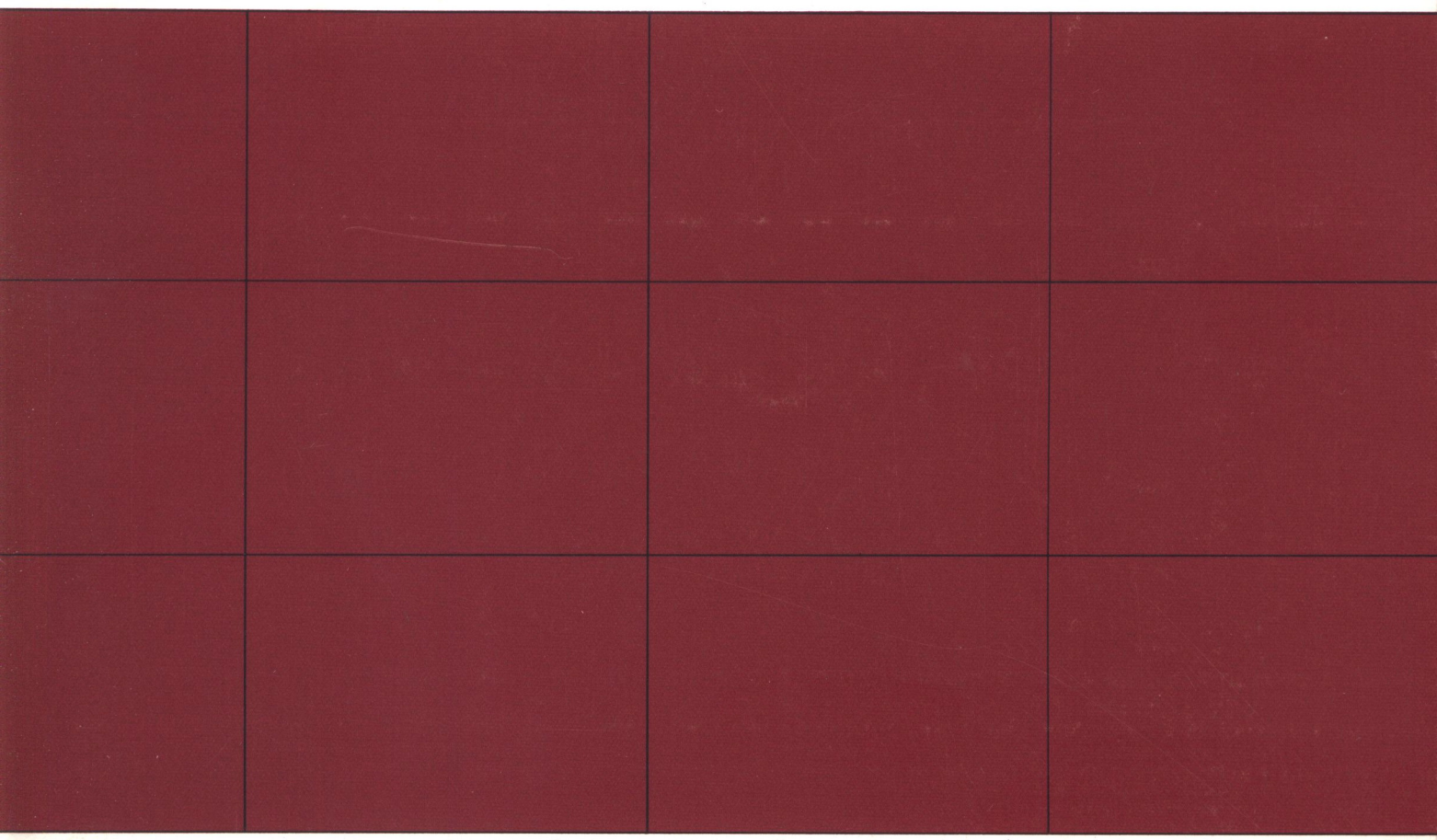
Policies, Instruments and Institutions for Rural Industrial Development



Thailand Development Research Institute Foundation

Policies, Instruments and Institutions for Rural Industrial Development

By

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Any errors or mistakes that remain in this study is of course the sole responsibility of the researcher.

POLICIES, INSTRUMENTS AND INSTITUTIONS
FOR RURAL INDUSTRIAL DEVELOPMENT

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EXECUTIVE SUMMARY

This study reviews the major industrial and other policies that may affect provincial industries and attempts to identify the biases against provincial industrial development. It was found that, although the development of provincial industries has been mentioned since the Third Plan, only in recent years has there been an attempt to seriously coordinate government actions in this area, with the formulation of provincial plans and the establishment of the Rural Industrial Development Committee in 1988.

The centralized government structure makes it difficult for provincial businesses to have formal access to the formulation of industrial policies; this also used to be true of major business associations dominated by business interests in the Greater Bangkok Area.

The study found that provincial industries have been unaware of the government's extension services to industries, although industries in Greater Bangkok were also found to be ignorant of such services.

Another result of the centralization of governmental authority in Thailand is the excessive dependency of local governments on the central government. Not only was local government spending much smaller than central government spending, local government's capacity to generate income is quite limited and a large part of its revenues come from the central government.

Nevertheless, the centralization of public finance in Thailand has not led to direct biases of major taxes -- including business and corporate income taxes -- against provincial industries.

Although there are no direct biases of import and export taxes against provincial industries, there could be indirect effects through the biases against some major types of industries. This is especially true for industries utilizing natural resources in the provincial areas.

The study found that the level of provincial industrial development seemed to be related to the level of public investment in infrastructure and education, the level of financial development, the local market size and the distance away from Bangkok. Furthermore, the distribution of public infrastructure was found to be quite inequitable.

As for the pricing of infrastructure services, it was found that provincial industries have also been disadvantaged in the case of electricity tariffs prior to 1983; it was not as clear in the case of water supply. Nevertheless, the much lower availability of water supply in provincial areas is still a problem to contend with.

The study's surveys show that, for provincial industrial firms, water tends to form a higher proportion of the costs of production than for Bangkok firms. Although this was found to be different in the case of electricity costs, it should be noted that provincial industries are much less sophisticated and may be less energy-intensive.

With regard to the financial system, the study found inherent biases in credit extension against provincial industries, although this may be improving. Furthermore, the implementation of central bank measures attempting to allocate cheap financial resources to some specific, priority economic sectors through commercial banks could have put provincial industries at a disadvantage, because banks tend to favor large businesses located in Bangkok.

Other policies that could have distorted lending by financial institutions to provincial industries were the central bank's control of interest rates through the setting of maximum interest rate ceilings and the discouragement of competition in the banking industry. This has reduced financial institutions' ability and willingness in carrying out their role as risk mediators. Nevertheless, it is encouraging that the policy direction of the central bank seems to have changed somewhat in the past few years.

Specialized institutions, which include the Industrial Finance Corporation of Thailand, the Small Industry Credit Guarantee Fund and the Small Industry Finance Office, have been contributing towards provincial industrial development, although their combined impact is still limited. Furthermore, their future roles could remain limited if there is no major restructuring.

With regard to education, it was found that the government has been successful in extending primary education to the rural areas, although it was difficult to measure the quality of such services. However, the government did not give sufficient priority to education at the secondary school level upwards. This was particularly true in higher education, where it was quite evident that government subsidies did not benefit the provincial population as much as that of Greater Bangkok.

The study also found that the proportion of the school-age population attending schools dropped dramatically at the secondary school level as compared to the primary school level and was lower in the provincial areas as compared to Greater Bangkok.

In terms of the legal minimum wage rates, not much difference was found between Greater Bangkok and the other regions, although the cost of living is likely to be quite different. Furthermore, the real legal minimum wage rate in Greater Bangkok has grown much less than the other regions since 1975. In addition, real minimum wage rates in provincial areas have grown faster than real per-capita income, while the opposite was true for Greater Bangkok. To the extent that legal minimum wage rates become effective in actual practice, it could reduce the comparative advantage of the provincial areas in terms of labor-intensive industries.

Although attempts have been made by the Board of Investment since 1973 to promote investment in provincial areas, they were not effective. This was because of the frequent changes in the definition of promoted zones and the economic incentives granted together with the large number of conflicting objectives of the Board of Investment, which had created loopholes against provincial industries. Furthermore, the major

incentives given were in the form of exemptions from business and corporate income taxes which are not likely to be effective, because there could be a greater tendency for provincial industries to evade paying such taxes anyway.

Industrial estates were also ineffective in promoting provincial industrial development, as most industries in the provinces are small-scale. There are an insufficient number of modern, large-scale industries to support the cost of establishing industrial estates in provincial areas.

CHAPTER 1

INTRODUCTION

Industrialization has been a part of the overall economic and social development strategy of Thailand since the introduction of the First National Economic Development Plan in 1961. Over the years, the industrial sector has grown rapidly, while a large number of policy instruments have been introduced and a number of institutions have been set up to support the industrialization process.

Despite the success of industrialization over the years, little emphasis has been placed on the dispersion of industries to areas outside of Bangkok and its surrounding provinces, although it has been mentioned since the Third Plan that it is the intention of the government to promote provincial industries. This has led to an over-concentration of industries in the Greater Bangkok area.

In addition to the problems of congestion and pollution resulting from the intense concentration of industrial activities, the fruits of industrialization have not been widely and evenly spread to other regions. Provinces outside of Greater Bangkok still depend heavily on activities related to agriculture, while incomes remain much lower than that in the capital and industrial activities remain limited and backward. This past bias in the country's industrialization process may have also contributed to the emergence of industries that place less emphasis on the utilization of local resources.

As a consequence, the government has recently attempted to correct this past geographical imbalance of industrialization in the country through an emphasis on provincial industrial development. Provincial industries are to become the centerpiece for overall future industrialization. As this change in the policy direction has been made only recently, there are still insufficient policy instruments and inadequate understanding of the problem to effectively implement the

policy of industrial dispersion. In addition, there is also a lack of an effective institutional machinery to adequately support the new policy.

Meanwhile, a large number of policy instruments designed for the earlier industrialization strategy are still in existence. It is, therefore, plausible that these policy instruments and measures will continue to be biased against provincial industrial development and favor urban growth in the capital. Consequently, it would be desirable to be able to gauge the potential impact of the policy measures on provincial industrialization in order to be aware of the tradeoffs that might exist between two conflicting goals.

1.1 OBJECTIVES OF THE STUDY

This research study has the following objectives:

1. To identify and analyze past and present industrial policies and measures that may have biases against provincial industrial development.

2. To identify and evaluate other major non-industrial policies and their potential biases against the expansion and growth of provincial industries.

3. To identify and evaluate various institutions and networks (both private and public) associated with the promotion and support of provincial industries.

1.2 ORGANIZATION OF THE STUDY

There are 9 chapters in this study. After this introductory chapter, Chapter 2 reviews the industrial policies in the country from the First through the Sixth National Development Plans. In addition, focus is placed in identifying the major policies relating to provincial industrial development in the various plans.

Chapter 3 covers the institutional structure in formulating and implementing industrial policies. This includes both public and private institutions and their linkages. Furthermore, an attempt is made to investigate the structure in which provincial industrial policies are formulated and implemented.

The potential impact of public resources on industrial development is covered in Chapter 4. A simple linear regression model was constructed to study the potential influence of public capital spending on provincial industrial development. In addition, the chapter covers the supply and availability of public infrastructure services and the pricing of such services in order to identify the potential biases against provincial industrial development.

