19th to 7th, thereby transforming the top 10 largest agglomerations in East Asia. On the other hand, although Tokyo and Osaka-Kobe remain at the 1st and 4th rankings, other Japanese cities such as Kyoto, Nagoya, Fukuoka-Kitakyushu, and Sapporo have lowered their respective positions. An increasing number of people in East Asia are living in large urban areas. In China, the

[1] Venables (2007) made a similar observation on EU system of cities.

number of such agglomerations is increasing rapidly. These new entrants of the city ranking thicken the lower tail of the rank size rule distribution, whereas in other countries, population growth is concentrated in fewer cities, shifting up the line.

Therefore, inspection of Figure 1 and Figure 2 reveals that there has been growth of cities in East Asia both in numbers and size above the threshold population of 750,000 between 1990 and 2005. Although the degree of primacy of the hierarchy of cities in East Asia as a whole has not changed, the concentration in higher rank cities tends to intensify in each country because of the agglomeration process.

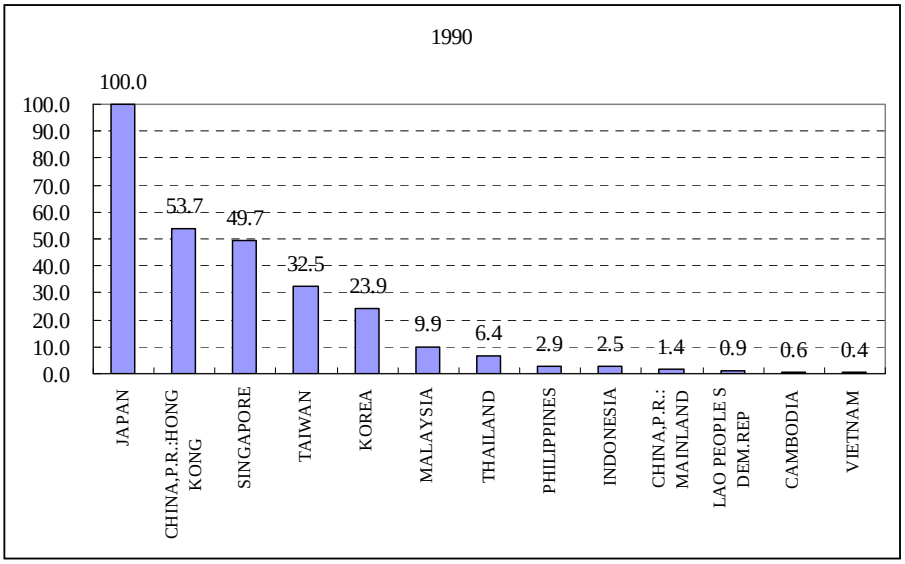
Scale economies play an important role in reshaping the economic geography of East Asia. Gill and Kharas (2007) contend that for middle-income countries agglomeration, by promoting product differentiation and knowledge creation, plays key roles to sustain economic growth because otherwise industrial development should be stagnated in a competition with less developed countries which can offer lower cost advantage. If scale economies will prevail, further improvement of market integration (both international and domestic) must foster advantages of agglomeration, while mitigating negative effects from agglomeration such as road congestion, pollution, and excessive housing price inflation, through appropriate provision of urban infrastructure and land use regulation.

