

**Policies for Provincial Industrial Development
in
Thailand**

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POLICIES FOR PROVINCIAL INDUSTRIAL DEVELOPMENT IN THAILAND

1 Introduction

When Thailand introduced the First National Economic Development Plan in 1961, industrialization became part of the overall economic and social development strategy. Over the years, a large number of policy instruments have been introduced and a number of institutions have been set up to support the industrialization process. Import substitution was used as a major strategy to accelerate economic growth in the 1960s and export promotion was added in the 1970s. As a result, the rate of economic growth increased rapidly, leading to a tremendous increase in industrial output and income. The economic growth rate averaged about 7.9 percent and 6.9 percent during the 1960s and 1970s respectively, while the share of the manufacturing sector in GDP nearly doubled over 20 years, from 11.7 percent in 1960 to 20.8 percent in 1980 (Rattasari, 1993, p.2).

However, this remarkable growth was not evenly distributed across the country ; instead, industrial development tended to concentrate in the Bangkok Metropolitan Region, or *BMR* (i.e., Bangkok and its five surrounding provinces, Pathum Thani, Samut Prakarn, Nonthaburi, Samut Sakorn, and Nakorn Pathom), particularly in Bangkok. In addition, as the government became aware of this problem in the late sixties, there appeared a widening of the income gap between different groups of earners and different parts of the country (NESDB, 1992, p.2). Furthermore, excessive migration from rural areas to Bangkok has raised concerns about increases in urban unemployment because the growth rate of labor demand is not keeping up with that of labor supply. It has also generated social problems in Bangkok, such as slums, shantytowns and environmental problems (Pakkasem, 1988, pp. 43-44). Therefore, in the Third Plan (1972-1976) the Thai government adopted

provincial industrial development as an important part of its strategy to decentralize industries away from Bangkok, generate income, and absorb unemployment in rural areas. This emphasis on provincial industrial development has continued until the current Seventh Plan (1992-1996).

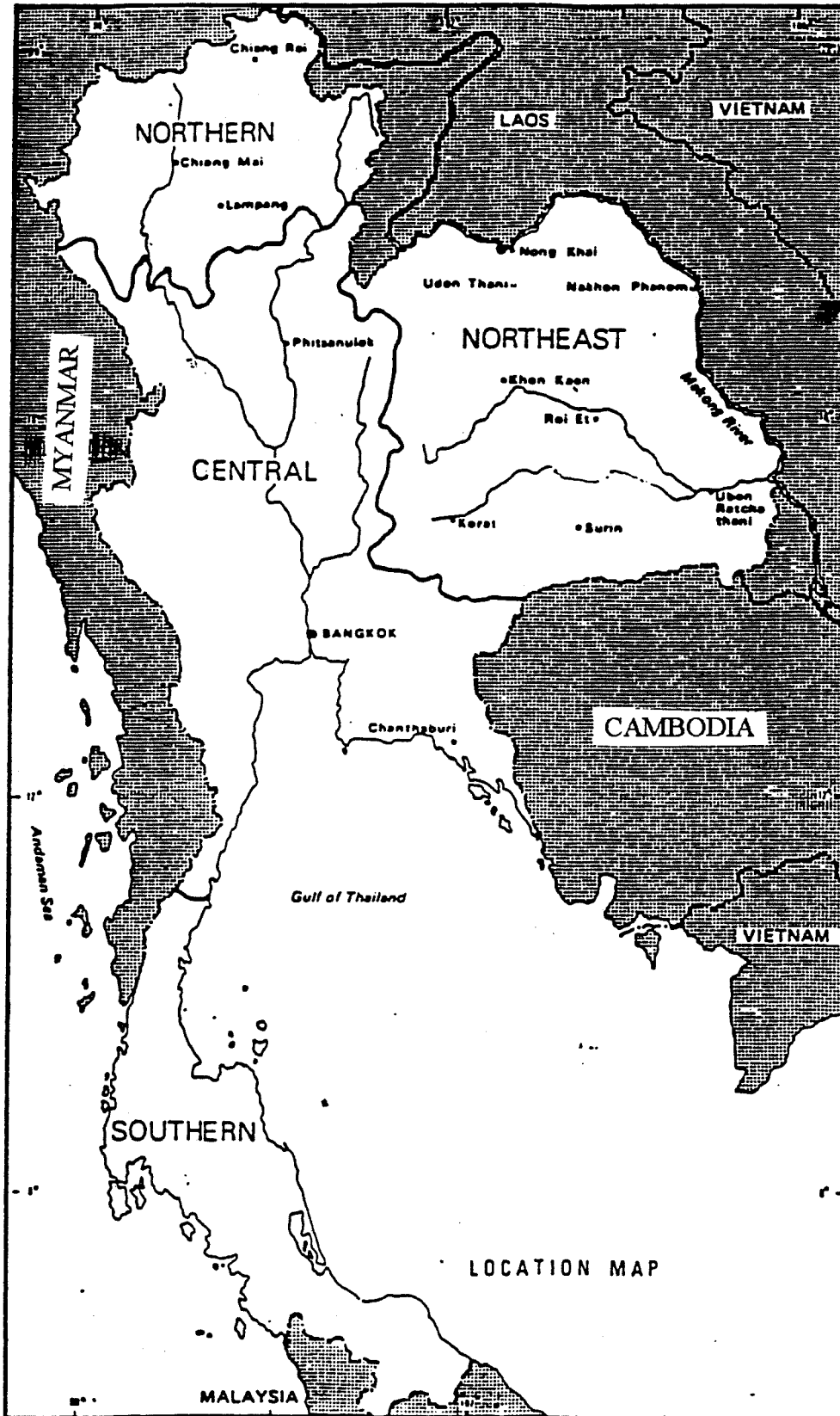
1.1 Geography and population distribution

Before going on to the problems of industrial concentration, we will briefly look at the geography and population distribution of Thailand. Thailand is located in the heart of the Southeast Asian mainland, bordered by Laos and Myanmar to the north, Cambodia and the Gulf of Thailand to the east, Myanmar and the Indian Ocean to the west, and Malaysia to the south (see Figure 1: from Jackson and Turcot, 1988, p. i). It covers an area of 513,115 square kilometers, and has maximum dimensions of about 2,500 km north to south and 1,250 km east to west, with a coast line of approximately 1,840 km on the Gulf of Thailand and 865 km along the Indian Ocean. It is divided into four natural regions :

- (1) the North, whose leading city is Chiang Mai ;
- (2) the Central, or Chao Phraya Basin, in which Bangkok, the capital of Thailand, is located ;
- (3) the Northeast, or Korat plateau ; and
- (4) the South, or Southern Peninsula.

The country is divided into 72 provinces, each (except Bangkok which is administered by an elected governor) governed by a governor appointed by the Minister of Interior. The provinces are further sub-divided into districts, sub-districts, and villages. Bangkok covers some 1,537 square kilometers which is 0.30 percent of the total area of the country; in 1990, its population was 5.7 million which is 10.3 percent of the total population (Office of Prime Minister, 1991, pp. 1-3, 55, 69, and 221).

FIGURE 1
MAP OF THAILAND



1.2 Regional concentration of industry

Thailand's economy has grown rapidly and has become more industrialized during the past few decades. In 1991, the share of manufacturing value added in Thailand's GDP stood at 28.2 percent, and per capita income was US \$ 1,570. However, the regional structure of the Thai economy is highly unbalanced. The BMR captured 75.2 percent of the country's

Table 1
Gross Regional Product (GRP) at Current Market Price :1991
(percent of Kingdom)

Industry of Origin	Whole Kingdom	North East	North	South	Other Central	BMR Central	Central
Agriculture	100.00	24.41	20.54	21.07	24.42	9.57	33.99
Manufacturing	100.00	4.07	2.80	1.59	16.35	75.19	91.54
Others*	100.00	12.48	11.40	8.67	17.58	49.87	67.45
Gross Regional Product	100.00	11.64	10.15	8.26	18.11	51.84	69.95
Population	100.00	34.4	19.2	13.4	16.9	16.1	33.00

Source : National Economic and Social Development Board (NESDB), Bangkok, Thailand

* Others including services, mining and quarrying, construction, and etc.

manufacturing income, while its population was only 16.1 percent for the total of the country. Its share of other components of GDP, except agriculture, was also high at about 50.0 percent. Moreover, the Central region alone accounted for about 92 percent of the total manufacturing income of the country, compared to only about 4 percent for the Northeast which has almost the same share of the country's population, about one third (see Table 1).

The share of manufacturing value added in GDP or Gross Regional Product (GRP) indicates the degree of industrialization of the country or region. The degree of industrialization varies widely between the BMR and the regions (see Table 2). While the share of manufacturing value added in GRP of the BMR was 40.8 percent in 1991, the share was much lower elsewhere: 7.8 percent in the North, 5.4 percent in the South, 9.8 percent in the Northeast, and 25.4 percent in the Other Central Region (defined to include all provinces in the east, west and central plain but excluding the BMR).

Table 2
Share of Manufacturing Value Added in GRP : 1991

	WK	Northeast	North	South	Other Central	BMR
Agriculture	12.8	26.9	25.9	32.7	17.3	2.4
Manufacturing	28.2	9.8	7.8	5.4	25.4	40.8
Other	59.0	63.3	66.3	61.9	57.3	56.8
Total	100	100	100	100	100	100

Source : NESDB

The data above (Table 1) also show that there has been a widening of the income gap between regions. The BMR alone earned about half of the income of the country while the Other Central Region captured about 20 percent of total income. The gap is even worse for the Northeast which earned only about 10 percent of total income but has almost 35 percent of the total population.

1.3 Size perspective

Table 3 displays the distribution of industrial establishments among regions by size of establishment. The results show that, for any given size of industry, firms located in the BMR, i.e., Bangkok plus the Inner Ring (see Figure 2 : from Biggs et al., 1990, p. 11), invariably account for a large share of the total. For example, the BMR has 55 percent of

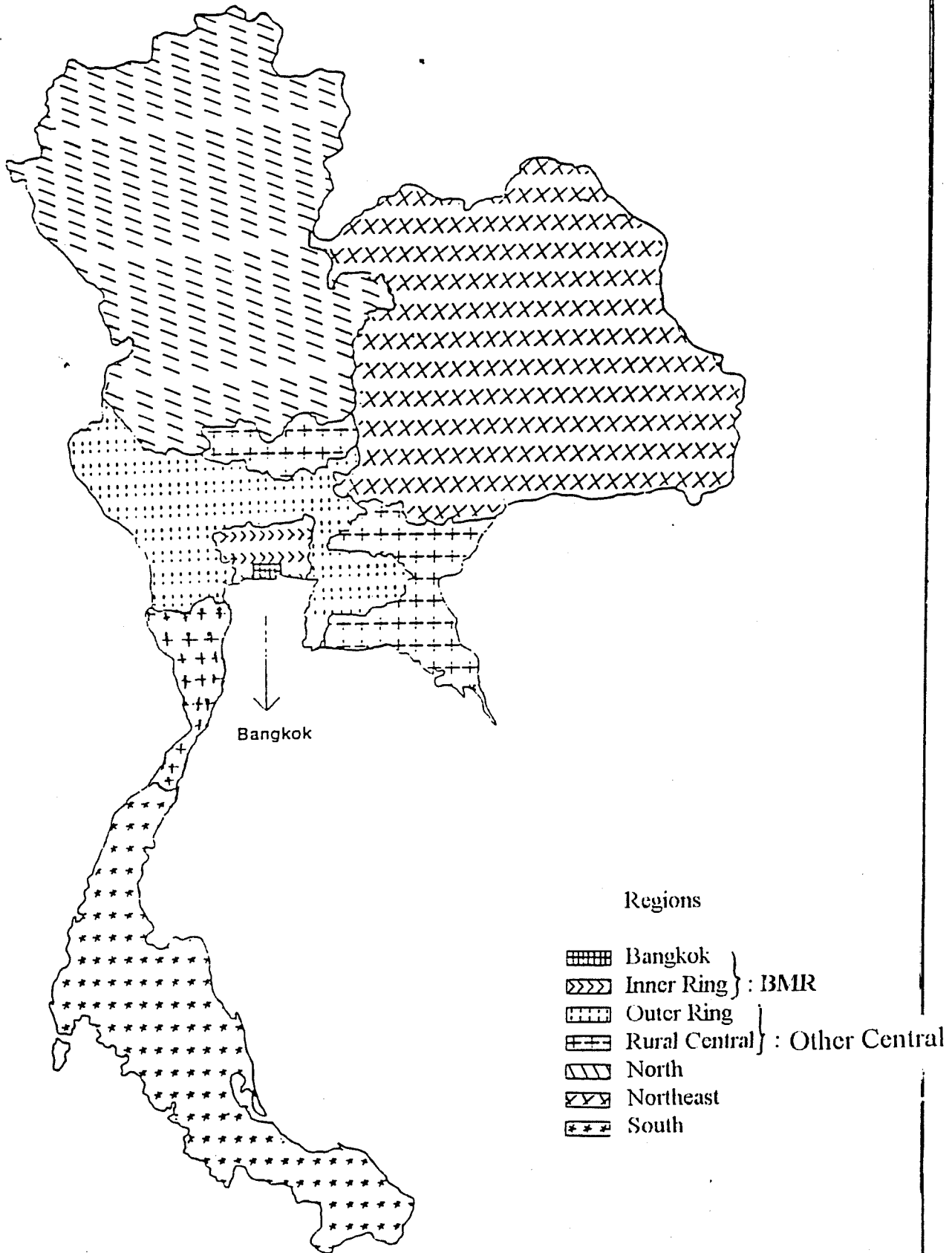
Table 3
Regional Distribution of Industries, by Number of Employment
and Invested Capital : 1985
(percent of Kingdom)