Chapter 5 attempts to identify the financial policy biases against provincial industrial development. The areas covered include the commercial banking system, the central bank's policy in allocating financial resources among economic sectors, the central bank's interest rate policy and specialized financial institutions involved in industrial development.

The issues of education and wage rates affecting industrial development is taken up in Chapter 6. The first part covers the past and present educational system and the potential biases in the distribution of educational resources. This is followed by a study of legal minimum wage rate policy and its changes over time across regions with respect to the potential biases against provincial industries.

Chapter 7 covers public policy relating to industrial investment zones and industrial estates. The promotion of investment zones through the granting of economic incentives by the Board of Investment is discussed together with the establishment of industrial estates in the country.

In Chapter 8, the major taxes in the country and their possible biases against provincial industries are investigated. The taxes covered include income, business and trade taxes.

The last chapter ends with a summary of the study together with the major conclusions integrated into a framework of policy recommendations.

CHAPTER 2

AN OVERVIEW OF INDUSTRIAL POLICIES IN THAILAND

Thailand began to pay attention to industrial development in 1936 with the establishment of the Industrial Division under the Department of Commerce in the Ministry of Economic Affairs. This was followed by the enactment of the "Factory Act" in 1942. Later in 1942, the Industrial Division was upgraded to become the Ministry of Industry.

The industrial development strategy in those early years placed emphasis on the direct role of the government in major industrial activities. This did not turn out to be successful due to inefficient operations of most state enterprises and the reluctance of private entrepreneurs to invest in manufacturing activities that could compete with these state firms.[1] Manufacturing activities in the private sector were thus mostly confined to small-scale operations covering industries such as rice milling, saw milling and household handicrafts.

The role of the private sector in promoting industrial development was first acknowledged in 1954 when the government enacted the "Industrial Promotion Act". However, there was no serious effort to implement the Act until 1960, when the the Board of Investment (BOI) was established.

The establishment of the BOI came about largely through a reversal of the government's industrialization policy in the late fifties: its direct involvement in the manufacturing sector was reduced and industrial production as well as trade were liberalized. To support private enterprises, the government also began to grant investment incentives and to provide the necessary public infrastructure to support investments.

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1. Industries which the state was involved include cement, textiles, paper, glass, sugar, gunny bags, tobacco and many others.

Since the early sixties, the course of Thailand's industrialization process has altered significantly. The First National Development Plan prepared by the National Economic and Social Development Board (NESDB) was introduced in 1961. It was a six-year plan divided into two phases; it was followed by five successive five year plans.

2.1 A REVIEW OF INDUSTRIAL POLICIES IN THE NATIONAL ECONOMIC DEVELOPMENT PLANS

Although the First National Development Plan (1961-1966) did not specify clearly the role of industry in economic development, it did emphasize the government's commitment towards industrialization through the encouragement of private initiatives.

Furthermore, it stated that the government would restrict the establishment of new public enterprises that would compete with the private sector. A major activity undertaken by the government to promote industrialization was the development of economic infrastructure such as roads, electrical power plants, communications facilities, and others.

The First Plan emphasized the promotion of private investment, particularly in industries utilizing domestic raw materials and producing import substituting products. Household and small-scale industries were also targeted for government support.

The Second National Development Plan (1967-1971) continued to place emphasis on the promotion of private investment in industries utilizing domestic raw materials and import-substituting industries. Labor-intensive industries also began to receive attention.

As for small-scale industries with fewer than 50 workers, the Second Plan stated that the government would provide assistance in terms of advisory services, market development and financing.

The major measures for implementing the industrial policy during the first two plans included the setting of import tariffs by the Ministry of Finance and the granting of economic incentives by the BOI through its investment promotion. The latter included exemption of import duties on machinery and other capital equipment, the reduction or exemption of import duties on raw materials and other intermediate inputs, the imposition of import surcharges and the exemption of corporate income taxes over a number of years.

The policy emphasis of the measures were geared towards import substituting industries especially of consumer goods and assembly type activities utilizing imported parts and components. Labor-intensive and resource-based industries such as textiles and agricultural processing were also included in the BOI promotion list, although they received fewer incentives than industries producing substitutes for imported consumer goods (import-substituting industries).

Industries that received the most favorable treatment by the BOI were large-scale capital intensive ones such as metal smelting, vehicle tires and chemicals. To a lesser extent, emphasis was also placed on the number of assembly industries including motor vehicles and electrical appliances.

In the Third Plan (1972-1976), there was a shift in strategy towards export industries for the first time, although import-substituting industries producing intermediate goods and raw materials continued to receive attention. To reflect the change, the BOI incentives were revised to promote industrial exports.

Rebates of import duties were given for inputs imported for the production of industrial exports, while preferential short-term export credits were given to industries through the central bank's rediscount facility.[2]

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2. The Bank of Thailand's rediscount measure is discussed in Chapter 5.

Labor-intensive, resource-based and small-scale industries also continued to receive mention in the Third Plan. There was also explicit mention of provincial industries, agro-industries and export-oriented handicraft industries.

Both the Fourth (1977-1981) and Fifth (1982-1986) National Development Plans continued to place special emphasis on the promotion of small scale industries, provincial industries and export industries.

However, a significant feature of the Fourth Plan (1977-1981) was the priority given to the promotion of basic industries, supporting industries and industries with linkages to the agricultural sector. In fact, strategies to promote specific industries such as steel, fertilizers, and pulp and paper were identified, although these strategies were not implemented.

The Fifth Plan enhanced the promotion of export industries by increasing the level of economic incentives relative to those for import substituting ones as well as eradicating various obstacles to exports. In addition, the exchange rate was utilized as a tool to promote exports for the first time.

Finally, under the current Sixth National Development Plan (1987-1991), there continued to be no major changes in the direction of industrial policies with export industries, small-scale industries and provincial industries still receiving attention. However, agro-based industries and engineering industries have been singled out as the two broad industrial groups to be promoted.

2.2 INDUSTRIAL POLICIES RELATING TO PROVINCIAL INDUSTRIAL DEVELOPMENT

The First Plan did not mention the government's position with respect to the development of provincial industries, although it did state that the government would have to make available land with sufficient public infrastructure to support industrial factories.

The Second Plan began to show an awareness of industrial location. It stated that the government would promote the establishment of industrial estates; however, it was not until 1973 that the Industrial Estate Authority of Thailand was set up.[3]

The first explicit support of provincial industrial development was in the Third Plan which stated that:

> "To counteract industrial concentration in the Bangkok-Thonburi Metropolitan area, the Ministry of Industry will increase its activities in the regions. Special privileges will be extended to increase regional industrialization, including loans from the Industrial Finance Corporation of Thailand and promotion privileges for public utilities. These efforts are designed to increase incomes and employment among the rural population, make more efficient use of natural resources, and expand the market for agricultural products."[4]

In fact, the plan objective was not only to develop provincial industries, but also to develop the provincial areas as a whole. It was stated for the first time that regional and provincial plans would be formulated.

The Third Plan indicated that, in order to promote provincial industries, the government would rely on the following measures:

(1) financial assistance would be given through the Industrial Finance Corporation of Thailand and the Small Industry Finance Office;[5]

(2) investment promotion would be given through the Board of Investment;[6] and

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3. A discussion of industrial estates can be found in Chapter 7.

4. NESDB, The Third National Economic and Social Development Plan, (1972-1976).

5. NESDB, The Third National Economic and Social Development Plan, (1972-1976).

6. This is discussed further in Chapter 7.

(3) prices of electricity, energy and other public infrastructure services would be reduced for provincial industries.[7]

The policy of dispersing industrial development to provincial areas continued to be emphasized in the Fourth Plan (1977-1981) as shown by the following paragraphs:

> "Industrialization in the past did not give sufficient attention to industrial development in areas outside Bangkok. The previous industrialization policy and strategy stressed the importance of import substitution and export oriented industries. As a result, most of the industrialization took place in and around Bangkok, as the economically most efficient location for import substitution and export oriented industries. It was near the only deep sea port of Thailand which is in Bangkok. A large number of other industries were located in the Bangkok area also because Bangkok is the largest market in Thailand for industrial products. The concentration of factories in the Bangkok then led to mass migration into the capital and the associated problems in the field of housing, environment pollution, traffic congestion and disparities in income."[8]

The policy to disperse industries to regional areas began during the Third Plan, when the Board of Investment granted promotional privileges to companies that set up factories in promoted zones in various provinces. The measure was not very effective, as only a few industries were established in the provinces compared with the number established in the Bangkok Area. During the Third Plan, value added in manufacturing was generated mainly in the Central Region, especially in Bangkok. During 1970-1974, manufacturing value added in the Central Region accounted for 77 percent of the national total. Bangkok and adjacent areas accounted for 57 percent of the nation's total industrial value added.

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7. This is discussed further in Chapter 6.

8. NESDB, The Fourth National Economic and Social Development Plan, 1977, page 190.

In addition, the Fourth Plan repeated the government's commitment to provide the necessary public infrastructure and the economic incentives for investment promotion to develop provincial industries.

The intention to promote provincial industrial development continued to be espoused in the Fifth and Sixth Plans. There was a statement in the Fifth Plan supporting the establishment of more commercial banks in provincial areas. Furthermore, there was an explicit plan to target the Eastern Seaboard Area for industrial development.

This has now led to the construction of two deep seaports: one at Laem Chabang to support light and export-oriented industries and another at Mab Ta Put to support heavy industries, especially the petrochemical industry.

In promoting provincial industries in general, the Sixth Plan emphasized the role of industries that utilize local resources. Furthermore, market development for provincial industries received attention in the plan.

CHAPTER 3

INSTITUTIONAL STRUCTURE OF INDUSTRIAL POLICY FORMULATION AND IMPLEMENTATION

3.1 PLANNING AND POLICY FORMULATION AGENCIES

Although there are many government agencies dealing with industrial development, it can be said that there are only two main institutions that deal directly with planning and policy formulation: the National Economic and Social Development Board (NESDB) and the Ministry of Industry.

The NESDB, an agency directly under the Prime Minister's Office, is the country's planning agency overlooking both macro and sectoral plans. Under the National Economic and Social Development Act of 1978, the NESDB is supposed to carry out the following functions:

1) formulate policies and draw up master plans for the country's economic and social development;

2) translate the policies and plans into consistent operational plans for the related ministries, bureaus and departments in the government so that they can be implemented;

3) monitor and follow up on various plans and projects of the implementing agencies; and

4) evaluate the actual implementation of the plans and projects of the various government agencies.

For industrial policies and plans, the Industrial Planning Section, Government-Private Cooperation Division, is the unit directly charged with these responsibilities in the NESDB. In addition, there is the Center of Integrated Plan of Operations (CIPO) which was set up for the

specific purpose of carrying out the planning and coordination of projects for industrial development in the Eastern Seaboard Area.

Another government agency that is supposed to be involved in the formulation of policies and plans on industrial development is the Ministry of Industry. There are two main units in the ministry involved in such activities: the Industrial Economic and Planning Division (IEPD) within the Office of the Permanent Secretary of Industry (PSI) and the Department of Industrial Promotion (DIP).

The IEPD's duties include formulating plans for the development of specific industries; formulating project plans for industrial development that are consistent with the master development plan; and coordinating with the NESDB and various units in the Ministry of Industry in order to translate the broad national development plan into more specific operational plans.

