



How is Thai Industrial Location Policy Get Beneficiary under GMSECs?

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Abstract— It can be best explained that although industrial development that Thailand has escalated the country to Newly Industrialized Country, it still fails to disperse industries to its regions. Such failure has been resulted from the deep-seated cause of the Industrial Magnitude of Bangkok Metropolitan Region or BMR; consequently, the BMR leads the country to income disparity and chronic poverty between people in Bangkok and in rural area. This paper provides a descriptive analysis of the changes in industrial structure and spatial concentration that has occurred in Thailand over the period from 1996 to 2005. The location quotient was used to measure its regional specialization. Using this property, it was found that, the decrease in the spatial concentration of manufacturing occurred in Thailand remained stable or lower in a small degree. This indicated that the industrial decentralization policy was less successful. However, some factories were relocated into the GMSECs strategic area, especially economic corridor and logistic route significantly.

Keywords— GMSECs, BOI, Industrial Location Policy, Manufacturing Structure in Thailand.

1. INTRODUCTION

Despite the success of industrialization over years, little emphasis has been placed on the dispersion of industries to rural areas [7, 9]. The industrialization policy and strategy stressed on the importance of import substitution and export oriented industries. As a result, most of the industrialization took place in and around Bangkok Metropolitan Region (BMR) as the economically most efficient location for import substitution and export oriented industries. The concentration of factories in Bangkok then led to mass migration into the capital and ended up with social ills such as slums, environment pollutions, traffic congestion and income disparities [4, 10].

In spite of the problems of congestion and pollutions resulting from the intense concentration of industrial activities, it is found that many factories are still located in the BMR; therefore the fruits of industrialization have not been widely and evenly spread to other regions [6, 9]. Most provinces outside of BMR still depend heavily on activities related to agriculture, whereas incomes remain limited. As shown in Fig.1, the result of industrial concentration effected in BMR precisely shows that in 2005. The disparity of gross regional products (GRP) per capita between BMR, the highest level stood at 275,030 Baht/year, and Northeastern, the lowest level stood at 32,897 Baht/year still remains high. The difference was 8.4 times. This income disparity was

resulted from production in manufacturing and other non-agriculture sectors [3].

2. LITERATURE REVIEW

Industrial Location Policy

Industrial development in Thailand has resulted in economic imbalance and inequality because of the primacy of Bangkok which is among the most primate cities in the world. Its population is 4 times larger than that of the second largest city in Thailand. Bangkok is the centre of population, government, and economic activities [2]. One of the rationale motivating industrial policies of Thailand is to mitigate the consequences from the growth of Bangkok where is the centre of Thailand's economy.

Primate city predominance has become a concern for two reasons. First, Bangkok as a primate city has increased regional inequality in Thailand. Second, infrastructure bottlenecks have necessitated the expansion of industry on the perimeters of the capital city. Further, the pattern of regional expansion appears to be influenced by BOI investment zoning policy. Industrial decentralization is an important tool for creating regional equality. Thus, the Thai government has actively pursued industrial decentralization since 1987, using several initiatives including BOI incentives, financial incentives, and industrial estates like the Eastern Seaboard Development Programme. The locational incentives in government policy may also promote the deconcentration of industrial activity within the greater BMR.

The BOI and the Industrial Estate Authority of Thailand (IEAT) are the primary government agencies shaping industrial location policy. The IEAT oversees industrial estates sponsored by government while the BOI provides incentives based on the type and location of the firm. Most government investment in infrastructure for industry has been in the form of

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industrial estates (IEs). This method of infrastructure distributing may be biased against the decentralization of industrial growth. In 1987, BOI incentive zoning policy changed drastically. Three promotional zones (Fig. 4) were established. Zone 1 included Bangkok and Samut Prakarn; Zone 2 included the inner ring provinces (Nakhon Pathom, Nonthaburi, Pathum Thani, and Samut Sakorn); and Zone 3 comprised, all remaining provinces. With this change, the firms in Zone 1 received no corporate income tax holiday unless they met export or employment targets [2].