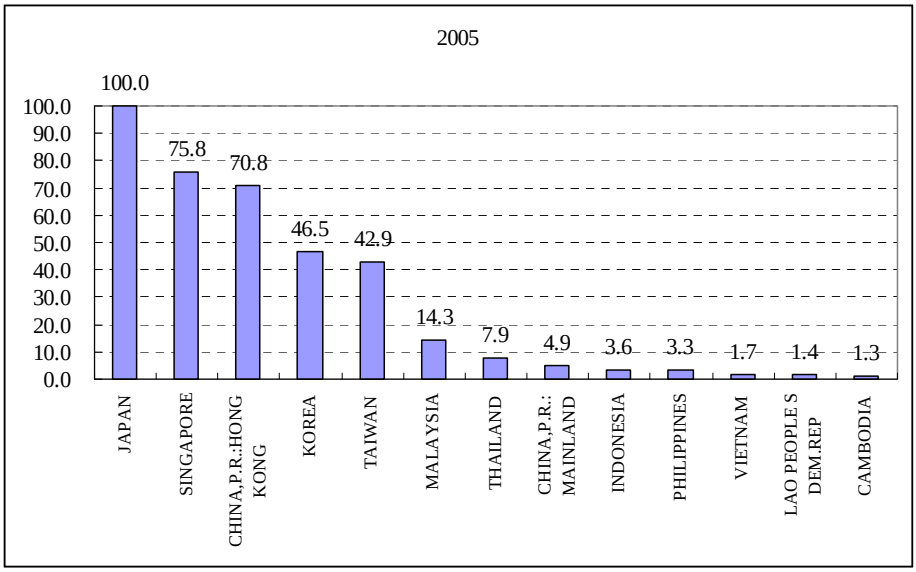
Although we expect that agglomeration enhances growth, this strategy inevitably exacerbates regional income disparities, especially in the rural-urban context. Despite of the substantial share of the related population, the rural sector has not been given enough attention in development policies due to the non-increasing returns to scale nature because it cannot agglomerate geographically and has been seen lacking opportunities for innovation. Inequality issues cannot be overlooked because the concentration of wealth and power can foment discontent of the bypassed regions and threaten social stability. Government programs for income transfer from urban to rural areas are usually implemented in this context. However, if farmers residing in disadvantageous locations were to continue producing only generic goods under perfect competition, intensifying pressure from global trade liberalization would leave them no room but that ensuring survival with subsidies, which is not sustainable in the long run. In Japan, for example, the dwindling prospects for traditional farming have encouraged migration to cities, thereby accelerating the tendency of aging of society in rural areas

and exacerbating related problems such as the infeasibility of providing necessary public services in such areas. In many developing countries, large cities tend to be overcrowded, leaving huge populations under informal living conditions.

We must develop innovative ideas to establish non-traditional agricultural production to make the periphery lively and livable without depending heavily on income transfers from the core region. In this context, Fujita (2007b) argues that introduction of highly differentiated branded agriculture is a viable strategy. Branded agriculture makes full use of cheap land and labor, which are abundant resources in the periphery, while overcoming the disadvantages of unfavorable market access because consumers will buy differentiated products even at higher prices. For instance, Japan imported 359 tons of roses from Kenya in 2006, roughly corresponding to 8% in quantity and 20% in value of the total imports of that product. As the data suggest, the unit price of Kenyan roses is very high not only because of the distance but also because the transportation is made by air through a transit in the cold storage facilities of Dubai airport. Still, the sales are growing thanks to high product quality. Being in the highland more than 1000 meters above sea-level and right on the equator, the production location offers ideal natural conditions for such horticulture: constant daylight hours all year long and a large temperature gap between day and night, lowering risks of insect infestations. These examples suggest that remote rural areas can be connected to a large market if they produce sufficiently differentiated products, take advantage of the local natural conditions, and establish innovative market access. Product differentiation of branded agricultural products must be understood in a broader sense, which involves the whole value chain—including quality control and logistic management—rather than innovations of the product itself. In contrast to the general perception of considering the periphery as a static supplier of generic foods, innovation is needed in the periphery as much as in large cities.

Figure 3 Income per capita – catching-up





(Source) IMF, *International Financial Statistics*

3. Regional income inequality

3.1 International income distribution

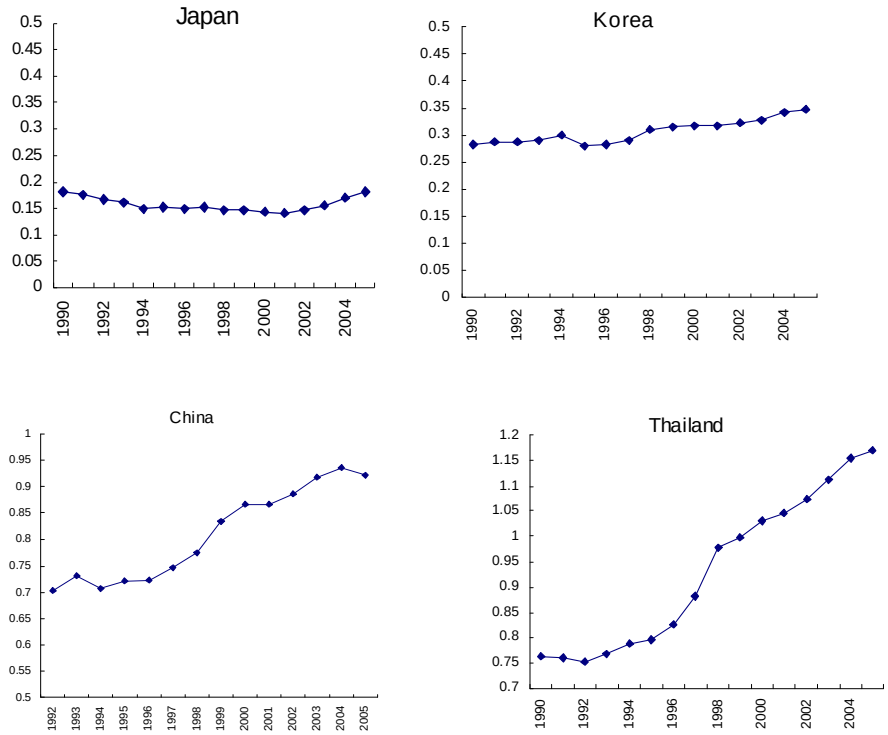
Some characteristics of the international economic catching-up in East Asia are interesting. Figure 3 depicts the relative size of the nominal per-capita GDP converted into US dollars, taking Japan (=100) as the reference. Because these figures are not PPP-based data, they do not represent the purchasing power of the people in each country. Rather, because the location decision of the foreign direct investment generally