So far, the IEPD has not been seen as effectively filling its role. This is due to the lack of adequate and qualified manpower in planning. This has led both the NESDB and the various departments and divisions in the Ministry of Industry to take over a large part of its responsibilities.

As for the DIP, its role is to formulate plans for the development of small-scale industries (especially in provincial areas) and to coordinate with other government agencies both within and without the Ministry of Industry in such areas.

In addition to the NESDB and the MOI, other government agencies are indirectly involved in provincial industrial development through the sectoral plans. Two examples include the Regional Cities Development Plan and the Plan for Development of Urban and Specific Areas. In these cases, provincial administrations become involved in the formulation of industrial plans under the broad direction of the master plan.

The NESDB is the core agency that provides the studies and analysis to back up the planning and formulation of industrial plans. It

also screens developmental projects and offers advice in solving problems to various government agencies.

In carrying out its duties in this area, the NESDB frequently consults and coordinates with the various government agencies together with domestic and foreign academics and experts in various fields. As such, the NESDB normally operates through various working groups and subcommittees.

The recommendations and results from such dialogues are presented to the NESDB's board of directors for screening before being finally presented to the Cabinet for consideration.

In December 1980, the Committee to Supervise Economic Policy was set up to assist the Cabinet in screening economic matters. The name was changed to the Council of Economic Ministers (CEM) in May 1983. It is chaired by the Prime Minister and consists of all three Deputy Prime Ministers and Ministers dealing with economic matters.

The Secretary General of the NESDB acts as the Secretary of the Council. In general, economic matters are referred to the CEM before they are finally presented to the Cabinet.

The Council's duties consist of the following:

(1) to screen matters concerning economic policies and measures;

(2) to coordinate economic policies and measures among the various ministries; and

(3) to follow up on the implementation of economic policies and measures that have been approved by the Cabinet.

The level of involvement of various groups of people in the formulation of policies and plans under the NESDB varies according to the time period. For example, academics and experts have been more actively involved in the studies that laid the foundation for industrial

development policies in the earlier development plans, especially the Third and Fourth Plans. They were less involved in the Fifth and Sixth Plans.

In recent years, it seemed that government agencies and private business groups have become more active in determining the direction of development plans. The latest restructuring of the board of directors of the NESDB points out very clearly the increasing influence of the private business sector in policy and plan formulation of the country.

Because the individuals and institutions involved in planning and policy formulation in the past and present tend to come mostly if not entirely, from the Greater Bangkok Area, there is no built-in mechanism for local authorities or representatives to become directly involved in the planning and policy formulation of provincial industrial development. Any involvement would have to be indirect or formulated from the top.

3.2 POLICY IMPLEMENTING AGENCIES

The implementing agencies are the various ministries, bureaus and departments. Their involvement in industrial development varies widely. Some of the major government agencies are discussed in the following sections.

3.2.1 Office of the Board of Investment (BOI)

The BOI was set up in 1960 in order to promote investment, especially in the industrial sector. The main functions of the BOI include the following:

(a) to disseminate information regarding the investment climate and attract investments in targeted industries;

(b) to establish an investment service center to serve investors (e.g., obtaining of various permits, prepare projects, and identify project partners);

(c) to analyze project applications for investment promotion and to verify, control and evaluate projects that receive promotional privileges; and

(d) to identify investment opportunities and promote new industries;

The activities of the BOI since its establishment have been concentrated in the provision of investment incentives to targeted industries. In 1972, the BOI began providing extra incentives to particular areas outside of Bangkok. However, the measures do not seem to have been effective.[1]

The BOI, chaired by the Prime Minister and under the Prime Minister's Office, is considered to be a high-powered agency. Because the BOI board is made up of top officials concerned with industrial development, it provides a forum for coordinating activities under the industrial development plan. In fact, the BOI is so powerful that in some instances it formulates its own industrial development policies and implements them on its own.

Although the NESDB does not have a permanent seat on the BOI board, its secretary general has always been appointed as a director. In addition, the Minister of Industry is given the permanent seat of Vice Chairman of the BOI.

Other government officials represented in the BOI board include the Minister of Finance, the Minister of Commerce, the Minister of Interior, the Minister of Foreign Affairs, the Minister of Agriculture and Cooperatives, Secretary of the Juridical Council, the Governor of the

1. This will be discussed in Chapter 7.

Bank of Thailand and the Minister Attached to the Prime Minister's Office overseeing the BOI.

Three major private sector associations are also represented on the BOI board by the presidents of the Board of Trade, Federation of Thai Industries and the Thai Bankers Association.

So far, the BOI has been able to follow the industrial development policies set out in the various national development plans relatively well. Nevertheless, the actual implementation of policies, especially regarding the granting of incentives, has changed frequently and has become quite detailed and complex. The BOI has also been ineffective in promoting provincial industrial development, as will be discussed in Chapter 7.

As the BOI system became more complex and detailed and the number of investment applications rose, the BOI set up a subcommittee in November 1982 to approve projects with investment value not exceeding 50 million baht and to screen and make recommendations for those with investments of more than 50 million baht for the main BOI committee.

The subcommittee is chaired by the secretary general of the BOI and made up of officials from the NESDB, the Fiscal Policy Office under the Ministry of Finance, the Ministry of Industry, the Bank of Thailand, the Federation of Thai Industries and the Industrial Finance Corporation of Thailand.[2]

3.2.2 Ministry of Industry (MOI)

The Ministry of Industry is supposed to be the main government agency dealing with the implementation of industrial development policies. Its main promotion activities are undertaken by the Department

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2. The subcommittee now has the power to approve projects with investments not exceeding 100 million baht. In the case of export industries, it could approve projects with investments of more than 100 million baht.

of Industrial Promotion (DIP), while its main regulatory functions are undertaken by the Department of Industrial Works (DIW).[3]

The main role of the DIP is to strengthen the capacity and efficiency of existing industries. This is done through the provision of information, advisory services and training for industrialists in the area of management, marketing, productivity improvement and finance. The activities are focused mainly towards small-scale, household, handicraft and cottage industries.

In addition, it has the objective of promoting the establishment of small-and medium-scale industries in provincial areas. It tries to identify investment opportunities in the provincial areas as well as to provide advisory services and assistance to industries.

In carrying out such a function, it has established five regional offices in addition to the Industrial Service Division, which mainly serves Greater Bangkok. They are:

(a) The Northern Industrial Promotion Center (Chiang Mai),

(b) The Northeastern Industrial Promotion Center (Khon Kaen),

(c) The Southern Industrial Promotion Center (Songkhla).

(d) The Western Industrial Promotion Center (Suphan Buri), and

(e) The Eastern Industrial Promotion Center (Chon Buri).

Furthermore, other units within the DIP which have a bearing on provincial industrial development include the Thai Handicraft Promotion Division, the Cottage Industries Division, the Rural Industry

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3. The Department of Mineral Resources (DMR), which promotes and regulates activities in the mineral, petroleum and underground water sectors will not be discussed here, because it deals with very specific areas.

Information Service Center and the Office of the Revolving Fund for Cottage and Handicraft Industries.

In promoting technological development in industries, it has established the Metal-Working and Machinery Industry Development Institute (MIDI). The objective is to help small-and medium-scale industries to develop and improve the efficiencies of their metal-working and machinery technologies. The services include information, training and advice for industrialists together with the checking and testing of various metal works. In addition, it carries out experiments by constructing prototype machines.

Under the DIP, there is also a Small Industry Finance Office (SIFO). It was set up in 1964 in order to provide medium-and long-term financing (3-7 years) to small-scale industries. This will be discussed in Chapter 5.

The DIW's main function is to regulate industrial factories under the various existing laws and regulations. It has the authority to issue permits for the establishment of factories and to register factory machinery.

In 1982, it established the one-stop Investment Service Center to help industrialists obtain all the necessary permits and other documents to operate and to expand their factories. This was extended to the provincial areas in 1987, when authority was decentralized to the provincial industrial officers.

A main regulatory function of the DIW is to safeguard the public from industrial pollution caused by factories. It has the authority to require factories to install noise, water and air pollution control systems and to close them down if their operations affect the public's health and safety.

In order to coordinate provincial industrial development, the MOI established various Provincial Industrial Offices (PIO) in 1972 under

the Office of the Permanent Secretary of Industry.[4] They originally consisted of a representative of the MOI in each of the government's provincial office who assisted in coordinating with other government agencies in the provinces, in addition to providing advice to the provincial governors regarding industrial development.

In the beginning, these officers were involved mainly with regulating provincial industries to ensure that they complied with the law. This has changed under the Sixth Plan: the PIO was given responsibility for promoting provincial industrial development under the Rural Development Plan.

The activities of PIO have therefore expanded in recent years. There are now two provincial industrial officers in each province. The PSI and the DIP act as the central coordinating agencies with these PIO officers, who have recently been required to prepare annual provincial industrial development plans and monthly entrepreneurial development plans.

In actual practice, however, it not clear whether the policy of recent years emphasizing promotion instead of regulation has been fully effective. This is because there were no programs formulated to help provincial industrial officers adjust to their new role.

In addition to the above, the MOI has jurisdiction over the Thai Industrial Standards Institute (TISI) -- which promotes the development of industrial standards through the certification activities provided to industries -- and two state enterprises, the Industrial Estate Authority of Thailand and the Petroleum Authority of Thailand.

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4. There were 29 such offices in the provinces in 1976. Today, all provinces in the country have such offices.

3.2.3 Ministry of Finance (MOF)

Although the MOF is involved mainly with the country's fiscal and monetary matters, its actions have a significant and direct impact on the development of the industrial sector. It is quite evident that the tax structure and system significantly influences the industrial structure.

In addition, its role in allocating the public sector budget expenditures and in securing financial resources for various public sector projects gives it a large influence on the types and distribution of public sector investments which have a major bearing on industrial development.

The MOF also oversees the Bank of Thailand (BOT) and the Industrial Finance Corporation of Thailand (IFCT). Although the BOT's main duty is to maintain monetary stability through the conduct of macro-economic policies, it has over the years adopted developmental functions in so far as it allocates credit to particular economic sectors.

As for the IFCT, it is the country's only industrial development financing institution, providing medium-and long-term loans to industries on a project basis. Although the IFCT has been successful in extending credit to new industries and those which could not obtain financing from commercial banks, its activity in the financial system is limited. Nevertheless, compared to commercial banks, it has been able to extend a larger proportion of credit to provincial industries.

3.2.4 Ministry of Interior (MI)

The MI's role in industrial development is indirect. It controls the Labor Department, which oversees labor relations, promotes the development of labor skills through training and plays a major role in setting the legal minimum wage rates.

In terms of provincial industrial development, because of its jurisdiction over the Local Administration Department (LAD), it controls all the government's provincial administration units and therefore the economies of the provinces. It is also supposed to play a major role in the development of urban centers in provincial areas.

Any attempt to develop provincial industries must therefore receive cooperation and support from the governors of the various provinces.

Other units under the MI that have a bearing on provincial development include the Town and Country Planning Department, the Community Development Department and the Office of Accelerated Rural Development.

In addition, the MI has under its control a number of major state enterprises which are important in providing the necessary infrastructure for development. They are the Provincial Electricity Authority and the Provincial Water Works Authority, among others.