The BOI took a more progressive stance towards industrial deconcentration in its 1993 update of Criteria in Approving Investment Promotion and Providing Tax Privileges. In 1993, sectoral restrictions became much stricter based on the proposed location of the firm seeking benefits. For the first time, certain industries would no longer be promoted if they are located in Zone 1, even if they were primarily exporters. For example, only textile producers located in Zone 3 are entitled to promotion, while electronics firms locating in either Zone 2 or Zone 3 are entitled to promotion. Many types of resource-based industries, light industries, metal products and machinery, electronics, and chemical, paper and plastics industries can only receive BOI promotion by locating in Zone 2 or even Zone 3. (There appear to be exceptions for some exporting firms located in industrial estates in Zone 1 . However, the IPZs were revised again in 2000 [3].

GMSECs Frameworks and Effect on Thailand Industry

Greater Mekong Subregion (GMS) is a country group located in Mekong River basin and sharing natural resources in Mekong River. The GMS comprises of six

countries namely; Kingdom of Cambodia, Lao People's Democratic Republic, Myanmar, the Kingdom of Thailand, the Socialist Republic of Vietnam, and the People's Republic of China (Yunnan and Guangxi Province). Since 1992, the GMS countries have embarked with the assistance of Asian Development Bank (ADB), these nations have cooperated in economic programs, and environmental protection through closer economic linkages. With the aim to effectively manage the environment and economic development in GMS through enhanced connectivity, improved competitiveness, and community in the subregion to reach the sustainable development, the life quality of GMS people is better. The cooperation under the GMS countries' Strategic Development Framework aims to develop the investment, logistics, tourism, agriculture, telecommunication, capability building, energy, environmental management, infrastructure, and commerce in subregion.

Thailand's geographical site is an advantage as it is the heartland of subregion: the hub or center of logistics in the GMS, so the Government of Thailand has supported to develop the transportation network to link with neighboring countries in the area as the regional freight transport. The GMS economic corridors can enhance connectivity of GMS communities by the linkage or exchanging knowledge, science, arts, culture, technology, goods, and services. All of them play as the indicators for socio-economic development of the sub region. There are three main economic corridors (Fig.2) to link the subregional transport and socio-economy, namely; North-South Economic Corridor (NSEC), East-West Economic Corridor (EWEC) and Southern Economic Corridor (SEC).