is made according to the nominal wage, the nominal figures are more appropriate. During 1990–2005, each economy in East Asia has respectively shown catching-up against Japan. A remarkable catching-up achievement was made by NIEs, but among NIEs, the relative importance of Singapore and Korea has increased compared to Hong Kong and Taiwan. Great advancement of the Chinese position is also notable, from just 1.4% of Japan to 4.9%, surpassing Indonesia and the Philippines. Among the least developed countries, Vietnam also has experienced leapfrogging growth. The disparity among ASEAN countries has been shrinking. The difference between Malaysia and Cambodia dropped from one-sixteenth to one-eleventh, although the relative importance of Thailand and the Philippines has declined slightly. For that reason, in East Asia in the last 15 years, although each country has narrowed the gap against the leading economies, some countries made great strides in growth performance, changing the order of the income level among countries.

3.2 Within-country regional income disparities

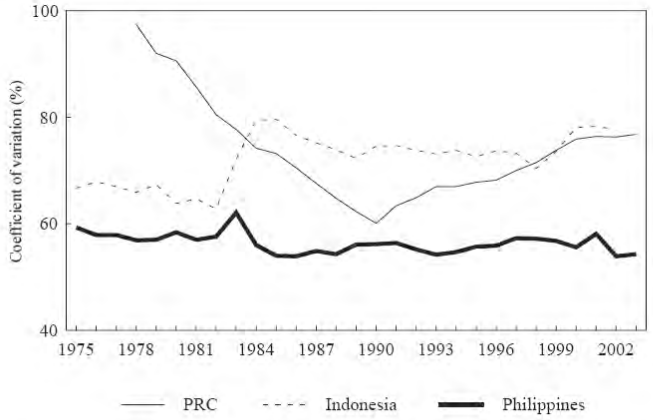
The East Asian regional economy has been transformed from a one-dimensional structure led by Japan to an internationally diverse and balanced one after the emergence of industrial agglomeration in various countries. Meantime, the problem of income disparity has become more serious within each country because the core-periphery structure has been clarified. Figures 4 and 5 presents the trend of regional income inequality measured using the coefficient of variation (standard error/mean) of the gross regional domestic product per capita. The intensification of regional inequality is more pronounced in dynamically growing economies such as those of China and Thailand. Inequality in Korea is slightly but steadily rising, whereas Japan's recent economic recovery is being led by agglomeration in the Tokyo metropolitan area, whose central business districts are witnessing a rush to build new buildings. According to Figure 5, regional income inequality in the Philippines and Indonesia has been stable over nearly two decades since the end of 1980s. Consequently, we can infer that, although the income disparity between regionally integrated countries is shrinking, the regional disparity within each country tends to rise as these economies grow. Because of agglomeration economies, some small areas of each country play a locomotive role for national economic growth, among which income gaps are growing. These cities correspond to the increasing primacy in the upper tail of the rank size distribution of Figure 2.

Figure 4 Regional income inequality measured using the coefficient of variation on selected East Asian countries



Data sources: (Japan) Statistics Bureau http://www.esri.cao.go.jp/jp/sna/toukei.html#kenmin (in Japanese); (Korea) National Statistics Office http://www.kosis.kr/eng/index.html; (China) *China Statistical Yearbook*, National Bureau of Statistics of China, (Thailand) National Statistical Office http://web.nso.go.th/eng/index.htm .