3.2.5 Other Ministries

Besides the ministries already mentioned, other ministries also influence industrial development. For example, the Ministry of Transport and Communications (MOTC) affects the development of industries through its development of infrastructure.

MOTC oversees the Land Transport Department, the Aviation Department, the Harbor Department and the Highways Department. In addition, it controls major state enterprises, including the Port Authority of Thailand, the State Railway of Thailand, the Express Transportation Organization of Thailand, the Telephone Organization of Thailand, the Airports Authority of Thailand, the Communications Authority of Thailand, the Thai Airways International Limited, the Aeronautical Radio of Thailand Limited, the Transport Company Limited and the Thai Maritime Navigation Company Limited.

To the extent that the level of infrastructure development affects the pace of industrial development, MOTC's role in formulating investment projects among the regions could significantly influence the pace of provincial industrial development.

In terms of the development of human resources to support industrialization, the government agencies that play a major role in this area include the Ministry of University Affairs, the Ministry of Education, the Ministry of Public Health and the Ministry of Science, Technology and Energy.

3.3 STRUCTURE AND LINKAGES OF GOVERNMENT AGENCIES

At the uppermost level, the Cabinet and Council of Economic Ministers (CEM) provide the linkages among various government agencies in the formulation and implementation of policies and plans. However, before the policies and plans reach the Cabinet for approval, there must be sufficient coordination among various government agencies so that they are consistent with one another.

In the planning stage, the NESDB coordinates and consults with various government agencies through working groups and subcommittees. It also commissions and carries out studies to support such work. Once the plans have been formulated, they will be forwarded to the CEM and the Cabinet for approval.

Although the NESDB is the major agency charged with policy and plan formulation, it is not involved in any direct way with the implementation of the various plans and policies. Nevertheless, it acts as the core in coordinating and overseeing the implementation of governmental policies through the various government agencies through its function as the Secretariat of the CEM.

It is supposed to ensure that the implementing agencies act according to the master plan and that their operating plans and actions are consistent with one another. To a degree, it has some authority

over the implementing agencies by screening investment projects of all government agencies and state enterprises before they are presented to the Cabinet or CEM for approval (although there are projects that have bypassed such a process). Its clout and authority hinge significantly on the backing of the Prime Minister. Even after receiving Cabinet approval for the various plans, it must act indirectly by persuading the Cabinet and various government agencies and state enterprises to act according to the plans.

Once the master plan has been approved by the Cabinet, the NESDB must carry out another round of coordination and consultation with various government agencies in order to come out with operational plans that can be implemented by the various agencies. This could again be done through various committees, subcommittees and working groups, or directly with the government agencies. After having formulated the operational and action plans together with the necessary projects, they will again be presented to the CEM and Cabinet for approval in order to incorporate them into the public budget.

With regard to rural development, there is the Committee on National Rural Development which coordinates activities among six government ministries: the Ministry of Interior, the Ministry of Agriculture and Cooperatives, the Ministry of Education, the Ministry of Commerce and the Ministry of Industry. The NESDB again acts as the secretariat.

However, there is no particular committee which deals directly with provincial industrial development. Activities in such an area therefore lacks coordination and direction. It is more or less left to various agencies to carry out their own programs and projects.

It was not until October 1988 that the Cabinet approved the establishment of the Rural Industrial Development Committee (RIDC) with the Ministry of Industry acting as the secretariat. The duties of this committee consist of the following:

(1) to formulate policies and guidelines to develop provincial industries;

(2) to set strategies and targets for provincial industrial development in the short and long term and to target industrial areas for development and industries in each of these areas;

(3) to formulate action plans, projects, targets and the necessary coordination in order to promote the most beneficial use of natural resources;

(4) to formulate measures and guidelines for government agencies, state enterprises and other related units in order to overcome obstacles to provincial industrial development;

(5) to supervise, monitor and evaluate the implementation of policies on provincial industrial development; and

(6) to carry out other activities related to provincial industrial development assigned by the Cabinet.

However, the RIDC is only an ad hoc committee created by the present Cabinet and has no legal jurisdiction or power to instruct other government agencies to act.

In theory, the NESDB acts as the core agency linking various government agencies and state enterprises that formulate and implement policies and measures for industrial development. However, in actual practice, such effective coordination depends significantly on politicians' willingness to lend credence to such work.

In the case of provincial industrial development, there has been no serious coordination among the government agencies. The issue has only arisen recently since the NESDB has given greater attention to this area.

3.4 PRIVATE SECTOR INSTITUTIONS INFLUENCING POLICY FORMULATION

In the early stages of Thailand's economic development, private sector institutions did not play a significant role in the formulation of industrial policies. However, as the economy developed and became more complex, the private business sector, which was also growing stronger, both economically and politically, began to take a keener interest in such a task.

At present, there are three major business institutions which play significant roles in representing local private business interest. They are the Thai Chamber of Commerce (TCC), the Federation of Thai Industries (FTI) and the Thai Bankers Association (TBA).[5]

These institutions became stronger partly because of the private sector's ability to attract many capable and highly qualified senior officials from the public sector over the years. This increased the private sector's confidence and ability to address public policy issues in addition to increasing the awareness among private institutions of the importance of such issues in influencing their business operations.

The Thai Chamber of Commerce (TCC) was established in 1933 in order to protect and promote the business interests of its members, who are major traders and industrialists. In addition, it is supposed to act on behalf of its members in dealing with the government.

This was followed by the establishment of many joint Thai-foreign chambers of commerce. Thai members of such chambers are required to have their permanent residences in Bangkok and Thonburi under the Board of Trade Act which seems to be unfair to provincial businessmen and tends to reflect the bias in favor of Bangkok. Because such chambers deal mainly with bilateral issues of trade and investment

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5. There is frequent confusion between the TCC and the Board of Trade (BOT). While the BOT includes both the TCC and the various foreign chambers of commerces as members, it is dominated by the TCC, because the Chairman of the TCC is automatically the Chairman of the BOT by law. The provincial chamber of commerces are also under the umbrella of the TCC.

between Thailand and other countries, they will not be further discussed here.

The first provincial chamber of commerce was not established until 1967[6] (See Table 3.1). The 1970s saw the establishment of only two additional provincial chambers of commerce. However, as a result of promotion by the TCC, the 1980s finally witnessed the establishment of provincial chambers in every province.[7]

Because most of the chambers have only been established for a few years, they remain weak and their roles are still quite limited. Furthermore, their strength also reflects the much weaker economies of the provinces. However, the BOT Act ensures that at least three members of the TCC board must be representatives of provincial chambers.

As a result of rapid industrialization, the Association of Thai Industries (ATI) was formed in 1967 to look specifically after the interest of industrialists. Many of its members are also prominent members of the TCC. Because there are many industrial associations attached under the umbrella of the ATI, it was finally upgraded to the Federation of Thai Industries (FTI) in December 1987.

The industrial associations attached to FTI include printing and publishing, glass, chemicals, agricultural machinery, industrial machinery, air conditioning and refrigeration, ceramics, cement, gas, rubber products, pharmaceuticals, automobile assembly, automobile parts and components, plastics, furniture, electrical goods, pulp and paper, leather, iron and steel, aluminum, food and footwear.

In addition, there are now nine provincial branches located in Chiang Mai, Songkhla, Saraburi, Khon Kaen, Udon Thani, Surat Thani, Rayong, Nakhon Ratchasima and Chachoengsao.

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6. In 1966, the government promulgated the Board of Trade Act to regulate the establishment and operation of such chambers of commerce.

7. In order to promote and strengthen the provincial chambers of commerce, a section was set up in the Board of Trade to help promote and develop these local chambers.

Although the activities of the FTI and its branches have gradually expanded, they are still much weaker than the TCC and the provincial chambers of commerce.

As for the Thai Bankers Association (TBA), because the members' head offices are all located in Bangkok, there are no provincial branches -- although Provincial Bankers' Clubs exist in certain provinces. The role of commercial banks in provincial industrial development is also quite limited at the present time.

3.5 STRUCTURE AND LINKAGES OF PRIVATE SECTOR INSTITUTIONS TO THE GOVERNMENT

As has been mentioned, the private sector's role in influencing policy formulation was quite limited in the early stages of economic development. Whatever involvement took place was based more on personal, rather than formal, relationships.

A joint committee was formed between the BOT and the FTI in 1976, expanding to include the TBA in 1977, under the Joint Standing Committee on Commerce, Industry and Banking (JSCCIB). It remains, however, mainly a forum through which these private groups call on the government to solve immediate obstacles hindering their business activities. The government is in no way represented in this committee.

It was not until 30 June 1981 that a forum was created to coordinate cooperation between the public and private sectors under the Joint Public-Private Consultative Committee to Solve Economic Problems (JPPCC).

The JPPCC is chaired by the Prime Minister with members including the Economic Ministers and representatives of the TCC, the FTI and the TBA. This is the first formal linkage between private sector institutions and the public sector's planning process.

The objectives of the JPPCC are to review problems and obstacles hindering the public and private sectors; to coordinate activities to solve problems and obstacles speedily; to coordinate the formulation of plans and projects of cooperation between the public and private sector in major economic sectors; and to promote the role of private sector institutions in economic development.

The structure of operations of the JPPCC is given in Chart 3.1. Both the government and private sector can introduce matters relating to policy problems involving both the public and private sectors or problems involving public interest for consideration in the JPPCC through the Secretariat of the JPPCC.

Issues originating from the CEM, Cabinet, various government agencies and committees in the public sector and provincial JPPCC can be sent to the JPPCC Secretariat under the Government-Private Cooperation Division.

On the private sector side, there are three ways in which issues can be forwarded to the JPPCC for consideration:

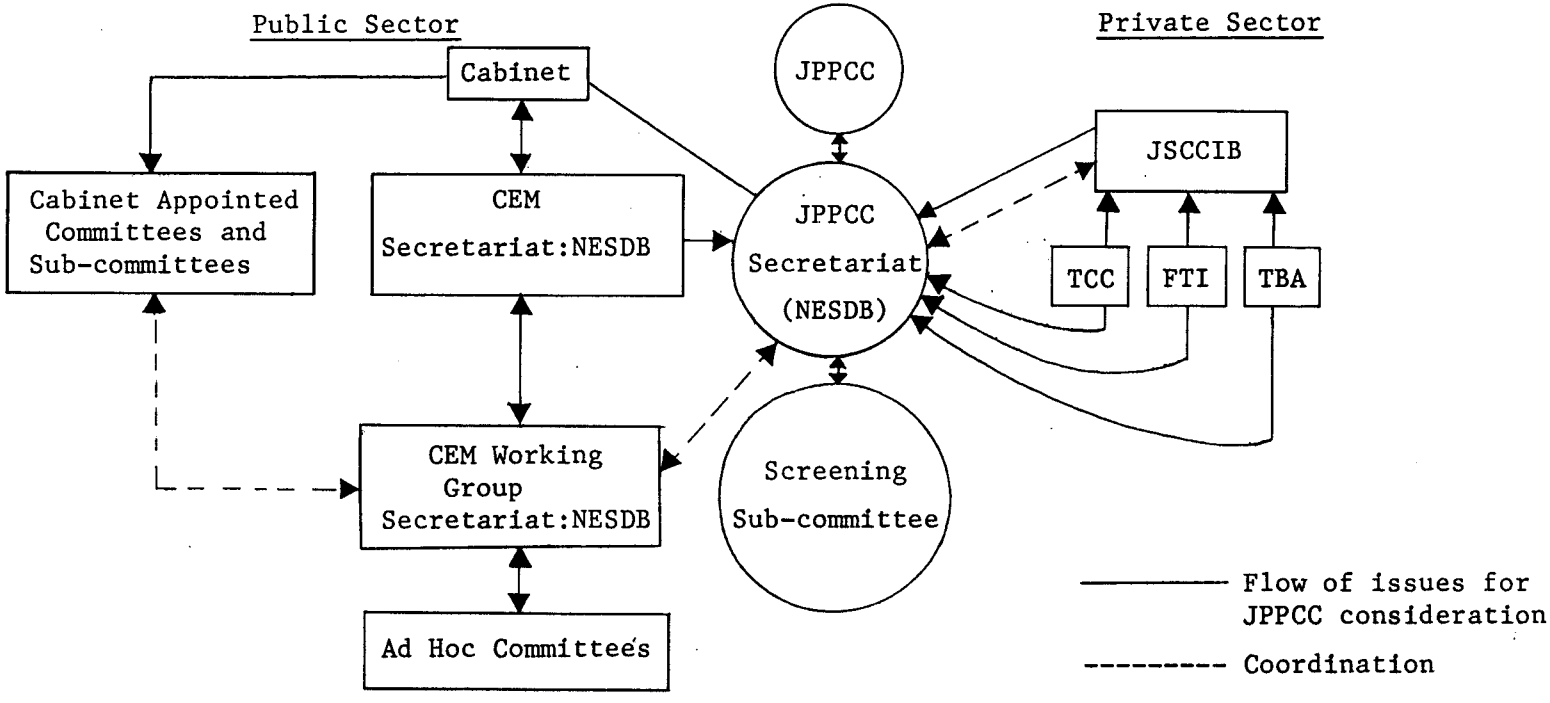
(1) Members of the three private sector institutions can forward the issue to their respective institutions for consideration before it is finally sent to the JPPCC Secretariat.

(2) For matters which involve all three private sector institutions, the steps are the same as (1), except that the issue would first go to the JSSCIB for consideration before it is passed to the Secretariat of the JPPCC.

(3) For private sector associations or clubs that do not operate under the three major private sector institutions, they can forward issues directly to the Secretariat of the JPPCC or through either of these three institutions.

CHART 3.1

Flow of Issues for JPPCC Consideration



JPPCC = Joint Public - Private Consultative Committee
JSCCIB = Joint Standing Committee on Commerce, Industry and Banking
TCC = Thai Chamber of Commerce
FTI = Federation of Thai Industries
TBA = Thai Bankers Association
CEM = Council of Economic Ministers

After having received the various issues from the public and private sectors, the JPPCC Secretariat would prepare the necessary facts and data and refer the matter to the screening subcommittee before forwarding the matter to the JPPCC for consideration.

The JPPCC was expanded to cover the provincial areas in 1986 when Provincial JPPCCs were established. It operates through the Ministry of Interior, because of the Ministry's jurisdiction over the Local Administration Department, which controls the provincial administration offices and governors.

The Governor of each province acts as the chairman of the Provincial JPPCC, with representatives of the private sector coming from the Provincial Chambers of Commerce (PCC), the FTI branches and offices of local financial institutions. The structure of coordination of the provincial JPPSC is given in Chart 3.2.

Although the JPPCC was active during the past government, it seemed to have become dormant under the present government. Nevertheless, private sector influence in government is not likely to be any less, because a large proportion of Ministers now comes from private business groups.

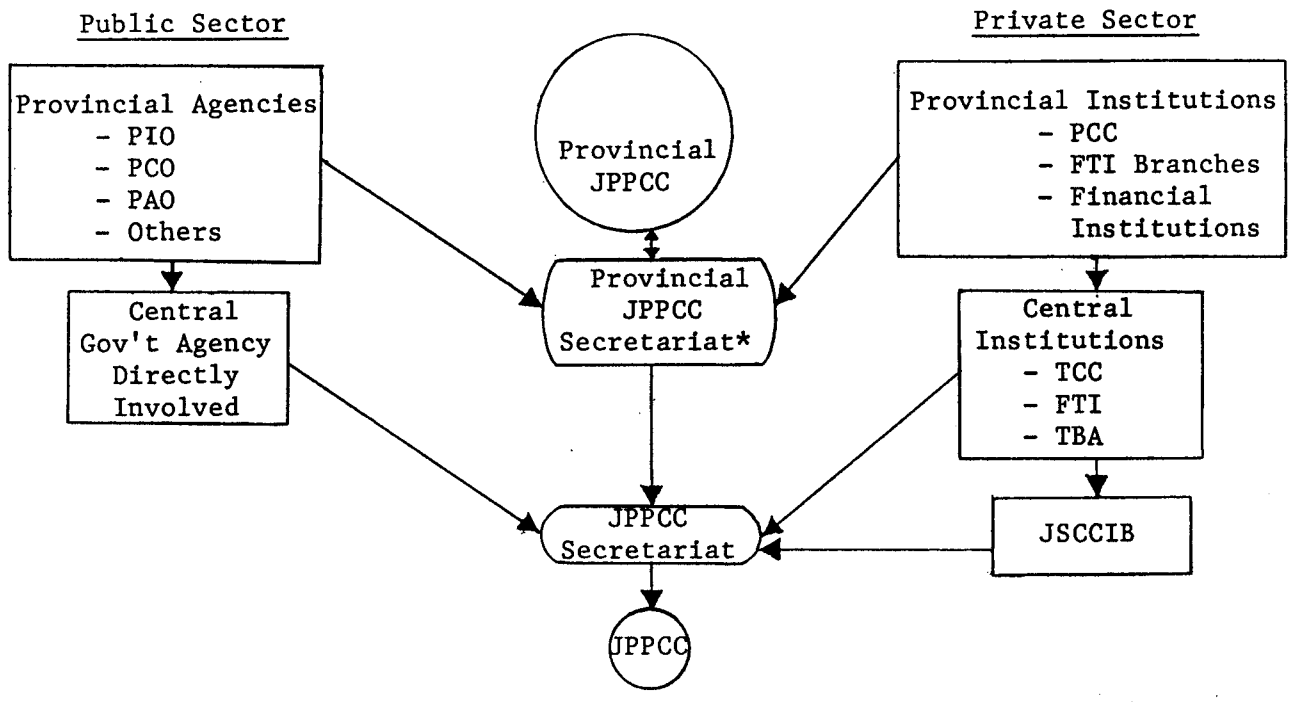
3.6 AVAILABILITY AND EFFECTIVENESS OF PUBLIC AND PRIVATE INSTITUTIONS IN PROMOTING PROVINCIAL INDUSTRIES

There is a general perception that public and private sector institutions have so far been ineffective in supporting the development of provincial industries. This view seems borne out by the field survey carried out under this research project.

Twenty public and private sector institutions were covered by the survey questionnaire. Manufacturers were asked whether they have heard of or know of these institutions. As Table 3.2 shows, the results were disappointing.

CHART 3.2

Flow of Local Issues for JPPCC Consideration



* Secretary : Chief of Governor's Office
Assitant Secretary : Private Sector Representative

JPPCC = Joint Public - Private Consultative Committee
JSCCIB = Joint Standing Committee on Commerce, Industry and Banking
TCC = Thai Chamber of Commerce
PCC = Provincial Chambers of Commerce
FTI = Federation of Thai Industries
TBA = Thai Bankers Association
PIO = Provincial Industrial Office
PCO = Provincial Commerce Office
PAO = Provincial Agriculture Office

Not only were most of these 20 institutions relatively unknown to provincial industries, they were also relatively unknown to industries in the Greater Bangkok Area. At the national level, there were only three institutions for which the positive response rates were higher than 50 percent: the Provincial Industry Office (PIO), Provincial Commerce Office (PCO) and the Thai Chamber of Commerce (TCC).

For these three institutions (along with the Small Industry Credit Guarantee Fund (SICGF)), the positive response rates were lower in Greater Bangkok than in the provinces. This should not be surprising for the PIO and the PCO, because they do not serve industrialists in Bangkok.

In contrast, there were 12 institutions where the positive response rates were higher in Greater Bangkok than the other regions. These include the Department of Industrial Promotion, the Industrial Finance Corporation of Thailand, Department of Export Promotion, Board of Investment, Export Service Division, Thailand Industrial Standard Institute, Federation of Thai Industries, Thailand Institute of Scientific Technology Research, Industrial Development Center, Department of Science Services, Industrial Productivity Division, and Technology Transfer Center.

In short, the evidence shows clearly that provincial industrial firms have less knowledge of the services offered by public and private sector institutions than do their counterparts in Greater Bangkok.

More importantly, the major finding was that a large majority of industries, irrespective of geographical location, do not know of the services provided by these public and private sector institutions. It seems either that there has been insufficient public relations from these institutions or that there is very limited supply of such services for industrialists.

Table 3.1
Establishment of Provincial Chambers of Commerce

Year	Number	Province
1967	2	Chon Buri, Chiang Rai
1977	1	Chiang Mai
1978	1	Nong Khai
1980	2	Chaiyaphum, Nakhon Ratchasima
1981	2	Phrae, Ang Thong
1982	2	Roi Ed, Nakhon Sawan
1983	5	Surat Thani, Phuket, Ranong, Nakhon Si Thammarat, Songkhla
1984	23	Udon Thani, Lampang, Nan, Phitsanulok, Buri Ram, Uthai Thani, Prachuap Khiri Khan,Kamphaeng Phet, Tak, Sakon Nakhon, Khanchanaburi, Samut Sakhon, Khon Kaen, Phra Nakhon Si Ayutthaya, Rayong, Saraburi, Yala, Uttaradit, Chantaburi, Narathiwat, Pattani, Loei, Yasothon
1985	19	Samut Prakan, Krabi, Surin, Pathum Thani, Ratchaburi, Phetchaburi, Supanburi, Phayao, Nakhon Pathom, Chachoengsao, Samut Songkhram, Nontaburi, Nakhon Nayok, Trat, Kalasin, Maha Sarakham, Lop Buri, Prachin Buri, Ubon Ratchathani
1986	14	Sukhothai, Lamphun, Satun, Si Sa Ket, Phangnga, Phetchabun, Chai Nat, Pkattalung, Nakhon Phanom, Sing Buri, Mae Hong Son, Mukdahan, Trang, Phichit
1987	1	Chumphon

Source: Thai Chamber of Commerce

Table 3.2
Awareness of the Role of Public and Private Organizations
(Percent of Positive Respondents)

Organization	Greater Bangkok	Rural Central	North East	North	South	Total
1 Provincial Industry Office (PIO)	87.3	98.6	96.3	98.6	98.2	96.7
2 Provincial Commerce Office (PCO)	75.2	79.3	80.2	90.2	79.3	81.3
3 Thai Chamber of Commerce (TCC)	59.3	62.3	64.1	75.6	61.2	65.0
4 Department of Industrial Promotion (DIP)	67.9	48.3	29.7	52.8	57.8	49.6
5 Industrial Finance Corporation of Thailand (IFCT)	54.0	54.0	49.8	46.4	48.6	46.1
6 Department of Export Promotion (DEP)	62.5	43.2	30.1	49.3	43.8	44.1
7 National Institute of Skill Development (NISD)	49.6	37.9	36.2	39.0	59.4	43.9
8 Board of Investment (BOI)	49.0	35.5	27.2	31.6	39.3	35.7
9 Small Industry Credit Guarantee Fund (SICGF)	22.5	22.1	26.4	37.6	43.8	31.4
10 Export Service Division (ESD)	47.8	28.4	19.4	27.0	28.3	28.4
11 Thai Industrial Standards Institute (TISI)	57.1	32.4	30.7	29.9	34.9	28.0
12 Small Industries Association (SIA)	30.7	28.0	18.1	31.6	30.3	27.3
13 Federation of Thai Industries (FTI)	50.0	25.6	21.4	24.9	25.2	27.3
14 Thailand Institute of Scientific Technology Research (TISTR)	35.7	26.1	22.4	22.6	28.4	26.2
15 Industrial Development Center (IDC)	36.9	19.6	17.5	26.9	25.3	24.1
16 Small Industry Finance Office (SIFO)	25.9	20.9	19.2	25.2	27.4	23.5
17 Department of Science Service (DSS)	30.1	20.0	17.6	18.1	22.8	20.9
18 Industrial Productivity Division (IPD)	29.5	22.3	14.8	19.8	20.5	20.5
19 Technology Transfer Center (TTC)	27.7	19.0	10.7	17.1	20.1	18.0
20 Institute for Management Education for Thailand Foundation (IMET)	10.9	10.9	8.1	9.9	11.0	10.2

Source: Rural Industries and Employment Project Survey, TDRI, 1989.