Employment (persons)	WK	BKK	INNER RING	BMR	C	N	NE	S
1 - 9	100.0	48.1	6.6	54.7	17.8	7.7	13.2	6.6
10 - 19	100.0	51.8	9.2	61.0	12.2	8.4	12.9	5.5
20 - 49	100.0	50.9	17.0	67.9	8.4	9.2	8.5	6.0
50 - 99	100.0	41.0	25.4	66.4	10.2	9.9	8.3	5.2
100-199	100.0	30.8	37.9	68.7	8.8	7.5	9.2	5.8
200-299	100.0	29.9	40.9	70.8	8.4	11.0	4.3	5.5
300+	100.0	30.7	42.6	73.3	12.9	6.3	5.9	1.6
Invested Capital (million baht*)								
Up to 1 mil.	100.0	49.4	6.0	55.4	16.6	8.2	13.4	6.4
1 - 10	100.0	46.6	18.9	65.5	10.8	8.4	9.5	5.8
10-15	100.0	32.2	37.0	69.2	11.3	6.1	5.7	7.7
15-20	100.0	37.2	43.0	80.2	7.8	3.3	3.7	5.0
20-49	100.0	36.9	45.2	82.1	7.8	2.0	3.7	4.4
50+	100.0	27.3	44.9	72.2	18.4	4.0	3.8	1.6

Source: Derived from Kuroda and Kasaji, 1987, Tables AP11, AP12.

Note : BKK = Bangkok
 INNER RING = The five surrounding provinces
 BMR = BKK + INNER RING
 * US \$ 1 = 25 Baht

FIGURE 2
Thailand : The Regions



the industries employing up to 9 workers, 61 percent of those employing between 10-19 workers, and 73 percent of those employing more than 300 workers. When the size of operation is classified by the amount of invested capital, the BMR has 55 percent of industrial operations with up to 1 million baht of invested capital, 66 percent of those with 1-10 million baht and 72 percent of those that have invested over 50 million baht. Therefore, whatever the size of operation, the absolute number of industrial establishments located in the BMR is always the largest in comparison to other regions.

Another interesting issue emerges when the distribution of industries among the regions by size is examined. As the size of industrial firms increases, the combined percentage of those located in the BMR, as a separate region, increases relative to the remaining regions (see Table 3). There also appears to be a redistribution of the relative share away from Bangkok into the inner ring, as the size of employment and invested capital becomes even larger.

1.4 Objective of study

It is clear that the problem of concentration of industries in the BMR, especially Bangkok, is still serious even though the government adopted provincial industrial development as a strategy to solve these problems two decades ago. This observation suggests that some of the past industrial policies of the Thai government may have been inappropriate for the development of provincial industry. The major objective of this paper is to study the past industrial policies and measures of the Thai government (since 1961, when the First National Development Plan was introduced) to determine which ones might have created obstacles to the development of provincial industry or subsidized the industries in the BMR (particularly Bangkok), and to propose appropriate strategies to promote industrial decentralization. These strategies have to solve the problems of : (1) concentration and

congestion in the BMR; (2) income disparity between the BMR and other regions; (3) creating adequate job opportunities outside the BMR; and (4) excessive migration from rural areas to the BMR.

In order to achieve the above objective, first, the basic theoretical approach (centralization concept, growth pole/ growth center theories, and location theory) that is considered relevant to the development of provincial industries in the Thai context will be explored. Second, the role of government policy and other factors in influencing industrial location will be analyzed. Third, appropriate policies to decentralize industries away from the BMR and develop provincial industries will be recommended. Finally, some conclusions will be provided.

2 Basic Theoretical Approach

The concentration of economic activities in the BMR and severe income disparity between the regions which accompanied Thailand's remarkable rate of economic growth, leads one to question the nature of the strategies for economic development that were employed by the Thai government during the last two decades. Were the problems due to the adoption of policies that were inconsistent with the government's stated theoretical approach, or do they lie in the underlying theory itself? To help answer this question, this section will review the theoretical literature related to industrial development in Thailand, focusing on the process of centralization and its advantages and disadvantages, the concepts of the growth pole and growth center, and finally, location theory, all of which are considered relevant to the development of provincial industry in Thailand.

2.1 Centralization

Economic growth, a popular goal of governments in most developing countries, seems to often be accompanied by centralization. The principle idea of centralization is to generate growth by using primate cities (or metropolises) as *beach heads*, centers of modernization which act as catalysts for economic growth, from which the benefits of modernization flow outwards to revitalize the stagnating agricultural sector (McGee, 1971, p. 13). The belief that concentrated industrial investment in major urban centers creates a *ripple effect* of growth throughout a nation is reflected in the major models that have governed development thinking (Soja and Tobin, 1975, pp. 197-243 ; De Souza and Philip, 1974). Equilibrium models, extensions of classical location theory, assumed that economic processes would guide a nation automatically toward optimal growth. Spatial inequalities would be corrected through the untrammelled flow of production factors; and, without government intervention, disparities between urban centers and rural peripheries would eventually even out as economic development spread *naturally* from the center to the hinterlands.

Concentration of investment in the primate city or a few metropolitan areas has been the strategy most frequently chosen by developing countries, sometimes more by happenstance than by design, owing to the influence of previous and external decisions, existing geographic characteristics, and recognition of the benefits of locational proximity and economies of scale (Rondinelli and Ruddle, 1978, p. 46). Historical circumstances in many developing countries also determined the concentration of investment in a single large city. Throughout most of the colonial world, but particularly in tropical Africa and parts of Asia, European nations maintained a classical relationship with their colonies, with each territorial economy subordinated to that of a foreign industrial economy and forced to concentrate resources on the production of raw materials for export to serve industrial nations.

Because of the existing unbalanced spatial structure, urban centers already perform vital functions in the national economy and have influenced the pattern of physical development by establishing the conditions for future investment. "The selection of future service centers, especially at the higher levels, should be one of the main components of a national physical plan and of the regional plans based on it," two theorists argue. " While the choice of future centers will be greatly influenced by the existing pattern of communication, it will in turn largely determine future changes in the pattern. Service centers and communications together provide the physical framework within which economic and social development is taking place." (Grove and Huszar, 1964, p.11).

The location of investment not only affects the potential of individual communities for future development but also shapes a nation 's entire spatial system. Locating services and facilities in central places of various size can have important impacts on the pattern of production and exchange; the concentration of economic and social activities in market towns, small cities, intermediate urban centers, and metropolitan areas can create economies of scale and spill-over benefits for surrounding areas (Rondinelli, and Ruddle, 1978, p.20).

The importance of the investment location decision together with the existing unbalanced spatial structure as discussed above would easily accelerate the concentration of primate or larger cities. However, theorists and practitioners have debated the merits of centralization for more than a quarter of a century. Some development theorists see urbanization as a *catalyst* while the others see it as a *cancer*. In the course of these debates, both advantages and disadvantages of centralization have been pointed out.

The advocates of centralization argued that to maximize the growth rate of national product, a country needs to concentrate investment in large cities where it is more productive. For example, Koichi Mera, analyzing the effects of centralized and decentralized investment in Japan, found that whereas inter-regional income disparities can be reduced by increasing the distribution of industrial capital in developing regions of the country, inter-regional equity is achieved at the cost of reduced GNP. He cites comparable studies of industrial countries in Latin America and Asia and concludes that "large cities are more productive. Therefore, a decentralization policy of investment and population distribution over the country cannot be encouraged, particularly for less developed countries, if the national goal is to maximize the growth rate of national product." (Mera, 1970, pp. 1, 27-28). Jane Jacobs (1970) also points out that the growth of nations is generated by the growth of city economies. She suggests that import replacement is an efficient tool for making city economies grow. As she notes "after a city has experienced an episode of import replacing and import shifting, its local economy is thus much larger than it was before the episode : not only larger absolutely but also *larger in proportion to its exports and imports*" (Jane Jacobs, 1970, p. 161).

Yet another advocate of concentrated investment contends that primate cities are the most important centers of cultural change, especially in fields vital to economic development: education, business organization, public administration, and technological innovation. Hoselitz argues that "if economic development is associated with modernization, the mediation of new, 'more modern' forms of social action through the primate cities" is indispensable (Hoselitz, 1957, p.43).

In contrast, opponents of centralization such as Jacobson and Prakash (1971) and McGee (1967) have put forth arguments in favour of decentralized development which Rondinelli and Ruddle (1978) summarize as follows :

- 1) Primate cities and large urban centers cannot provide enough jobs for even their own populations and therefore cannot absorb the additional migrants who flow to the cities in search of employment.
- 2) Because of burgeoning population growth in the largest cities, unskilled or less educated people accept demeaning or low-wage jobs, which provide at best a bare subsistence income, and are forced to live in conditions worse than those in rural areas.
- 3) Rural migrants generally expect to be provided with goods and services that are neither available nor expected in rural hinterlands or small towns, including nonessential foodstuffs, housing, fuel, entertainment, and "apparel suitable for city life." The lack of these provisions in urban areas is a cause of social alienation and resentment.
- 4) Growing urban populations place an increasing demand on public facilities and services such as health care, education, transportation, electricity, roads, sanitation, police and fire protection, and public administration, which usually are overstrained.
- 5) Most metropolitan areas are afflicted with traditional urban infrastructures, to which modern *ad hoc* accretions have been made, and thus are incapable of serving the physical functions of large cities in developed countries. In most cities of developing nations, life is ostensibly demoralizing not only for the urban poor, but for the emerging middle classes. City life is thus dangerous to the community as a whole because of high levels of crime and the absence of physical and economic necessities.
- 6) Most of the larger metropolitan areas are financially constrained with either limited income bases or inefficient revenue collection systems, or both, and unable to provide the level of services and number of facilities required for existing inhabitants, let alone the additional migrants expected to pour in from rural areas over the next few decades.
- 7) Continued migration to the major metropolitan areas results in the concentration of the urban poor in slums and squatter settlements, adding to the physical deterioration and social demoralization of the city.
- 8) Continued concentration of people and resources in the primate city and metropolitan areas drains resources from the hinterland, perpetuates regional income differences, and prevents significant growth from occurring in smaller towns and villages, leading to the establishment and maintenance of dual economies (Rondinelli and Ruddle, 1978, pp. 48-49).

In conclusion, a consideration of past economic development policies in Thailand suggests that Thailand followed a strategy of centralization. Most of the public infrastructure and social services provided by the government have been centered in Bangkok since modern economic development began under the First National Economic and Social Development Plan in 1961. This policy has resulted in a high average rate of economic growth for three decades, but inter-regional income disparities and urban-rural migration have also increased. Moreover, industries and other economic activities have become highly concentrated in Bangkok. In an attempt to decentralize industry away from Bangkok, the government decided to adopt growth pole / growth center strategies . Thus the next section will review growth pole / growth center theories.