Figure 5 Regional inequality in Indonesia and the Philippines compare with China, 1975–2003

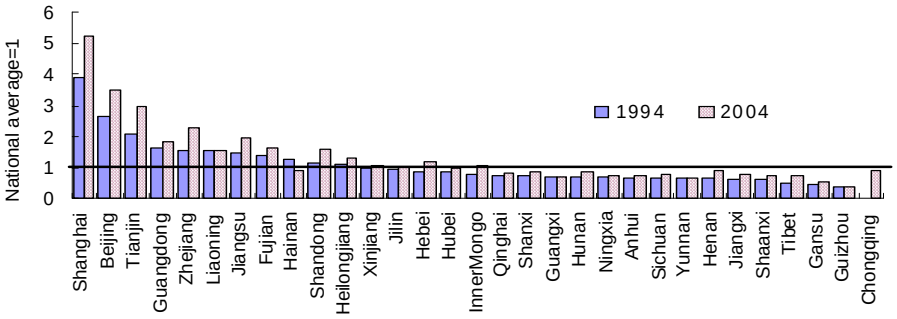


Note: Figures are coefficients of variation of real per capita regional incomes. In China and Indonesia, the regions referred to are the provinces. The Indonesia series excludes mining provinces.

(Source) Balisacan et al. (2006), Figure 5.

For the case of China, Fujita and Hu (2001) showed that the income disparities between the coastal areas and the interior had been increasing during the initial stage of economic opening in 1985–1994; industrial production showed strong agglomeration toward the coastal areas, although a trend toward convergence was apparent within the coastal provinces. Higher growth was related to production agglomeration, prompted by exposure to globalization (exports and foreign direct investment) and economic liberalization (reduction of state enterprise share). We can confirm a continuation of this trend from the recent data (1994 and 2004), as presented in Figure 6, which depicts the level of per-capita gross regional product of each province as a ratio of the national average. The figure shows that the disparity increased as the richest areas, i.e., Shanghai, Beijing, and Tianjin, became considerably disparate from the national average. Simultaneously, other coastal provinces such as Zhejiang, Jiangsu, and Shandong showed remarkable growth, thereby changing the rank order. These provinces had a high growth of exports as well as a large share of MNF participation in those exports. That export growth implies that, although we can observe a narrowing of the gap in the per-capita income of less developed provinces with respect to the national average, the difference between the coastal core and inland periphery has widened. The difference

Figure 6 China's Regional Income Disparity



(Source) National Bureau of Statistics of China, *China Statistical Yearbook*

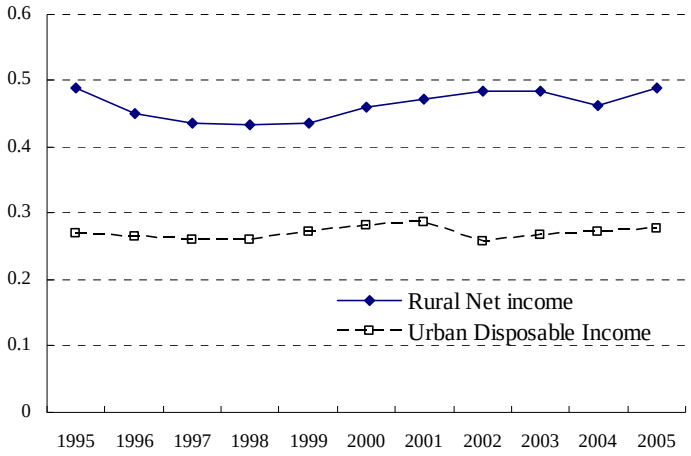
between the richest (Shanghai) and the poorest (Guizhou) widened from 10 times in 1994 to 13 times in 2004, which presents a contrast of the two extremes.

Despite that statistical fact, some important caveats are necessary for appropriate interpretation. First, Wan (2007) recently reported that a large part (70–80%) of income inequality in China is explainable by the rural-urban gap. For that reason, it is the degree of urbanization that best explains a given provincial income level. Secondly, the magnitude of the regional income gap is reduced substantially if we adjust the income level according to spatial price differences (Sicular et al. 2007).

For illustration, Figure 7 demonstrates that regional per-capita income disparities among urban households and that of rural households have been fairly stable over the period of 1995-2005, when they are analyzed separately. It also shows that regional disparities of rural households are bigger than that of urban households. Next, Figure 8 depicts the progress of urban-rural income gaps calculated as the ratio of per capita rural net income over per capita urban household disposable income in each province. The graph shows general downward trend. We can also observe that the urban-rural income gap is higher than the national average in more developed costal regions while those are lower in western inland regions. So far, the rising regional income inequality trend in China demonstrated by Figure 4 cannot be confirmed within the group of urban households, rural households, and urban-rural comparison in each province. But if we turn to Figure 9 which depicts the changes in per capita income of urban households in the riches provinces and those of rural households in the poorest provinces, the

widening disparities become pretty obvious. Therefore, the problem of regional income disparities in China should not be addressed simply as costal vs. inland nor urban vs. rural, but more precisely should be seen as the gap between costal urban and inland rural households.