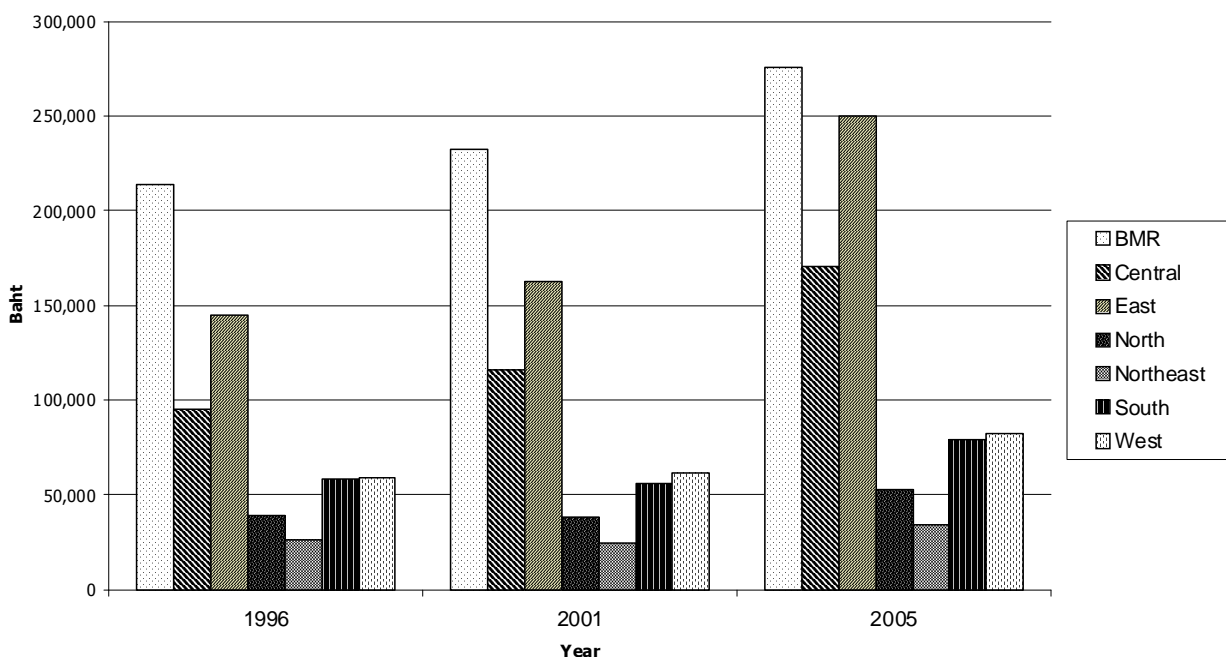


Fig. 1. Gross Regional Product Per Capita, by region 1996-2005
 Source: Calculated from NESDB (2007)



Fig. 2. GMS Economic Corridors (GMSECs)
Source: ADB, 2002 from [1]

In Addition, the influence corridors that have the most effect on Thailand’s economic are the North-South Economic Corridor and the East-West Economic Corridor. Besides, Thailand is the hub where NSEC and EWEC join together at Wang Thong intersection in Phitsanulok province. In comparison with other GMS countries located in these corridors, half of the whole distances of both NSEC and EWEC passes over Thailand. This will become a logistic route that will positively affect the economy of Thailand.

The geographical advantage affects Thailand as a center of regional freight transport either NSEC or EWEC. It reduces the transportation distances of neighbor countries such as China; Lao PDR can transfer freight to deep port around the Gulf of Thailand. Goods and services are distributed to other regions through the hub as Thailand especially Bangkok is the center of the industrialization and logistics.

3. METHODOLOGY

The data set we use is the industrial database provided by the Department of Industrial Work (DIW), Ministry of Industry. It includes data for 76 provinces and 11 manufacturing sectors registered directly by the DIW. The time focused (1996-2005) is the period which cover pre- and post financial crisis period.

The regional specialization indices are the measure of the degree of industrial specialization (or diversification) of a region. Changing in these indices indicate changes

in the industrial structure of the region. Location Quotient (LQ), sometimes called coefficient of localization or specialization, is a ratio that approximates the relative position of an activity in an area as compared to the same activity occurring in a broader region. The formula for computing location quotients is defined as:

$$LQ_i = \frac{A_i}{\sum_{i=1}^n A_i} \bigg/ \frac{B_i}{\sum_{i=1}^n B_i}$$

where:

A_i = the amount of some activity A in area i

B_i = the measure of activities A in the whole region i

Location quotients can be interpreted by using the following conventions:

1. If $LQ > 1$, this indicates a relative concentration of the activity in area n , compared to the region as a whole.
2. If $LQ = 1$, the area has a share of the activity in accordance with its share of the base.
3. If $LQ < 1$, the area has activity share less than that has been generally, or regionally, found.

4. FINDINGS

GMSECs Survey

Basically, NSEC has 2 routes (see Fig. 1), the first one is from Kunming city, China (PRC) to Bangkok and the second one is from Kunming to Hanoi, Vietnam. The NSEC where directly affects Thailand is along the route number R3A from Kunming – Xishuangbanna- Mohan in China (PRC) cross border to Boten (Lao PDR)-Luang Namtha-Huaixay then cross the Makong River to Chiang Khong Distrcit,Chiang Rai province in Thailand and goes along the road no. 1020, 1152 and 1232 joins the expressway no.1 Phahon Yothin in Chiang Rai then goes downtown to Bangkok.This route passes over 13 provinces: Chiang Rai, Phayao, Lampang,Phrae, Uttaradit, Phitsanulok, Phichit, Nakhon Sawan, Lop Buri, Sara Buri, Ayutthaya, and Phatum Thani to Bangkok. The total distance of NSEC from Kunming to Bangkok is about 1,960 Km as shown in Table1 and Figure 3.