2.2 Growth pole / growth center theories

Growth pole theory was introduced by Perroux in 1950. It is an unbalanced growth strategy in a spatial context. This strategy provides an alternative that could foster *more balanced* national growth by creating new growth poles or growth centers which can provide a migration alternative to the large cities as well as beneficial *spread effects* to their rural hinterlands. Perroux developed the concept of growth poles based on the hypothesis that "growth does not appear everywhere and all at once; it appears in points or development poles, with variable intensities; it spreads along diverse channels and with varying terminal effects for the whole economy" (Perroux, 1950, p. 45). These growth poles are assumed by Boudeville to be composed of a complex of propulsive industries. A propulsive industry has two characteristics :

- (1) a direct and indirect dominating influence over all other activities; and
- (2) an oligopolistic concentration of firms with price leadership.

Growth is assumed to be transmitted via the interindustry linkages of the propulsive industries (Boudeville, 1966, p. 112). Although Perroux 's original thesis limits the analysis

of these ties to sectoral relationships in economic space, he later applied similar ideas to geographical areas, generally known as growth centers, from which it may be inferred that the growth pole could diffuse growth to its hinterland through interactions between the propulsive industries located in the growth pole and satellite industries located in the hinterland. In so doing he noted, first, that agglomeration economies are another factor encouraging the development of growth poles and, second, that agencies operating in geographical space, such as private sector enterprises and public institutions, affect the diffusion of growth impulses. The agglomeration economies concern the scale of operations in a particular community, as Weber (1929, pp. 124-172) observed that economies can be obtained by a plant either internally by growing, or externally by purchasing from other specialized businesses. He also recognized diseconomies of scale (deglomerative factors).

Hoover (1937, pp. 89-111) divided *agglomeration economies* into three types. First, *scale economies* : all manufacturing operations can benefit from a larger scale of production. Second, *localize economies* : independent small businesses gain by locating near to each other. For example, a sequence of processes -- such as rolling a metal, shaping it into semi-finished items or components, and manufacturing finished metal goods and/or machinery -- can be in one plant, but if several plants locate near to each other the production process does not lose much by separation, and independence and flexibility are retained. In other words, this relationship can be seen as forward and backward linkages. Finally, *urbanize economies* : scale advantages benefit an even wider group of businesses -- potentially all businesses. As manufacturing grows in a particular area, the business services improve in variety and quality, potential suppliers and buyers increase, the size and variety of the workforce expands -- in fact, almost all the factors required by a firm improve in one way or another. These advantages, however, relate not to only one sector of industry but to all. If general standards of education improve, everybody benefits. If more trucking companies

expand the route network serving a city, every business benefits. Thus urban economies encourage sectoral diversity to a much greater degree than do local economies.

The growth pole idea is closely related to the promotion of industrial complexes for regional development purposes. Essentially, the focus of these complexes should be on sectors with the characteristics of Perroux's propulsive firms or industries, including rapid rates of growth in employment and output as well as extensive backward and forward linkages to serve as the channels for the transmission of growth. The petrochemical industry met these requirements during the 1960s when it was used as an instrument of regional development policy in several different countries (Chapman, 1984, p. 87-98).

However, the technical linkages do not automatically induce adjacent investment in related manufacturing activities. Industrial linkages are maintained over considerable distances in economies with efficient transportation systems. Furthermore, the location requirements of upstream and downstream operations in a processing chain may be very different. In the case of petrochemicals, the basic activities are drawn to the sources of raw materials (natural gas and crude oil supplies) but the plastics and textile industries, which depend upon petrochemical products, tend to be associated with market location and sources of cheap labor respectively (Chapman and Walker, 1991, pp. 230-233).

Growth center policies, which seek to provide an efficient organization of public infrastructure, are another approach to regional development. Hansen (in Hewings, 1977, p. 119) noted that a growth center is a complex consisting of one or more communities or places which, taken together, provide, or are likely to provide, a range of cultural, social, employment, trade and service functions for itself and its associated rural hinterlands. A growth area is an extension of a growth center itself because of its proximity to a center or location between centers. The hinterlands, which depend on the growth center and growth

area for services and employment, contribute resources and manpower to the overall district economy.

Growth center policies have generally been more successful than policies focused upon investment in regional industrial complexes. A growth center has two major characteristics which differentiate it from a growth pole : firstly, the term "growth center" refers to geographical space while "growth pole" focuses on economic space; and secondly, a growth center depends not only on industry but also on other social and economic activities in generating growth. In Austria and West Germany, for example, rural development planning at the provincial level has frequently built on central place concepts -- i.e., an urban center is used as a source of services for its hinterland (complementary region), supplying it with goods and services -- encouraging the population to remain in rural areas but providing access to critical services in nearby towns by public transport (Blacksell, 1975, p. 185; Krumme, 1974, pp. 118-135). Such service centers (growth points) have at the same time been the recipients of special supports for job creation, including, to some degree, manufacturing jobs.

Hirschman (1958) argued a thesis similar to the growth center idea when he analyzed the regional transmission of growth in terms of a dichotomy between advanced and backward areas. The advanced areas are spontaneously growing and possess characteristics generally associated with growth centers, such as abundant infrastructure, economies of scale, and agglomeration economies. In assessing the role of growth centers in promoting regional development, Hirschman holds that once growth takes a firm hold in one part of the national territory, it obviously sets in motion certain forces that act on the remaining parts (Hirschman, 1958, p. 187, and also Myrdal, 1957, pp. 31-33). This alleged diffusion of growth is assumed to be facilitated by increased investments and purchases by the growth

center and the satellite industries in the backward area. Hirschman also counts on political forces to help redress disparities between growth centers and lagging areas.

In order to create a new growth center based on a few key industries, it is necessary to understand the behaviour of the investor in making location decisions. So location theory will be helpful to explore potential locations and provide insight into which level of basic infrastructure would be appropriate to attract industries.

2.3 Location theory

Location criteria can be greatly affected by changes in technology. For example, during the last century basic industry was strongly attracted to sources of raw materials and fuel supplies, but the coming of electric power, changing technology, and development of transportation systems such as railways, roads, and air transport greatly widened the location choice. The build-up of industry near large high-income population centers indicated an increasing trend towards market orientation (Richardson, 1969, p. 80).

Weber (1929) made a distinction between material- and market- oriented industries. He recognized that the costs of assembling the material required by a manufacturing plant may encourage its location at the source of these materials. This effect depended upon the nature of the materials, which Weber characterized as either *ubiquitous* or *localized*. The former are available at similar cost everywhere whereas the latter are only available at specific locations. *Localized* materials are sub-divided into pure and gross materials. In the case of pure materials, the whole weight of each unit of input enters into the finished product, whereas part of the weight of gross materials is "wasted" in the production process. Gross localized materials have the ability to attract industries to locations at their production point, making an industry *material oriented*. On the other hand, by adding to

the product's weight wherever it is produced, ubiquities may encourage *market orientation*.

This principle is, however, less relevant to many modern industries because an increasing proportion of plants begin not with raw materials but with semi-finished items or components. On these, there is almost no weight loss and so little tendency towards material orientation. Moreover, such "materials" are frequently obtained in urban centers which also serve as markets for the finished product. Under these circumstances, the same place is both a material and a market location. Only a few items today can be referred to, without qualification, as ubiquities; for example, water and electricity in most developed countries. In the case of developing countries, nothing can be regarded as ubiquitous (Chapman and Walker, 1991, p. 37).

In general, the most important location factor is profit maximization. Firms locate where their potential profitability is greatest. The following items are the major components of cost and revenue in the profit calculation :

- the price of the product and the quantity demanded which determine the firm's revenues;
- labor cost, including all types of managerial, technical, skilled and unskilled labor used by the firm;
- the cost of raw materials used in the manufacturing process, including inventory costs;
- transportation costs;
- the cost of land;
- the cost of utilities such as electricity, water, and gas;
- the cost of credit such as investment capital, working capital, and interest;
- the transaction costs of arranging official licenses, permits, approvals, etc.

The values of these profit determinants vary from location to location, making some locations better for production than others. In addition, the profit determinants vary among firms as well, depending on the products manufactured and the technologies used. Thus the optimal location differs from one firm to another. In general, a given firm locates where the factors that are important for its own profit calculation are most favorable.

Nevertheless, in addition to financial profit, "personal factors" have been found to significantly influence the location decisions of investors. In his empirical study Greenhut (1956, pp. 233-247) found a third broad category of location determinants that did not fit in financial profit. He named it "personal factors", and classified them into three groups : psychic income or non-monetary satisfaction; environmental preferences; and the security motive. Examples are the attitudes of politicians and community leaders, and the provision of amenities, housing stock and educational facilities.

2.4 Implications for policy

To decentralize industry away from the BMR, especially Bangkok, the growth pole / growth center theories which the government already adopted are still an appropriate approach. To generate growth centers a country needs well-developed infrastructure networks, particularly transportation networks which help connect the potential target areas to sources of materials and markets, and also spread benefits from the growth center to its hinterland. A well-articulated infrastructure, for example, can increase the attractiveness of the potential target areas in the eyes of investors, since it may reduce the costs to firms of bringing inputs to plants and sending goods and services to markets. If the expected profit of firms in the long run compares favourably with the profit if the firm locates in the BMR, then the target areas will be attractive to investors. According to location theory, this is a

necessary condition for the creation of a growth center. In addition, theory suggests that policy should provide enough incentives to attract industry and/or other social and economic activities until agglomeration economies appear. After the growth center is established, an efficient infrastructure system will still play an important role in stimulating linkages between the growth center and its hinterland -- i.e., between advanced and backward areas.

3 The Role of Government Policy in Influencing Industrial Location

The concentration of industries in the BMR, particularly in Bangkok, may have been influenced by either government policy or non-policy factors, or by both. In the case of Thailand, a number of government policies -- electricity and water pricing, minimum wage laws, interest rate ceilings, and the Eastern Seaboard Region Program (ESB), etc., -- have altered the attractiveness of industrial location. At the same time, some non-policy factors, such as the nature of various locations, and the financial system, have also influenced choice of location. This section is divided into two major parts : first, the non-policy factors affecting location decisions will be examined, and second, the government policies which influence industrial location will be analyzed.

3.1 Non-policy factors

3.1.1 The primacy of Bangkok

Bangkok has most of the characteristics of a primate city which are as follows :

- it is the center of government;
- the government is centralized (discussed further in section 3.2.7);
- it is a major port;

- it has an international airport;
- it is a center of internal transport linkages -- road, rail, and river, as well as air routes;
- the headquarters of the financial and business system are located there;
- it provides large commercial markets with vast purchasing power;
- it contains the greatest range of modern physical infrastructure and utilities;
- its labour force offers the most specialized technical skills;
- the country has a low level of urbanization -- the level of urbanization in Thailand is only about 23 percent, whereas urbanization averages 30 percent in Asia, and for the whole world is some 43 percent (Pernai, 1991, pp. 3-4);
- the country does not have strong regionally-based ethnic or religious rivalries.

All of these special characteristics make Bangkok the place for firms to create the highest potential profit, because Bangkok provides some major advantages to manufacturing firms over other locations. First, transportation costs are usually lower because Bangkok is the center of internal and external transportation networks via land, air, and water, allowing firms to realize higher ex-factory profits from their products and obtain inputs and capital equipment at lower prices. Second, labor productivity may be higher in Bangkok because the population is better educated (this was confirmed by the study of Loha-unchit (1991), Tables 6.3 and 6.7) and has had more experience with factory employment. Third, utilities may be available more cheaply because of economies of scale (see section 3.2.2). Fourth, credit may be less costly and easier to access (see the analysis in section 3.2.1). Fifth, the transaction costs¹ of dealing with government services are generally lower in Bangkok (see section 3.2.7). Last, and perhaps most importantly, Bangkok possesses powerful economies of agglomeration. For example, the large market of Bangkok makes it possible for firms located there to produce at a large scale. In addition, agglomeration economies also occur when related industries locate near each other. In the clothing sector, for

example, the ability of small units to locate in some particular places in Bangkok allows them enough flexibility to cope with sudden changes in demand, hire suitably-skilled labour, and obtain clothing market information. Locating salesrooms in a concentrated area allows tradespeople to look at a variety of clothing quickly and thus anyone choosing to locate away from the main group is penalized.