Figure 7 China: Urban and Rural Regional Per-capita Income Disparities

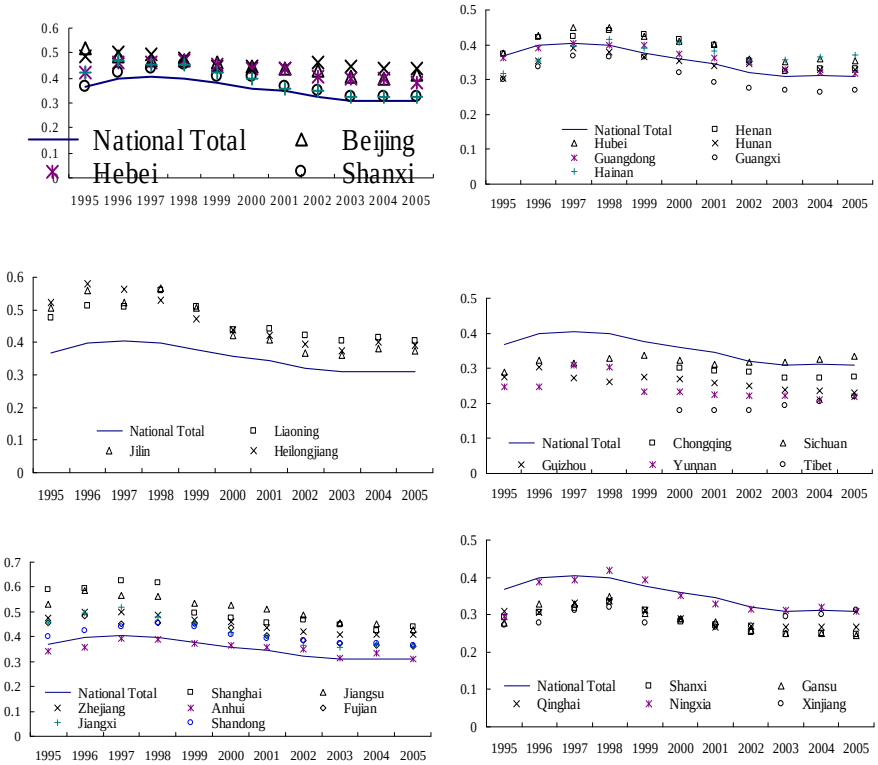


(Note) Rural Net income = total income - taxes and fees paid - household operation expenses - taxes and fees - depreciation of fixed assets for production - subsidy for participating in household survey - gifts to non-rural relatives

Urban Disposable income = total household income - income tax - personal contribution to social security - sample household subsidy for keeping diaries

(Source) National Bureau of Statistics of China, *China Statistical Yearbook*, various years.

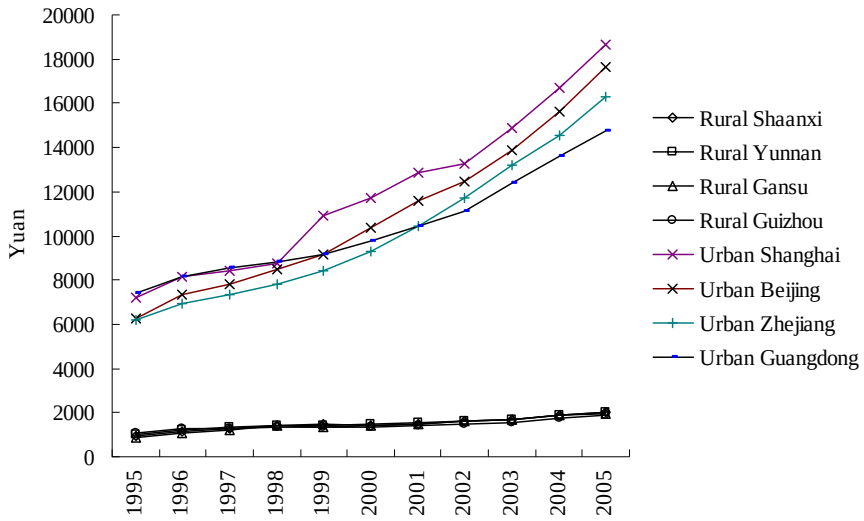
Figure 8 China: Urban-Rural Income Gap by Province, 1995-2005



(Note) Income gap corresponds to the ratio of (per capita rural net income)/(per capita urban household disposable income)

(Source) National Bureau of Statistics of China, *China Statistical Yearbook*, various years.