CHAPTER 4

THE DISTRIBUTION OF PUBLIC RESOURCES AND INFRASTRUCTURE

4.1 CENTRALIZATION OF PUBLIC AUTHORITY

Although modifications and adjustments were made over the years, there have been basically three levels of government in Thailand since 1932 consisting of the central government, provincial governments and the local governments.

The central government 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 governors and chief district officers of provinces are appointed by the Ministry of Interior and are obliged to follow central government policies.[1] Decisions therefore tend to be made in Bangkok even on provincial issues.

Although local governments possess more autonomy than provincial governments, they are still pretty much under the influence of the provincial and central governments and are in themselves relatively weak.[2] Local governments consist of provincial administrative

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1. Other lower-ranking officials are also appointed by the central government or are on the central government's payroll.

2. A study conducted for the Fifth Plan (1982-1987) found that there is still much central control over local government units. (See Fifth National Economic and Social Development Plan (1982-87), Cooperatives Association of Thailand, an unpublished paper.)

organizations, municipalities, sanitary districts and self-governing cities, including Bangkok and Pattaya City.[3]

Because the central government is rather dominant in the country, local needs are generally seen through the eyes of central government officials instead as an expression of the real desires of the local populace.

For example, provincial governors are appointed by the central government for a term of 4 years after which they may be transferred to posts in other provinces. It is therefore highly unlikely to find governors born and raised in the same provinces they govern.

Given that they do not sufficiently understand the needs of different provinces, especially the differences between Greater Bangkok and other provinces, or that they tend to represent the interest of the central government, too few resources are made available, while the few that are available may not meet the development needs of the localities.

In addition, the influence of the central government extends down further to the local government units. Although public officials at the local government units are now elected, they still depend heavily on the central government for funds and other resources, as they do not have sufficient revenue bases (the leadership and manpower to collect such funds is inadequate).

Almost all the major taxes, including import duties, export duties, personal income taxes and corporate income taxes, go entirely to the central government.[4] Although local authorities are allowed to impose a surcharge on a number of major taxes collected by the central government, they are limited to a ceiling of 10 percent of the rate set

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3. The provincial administrative organization is in fact under the control of the provincial government.

4. This is not taken to mean that such taxes should be collected by local authorities. It is only meant that local taxes cannot be considered as major sources of revenue for the public sector as a whole in Thailand.

by the central government. These taxes include the business tax, liquor tax, non-alcoholic beverage tax, cement tax, gambling tax, entertainment duty, and petroleum product tax.

Local governments are legally 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.

In order to collect new types of taxes, a new law must be promulgated, which would first be approved by the central government. Because of such a structure, local governments do not have much control over their public finances.

Given the limited revenue base, local authorities have also been unable or unwilling to fully implement their income collection schemes. In addition to the lack of manpower for such collection, there has never been a tradition in Thailand of true self-governance in local affairs. Government at the local level is still quite weak.

According to a 1982 study, the total income of the local governments amounted to only baht 7.5 billion or 6.5 percent of the total central government income (see Table 4.1).

In addition to being only a small fraction of central government income, a large part of local governments' income was actually obtained from the central government. About half of local governments' income was collected by the central government on their behalf while more than a quarter are subsidies provided by the central government. In short, the local governments as a whole were able to collect less than a quarter of their revenues on their own (see Table 4.2).

Because of the limited capacity to generate its own income, expenditures by local governments have been relatively small as compared to the central government. Local government expenditures in 1982 were only about 8.6 percent of total central government expenditures (see

Table 4.1). This is rather low as compared to other countries, where the proportion is generally above 20 percent. Local government spending also seemed to become stagnant in the early eighties.

4.2 PUBLIC RESOURCES AND THE LEVEL OF INDUSTRIALIZATION

Because of the centralization of governmental authority,[5] it is highly likely that provincial areas have received fewer public resources than has Greater Bangkok.

Assuming that fewer resources are put into developing provinces outside of Greater Bangkok, it could lead to a bias against the development of provincial industries, because this would mean that public capital would be less adequate to support private sector investments in industries.

An attempt was made in this study to investigate the financial resource flows between the central government and the local governments in order to obtain the net resource flows between the provinces and the central government. However, the data base on such flows are inadequate presently to permit the carrying out of the study.

Preliminary investigations of public sector financial flow data, especially those at the provincial level, reveal that a separate research effort would be required to construct the database. Without the creation of such a database in this area, it will be difficult for the government to assess how much resources are actually being spent on provincial development and for other development purposes.

Despite the lack of data about financial flows in the public sector between the provinces and the central government, it may be possible to look at the distribution of central government resources among the various provinces through public investment figures.

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5. In fact, such concentration of power also extends to the state enterprise sector. Local industrialists have complained that decision-making authority in many cases is still in Bangkok and has caused delays in services provided to them.

In order to study whether such distribution of public investments has created any biases towards the development of industries in each province, a simple regression model was constructed to investigate whether there is any correlation between the level of industrialization and the level of public capital stock by utilizing cross sectional data for 73 provinces in 1985-1987.[6]

The model consists of six groups of variables: the level of industrialization, the level of public capital or infrastructure development, the level of financial development, the market for industrial products, the access to education and the distance from the province to Bangkok, which serves as the main market for industrial products and inputs of the provinces.

The dependent variable in this case is the level of industrialization. It is hypothesized that the levels of public infrastructure development, financial development, market demand for industrial products and education will positively influence the level of industrialization. This is because, without adequate and good infrastructure, without access to sufficient financial resources and education, and without sufficient market demand, it is difficult for industries to develop.

As for the distance between Bangkok and the provinces, it was included in the model because provincial markets are generally too small to be able to absorb the industrial products which they produce; they therefore must rely on Bangkok either as a market or as a port to export their products. In addition, they also have to rely on intermediate and raw material inputs from Bangkok. A further distance away from Bangkok would therefore lead to higher transportation costs, which would deter the industrialization process of a province.

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6. In estimating the model, the 3 year average figure for each variable was utilized wherever applicable.

Various proxies were used to estimate a simple linear regression model. The proxies which were experimented as a measure of the level of industrial development of provinces in this study include the share of manufacturing value added in gross provincial product (MAN), the provincial per-capita manufacturing value added and the proportion of factory workers in the labor force.

Value added and population figures were obtained from the national income accounts compiled by the National Economic and Social Development Board (NESDB). Figures for the number of factory workers in the labor force were obtained from a rural survey conducted by the NESDB in 1986.

The original intent in measuring the level of public infrastructure development was to obtain public capital stock data or at least to obtain public investment data over a period of time to enable the estimation of a capital stock series. However, such provincial data were found to be inadequate.

We then experimented with a number of proxies, including value added figures of electricity and water supply from the national income accounts compiled by the NESDB. These were converted to per-capita values for each province (ELEC).

Another set of proxy variables obtained from a TDRI study was also utilized.[7] They include investments in roads (ROAD) and irrigation (IRRI) in each province which were constructed from accumulated budget figures in value terms during 1963-1985.

In the case of IRRI, the accumulated budget for irrigation construction was apportioned to each province based on the amount and proportion of irrigated land in each province.

Although capital stock figures in the Pattamasiriwat study were designed specifically for use in the study of Thai agriculture, it may

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7. Direk Pattamasiriwat, Capital Formation in Agriculture: Thailand, TDRI. (mimeograph)

be possible to use them in this study. There should be no problems in the case of road construction. However, irrigation stock is more difficult to accept. Nevertheless, it is included in this study because such investments may have contributed indirectly towards industrial development.

Because the capital stock figures for ROAD and IRRI were in absolute terms, a relative measure for each province was calculated by dividing such figures by the land area of each province. The most recent stock data of 1985 was used in the study.

We tried out a number of proxies to account for the difference in access to education (EDUC). These include the literacy rate, which is compiled by the National Statistical Office; the school student to teacher ratio, which is compiled by the Educational Planning Division of the Ministry of Education; and the ratio of students passing the university entrance examination out of the total population, which is obtained from the Office of the State Universities. The estimates obtained were satisfactory only for the last variable.

Two variables were included simultaneously in order to measure the influence of the market demand on the level of industrialization. One is the per capita provincial income (PGDP), and the other is the population density (POPD) as measured by the number of population per unit of area. Income and population figures were obtained from the NESDB.

To measure the level of financial development or the availability of financial resources, two proxy variables were tried out: the credit to deposit ratio of commercial banks (CRDT) and commercial banks' credit per capita. The financial data were obtained from the Bank of Thailand, and the population figures were obtained from the National Statistical Office.

In the case of the distances between Bangkok and the other provinces (DIST), the data were also obtained from the Pattamasiriwat study.

Because of better estimation results, only the equations utilizing the share of manufacturing value added in gross provincial product (MAN) as the dependent variable are shown here.

The ordinary least squares regression gave a satisfactory fit as shown in Equation 1 of Table 4.3. The R^2 value is as high as 0.834, while five variables were significant at above the 90 percent confidence level. The three variables that did not significantly affect the level of industrialization include POPD, ROAD and EDUC.

However, this should be due to the weakness of statistical estimation. It was found that there are significant cross correlations among the variables relating to population density, public infrastructure and education as shown in Table 4.4. If these variables are included in the model one at a time, they are significant explanatory variables by themselves as shown in Equations 3-6. However, if they are included together, they are not significant.

Nevertheless, in these cases, the province of Pathum Thani and Bangkok would have to be deleted, because the estimation error in this case was found to be exceptionally large. Pathum Thani is an exceptional case, because it has the highest share of manufacturing value added in the country (58.6 percent), while Bangkok does not have any significant amount of agricultural activities.

4.3 THE DISTRIBUTION OF PUBLIC INFRASTRUCTURE INVESTMENTS

The above section seems to indicate that public infrastructure investments could influence the pace of industrialization. It can also be said, however, that industrialization would lead to increased demand for public infrastructure which, if met by public investments, would result in a higher level of infrastructure development. Nevertheless, it remains undeniable that public infrastructure development is a prerequisite for industrial development, although it is not the only factor that determines the level of industrial development.