Generally, the advantages of Bangkok give firms in Bangkok the potential to obtain the highest profit. According to location theory, the potential profit firms expect to earn influences location decisions. Moreover, the better social facilities in Bangkok, such as modern hospitals, the best schooling systems at every level of education, entertainment etc., can all be considered psychic benefits which are higher in Bangkok than in the other regions. The fact that both financial profit and non-monetary benefits are higher in Bangkok can explain the concentration of firms in Bangkok very well.

3.1.2 The financial system

Thailand's financial system is dominated by commercial banks which provide three quarters of all of the credit extended within the financial system. The commercial banks are a branch banking system, due mainly to British influence. Theoretically, a unit banking system should be much more conducive to promoting the needs of the local business community than a branch banking system. It has been argued that "close contact between unit banks and the business communities they serve will be lost when branch offices are substituted for unit banks, owing to the rotation of branch officers who operate as 'strangers' and are less well informed of, and less sympathetic to, local needs" (Chung, 1970, p. 51). Moreover, in Thailand provincial bank branch managers have very little power to extend credit. Only a few large banks allow their branch managers to expand credit up to 1 million baht (US \$ 40,000) per loan.

It is a fact that most of the commercial banks have their headquarters located in Bangkok. By the end of 1987, 37 percent of the total number of bank offices were concentrated in the BMR. Moreover, about half or less of all deposits mobilized in provincial areas went back to the region, while credit extended in the BMR area generally exceeded the deposits mobilized within its area (Bank of Thailand, 1988, pp. 90-91) . The limited power of branch managers in credit expansion creates higher costs for persons seeking bank credit in provincial areas.

3.2 Policy factors

3.2.1 Monetary policy

The financial system and the major policy of the Bank of Thailand (BOT), maximum interest rate ceilings, have a differential impact on credit availability in Bangkok and the other regions. The industrialists in provincial areas have had more difficulty in accessing credit than those in Bangkok. However, the government and the Bank of Thailand have tried to solve the problem. The Bank of Thailand has forced the commercial banks to increase loans in provincial areas while the government established three specialized financial institutions in order to provide low-interest rate and long term loans to small-scale industries. In the remainder of this section, the main policy of the BOT and the attempts of both the government and the BOT to ease access to credit for industrialists in provincial areas are reviewed and analyzed.

The major policy of the BOT which affects credit in provincial areas is the maximum interest rate ceiling that has been in place since 1962. Such ceilings can lead to serious distortions in the allocation of financial resources. The interest rate ceilings were generally

set below market levels. There was therefore a shortage of domestic funds at maximum interest rate levels. As a result, the commercial banks tend to lend only to good customers with sufficient collateral and to their own family business groups. This is a significant factor affecting the supply of credit to smaller and less well-known entrepreneurs, as it is likely that commercial banks will engage in credit rationing and select only large firms with good collateral. This practice is likely to have a strong negative impact on provincial industries which are mostly small-scale. Thus, those unable to receive funds from commercial banks must turn to the informal markets where interest rates are much higher ².

The evidence that there was insufficient credit for industries in provincial areas caused the Bank of Thailand to try to remedy the situation by introducing a measure in 1977 to force commercial banks to increase lending to provincial areas -- banks in outlying districts³ must lend 60 percent of their deposits mobilized from a particular area back into that locality.

However, this measure was not effective since commercial banks can deposit the amount short of the provincial credit requirement in an interest-free account at the BOT or purchase government bonds up to 4.5 times the amount of the unsatisfied residual.

Furthermore, it was evident that provincial credit accounted for only 23.8 percent of total nationwide credit in 1987 (BOT, 1989, p. 9). Therefore, the branch banking system and interest rate ceilings have contributed to relatively better access to credit for industries located in the BMR, especially in Bangkok. If firms in provincial areas want credit of more than 1 million baht, the branch managers have to ask for credit approval from their headquarters for firms in Bangkok. Generally, the procedure of getting credit in this case takes longer than in Bangkok. Hence, firms in provincial areas face the problem that it takes them longer to obtain credit of above 1 million baht, which implies relatively more difficulty in expanding their production. Otherwise they have to depend on the informal markets at higher interest rates. All of these factors make the BMR, particularly Bangkok,

more attractive to the investors because of the lower cost of and easier access to credit, which is very important for investment.

The Thai government also tried to solve the lack of credit for provincial industries by setting up the following specialized financial banks : the Industrial Finance Corporation of Thailand (IFCT), the Small Industry Credit Guarantee Fund (SICGF), and the Small Industry Finance Office (SIFO). These three specialized financial institutions lend directly to small-scale industries in order to achieve the promotion of provincial industries. Even though the IFCT does provide a larger proportion of its loans to provincial industries than do commercial banks, it is faced with difficulties in mobilizing funds. However, the government has tried to solve this problem from time to time. For example, in 1992, the government approved a budget of 1,000 million baht for the IFCT to support the distribution of growth to regional areas. The other two institutions have had problems due to a lack of staff who are able to manage and appraise projects. In addition, their funds are limited and the size of their loans is small. Hence these attempts to provide funds to provincial industries have not yet been effective.

3.2.2 Public infrastructure investment and the pricing of electricity and water

Public infrastructure investment in Thailand is heavily concentrated in Bangkok. A study by the Thailand Development Research Institute (TDRI) published in 1990 showed that the highest level of investment in roads has been in Bangkok at 473.5 baht per sq. km. of land area. This is over 6 times the level of investment in roads in the Central and Southern Regions; and over 9 times the level of investment in roads in the Northern and Northeastern Regions (TDRI, 1990, p. 90).

According to 1986 survey data from the NESDB, the availability of electricity and water supply was highest in the Bangkok area. It was over 3 times, 7 times, 13 times and 6 times higher than in the Central, Northern, Northeastern, and Southern Regions, respectively. Population density in each of these regions is as follows : 10.3 percent in Bangkok, as compared to 22.7 percent in the Central region (excluding Bangkok), 34.4 percent in the Northeast, and 13.4 in the South (see section 1.1 and Table 1). Moreover, the pricing of electricity and water in Bangkok and the other regions has been different.

Before 1980, the price for electricity charged by the Provincial Electricity Authority (PEA) was much higher than that of the Metropolitan Electricity Authority (MEA). In February 1980, industries were classified into two groups : small and large⁴. The PEA rate structure for industries remained higher than the MEA rate structure until April 1983, when they were equalized. A declining marginal rate structure was also implemented by both the MEA and the PEA until June 1987, when a uniform rate was introduced by both agencies. However, the TDRI survey revealed that provincial users frequently complained that the supply of electricity is inconsistent and there are frequent blackouts. Except for the Northern Region, blackouts adversely affect provincial areas more than the BMR. This inconsistency in supply represents an implicit cost for industries situated in these regions.

In the case of tap water, a document of the Provincial Water Works Authority (PWA) noted that during 1957-1965, water rates were 1.5 baht per cubic meter in the Bangkok area and 2.0 baht per cubic meter in the provincial areas. From 1972 to 1981, the Metropolitan Water Works Authority (MWA) charged progressive rates with respect to levels of utilization, while the PWA charged a uniform rate of 2 baht per cubic meter. However, the PWA rates were higher than the MWA rates at all levels of utilization except levels above 200 cubic meters. After 1981, the MWA began to classify users into different groups. For business users between 1981 and 1984, the PWA rates were lower than the

MWA rates for utilization levels of up to 50 cubic meters while they were either equal to or higher than the MWA rates for utilization levels above 50 cubic meters.

During the period 1984-1987, the PWA's rate structure was lower than that of the MWA for all levels of utilization. In 1987, this relationship was again reversed -- the PWA rate structure became higher than the MWA rate structure for utilization levels above 30 cubic meters. In addition to paying a higher price for water, the provincial areas are also disadvantaged by a lower availability of water. For instance, in 1988, the PWA could only support 58 percent of potential users in the provincial areas, compared with 73.3 percent for the MWA in metropolitan areas (Loha-unchit, 1991, pp. 71-75). The higher price of water and relative lack of public water supply in provincial areas might contribute to a higher cost of water in their production costs since firms may be forced to produce water on a very small scale themselves. According to one study 87 percent of surveyed firms in Bangkok had water costs of less than 5 percent of their total costs while the majority of firms in provincial areas were found to have water costs in the range of 5-14 percent of their total costs (Loha-unchit, 1991, Table 4.17). However, it is not clear whether the higher share of water costs in total production costs implies that majority of firms in provincial areas use more water, or pay more for water at the same level of water use.

3.2.3 Minimum wage rate policy

Thailand introduced a legal minimum wage rate in 1973 that covered only four provinces, Bangkok, Nonthaburi, Samut Prakarn, and Pathum Thani. In 1974, it was expanded to cover the whole country. The legislated wage rates have differed between regions. Every year, a Wage Committee consisting of Labour Department officials, representatives of both employers and employees, and three independent members meets to negotiate a legal minimum wage rate to be used in the following year. However, the final say for the legal

minimum wage rate rests mainly with the Ministry of Interior. In practice, if there were disagreements within the Wage Committee, the Ministry of Interior would not announce a new set of legal minimum wage rates and the old rates would still apply for the next year.

Table 4 shows legal minimum wage and actual wage rates since 1979 to 1986. In fact, it is hard to measure the market wage rate in Thailand. However, the actual wage rates from the Wage Structure surveys, conducted by the Bank of Thailand and the Department of Labour, roughly represent the market rate. This table gives rise to three important observations which should be pointed out. First, the differential in legal minimum wage rates between the BMR and the other regions is progressively narrowing. And, the minimum wage rates do not reflect the market rates. Second, there are two patterns to the differential between the legal minimum wage and market wage rates in the 5 regions (the BMR is treated as a separate region). The BMR, the Central and the South form one group in which the legal minimum wage rate increased more slowly than the market wage rate, while in the North and the Northeast the legal minimum wage rate increased faster than the actual wage rate. Third, in 1986 the market wages for unskilled labour in the North and the Northeast, which were 56 and 57 bahts, were only about 68 percent of the market wage in Bangkok. These low market wages should make locations in the North and Northeast regions attractive to firms for which wages paid to unskilled labour are a large fraction of total cost, namely labour-intensive industries. In contrast, the legal wage rate in the North and Northeast was 61 bahts, 84 percent of that in Bangkok. Thus there are some labour market distortions resulting from the minimum wage rate policy. These distortions are likely to reduce the comparative advantage -- in terms of labour costs -- that the North and Northeast regions should possess over the BMR. In other words, this represents a hidden subsidy for Bangkok over other potential locations. The effect of minimum wage policy on labour-intensive industry in the North is evident as Biggs et al. (1990, p. 68) note:

One large labour-intensive electronics manufacturer in the north complained that the introduction of minimum wage in the early years of his factory's operations compromised its profitability for several years and nearly resulted in the closure of the plant.

Table 4
Comparison of Actual Wage Rate of Unskilled Labour
to Legal Minimum Wage Rate
 (Baht per Day)

Year	1979	1980	1981	1982	1985	1986
BMR						
-legal MWR	45.00	54.00	61.00	64.00	70.00	73.00
-actual wage	41.68	52.48	58.96	61.46	80.07	84.00
North						
-legal MWR	35.00	44.00	52.00	52.00	59.00	61.00
-actual wage	27.32	40.24	44.96	51.92	55.87	56.00
Northeast						
-legal MWR	35.00	44.00	52.00	52.00	59.00	61.00
-actual wage	26.80	37.92	52.38	58.31	53.62	57.00
Central						
-legal MWR	38.00	47.00	52.00	52.00	59.00	61.00
-actual wage	31.32	45.44	50.50	58.42	64.83	73.00
South						
-legal MWR	38.00	47.00	52.00	52.00	59.00	61.00
-actual wage	33.68	48.28	50.15	57.00	66.33	68.00

Source: 1 Actual wage rate of 1979-1982 from Wage Structure Surveys jointly conducted by the Bank of Thailand and the Department of Labour, Ministry of Interior.

2 Actual wage rate of 1985-1986 from Wage Structure Surveys conducted by the Department of Labour, Ministry of Interior.

3 Legal minimum wage rates from Department of Labour, Ministry of Interior.

Note : MWR = minimum wage rate

3.2.4 Board of Investment

The BOI is the principal government agency responsible for promoting both foreign and domestic investment in Thailand through the provision of investment incentives and guarantees, and through overseas investment promotion activities. The incentives provided include income-tax holidays, exemption from import duties on raw materials, exemptions from, or reductions of, export duties and import bans or surcharges on competing imports.