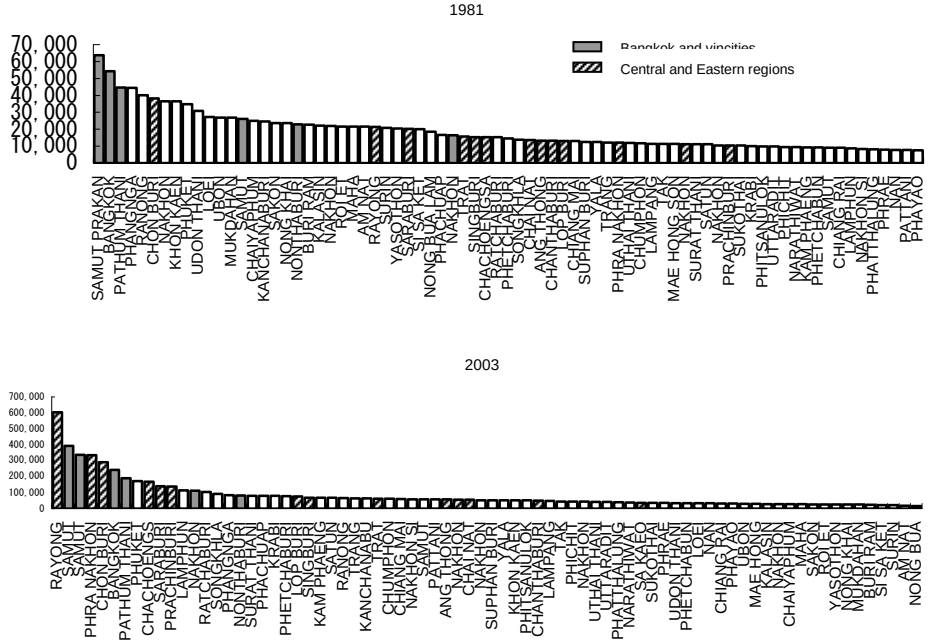
Figure 9 China: Disparities between Richest Provinces/Urban and Poorest Provinces/Rural



(Source) National Bureau of Statistics of China, *China Statistical Yearbook*, various years.

The case of Thailand shown in Figure 10 also portrays a clear tendency toward strengthening of the core-periphery structure. In this case, the core includes provinces in "Bangkok and vicinity," "Central," and "Eastern" regions. In this figure, many provinces with per-capita GRP higher than the national average in 1981 are in non-core regions (denoted as white bars), involving the northeast. However, in 2003, most provinces with income higher than the national average were in the core regions. Moreover, the number of such provinces decreased from 36 in 1981 to 14 in 2003, leaving the remaining provinces below the average. It is also noteworthy that the income gap between the poorer provinces and the national average has widened. This core-periphery structure, which is more accentuated than in the Chinese case, might be related to the higher mobility of labor in Thailand, which strengthens the agglomeration effect through backward and forward linkages of the core region.

Figure 10 Thailand's Regional Income Disparity



(Source) National Statistical Office http://web.nso.go.th/eng/index.htm

It follows from the observation described above that deepening of economic integration and the related structural changes in economic geography can generate a mix of convergence and divergence of income inequality at different levels. First, within East Asia, some countries that have attracted industry have tended to grow faster, although others have not taken advantage of such trends and remain at the economic periphery. Second, within each country, industrial agglomeration occurs in a limited spatial range, sharpening the regional contrast between the core and the periphery, although the income gap within the core can be narrowed because of the sprawl of agglomeration economies.

3.3 Policy reform and regional inequality in Vietnam

The Vietnamese economy achieved annual average growth of 7.3% in real terms during 2000–2006. An inspection of Figure 11 may tell us that the regional inequality of industrial output has not been changing during this period. However, if we turn to Figure 12, we can clearly see the tendency of geographical concentration of industrial production.