Given that the distribution of public infrastructure is uneven, it could affect the development of industries among different regions and provinces. In Thailand, it is quite clear that public infrastructure investment is concentrated in the Greater Bangkok Area.

The study found the highest levels of investment in roads and irrigation in the Greater Bangkok Area, at 473.49 baht per square kilometer of land area and 282.06 baht per square kilometer of land area, respectively (see Table 4.5).

Investment in roads in Greater Bangkok is over six times the level of investment in the Central and Southern Regions; and over nine times the level of investment in the Northern and Northeastern Regions.

Within each region, the distribution of investment in roads is also highly uneven. As measured by the standard deviation to the mean value across provinces, it was most unequal in the Central Region at 0.83. The distribution was more equal in the Northern and Northeastern Regions at 0.27 and 0.34, respectively, although investment in roads was also lowest in these two regions. The standard deviation to the mean value figure across all provinces in the nation was about 1.32.

In terms of investment in irrigation, the standard deviation to the mean value across all provinces in the country was 1.36. It was most unequal in the Southern and Northeastern Regions at 2.27 and 1.22, respectively. Furthermore, the average levels of irrigation investment in these two regions and the North were much lower than were the levels of Greater Bangkok and the Central Region.

Utilizing 1986 value added data from the NESDB, it was also found that the availability of electricity and water supply (ELEC) was highest in the Greater Bangkok Area. It was over 3 times, 7 times, 13 times and 6 times higher than the Central, Northern, Northeastern and Southern Regions, respectively.

4.4 PRICING AND SUPPLY AVAILABILITY OF INFRASTRUCTURE SERVICES

In addition to the biases which could result from the distribution of public sector investments in infrastructure development, there could be biases resulting from the pricing of such infrastructure services. This section therefore investigates whether there are any biases in the pricing of such services together with their supply and availability in the metropolitan and provincial areas. Only electricity and water supply will be covered in the study.

4.4.1 The Pricing and Supply of Electricity

There are three state enterprises that deal with the distribution of electricity: the Electricity Generating Authority of Thailand (EGAT), the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA). EGAT's main function is to produce electricity, which is then distributed to users through the MEA and PEA.

While EGAT is under the jurisdiction of the Prime Minister's Office, the MEA and PEA is under the jurisdiction of the Ministry of Interior. Energy policy is therefore under the Prime Minister's Office, and the distribution of electricity is under the Ministry of Interior. The MEA's customer base covers only three provinces: Bangkok Metropolis, Nonthaburi and Samut Prakan. The remaining provinces are supposed to be serviced by the PEA.

Electricity was first introduced into Thailand in the Bangkok Area in 1914. Although electricity use spread out to other provinces, major development of such services did not take place until the country embarked on the path of modern economic development with the introduction of development plans in the sixties.

In the early years after the Second World War, there were many public and private institutions involved in the generation and sale of electricity, especially in the provinces. In 1954, the government consolidated the production and distribution of electricity in

provincial areas under the Department of Public Works through the establishment of the Provincial Electricity Organization, which finally became the Provincial Electricity Authority in 1960.

In 1968, electricity generation in the country was consolidated with the establishment of EGAT through the merging of the Yanhee Electricity Authority, the Lignite Authority and the Northeastern Electricity Authority. EGAT now produces almost all the electricity in use in the country, while the MEA and PEA act mainly as distributors.

Because EGAT does not sell electricity directly to end users, this section will cover only the tariff rate structures of the MEA and PEA. The period covered will be during 1971-present, because it was possible to trace electricity rates back to only 1971. The investigation is also confined to energy charges of these two state enterprises.

The study will investigate three groups of users that can directly affect industrial development. They are households or residential users, small and large businesses, and small and large industries.[8]

Because small manufacturing firms in Thailand tend to start their businesses in their homes, the tariff rates for residential users should not be overlooked, especially when they make up the majority of users in both the provincial and metropolitan areas (see Table 4.6). In 1987, household users made up 82.8 percent and 95.2 percent of all users in the metropolitan and provincial areas, respectively.

A comparison of MEA and PEA residential rates show quite clearly that the price of electricity of the PEA was much higher than that of the MEA until May 1975, when their rates were equalized (see Table 4.7).

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8. Small businesses include buildings and offices that require a maximum electricity level of less than 30 kilowatts over a 15 minute period, while large businesses are those which require 30 kilowatts or more. As for industries, small means factories that require a maximum electricity level of less than 500 kilowatts over a 15 minute period, while large means those that require 500 kilowatts upwards.

Since 1975, the MEA and PEA rates have been similar except for minor differences during certain periods. These differences seem more to be mostly due to the PEA's slower response towards energy price decreases in the early 1980s, which resulted in higher tariff rates for the PEA.

As for businesses, the PEA rates were again found to be higher than the MEA rates for all sizes of businesses until May 1975 (see Table 4.8). Between May 1975 and February 1980, the PEA's marginal rates were only higher than the MEA's marginal rates for lower utilization levels (An exception was small businesses during the period of May 1975-August 1977, which still experienced higher PEA rates.)

In the early 1980s, the PEA's marginal rates for small businesses continued to be higher than the MEA's marginal rates up to a utilization level of 3000 units (see Table 4.9). Since April 1983, their rate structures have been equalized.

February 1980 saw a significant change in the rate structure for small businesses: the introduction of increasing marginal rates for additional usage, instead of the declining marginal rates of the past. The change reflected the policy to conserve energy use.

As for large businesses, the PEA introduced a uniform rate structure similar to that of the MEA in February 1980, although its rates remained higher than the MEA rate until April 1983, when they were equalized.

The tariff rates for businesses of the MEA and the PEA also applied to industries up until February 1980, when industries were classified in two distinct groups: small and large. Since then, the tariff rates for industries have been lower than the rates charged to businesses (see Tables 4.9 - 4.10). Furthermore, the rates for large industries have always been lower than those for small industries.

After the introduction of separate tariff rates for industry, the PEA rate structure for industry 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 the MEA and the PEA.

Since June 1987, industrial electricity rates have been restructured. There are now three categories: small industries, large industries and smelting industries. The rates are uniform for all utilization ranges at 1.23 baht per unit for small industries, 1.22 baht per unit for large industries and 1.2 baht for smelting industries. The rates are also the same for the MEA and the PEA.

Although electricity rates have been biased in the past against provincial industries, such biases have disappeared since 1983. The remaining biases have to do with the size and type of industry and different group of users.

To the extent that the authorities would like to promote indigenous provincial industries(which generally start off as small concerns), the bias against small industries could have an effect on provincial industries. Nevertheless, it should be pointed out that the higher rate for small industries is not significant, since it is less than 1 percent higher than the rate for large industries.

Despite the fact that the number of business and industrial users is much smaller than the number of residential users, the majority of electricity consumption is explained by these groups. Their combined use accounted for 76.7 percent of MEA sales and 62.5 percent of PEA sales in 1987.

The availability of electricity in provincial areas has also greatly improved over the years, as shown by the rising proportion of provincial electricity users and electricity consumption -- although consumption per user has not increased (see Table 4.11).

The TDRI survey results indicate that, for more than 60 percent of the industries in provincial areas, electricity costs make up less than

five percent of total manufacturing costs (see Table 4.12). The figure for industries in Greater Bangkok was less at 46 percent.

Nevertheless, there are cases of provincial industries whose electricity costs exceed 15 percent of their manufacturing costs, making electricity a significant factor in production. It could also be expected that as provincial industries become more developed, electricity will form a larger proportion of production costs as is evident in the case of Greater Bangkok.

Although electricity rates have been equalized between the metropolitan and provincial areas, and the supply and availability of electricity has improved, a complaint frequently heard from provincial users is that the supply of electricity is inconsistent and there are frequent blackouts.

The TDRI survey revealed that, except for the Northern Region, blackouts adversely affected the provincial areas more than Greater Bangkok, especially in the Southern and Northeastern Regions (see Table 4.13). This could increase costs for industries situated in these regions.

4.4.2 The Pricing and Supply of Water

Tap water was introduced into Thailand with the establishment of a water works system to provide water to Bangkok in 1914. This was followed by the establishment of water supply systems in other localities.

In 1967, the Metropolitan Water Works Authority Act was promulgated whereby the Metropolitan Water Works Authority (MWA) was created through the merging of four water works agencies: the Bangkok Water Works, the Thonburi Water Works, the Nonthaburi Water Works and the Samut Prakan Water Works.

It was not until 1979 that the Provincial Water Works Authority (PWA) was established through the merging of the water supply systems of Department of Public Works and the Department of Public Health.

The MWA was supposed to provide water to Bangkok, Thonburi, Nonthaburi and Samut Prakan, while the PWA was supposed to carry out activities in other provinces. Both are under the Ministry of Interior's jurisdiction.

Although water rates prior to 1967 could not be confirmed, it was mentioned in a document of the PWA that it was 1.5 baht per cubic meter in the metropolitan area and 2.0 baht per cubic meter in the provincial area during Prime Minister Sarit Thanarat's government.

After the establishment of the MWA in 1967, the MWA tariff rate for Bangkok was reduced significantly. For utilization of the first 6 cubic meters, it was free of charge while it was only 0.5 baht per cubic meter for usage above 6 cubic meters. As for Samut Prakan, Thonburi and Nonthaburi, uniform rates of 1.25 baht, 1.5 baht and 2 baht per cubic meter were charged for water use, respectively.

During 1972-1981, the water rate for provincial areas remained higher than that of the metropolitan areas for utilization levels of up to 50 cubic meters (see Table 4.14). For utilization of 51-200 cubic meters,the rates were the same, while the MWA rate was lower than the PWA rate for utilization above 200 cubic meters.

Since 1981 when the MWA began to classify users into different groups, the PWA rates have in general been higher than the MWA rates for household use (see Table 4.14).

However, for business use during 1981-1984, 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 1984-1987, the PWA's rate structure was lower than that of the MWA's rate structure for all levels of utilization. Since 1987, this has again reversed -- the PWA rate structure is higher than the MWA rate structure for utilization levels above 30 cubic meters.

In short, the price of water in provincial areas has been both higher and lower than metropolitan areas, depending on the period and level of utilization. There has been no attempt so far to unify the water rate structures of the PWA and MWA -- as has been done with electricity in the case of PEA and MEA.

In actual practice, the average price the PWA charges for water has been higher than that charged by the MWA. In 1988, the average PWA price was 12.5 percent higher than the average MWA price, although the PWA's average unit cost of production was 30.8 percent higher than that of the MWA (see Table 4.15).

In addition to paying a higher price for water, the provincial areas are also disadvantaged by a lower availability of water. In 1988, the number of users as a proportion of the total population within the serviced areas was only 58 percent for the provincial areas and 73.3 percent for the metropolitan areas. If population outside of serviced areas were included, the difference would be much larger.

The per-capita water production capacity was also much lower in the provincial areas compared to the metropolitan areas: 79.3 cubic meters per head versus 122.7 cubic meters per head in 1988.