The BOI paid no attention to industrial decentralization until the Third Plan period. In October 1972 it began to provide special incentives (reductions of business tax on sales and of corporate income tax) to promote firms located in designated Investment Promotion Zones (IPZs). In 1973 the BOI designated 72 districts in 21 provinces as IPZs (see Annex 1). The only province and district in the BMR included in this group was Nakhon Pathom's capital district, although the BMR was also given promotional status in the case of export industries.⁵ Because the IPZs covered such a wide area, it was difficult for the BOI to concentrate its resources on any particular region. In addition, it was difficult for the government to invest adequately in infrastructure development in all these areas. Thus, these incentives did not result in any progress towards decentralization. The number of BOI projects located in the IPZs during 1959-1973 and during 1974-1978 remained proportionally about the same -- about one fifth of the number of projects outside of the promoted zones (see Table 5).

Additional incentives for firms in IPZs were incorporated into the Investment Promotion Act of 1977. This policy change was followed by a reorganization of designated IPZs into 4 zones⁶ plus industrial estates in 1978. Zones 1 and 2 and the industrial estates received slightly fewer incentives than Zones 3 and 4. However, the granting of tax exemptions on corporate income and machinery had no special element.

Table 5

Number of Firms with Promotional Certificates

Province	1959-1973	1974-1978	1979-1987	Unknown*
Promoted Zones	63	44	112	333
Nakhon Pathom	19	13	22	22
Chachoengsao	2	2	8	74
Chon Buri	8	5	11	62
Khanchanaburi	1	3	5	12
Samut Songkhram	0	0	0	3
Saraburi	8	6	13	34
Rayong	5	0	14	28
Chiang Mai	8	3	3	13
Lampang	3	1	5	7
Lamphun	0	7	2	9
Phitsanulok	0	0	1	0
Sukhothai	1	0	0	0
Khon Kaen	1	1	4	4
Nakhon Ratchasima	3	1	8	15
Krabi	0	1	0	3
Phangnga	0	0	0	2
Phuket	2	0	3	6
Songkhla	2	1	13	39
Other Provinces	328	224	498	982
Whole Kingdom	391	268	610	1315

* year of firm establishment unknown

Source : Board of Investment

In 1983 the BOI announced new criteria for granting tax incentives based on the firm's planned location. Although the definition of the IPZs remained unchanged, the criteria for providing special incentives were modified. Then, in 1985, the BOI again revised the incentive structure to provide a more attractive package for projects locating in industrial estates, especially those in Chiang Mai and Lamphun. A major change in the BOI's spatial policy occurred in 1987, following a surge in the number of applications. The IPZs were

expanded to include 67 provinces outside Bangkok and the inner ring, and location became a major criterion for granting exemptions on corporate income tax and machinery.

As the number of applications continued to rise and pressure from the cabinet to decentralize industries increased, the BOI further modified the criteria for granting tax incentives in 1989. Again, the designated IPZs were changed. These modifications gave the 57 provinces outside the central region the most incentives (see further details on the incentives provided for investors in each zone in Annex 2).

According to Biggs et al. (1990), since 1987 the attempts of the BOI to decentralize industries has resulted only in a shift in location to the areas around Bangkok (the outer ring), rather than to more distant regions. This is because the BOI has too many objectives such as promoting export industries, large-scale industries, import-substituting industries, and decentralization of industries (Biggs et al., 1990, pp.94-96). The efforts to promote export industries through special compensations have conflicted with decentralization, since export industries still get the partial incentives from the BOI even if they locate in Bangkok. The additional incentives for firms to locate outside the BMR may be offset by the advantages of Bangkok discussed earlier. Furthermore, Loha-unchit (1991) concluded that the frequent changes in criteria and incentives of BOI were difficult for the entrepreneurs in provincial areas to understand and follow, since they are relatively less educated than those in Bangkok.

3.2.5 Industrial Estates

Another area in which the government has attempted to promote regional industrialization is through the provision of infrastructure services such as the construction of industrial estates. The responsibility for industrial estate construction and management lies with the

Industrial Estate Authority of Thailand (IEAT). In the early years, all the industrial estates built by IEAT were located in the inner ring close to Bangkok.

IEAT's first attempt to develop industry in the regions was the Northern Industrial Estate which was opened in 1983. At that time, the economic growth rate was rather low (resulting from the second oil shock in the late 1970s) and inflows of foreign investment were not significant. As a result, the industrial estate was virtually unoccupied for a number of years. It was not until the recent economic boom and the increase in the disadvantages of locating in Bangkok that the estates began fill up. From this experience, the government realized that IEAT should co-invest with the private sector wherever possible rather than having the public sector finance projects exclusively.

In recent years, a number of private sector industrial estates have sprung up both around Bangkok and in the regions. More than 30 industrial estate projects have been approved by the BOI, indicating that the private sector is responding well to increased demands from investors for estate facilities. However, the comprehensive package deals offered by existing industrial estates have largely attracted foreign investors or large Thai firms. Few small Thai firms have found it advantageous to move into an industrial estate with relatively high costs and also a relatively high profile, because in an industrial estate a package of utilities such as a solid waste system, a waste water treatment system, a standard building etc., is provided and every firm has to share these costs. In contrast, if small firms locate outside the industrial estate they can use cheaper materials to build their plants or cut some utility services that they consider unnecessary in order to save costs.

The BOI is presently carrying out an information policy using a combination of "moral suasion" and the provision of information about available subcontractors to encourage foreign firms to create more local linkages. Initial results indicate that this approach could

be reasonably successful. A number of positive externalities have become evident in the North and Northeast. For example, one Japanese electronics producer in the Northern Industrial Estate is providing significant training to local farm girls, while a large Thai machine tool manufacturer in the Northeast is providing advice to a number of local metalworking shops in an attempt to develop a supplier network that would enable it to subcontract certain tasks that are relatively expensive for it to carry out in its own factory. This is a kind of backward linkage.

However, Loha-unchit (1991) has observed that :

There does not seem to be any concrete zoning plans or policy for industrial estates on the government's part: industrial estates in Thailand are small and spread out in many different areas. The resulting unsystematic growth of Bangkok and many other surrounding towns which has led to congestion in Bangkok and, possibly, a heavier burden on the government to develop a public infrastructure over a spread out area. Even the industrial estates established in the much touted Eastern Seaboard Area, the Laem Chabang and Mab Ta Put Industrial Estates, are considered to be quite small in size (Loha-unchit, 1991, p.169).

It is evident that the investment promotion policy of the BOI, which concentrated on the granting of economic incentives, has not effectively promoted the development of provincial industries. Although many investment promotion zones have been designated since the early 1970s, the measures were complex, and frequently changed. The complexity of measures and frequent changes of criteria make it difficult for investors in provincial areas to follow the criteria since they stay far from Bangkok and are relatively less-educated than those in Bangkok. In addition, the priority given by the BOI in actual practice towards developing provincial industries appears to have been much less significant than other objectives -- i.e., the promotion of large-scale, import-substituting industries, and export industries. Similarly, the effort to establish industrial estates in order to decentralize industry was not quite effective because there were no concrete

zoning plans that provided guidelines for private investors. The government could also develop more adequate and efficient public infrastructure focusing on those zones. These changes would make the industrial estates more attractive to investors.

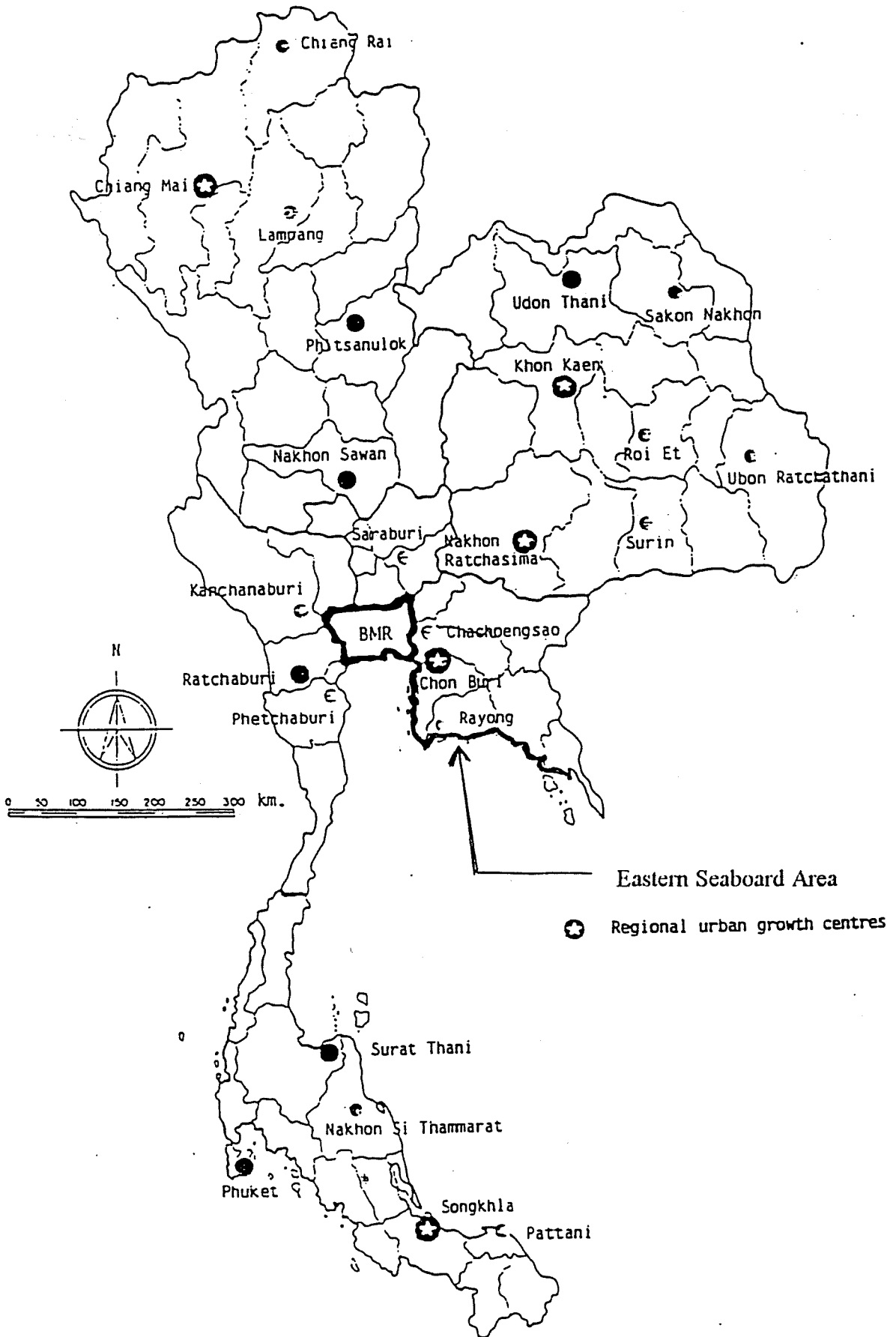
3.2.6 Growth centers

Thailand adopted a growth center strategy in the late 1970s in two contexts: first, in terms of industrial decentralization to reduce regional development disparities, and second, in terms of the development of resource frontier regions (Pakkasem, 1988, p. 3). The Fourth Plan (1977-1981) selected provinces for promotion as regional urban growth centers, based on their existing economic base and attractiveness to potential investors. The selected provinces were Khon Kaen, Nakhon Ratchasima, Ubon Ratchani and Udon Thani in the Northeast region, Chiang Mai in the North, and Songkhla-Hat Yai in the South (see Figure 3 : adapted from Ashakul and Ashakul, 1988, Figure 4.1).

Growth centers are another approach to attract social and economic activities to the target areas through the provision of infrastructure services, while industrial estates aim at attracting only industries. A growth center may cover a wider area than does an industrial estate. A growth center may cover several provinces while an industrial estate covers only a small area (eg., a hundred acres). In addition, industrial estates are now initiated and built by the private sector under the supervision of the IEAT. The IPZs are the areas designated by the BOI in which industries can ask for the BOI investment promotions. Furthermore, an industrial estate is one of the activities that the BOI promotes, while growth centers are promoted by the government as a whole.