The EWEC is an economic route as economic development plan in Greater Mekong Subregion. This logistic route aims to link the economic region from the Western coast area of Andaman Sea to the Eastern coast area of the South China Sea. EWEC start from coastal route in Mawlamyine, Myanmar cross border to Mae Sot border goes along the road no.105 to Tak downtown joins road no. 12 to Sukohthai, Phitsanulok, Phetchabun, Chaiyaphum, Khon Kaen, Kalasin, and Mukdahan province, then crosses the Mekong River to Sawannakhet District in Lao PDR along the road no.9 entering Densavan/Lao Bao Border (Lao PDR/Vietnam border) passes over Dong Ha town in Quang Tri province to Hue city in Thua Thien province until to the end at the coastal area of Da Nang, the fourth largest city of Vietnam. The

total distance from Da Nang, Vietnam to Mawlamyine, Myanmar about 1,432 Km. is given in Table 2 and Fig. 3.

Table 1. NSEC distances by country

Country	From - To	Length (km)	Percentage
PR China	Kunming, Yunnan–Mohan/Boten(China /Lao Border)	760	39
Lao PDR	Mohan/Boten(China /Lao Border) - Huaixay (Lao PDR)	225	11
Thailand	Chiang Khong, Chiang Rai - Bangkok (Victory Monument)	975	50
	NSEC Total	1,960	100

Source: Field Surveyed, September 2007.

Table 2. EWEC distances by country

Country	From - To	Length (km)	Percentage
Vietnam	Da Nang, Vietnam - Lao Bao/Densavan Border (Vietnam/ Lao PDR border)	266	19
Lao PDR	Lao Bao-Densavan Border - Sawannakhet	236	16
Thailand	Mukdahan - Mae Sot Border, Tak	805	56
Myanmar	Myawaddy - Mawlamyine	125	9
	EWEC Total	1,432	100

Source: Field Surveyed, June 2007.

Table 3 Change in the Structure of Manufacturing Industry in Employment

Sector	1996		2005		Growth	Growth rate
	Number	% Share	Number	% Share	1996-2005	(%)
Food, Beverages and Tobacco	442,343	17.93	574,412	16.55	132,069	3.32
Textiles, Wearing Apparel, Leather Products	558,520	22.64	727,919	20.97	169,399	3.37
Paper and Paper Products, Printing	60,672	2.46	98,504	2.84	37,832	6.93
Chemicals and Chemical Products	68,631	2.78	106,595	3.07	37,964	6.15
Rubber and Plastic Products	195,447	7.92	333,688	9.61	138,241	7.86
Non-Metallic Mineral Products	146,587	5.94	193,099	5.56	46,512	3.53
Basic Metals and Fabricated Metal Products	191,299	7.76	231,793	6.68	40,494	2.35
Machinery, Electrical Equipment and Supplies	285,493	11.57	460,307	13.26	174,814	6.80
Motor Vehicles and Other Transport Equipment	149,809	6.07	367,299	10.58	217,490	16.13
Furniture	168,665	6.84	226,337	6.52	57,672	3.80
Other Manufacturing Industries	199,191	8.08	150,832	4.35	-48,359	-2.70
Total	2,466,657	100.00	3,470,785	100.00	1,004,128	4.52

Source: DIW (2005)

Table 4 Change in the Geographical Distribution of the Manufacturing Industry in Employment by BOI's Zone

Zone	1996		2005		Growth	Growth rate
	Number	% Share	Number	% Share	1996-2005	(%)
1	1,352,470	54.83	1,656,697	47.73	304,227	2.50
2	447,693	18.15	819,984	23.63	372,291	9.24
3	666,494	27.02	994,104	28.64	327,610	5.46
Nation	2,466,657	100.00	3,470,785	100.00	1,004,128	4.52

Source: DIW (2005)