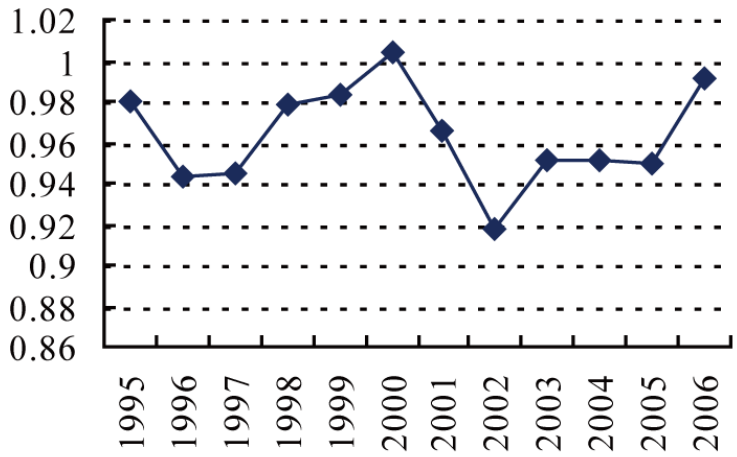
The substantial inflow of foreign direct investment played the role of a driving force of the Vietnamese economic growth during this period. Nearly 90% of foreign direct investment in Vietnam is concentrated in two regions: the Southeast Coast and the Red River Delta. In the former, Ho Chi Minh City and its surrounding provinces such as Dung Nai and Binh Duong as well as the regional port at Vung Tau attract the most foreign investment. The latter includes Ha Noi and its neighboring province Vinh Phuc as well as the regional port of Hai Phong. According to data of the General Statistic Office of Vietnam, the shares of industrial output value of the foreign invested sector of the Southeast Coast region and the Red River Delta region have changed respectively from 81% and 11% to 66% and 24%, emphasizing the rapid growth in the latter. The Southeast Coast region has attracted foreign investment because of its larger population and higher income level. To mitigate the regional inequality, the government strengthened incentives and public investment in the infrastructure in the Ha Noi area. In Ha Noi, the locational advantage of having a highway connection with China's Guangdong Province, from which intermediate goods can be supplied, attracts a growing volume of foreign investment. Investment in the North Central Coast, the South Central Coast, the Mekong River Delta and the Northeast were also promoted, which contributed to the reduction of inequality during 2001 and 2002; inequality has increased again because of the yawning gap between the leading two regions and the other regions.

3.4 The case of Lao PDR

Lao PDR is one of the least developed countries in East Asia, with a population of 5.6 million dispersed with low density. It is a landlocked country; 80% of its territory is mountainous. In addition, 77% of the population is rural. Of them, many reside on

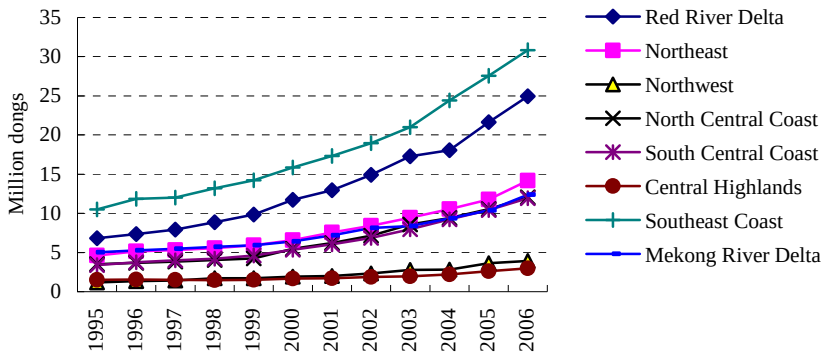
farms; 60% of farms still produce mainly for subsistence, not for the market (MAF 2005) because the national economy is highly fragmented by poor road conditions.

Figure 11 Inter-provincial inequality* of industrial production per urban resident



(Source) General Statistics Office of Vietnam

Figure 12 Vietnam: Regional industrial production per urban resident



*Measured using coefficient of variation

(Source) General Statistics Office of Vietnam

Since 1986, Laos has been engaged in a program of economic reforms called the New Economic Mechanism. The reform program encompasses: price liberalization (market mechanism), liberalization of domestic and international transactions, decentralization of control to local governments and to firms, liberalization of foreign investment, dissolution of collective farms, and free internal migration. Studying market integration in Lao PDR, Anderson et al. concluded that price variations between villages depend not only on distance from the capital; they depend also on access to roads and the market size (local competition).