In the Fifth Plan (1982-1986), the efforts to decentralize growth away from the BMR were continued. Several spatial development strategies were adopted, the most ambitious project

Figure 3 : Regional Growth Centers

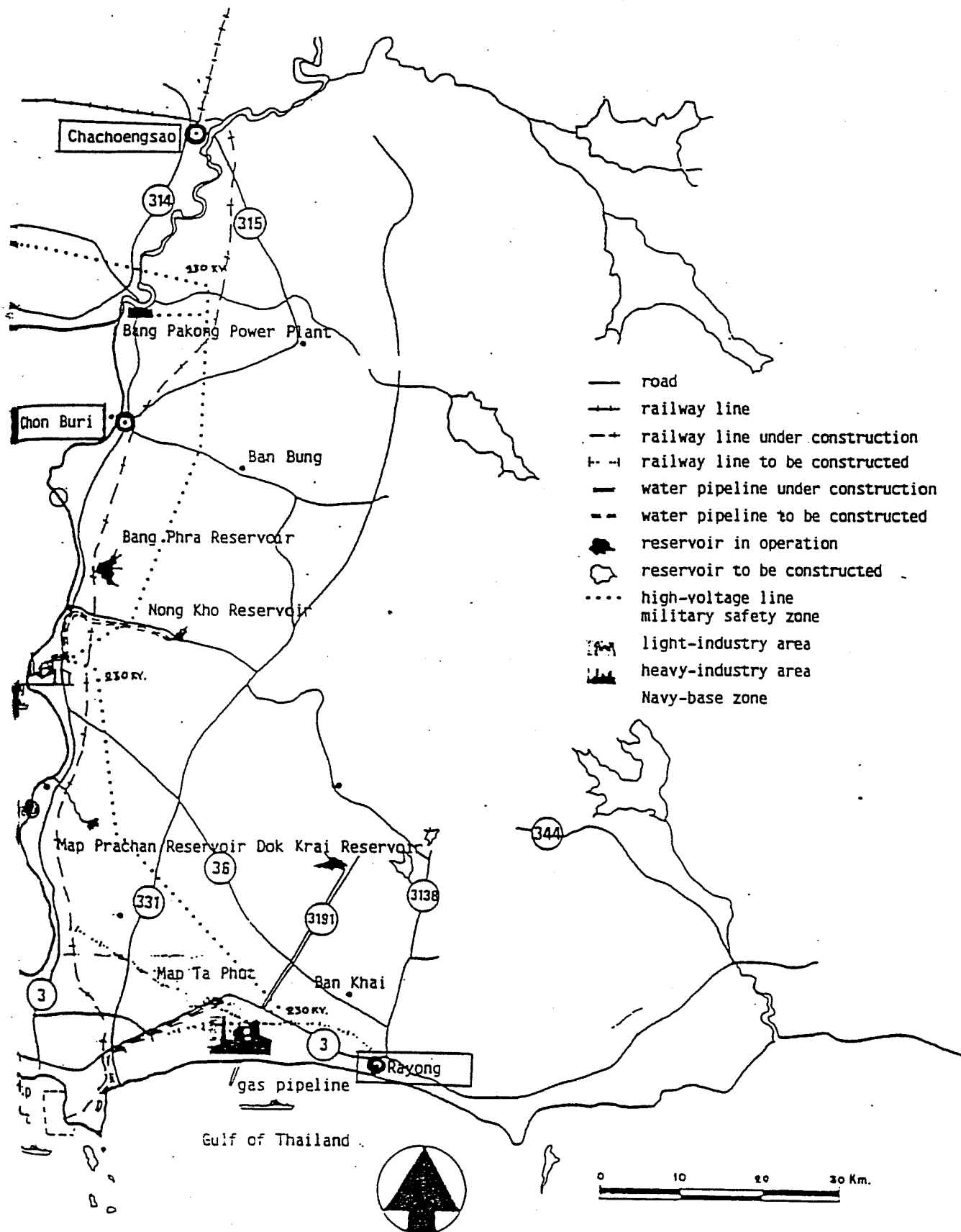


being the development of the Eastern Seaboard Region.⁷ In essence, the Eastern Seaboard development project was designed as an infrastructure-led industrial development (see Figure 4 : from Ashakul and Ashakul, 1988, Figure 4.2), which is the idea of "a growth center", on the assumption that the construction of basic infrastructure would attract industrial investors and decentralize the location of employment opportunities away from the capital city. As originally envisaged, the necessary infrastructure facilities to support basic industry included deep-sea ports, water pipelines, a road network, railway lines, electricity, telephone exchanges and a telecommunications system.

The development of basic industries in the Eastern Seaboard Region (ESB) is by far the largest project of this kind in Thailand. During the early 1980s many ESB development projects were delayed or scaled down due to the country's financial difficulties.⁸ However, the excellent performance of the Thai economy since the late 1980s, particularly the manufacturing sector, has revived most of the project's vitality. Private sector interest in the development of the ESB has grown significantly as a result of rapid industrial growth and the increasing shortage of industrial infrastructure in the BMR (Ashakul and Ashakul, 1988, p. 12).

The quite successful results of the ESB can be attributed to the serious attention which the government has paid to this project. For example, at every step of the project analysis was done, i.e., project feasibility studies, project monitoring and evaluation. But the success of the provinces selected as regional growth centers since the 1970s has been rather modest. Ashakul and Ashakul (1988) noted that this poor progress may be due to a lack of understanding of the location decisions of business firms and a low level of urbanization. However, there has been no evidence that special attention has been paid to those areas as in the case of the ESB project.

Figure 4. EASTERN SEABOARD REGION



3.2.7 State structure : centralization of public authority and services

Since 1932, Thailand has had basically three levels of government consisting of the central government, provincial governments and local governments. The central government in Bangkok is represented by the Cabinet and consists of various ministries, bureaus, departments and the Prime Minister's Office. Provincial governments are made up of various provincial and district offices. They are somewhat an extension of the central government, since the governors and chief district officers of the provinces are appointed by the Ministry of Interior and are obliged to follow central government policies. (Other lower-ranking officials are also appointed by the central government or are on the central government's payroll.) Decisions therefore tend to be made in Bangkok even on provincial issues.

Almost all the major taxes, including import duties, personal income taxes and corporate income taxes, go entirely to the central government. Local governments are allowed to collect only certain types of taxes on their own. They include the house and building tax, local development tax, signboards tax and animal slaughtering tax. These taxes do not provide much revenue, as their rates are low and local governments are not allowed to set their own tax rates. During 1974-1982, the income collected by local governments was only approximately 6-7.5 percent of that of the central government. In addition, because local authorities have also been unable or unwilling to fully implement their income collection schemes, about half of local government's income is collected by the central government on their behalf (Juito, 1985, Table 4 and 5). For example, in 1982 local government expenditures (more than a quarter of which are subsidized by the central government) have been relatively small as compared to those of the central government -- only about 8.6% of total central government expenditures. This is rather low compared to

other developing countries, where the proportion is generally above 20% (Loha-unchit, 1991, P.38).

Furthermore, the public services with which industrialists need to deal also have a centralized authority. Thus, while investors in regional areas can obtain most licences or permits through provincial offices, the final decision is generally made at the head office in Bangkok. The major licences and permits are as follows :

(1) License for the construction of a building. An application must be submitted to the District (Amphur) Office or the Provincial Industrial Office (PIO), which forwards it to the Provincial Public Works Office for consideration. However, the technical appraisal tends to be carried out at the Public Works Department in Bangkok. Only in certain provinces does the Provincial Public Works Office have the authority to make the final decision.

(2) Board of Investment (BOI) Promotion. Applications for promotional privileges can be submitted to the three regional offices of the BOI (in Surat Thani, Nakhon Ratchasima and Chiang Mai), but final approval is issued by the head office in Bangkok. Most applicants have to meet project analysts in Bangkok to discuss details of their projects and negotiate various benefits at each stage of the promotion process. Even after the company receives promotional privileges, privileges such as tax exemptions on imported machinery and raw materials, visas and work permits must be processed by the BOI 's head office in Bangkok.

(3) Other licenses and permits. Licenses and permits to undertake specific business activities must be obtained from various government agencies. Examples are licenses to produce food, drugs and cosmetics, issued by the Food and Drug Administration, Department of Agriculture or Industrial Works Department; to manufacture wooden furniture, issued by the Forestry Department; to operate a hotel, issued by the Royal Thai Police Department; and factory licenses issued by the Industrial Works Department. Applications for all of these can be submitted to the PIO, but approvals are issued by the relevant authorities in Bangkok.

(4) Customs clearance. Centralized customs procedures and the need to make "unofficial payments" to expedite clearance of shipments create another need to be present in Bangkok or to hire someone to be there. As Biggs et al. (1990) noted, a factory manager visited in the industrial estate at Lumphun cited the presence of a customs officer in the estate 's export processing zone as a major benefit of locating in the estate (Biggs et al., 1990, p.64).

All these administrative processes together with the weak capacity of local governments to develop their areas themselves, enhance enormously the status of Bangkok as the industrial location which provides the lowest costs. It is obvious that the centralized structure of public authority and services increases transaction costs of industries operating outside Bangkok. Thus to decentralize industries to provincial areas, Thailand will need to provide more authority to the provincial offices, even though the head office remains in Bangkok. Such a policy will reduce transaction costs and enhance the attractiveness of regional locations.

3.3 Concluding remarks

It is clear that both non-policy and policy factors have influenced industrial location as follows :

(1) The existence of a branch banking system in the private sector and the fact that Bangkok has a major port, an international airport, possesses agglomeration economies, and is the center of domestic transport, have contributed to lower transportation costs, and lower costs to access to credit for industries located in Bangkok, given the same technology.

(2) The centralization of public services, cheaper electricity and water for a prolonged period, better availability of infrastructure and utilities, a minimum wage rate below the market rate in Bangkok, maximum interest-rate ceilings which are below the market rate, and the BOI incentives for re-export-oriented industries have also contributed to lower transaction costs in dealing with public services and lower operating and production costs for industries located in Bangkok.

Both non-policy and policy factors, therefore, have made the BMR, particularly Bangkok, the location where industries can operate at the lowest cost. Furthermore, Bangkok is also the largest market in the country, which would induce high revenues for industries. So Bangkok is undoubtedly the location where industries can gain the maximum profit. This

clearly explains the concentration of industries in Bangkok. Moreover, past government policy has played a major role in increasing potential profit for firms located in Bangkok rather than in other regions; thus it has been an important obstacle to provincial industrial development.

However, the comparative advantage of a particular location can change when changes in the economic and political environment occur. In recent years, the political environment in Indochina has improved, which may have a positive effect on the Thai economy and may generate investment opportunities for Thailand's investors, particularly in the regions, because of easy access to the newly-opening markets. These factors will change the optimal choice of location for investors. So, changes in the political environment around Thailand and congestion in Bangkok may provide an opportunity to develop growth centers in regional areas. These factors can be classified into two groups of effects : *push effects and pull effects*.

The concentration of economic activities in Bangkok has grown so far that the point of diseconomies of scale has been reached. The high price of land, traffic congestion, air, noise, water pollution, and slum dwellers are serious factors which affect the growth of industries in Bangkok. These diseconomies of scale create "push effects" on Bangkok as a location. It is evident that the growth of industrial establishments in Bangkok has slowed down while the number of firms established in the inner ring has been growing rapidly in recent years (see Table 3). This is because the pressures in Bangkok (eg., high price of land, traffic congestion etc.) are putting pressure on firms to choose other locations. The same phenomenon also occurred in South Korea. Over-concentration of industries in Seoul and pressure from the Korean government forced firms in Seoul to relocate to areas around Seoul (Murray, 1985, and Choe and Song, 1984). But the experience from

relocation of firms in Seoul and in Bangkok suggest that the incentives were not big enough to encourage firms to move long distances.

The lesson of industrial development in Bangkok has also reminded policy makers that insufficient controls and laws regarding pollution caused by industry have severely damaged the natural environment. So far waste and pollution clean-up costs have been picked up by the government. These environmental costs should be paid by the industries through *some form of environmental tax*, in order to prevent any environmental damage caused by industries in other regions and reduce industrial pollution in Bangkok as well. Such a tax will provide another push effect on Bangkok location.