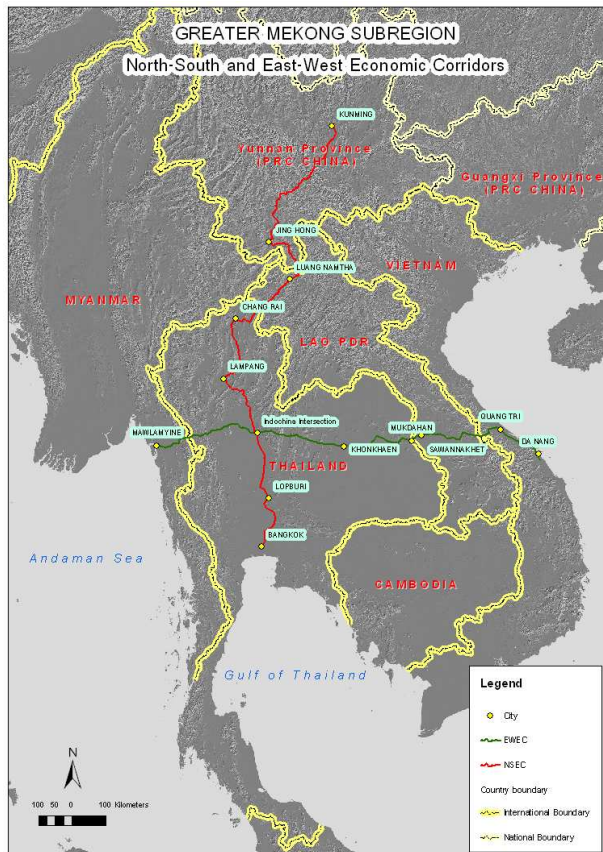


Fig. 3. North-South and East-West Economic Corridors.

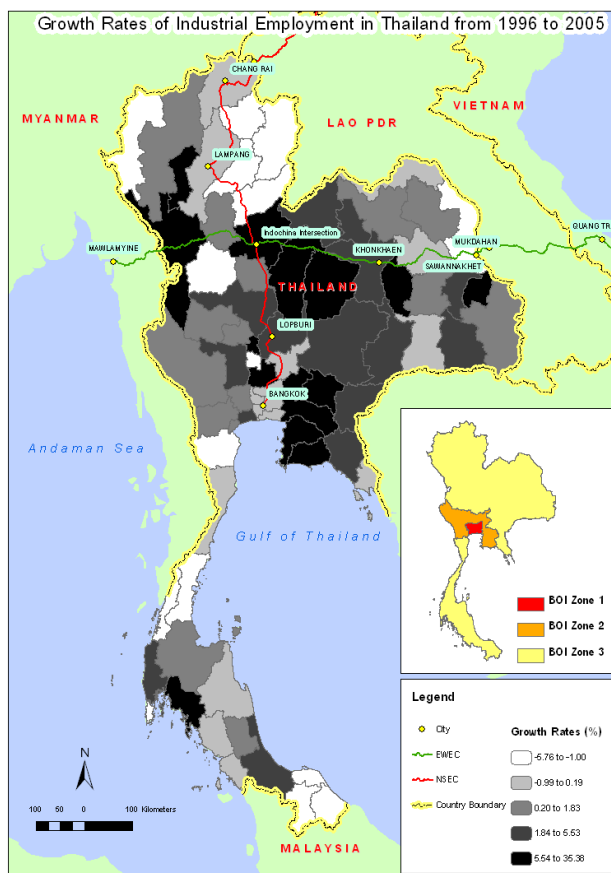


Fig. 4. Growth rates of Industrial Employment in Thailand from 1996 to 2005

The Manufacturing Structure and Distribution in Thailand

Table 3 indicates the changes in the structure of the manufacturing industry between 1996 and 2005. Thailand as a whole had the annual employment contract at the average rate of 4.52% over the period, increasing above 1 million employees altogether (from 2.46 million to 3.47 million employees). The motor vehicle and other transport equipment recorded the largest positive growth rate at 16.13%. It increased 217 thousand employees, accounting for 25% of the total increase in manufacturing employment. Therefore, it increased its employment share substantially from 6.07% to 10.58% during the period. This reflects the fact that Thai government has promoted the hub of auto-mobile as 'Detroit of Asia' since the early 1990s. In 2005, the textile, wearing apparel and leather products still had the largest employment share at 20.97%, followed by the food, beverages and tobacco products at the percentage of 16.55. Machinery, electrical equipment and supplies industries enjoyed 13.26% of the share.