Economic reforms in 2006 stimulated exports of the garment industry, which was mainly located in Vientiane. Garment exports account for 14% of exports. Capital and some new export commodities such as coffee produced on the Bolaven Plateau in the southern region, which is centered in the commercial town of Pakse. In both the Vientiane Capital and Pakse, there are bridges on the Mekong River, over which merchandise is transported to Thai ports (Andersson et al. 2007). In 2005, 52% of

Table 2 Laos' regional economy

Province	Population	GRDP per capita (US$)	Road distance from capital
Vientiane Capital	788,857	1,301.82	-
Champasak	629,705	610.72	685
Savannakhet	859,661	529.00	487
Bolikhamxay	239,807	514.03	154
Louangphabang	413,676	505.47	397
Xayyabouly	338,669	464.09	508
Salavanh	340,045	448.68	649
Khammouane	337,390	429.20	354
Bokeo	149,631	406.29	811
Xekong	242,725	396.06	435
Oudomxay	266,950	385.30	583
Vientiane	428,223	370.39	55
Louangnamtha	149,000	337.36	644
Phongsaly	166,279	298.00	747
Attapeu	117,849	258.01	847
Sekong	89,111	210.15	798
Huaphanh	288,694	207.27	629

(Source) GRDP, Provincial Socio-Economic Plan 2006–2007; Population, National Statistics Center; Distance, Andersson et al.

Table 3 Regression analyses of per-capita gross provincial product in 2005 (log-transformed)

Independent variables	1	2
Constant	5.500	7.094
	(7.480)	(24.899)
Distance from Vientiane Capital(log)	-0.142	-0.186
	(-3.087)	(-3.930)
Population in 1990 (log)	0.253	
	(2.307)	
Adj. R^2	0.592	0.474

Note: *t*-statistics are in parentheses.

exports and 62% imports were with Thailand. As Table 2 shows, as the only gateway to Thailand, Vientiane Capital has by far the highest GRDP per capita.

Simple regression analyses of road distance from the capital on GRDP per capita (both log-transformed) and the population size of each province in 1990 are illustrative of the importance of transportation. Table 3 shows the results: the income level is negatively associated with the distance from the capital and is positively correlated with the population size in the early stage of development. Therefore, although Lao PDR is a land-locked country, it presents a typical spatial structure of a *port city*, where the transport hub constitutes the mono-centric core.

4. Discussion

The East Asian economic geography has been transformed by the opposing forces of dispersion and agglomeration. Dispersion is related to factor price differences based on comparative advantage. Through such transformations, sequential catch-up industrialization, often described using the metaphor of flying geese, has developed. Regional integration has lowered the service link cost and broadened the opportunity for task-wise division of labor of production processes in different locations. Intra-regional trade in intermediate goods is rapidly growing within the regionally extensive production network. The international spread of industries has contributed to more rapid growth of low-income countries and to a narrowing of the income gap between the rich and poor countries. Regional integration, on the other hand, increases the relevance of

scale economies, which in turn stimulate agglomeration. High economic growth is accompanied by urbanization. For that reason, economic development tends to concentrate geographically in each country. Because of increasing returns to scale, agglomeration enhances productivity and innovation, providing sources of long-run growth. These benefits of regional integration contributed to East Asia's dominant position in the production of many types of industrial products, especially in the electronics industry.

Two main concerns might arise in relation to the agglomeration-based development strategy. First, excessively high density in certain agglomerations might diminish the advantages that they provide because of diseconomies from congestion and higher prices of immobile resources such as land and unskilled labor. Cities might grow beyond their optimal size, but industries might not relocate to a remote periphery easily because of such areas' poor access to markets and intermediate goods. Therefore, local governments must implement appropriate urban policies to mitigate diseconomies by providing infrastructure and land use regulation, while encouraging specialization in knowledge-intensive activities.

Secondly, by emphasizing the role of agglomeration, widening of regional income gaps is inevitable. It is necessary to improve transportation connections with the periphery, which enables urban industries to shed those activities to the periphery that no longer hold competitiveness. As the regional integration has grown very rapidly, many developing countries in East Asia tend to put domestic integration aside. This one will be next valuable challenge both for cohesion of the society and to make growth sustainable in the long-run (Gill and Kharas 2007).

Another possibility is to introduce product differentiation (in a broad sense), thereby taking advantage of the diversity of the natural conditions of the remote periphery, as discussed in Section 1. In this context, we endorse the policy issues raised by Hill (2002) which recognized that for lagging regions while "migrating out of poverty" is still a relevant strategy, regional policies should "assist in identifying local strength" and provide adequate physical infrastructure and revise trade policy and regulations which unintendedly have discouraged development of local initiatives.

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