Changes in the political environment in Vietnam, Laos, and Cambodia are creating opportunities for Thailand to trade with these countries both in terms of exports and imports. The bridge link between Thailand and Laos at Nong Kai 's border became operational during 1994. Moreover, the Thai and Myanmar governments signed an agreement to construct a bridge link between Thailand and Myanmar during 1994 as well. These improvements in political and infrastructure linkages affect the comparative advantage of provincial location as "pull effects". The Northern and the Northeastern regions will become more attractive to investors since they are near the new markets and also sources of materials. If firms in the BMR establish new branches in the North and the Northeast, they will be able to easily reach the new markets in Myanmar, Laos, Cambodia and Vietnam, where there are also plenty of natural raw materials.

However, even though the political situation of neighboring countries and transportation networks between countries have improved and are providing benefits to local areas, and the political situation in Thailand itself is more stable than that in the other countries, there is still a need for the incentives from the government that are comparable to the incentives

Bangkok has enjoyed for a considerable time. Moreover, to attract foreign firms to these regions in Thailand, a comparison to locations not only in the BMR but also to in neighboring countries must be made. Therefore, the government must pay serious attention to the elimination of past biases in policies which have worked against the development of provincial industries. The experience gained in the successful development of the Eastern Seaboard Region Project should be employed to develop growth centers in other regions.

4 Appropriate Policies for Industrial Decentralization

As Chapman and Walker (1991) observed, both the costs and revenues of a manufacturing firm will vary with location : "It is not only purchasing and marketing activities which are influenced by location, but also the production process itself. The costs of many of the factors which are essential to this process, such as labor vary from place to place" (Chapman and Walker, 1991, p.35). The evidence from Thailand, where firms have concentrated in Bangkok, confirms the importance of location factors. The more favourable factors of Bangkok have resulted in higher profits for firms located there. The discussion in previous sections clearly showed that it is not only the geography of Bangkok itself but also the bias against provincial areas in government policies that has created the comparative advantage of Bangkok *vis-a-vis* other provinces. To achieve industrial decentralization these policy biases need to be corrected, and a number of policies and measures should be introduced which build the comparative advantage of location in provincial areas in terms of industrialization. This objective can be achieved by creating factors which either reduce the costs of production and operation of firms or increase revenues. Moreover, the profits of firms in regional locations must become comparable to those in Bangkok. Thus, to encourage the location of firms in provincial areas, policy changes should be designed to influence the following areas : finance and credit, public infrastructure and services, minimum wage policy, tax incentives, industrial estates,

government authority and services, and development of growth centers. Each of these areas will be discussed in turn.

4.1 Finance and credit

Provincial industries, particularly small ones, rely mostly on internal and informal sources of funds for their financial needs. However, to achieve provincial industrial development, access to credit must be made easier. That credit is one of the most important factors in operating a firm is confirmed by the experience of South Korea in relocating firms away from Seoul. The data from the World Bank-Seoul National University Project Survey indicated that the South Korea's *loan guarantees program* was the only one among a wide range of incentives (eg., tax incentives, grants, land price reductions, public infrastructure investments and wage bill subsidies) that the relocating firms in a survey of 141 firms mentioned as being the most important to them (cited in Biggs et al., 1990, p.79, Murray, 1988, pp. 48-60, and Lee et. al., 1987, pp. 1-25).

The importance of loans for operating industries would apply to Thai industrialists as well. In Thailand, the loan guarantees program that was successful in South Korea should be adopted to assist provincial industrialists to solve problems of insufficient collateral or high-risk customers. To achieve industrial decentralization, this might be an important strategy to correct insufficient credit in provincial areas. The three specialized financial institutions should change their roles to one of screening firms' projects to borrow from commercial banks instead of providing low-interest rate loans themselves. Then the government should provide loan guarantees for the project. Moreover, efforts should be made to ensure that industrialists in provincial areas have access to credit. Adequate sources of funds and easy access to loans are likely to be more effective in attracting investors than low-interest rate loan programs with insufficient funds, since it is evident that most provincial industrialists

depend on internal and informal markets where interest rates are much higher than those in formal markets (2-5 % per month compared to 15 % per year in formal markets). Finally, a loan guarantees program will probably also work well in Thailand.

4.2 Public infrastructure and services

The level of availability of basic infrastructure, including the quality of infrastructure services, in Bangkok as compared to other regions, has been different. For example, the level of road investment is highest in Bangkok. Electricity and tap water are less available in provincial areas than in Bangkok. The quality is also worse in provincial areas, since electricity supply is inconsistent and there are frequent blackouts. Furthermore, the pricing of utilities was found to be a constraint to provincial industrial development. Provincial industries were disadvantaged by electricity tariffs until 1983, although the picture is less clear in the case of water supply since the price of water in Bangkok relative to the provincial areas has often been reversed.

The level of availability of these basic infrastructures and the price differential for infrastructure services affect the cost side of the firm's balance sheet. Firms located in areas with a better level of infrastructure facilities and lower prices for public utilities certainly produce at a lower cost, given the same technology and scale. In India, to attract industries to relocate in the regions, incentives were related to the prices and availability of inputs, such as reductions in electricity duties and power tariffs, reduced water rates, and assistance in the procurement of controlled raw materials (Sekhar, 1983, p. 35). In the case of Thailand, the past policy for infrastructure obviously favoured Bangkok. Thus, it is certainly not an appropriate policy to achieve decentralization, because adequate infrastructure is a prerequisite for industrialization while the high price of public utilities affects costs of industrial production. Hence, it is clear that to decentralize industries away

from Bangkok, firstly, the pricing of utilities should not favour the BMR. In addition, in the beginning period of attracting industries to target areas, the pricing of public utilities in target areas should be reduced for a certain time. Secondly, necessary infrastructure needs to be made available in regions as well as the BMR. Thirdly, the quality of public utilities in the regions should be improved to the same standard as in the BMR. These three strategies will help generate new growth centers and spread benefits to the centers ' hinterland.

4.3 Minimum wage policy

The minimum wage policy has distorted Thailand 's labour markets by making the legal minimum wage rate cheaper than the market wage rate in Bangkok, and the reverse in the North and Northeast. This policy has a significant impact on labor-intensive industries, an important group of industries whose growth in provincial areas the government should be promoting. At present most of the industries in provincial areas are resource-based (or material-oriented) industries. While the development of resource-based industries has met with a certain degree of success, the resources on which some of these industries depend will become scarce in the near future. Thus, to strengthen the industrial base the government should also provide for the development of new labor-intensive industries. Such industries will help to create job opportunities outside the BMR. In order to ensure the success of attempts to promote labor-intensive industries, the distortion caused by the legal minimum wage rate must be eliminated. Presently, more attention is paid to political factors than to local labour market conditions in setting the minimum wage rate for the North and Northeast. In contrast, if the legal wage rates reflected market rates which are lower than in other regions, the North and Northeast would attract a lot of labor-intensive industries for which labor cost is a major element of costs. So in cheaper labour areas, labour-intensive industries will produce at lower costs which will increase the demand for labor in these areas, and ultimately raise the actual wage. Thus in the long run people will

be able to find a job at a higher market wage rate without the need for a legislated minimum wage.

4.4 Tax incentives

Although the BOI has attempted to promote investment in provincial areas since 1973, its lack of effectiveness may be attributed to the frequent changes in the definition of promoted zones, the economic incentives granted, and the large number of conflicting BOI objectives which have created loopholes against measures to promote provincial industries. The major incentives given are in the form of exemptions from or reductions of business and corporate income taxes which are not likely to be effective since these incentives are too small to offset the advantages of the BMR. In South Korea and India where several kinds of tax incentives to relocate industries away from concentration areas were provided, no evidence indicates that such tax incentives alone are ineffective (Biggs et al., 1990, p.79, Murray, 1985, pp. 79-81, Murray, 1988, pp. 48-60, Lee et. al., 1987, pp. 1-25, and Sekhar, 1983, pp. 64, 76-85). Hence, to develop provincial industries Thailand can not rely on merely tax incentives. Other incentives such as well-articulated infrastructure, well-trained labour, easy access to public services etc., are necessary to attract industries.

4.5 Industrial estates

The establishment of industrial estates was not as effective as anticipated. They are small and spread out in many different areas which puts a heavier burden on the government to develop public infrastructure for a wide area. Most industrial estates have been filled up by foreign and large Thai firms. The small firms which are a major group of provincial industries could not afford the relatively high price of the comprehensive package in the existing industrial estates. To make industrial estates more effective, the IEAT should

design industrial zoning for private investors. In addition, the government could develop more adequate and efficient public infrastructure to service the estates so as to attract larger numbers of firms and reduce the burden on the public sector. The concentration of firms in industrial estates zones would also make it easier for the government to control the pollution produced by some industries. Furthermore, when a large number of firms establishes in the industrial zone, it becomes easier to create forward and backward linkages and agglomeration economies. Already industrial estates have led to the development of various linkages between the primarily large or foreign firms in the industrial estates and the local supplier network of small firms. Indeed, it has already been pointed out that a major issue relating to very large inflows of foreign investment is how to maximize the spillover benefits of such investment (Dahlman et al., 1990). As noted in section 3.2.5, the BOI's information policy to stimulate local linkages and technology transfers has had some success. If this approach continues to be successful, when the industrial estates attract firms, the benefits will not concentrate only in the industrial estates, but will spread over to the areas around them through job creation, the transfer of modern technology to local entrepreneurs, and the training of local people. However, the government needs to provide an appropriate and adequate job training program for people in the areas targeted to be growth centers. Well-trained workers are another means of attracting industries, and spreading benefits to peripherals.

4.6 Government authority and services

The centralization of government power and authority and the complexity of obtaining government services discussed in section 3 undoubtedly increase the transaction costs of industries located outside Bangkok. Hence, the government itself should operate its regulatory and promotional functions in a more decentralized manner. While the unified form of government that exists in Thailand must clearly be accepted as given for present

purposes, many instances have been cited in which government services could be extended more evenly to the regions. Government offices concerned with industrial development should open more branch offices in the regions. Beyond that, it would facilitate industrial deconcentration if more decision-making power could be delegated from central to regional offices within the respective agencies. This applies to the BOI and the Customs Department, which appear to be the agencies having some effects on the location of modern firms, as well as to the Department of Industrial Promotion and Department of Export Promotion, which affect the development opportunities of provincial industries of all types.

However, given the political environment in Thailand, it will take a long time to achieve decentralization of government authority. Therefore, in the meantime at least a definite time limit for decisions should be specified for each particular licence and permit (e.g., factory licence, licence for a construction of a building, work permit, custom clearance, etc.) that industrialists must obtain from government officers. For example, to get a factory licence for a factory of less than 3,000 sq.ft. should take no more than 60 office-days. All licences and permits involving investors in provincial areas should be offered in packages as a one-stop service. Finally, if regional authorities are to be given more responsibility, the financial and administrative autonomy of municipal governments should be increased and the quality of their officers strengthened to enable them to respond more efficiently to local demands for public services.

4.7 Development of growth centers

The success of the Eastern Seaboard Region project (ESB) and the modest progress of the regional growth centers in the regions may be due to both the serious attention of the government itself, and the existing potential of the areas. Furthermore, observation and

study of the ESB suggests that the following characteristics of the ESB and growth centers in the regions are responsible for the greater success of the ESB :

- (1) The ESB project was designed for modern foreign and Thai large firms which rely mostly on Bangkok and export markets.
- (2) The ESB was located in an area which could support two new deep sea ports and a new international air port. Furthermore, its location has more developed links to Bangkok than the other regional growth centers and is also supported by all types of transportation networks connecting it to other regions.
- (3) In contrast, the regional growth centers did not have any special infrastructure plans while most of the industries in the regions are small in nature. Their marketing channels depend heavily on local markets. Moreover, the government has not paid enough attention to the regional growth centers ' development.

As mentioned in section 3.3 the improvement in the political environment in Indochina may provide better opportunities to generate regional growth centers in Thailand, especially in the North and Northeast. Hence, the success of the ESB project, which was based on the growth pole /growth center idea, should be applied to develop growth centers in the regions. In particular, the emphasis should be placed on providing adequate infrastructure and building transportation networks and communication networks that link deep sea ports and marketplaces to the regional growth centers. In addition, government agencies providing services should be established. Furthermore, project monitoring and evaluation need to be provided. When the growth centers in the regions are developed, the economic benefits should be spread over the hinterlands as the ESB project has spread benefits over the Eastern part of Thailand.