From the location quotient of regional specialization analysis during 1996 to 2005. In 1996, it was found that 12 of the 20 provinces with specialization in manufacturing industry were located in the core region (Zone1 and 2). In 2005, Bangkok had stilled the highest specialization which however was decreased. Only 12 of the 76 provinces showed an increase in higher specialization, and most of them were located in the core region, especially in the vicinity and inner ring area; Nakhon Pathom, Nonthaburi, Samut Sakhon, Chachoengsao, Phra Nakhon Si Ayutthaya, and Rayong where were the important sources of food processing, electronic appliance, auto-mobile and chemical production while 5 of the 58 provinces in the promotional area by BOI showed an increase in specialization, but the magnitude of this increase was very small.

Table 4 has shown the change in the geographical distribution of the manufacturing by region between 1996 and 2005. There have been significant changes in the geographical distribution. Among the 3 zones, 2 zones presented above average annual growth rate of the nation, especially, Zone 2, where includes Chon Buri and Rayong as the center of petro-chemical and auto-mobile industries and business in the eastern region of Thailand, recorded very high positive growth rates (above 2 times of the nation). In 2005, Zone 2 had around 23.63% of total manufacturing employment higher from 18.15% in 1996. It raised 372 thousand manufacturing employees in the period. The Zone 1, where BMR was included, also had higher rate of employment, but slightly growing. However, only Bangkok had lost its share from 21.70% to 14.41% of the total manufacturing employment. It recorded negative growth rates around -0.72%, whilst its vicinity showed positive growth rates such as Samut Prakan and Samut Sakhon, increased above 151 and 94 thousand of manufacturing employment respectively.

5. DISCUSSION

Finally, there seems to have a shift in manufacturing employment, during 1996 to 2005, from the industrial core to the inner ring area, even though the BMR still occupied 47.73% of total manufacturing employment. It should be noted that the relocation of factory during the late 1990s and the early 2000s, which corresponds closely to the rise and the collapse of the bubble economy. In early 1990s, financial institutes increased their loan for investment in stocks and real estate, especially in BMR, following the deregulation and liberalization of financial sector in Thailand. As a result, the prices of stocks and real estate increased conspicuously, and their respective capital gain brought huge wealth to the investors. However, this bubble economy collapsed in 1997 with a drastic fall in the prices of stocks and real estate so called 'Tom Yam Kung Crisis' and the Thai economy entered a period of recession. Actually, the financial crisis was associated with the rise and fall of geographical concentration in BMR.

Although, almost of factories were still located in the BMR, the industrial employment in some provinces under the GMSECs grew rapidly for example Tak, Phitsanulok, Lamphun and Khon Kaen. Their employment increased about 88,000 persons. Almost of them were in the labor-intensive industries such as the Textile and Electronic industries. The increment indicated that the potential and the opportunity of the strategic area under the GMSECs were useful for the entrepreneurs to operate their transactions and transport costs particularly in the EWEC.

6. CONCLUSIONS AND RECOMMENDATIONS

The results of this study confirmed that the impact of the country's trade liberalization policies has been the industrial concentration and spatial concentration in the BMR. Although the Government of Thailand has also been attempting to promote industrial decentralization policies, still there has been no real and significant evidence of increased regional specialization of manufacturing between 1996 and 2005 in the IPZs specifically in Zone 3. However, many firms have already relocated their industries from the BMR to its surrounding areas covered in Zone 2, more particularly in the IEs by IEAT. Therefore, it can be concluded that the privileges offered under the BOI scheme may have not been really sufficient to subsidize the agglomeration economies in the new economic geography model.

After GMSECs had been embarked on the GMS Strategic Development Framework; the direction of industrial development in Thailand emerged in the positive way. Especially many provinces along the GMSECs were affected by the positive growth rates of employment, especially in remote areas. Consequently, the economic corridors affect many footloose industries in Thailand to evacuate from BMR to potential area around GMSECs. In the meanwhile, Thailand developing policy that was issued by BOI should be

adjusted in the same direction of GMSECs Strategic Development Framework. As BOI's planning policies focused on the tax conventional measure, GMSECs aimed to develop under the geographical development framework in many dimensions. The cooperation embarks through closer economic linkages of the region and harmonizes with the regional developing plan.

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