4.8 Government funding

Recently, the political situation around Thailand has improved and become more stable, but the share of defence expenditures has remained high at about 18 percent of total

government expenditure since 1974 (Bureau of Budget, in Thai, various issues). This share is very close to the share of economic services expenditures and the share of education expenditures which have varied between 16 and 20 percent of total government spending. Thus shifting a part of defence expenditures to the development of regional growth centers will accelerate the progress of new growth centers in the regions from which benefits will spread out over nearby areas. Such a reallocation of spending will not necessarily threaten national security, since more balanced national growth is a way of building the security of the country as well. Furthermore, the government needs to implement the above policies immediately to establish growth centers in the regions while it can take advantage of the favourable market conditions that presently exist. However, despite these favourable market conditions government intervention is still required to accelerate and provide some sufficient conditions for growth.

5 Conclusions

The Thai government decided to decentralize industries away from Bangkok in the early seventies. In the late seventies, the growth center approach was adopted to generate growth centers in the regions. In the early eighties, the Eastern Seaboard development project (ESB) became the newest effort of the government to follow the framework of the growth center strategy. But, over the twenty years of government attempts only the ESB project has shown significant progress, while the development of regional growth centers has been modest. Moreover, the concentration of industries has remained heavy in the BMR, particularly in Bangkok. Thus, this paper has tried to find out: first, whether the growth center approach which was adopted to decentralize industries away from the BMR since the late seventies is appropriate; second, whether past government policies were consistent with this approach; and third, what new policies or modifications to existing policies are required.

The analysis of past policies influencing provincial industrial development and overviews of the ESB project and the regional concentration of industries confirm that the growth center strategy is an appropriate means of achieving more balanced national growth. The rapid progress of the ESB project also illustrates the merit of growth center theory for decentralization in Thailand. However, examination of past government policies influencing decentralization reveals that they can be divided into two groups, the first of which consists of policies which are biased against the development of provincial industries. Clearly, this group is not consistent with the growth center approach. Thus, the impact of these biased policies partially explains the slow progress of the development of regional growth centers. This group consists of the maximum interest rate ceilings which result in insufficient credit from formal financial institutions in provincial areas, infrastructure investments and public utilities which favour Bangkok, the minimum wage rate policy which indirectly subsidizes labour-intensive industries in Bangkok, and centralization of government authority and services.

The second group consists of policies to attract industries to provincial areas such as the BOI incentives for decentralization, the industrial estates, the new economic zone (the ESB), and the regional growth centers. However, for the last two decades, there has been no evidence that any of these policies have been implemented effectively, with the exception of the ESB. One reason is that the influence of these policies is not strong enough to offset the immense advantages of Bangkok as a location, resulting from the combined effect of government subsidies and Bangkok's desirable characteristics. The potential profit for firms located in provincial areas (except in the ESB) appears to be less than that in the BMR. Hence, to make decentralization effective all the past policy biases against the development of provincial industries must be corrected and policy influencing decentralization must be improved. Some new policies should also be introduced: loan

guarantees, well-articulated infrastructure and unbiased pricing of public utilities in target areas, minimum wage rates based on local wage rates, industrial estate zoning plans, one-stop services for obtaining licenses and permits, and decentralized decision-making authority.

First, adequate credit in provincial areas, especially for small-scale industries, can be provided using loan guarantees. To implement this policy, the role of three specialized financial institutions, IFCT, SIFO, and SICGF, should be changed from lending at low-interest rates to screening small-scale industries' projects for loan guarantees. Second, good quality basic infrastructure should be available to generate locational attractiveness in target areas. In addition, transportation networks should link the target areas to markets, sources of inputs, deep sea ports, and national airports. Moreover, the pricing of public utilities should not favour the BMR. Instead, during an initial period the prices of public utilities should be cheaper in the regional growth centers than in the BMR; later, they can be adapted to the market price (by that time, if a large number of industries have located in the target areas, economies of scale will have arisen). Third, the legal minimum wage rate policy should be based on the local market wage rather than on political factors in order to reflect the comparative advantage of cheap labour regions. Moreover, training programs should be provided to prepare local labour for industries. Fourth, the IEAT should provide industrial estate zoning plans as a guideline for private investors and for government agencies providing public infrastructure services to the estate to help them provide more effective services. Fifth, one-stop services for obtaining licenses and permits required by investors in provincial areas should be provided. In addition, a definite time limit for decisions from government officers should be specified for each particular license and permit. Moreover, responsibility for making decisions should be decentralized to the regions. Finally, the capacity of the staffs of local governments should be strengthened so that they will be better able collect and handle their revenues.

In creating regional growth centers, the infrastructure investments of the ESB project constitute a good model of the level and pattern of infrastructure investment required to make the features of potential target areas comparable to the cumulative incentives in the BMR. However, government attention to the development of regional growth centers in the form of infrastructure planning, monitoring and evaluation of projects is also necessary. The ESB project suggests that an enormous amount of government funding will be needed despite the many private domestic and foreign investments at the port. Therefore, the size of the government budget provided for the development of regional growth centers will be one of the key determinants of success in the implementation of the policies described above. In addition, to ensure the success of these policies, the government should shift a part of defence expenditures to the development of regional growth centers, given the improvement in the political situation around Thailand. Furthermore, to utilize the favourable market conditions, the government should accelerate the development of growth centers in the regions by providing some sufficient conditions for growth. Lastly, environmental controls and land use plans for industrial zones, housing zones, commercial zones etc., must be provided and strictly regulated in the regional growth centers in order to prevent the environmental damages and severe traffic congestion that have occurred in Bangkok.

ENDNOTES

- ¹ Transaction costs are defined as expenditures which occur when investors proceed to obtain licences and permits, government privileges, etc., required for their firms.
- ² In general, the maximum interest rate ceiling on lending has been set at 15% per year. It is well-known that unorganized market interest rates can be as high as 2 - 5 % per month (Munjaiton, 1984, pp. 109-110, 120).
- ³ The BMR and capital districts (or Amphur Muang, in Thai) of provinces are not included.
- ⁴ Small industry means factories that require a maximum electricity level of less than 500 kilowatts over a 15 minute period, while large industry means those that require 500 kilowatts or more.
- ⁵ Nevertheless, for agribusiness and agro-industries, the BMR was only area excluded from investment promotion within the country.
- ⁶ All four zones are located in the North, the Northeast, and the South, outside the BMR, as follows :

Zone 1 : covering San Kamphaeng district in Chiangmai and the capital district of Lumphun (Since 1981, Mae Sod district in Tak was included in Zone 1.);

Zone 2 : covering Nakhon Ratchasima 's capital district, Pak Thong Chai district and Pak Chong district and Saraburi 's capital district and Kaeng Khoi district;

Zone 3 : covering Khon Kaen 's capital and Ban Phai districts; and

Zone 4 : covering Songkhla 's capital and Hat Yai districts.

- ⁷ The Eastern Seaboard Region includes three provinces -- Chon Buri, Rayong and Chachoengsao -- located at 81, 179, and 82 km respectively to the southeast of the Bangkok Metropolis -- Bangkok and Thon Buri.
- ⁸ As originally envisioned under the Eastern Seaboard Study, total program investments were estimated at about US\$4 billion (in constant 1981 prices). Between FY82 to FY85 only US\$233 million were actually invested in the ESB, mostly for infrastructure-related works and the total investment had been significantly cut down to about half of the originally projected capital requirement.

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Annex 1
Promoted Investment Zones, 1973-1978

Province	District
1. Krabi	Muang Krabi, Khlong Thom, and Ao Luk
2. Kanchanaburi	Tha Maka
3. Khon Kean	Muang Khon Kean, Nam Phong, Chonnabot, and Ban Phai
4. Chachoengsao	Bang Pakong
5. Chon Buri	Muang Chon Buri, Bang Lamung, Phan Thong, Si Racha, and Sattahip
6. Chiang Mai	Muang Chiang Mai, Doi Saket, Mae Rim, Saraphi, San Kampeang, San Sai, and Hang Dong
7. Nakhon Pathom	Muang Nakhon Pathom
8. Nakhon Ratchasima	Muang Nakhon Ratchasima, Chakkarat, Chok Chai, Non Thai, Non Sung, Pak Thong Chai, Phimai, Khan Thale So, Sung Noen, Sikhui, and Pak Chong
9. Phangnga	Muang Phangnga, Takua Thung, Takua Pa, Thap Put, and Thai Muang
10. Phitsanulok	Muang Phitsanulok, and Phrom Phiram
11. Phuket	Muang Phuket, Kathu and Thalang
12. Rayong	Muang Rayong
13. Ratchaburi	Muang Ratchaburi, Ban Pong, Pak Tho, Wat Phleng, and Phothalam
14. Lampang	Muang Lampang, Ko Kha, Mae Tha, and Hang Chat
15. Lumphun	Muang Lamphun, and Mae Tha
16. Songkhla	Muang Songkhla, Rattaphum, and Hat Yai
17. Samut Songkhram	Muang Samut Songkhram, Bang Khonthi, and Amphawa
18. Saraburi	Muang Saraburi, Kaeng Khoi, Nong Khae, Nong Saeng, and Sao Hai
19. Sukhothai	Kong Krailat
20. Udon Thani	Muang Udon Thani, and Kumphawapi
21. Ubon Ratchathani	Muang Ubon Ratchathani, Khuang Nai, Muang Samsip and Warin Chamrap

Source : Board of Investment

Annex 2

Spatial Aspects of Board of Investment Incentives

(1989-present)

1. Coverage of Investment Promotion Zones (IPZs)

Zone 1 : The BMR;

Zone 2 : Samut Songkram, Ratchaburi, Kanchanaburi, Suphanburi, Ang Thong,
Ayuttaya, Saraburi, Nakhon Nayok, Chon Buri, and Chachoengsao;

Zone 3 : The remaining 57 provinces including Laem Chabang and Mab Ta Phut
Industrial Estates (IEs) which are designated as IPZs.

2. Corporate Income Tax Exemption

Zone 1 No exemption, except that projects which satisfy one of the criteria below
get exemption for 3 years:

- export not less than 80 percent and locate in an IE;
- produce or supply specific raw materials or parts^{1/} and locate in an IE;

Zone 2 Tax exemption for 3 years, extendable up to 5 years for projects which :

- earn foreign exchange^{2/}
- produce or supply specific raw materials or parts^{1/};
- are agro-based or use domestic supplies for at least 60 percent of inputs;
- locate in IEs;

Zone 3 For target activities^{3/} : Tax exemption for 4 years, extendable up to 8
years for projects which :

- earn foreign exchange^{4/};
 - are agro-based or used domestic supplies for at least 50 percent of inputs;
 - employ 200 persons;
 - locate in IEs;
-

For general activities^{3/} : Tax exemption for 4 years, extendable up to 8 years for projects which satisfy one or more of the criteria for target activities.

3. Tax Exemptions on Machinery and Equipment

Zone 1 No tax exemption, except projects which :

- export not less than 80 percent or are classified under category 5.49^{3/};
- produce or supply specific raw materials or parts^{1/} ;
- locate in an IE;

Zone 2 The 50 percent tax reduction, except the following projects which will be fully exempt :

- export not less than 80 percent or are classified under category 5.49^{3/};
- produce or supply specific raw materials or parts^{1/} ;
- manufacture engineering products;
- are agro-based or use domestic supplies for at least 60 percent of inputs;
- locate in an IE;

Zone 3 *Full tax exemption for both target and general activities.*

4. Additional Incentives

For projects locate in zone 3, both target and general activities.

Business Tax on Sales :

- 90 percent reduction for 5 years;

Corporate Income Tax ;

- 50 percent reduction for 5 years;
 - double deduction from taxable income of water, electricity and transport costs for 10 years;
 - deduction from net profit of 25 percent of the costs of installing or building infrastructure.
-

5. Other Incentives

For target activities in zone 3 :

- 50 percent reduction of import duty and business tax on raw materials used to produce for the domestic market for 1 year;
 - exemption of import duty and business tax on raw materials used for the manufacture of exports for 5 years.
-

Source : Compiled from Board of Investment announcements and Guides to Investing in Thailand.

Note : 1/ Mainly for producers of engines, machinery, and electrical and electronics products in the same zone.

2/ Save or earn net foreign exchange of more than US\$ 2 million per year.

3/ See Guide to Investing in Thailand (including a Guide to Board of Investment), 1993.

4/ Save or earn net foreign exchange for more than US\$ 1 million per year.