Because of the higher price of water and the lack of sources of public water supply in provincial areas, it is not surprising to find that, for provincial industries, water tends to make up a higher proportion of their production costs (see Table 4.17). While up to 87 percent of surveyed firms in Bangkok had water costs make up less than 5 percent of total costs, there were only 6.4 percent, 4.8 percent, 6.6 percent and 10.6 percent of surveyed firms falling into this group in the Central, Northeastern, Northern and Southern Regions, respectively.

The majority of industrial firms in provincial areas were found to have water cost in the range of 5-14 percent of total costs.

4.5 A SYNTHESIS AND POLICY RECOMMENDATIONS

Despite the change from an absolute monarchy to a constitutional monarchy in 1932, the Thai political system has remained rather centralized. It is widely recognized (including the feedback received from this research work) that such concentration of political power has been biased against provincial and regional development -- including industrial development.

The centralized political system has not only resulted in the unequal development and distribution of resources and wealth between Greater Bangkok and the other regions of the country, but it has greatly weakened the ability of the local population and their institutions to develop their own regions and their own future.

The Thai people has been so accustomed to this centralized system of government that it has been recognized that the decentralization of political power alone would not be sufficient to introduce more balanced development of the economy unless local governments and institutions were strengthened at the same time.

For example, we mentioned earlier that revenue collected by local governments is quite limited. This is due to both the lack of authority and the inherent weaknesses of local governments in implementing such collection.

Given that it is difficult to modify the present system of government to enable more self determination at the local level, the alternative to developing the provincial areas would require a conscious effort on the central government's part to allocate a larger proportion of public resources to the regional areas. The movement towards greater democracy in Thailand should help to promote such a direction.

It was found from the study in this chapter that public investments in infrastructure -- including electricity, water supply, roads, irrigation and education -- affect the level of industrialization either directly or indirectly. Although it could be argued that the level of industrialization also determines the level of public infrastructure development, it would be difficult to develop industries without the support of adequate and sufficiently good infrastructure.

Furthermore, the study also found that the level of local demand is a significant factor in determining the level of industrialization. This plus the fact that public sector investment is likely to lead to higher incomes would certainly mean that public sector investments would have an indirect effect on the level of industrialization.

Despite whatever weaknesses that remain in this study, there are strong reasons to believe that a better redistribution of public sector investments towards provincial areas will benefit the development of provincial industries. In the worst case, the redistribution of such investments is justifiable in correcting the inequitable distribution of income and wealth of the past.

Nevertheless, because resources are limited, there would need to be a well thought out plan to deploy the additional resources allotted to develop provinces. If such resources were to be spread out too thinly, there may not be much impact resulting from such investments.

Resources should be allocated such that a certain minimal social overhead is provided to the population in each province. Once this has been met, the remaining resources should be allocated to areas where they would help to promote regional development over the widest area and number of people.

In short, there may be a need to promote growth poles in the various regions of the country because there would not be sufficient resources to create the critical mass needed in each individual province.

In addition to the inequitable distribution of public resources between Greater Bangkok and the other regions, it was also found in this study that the pricing policy of public services has also been against the provincial areas. Although there have been attempts to reduce such differences over time, there are a number of areas where such biases still exist.

One example is the provision of public transportation service in Bangkok, where the bus fare is fixed at very low rates while such services are not available in most provincial towns. This has led to the provincial population paying many times the daily traveling expenses per trip of the population in Bangkok.

Another example is the retail gasoline and diesel prices, which are higher in the provincial areas. It has been argued that such differences exist because of transportation charges. Although differences are allowed for transportation charges, marketing margin differences are not. It is very likely that if retail gasoline prices were allowed to be determined by market forces, such prices in urban areas especially Bangkok will rise due to higher operating costs and land rental. Already we are witnessing the disappearance of gas stations in Bangkok due to rising land prices.

Furthermore, it should be remembered that, although the Northeast is the region producing the petroleum, it does not have a refinery there. The argument of transportation cost alone is therefore not a strong one.

Even if one were to argue that a petroleum refinery is most efficiently established in Greater Bangkok and that there should be some price differences on efficiency grounds, the Northeast should at least receive a fair share of income generated from the oil which it produces.

It is recommended that a more detailed study of retail gasoline prices should be carried out on whether such prices should be liberalized while competition be fostered.

Table 4.1
Income and Expenditure of Local Governments and Central Government

Million Baht

Fiscal Year	Local Administration 1/			Central Government 2/		
	Income	Expenditure	Balance	Income	Expenditure	Balance
1974	2257.4	6477.0	-4219.6	39120.0	35239.0	3881.0
1975	2936.4	10731.0	-7794.6	39636.0	45178.0	-5542.0
1976	3171.8	14118.0	-10946.2	43602.0	57656.0	-14054.0
1977	3806.1	12031.0	-8224.9	54064.0	66110.0	-12046.0
1978	4549.1	14863.0	-10313.9	65208.0	77509.0	-12301.0
1979	5035.5	16987.7	-11952.2	78675.0	89456.0	-10781.0
1980	5474.8	23290.5	-17815.7	95557.0	120973.0	-25416.0
1981	6696.6	12464.7	-5768.1	111843.0	133444.0	-21601.0
1982	7516.7	13525.5	-6008.8	115980.0	157017.0	-41037.0

Notes: 1/ Excluding loans and subsidies.
2/ Excluding proceeds from loans.

Sources: Data of local government income and expenditure were obtained from Sanoh Juito, Finance of Local Administration, textbook of Sukothai Thammatirath University.
Data of actual income and expenditure of the central government were obtained from the Bank of Thailand's Monthly Bulletin, various issues.

Table 4.2
Sources of Local Government Revenues 1/

Million Baht

Fiscal Year	Income Collected by Local Government 2/		Taxes Collected by Central Government		Central Government Subsidies		Total	
	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)
1983	1023.1	24.8	1733.7	42.0	1369.6	33.2	4126.4	100.0
1984	1104.6	25.5	1871.05	43.1	1361.5	31.4	4337.2	100.0
1985	634.7	16.0	2020.9	50.8	1320.8	33.2	3976.4	100.0
1986	1325.0	27.2	2137.4	43.8	1415.2	29.0	4877.7	100.0
1987	1414.5	23.9	2783.4	47.0	1720.3	29.1	5918.2	100.0

Notes: 1/ Includes only municipality, sanitary districts, and Pattaya City.
2/ Taxes and other income collected directly by the local government.

Source: The Local Finance Division, Local Administration Department, Ministry of Interior.

Table 4.3
Regression Results with Share of Manufacturing Value Added (MAN) as Dependent Variable

Independent Variables	Equation 1	Equation 2 1/	Equation 3 1/	Equation 4 1/	Equation 5 1/
C	-2.202	-1.874	-0.592	-0.940	-0.586
	(0.746)	(0.781)	(0.240)	(0.373)	(0.229)
PGDP	0.227 ***	0.253 ***	0.213 ***	0.213 ***	0.160 ***
	(2.428)	(3.259)	(2.723)	(2.746)	(2.017)
POPD	0.418	14.391 ***	-	-	-
	(0.132)	(2.710)			
DIST	-4.835 ***	-5.371 ***	-5.334 ***	-5.000 ***	-5.314 ***
	(2.163)	(2.883)	(2.719)	(2.502)	(2.673)
CRDT	0.076 ***	0.066 ***	0.062 ***	0.064 ***	0.064 ***
	(2.522)	(2.571)	(2.335)	(2.387)	(2.339)
ELEC	8.906 ***	5.735 ***	6.926 ***	7.772 ***	7.736 ***
	(5.194)	(3.433)	(4.157)	(5.310)	(5.179)
ROAD	2.477	-	9.885 **	-	-
	(0.247)		(1.564)		
IRRI	13.661 ***	-	-	10.281 ***	-
	(1.977)			(1.699)	
EDUC	-0.005	-	-	-	0.009 **
	(0.573)				(1.369)
R^2	0.834	0.799	0.784	0.786	0.783
S.E. of regression	4.788	4.228	4.379	4.365	4.398
F-statistic	40.344	51.698	47.318	47.714	46.808
Sum of squared residuals	1467.160	1161.998	1246.366	1238.253	1257.005
No. of observations	73	71	71	71	71

Note: 1/ Excluding Bangkok and Pathum Thani. Significance Levels: *** = 90% and over
** = 80% - 90%

MAN = 1985-87 average percentage share of manufacturing value added to gross provincial product
PGDP = 1985-87 average per capita income (1000 baht per person)
POPD = 1985-87 average population density (1000 persons per square kilometre)
DIST = the distance from Bangkok to the province (1000 kilometres)
CRDT = 1985-87 average percentage of commercial bank credit to deposit
ELEC = 1985-87 average value added generated from electricity and water per head (1000 baht)
ROAD = accumulated public investment in roads upto 1985
(1000 baht per square kilometre of provincial land area)
IRRI = accumulated public investment in irrigation upto 1985
(1000 baht per square kilometre of provincial land area)

Table 4.4
Correlation Matrix

Variables	ROAD	IRRI	ELEC	EDUC	POPD
ROAD	1.000	0.449	0.600	0.861	0.822
IRRI		1.000	0.297	0.342	0.247
ELEC			1.000	0.558	0.348
EDUC				1.000	0.844
POPD					1.000

Table 4.5
Mean Value of Regression Variables

Variables	Greater Bangkok	Central	North	North East	South	Kingdom
MAN (percent share)						
- weighted	37.38	18.75	7.05	7.45	5.16	23.18
- unweighted	37.14	11.43	6.29	6.25	5.12	9.93
- S.D./mean	0.40	0.82	0.57	0.55	0.69	1.11
ROAD (1000 baht/sq.km.)						
- weighted	473.49	74.26	54.65	51.18	73.15	66.06
- unweighted	498.44	125.19	56.36	52.35	78.81	113.98
- S.D./mean	0.51	0.83	0.27	0.34	0.42	1.32
IRRI (1000 baht/sq.km.)						
- weighted	282.06	76.96	29.45	32.34	27.21	42.82
- unweighted	240.10	109.30	36.10	35.11	42.24	72.87
- S.D./mean	0.56	0.78	1.57	1.22	2.27	1.36
ELEC (1000 baht per head)						
- weighted	1,877.97	600.59	248.13	139.22	306.42	533.03
- unweighted	2,309.78	570.27	235.97	121.40	361.66	490.85
- S.D./mean	0.54	0.76	0.75	0.46	0.66	1.47
PGDP (1000 baht per head)						
- weighted	62,950.13	22,725.59	12,640.22	8,076.43	16,638.27	21,166.68
- unweighted	45,034.00	21,294.91	12,467.29	7,922.45	20,283.40	17,882.20
- S.D./mean	0.51	0.56	0.22	0.17	0.44	0.78
POPD (1000 persons/sq.km.)						
- weighted	1,064.21	92.62	60.91	108.52	96.46	102.59
- unweighted	1,007.92	144.52	66.53	111.50	114.29	183.83
- S.D./mean	1.22	0.73	0.41	0.27	0.65	2.37
DIST (1000 km.)						
- weighted						
- unweighted	31.17	143.42	518.35	522.47	842.71	443.89
- S.D./mean	0.58	0.48	0.37	0.22	0.22	0.68
CRDT (percent)						
- weighted	99.21	64.65	78.74	78.52	68.23	90.32
- unweighted	63.96	63.05	77.15	77.08	64.72	69.99
- S.D./mean	0.36	0.36	0.25	0.22	0.26	0.30
EDUC (number per million population)						
- weighted	1,058.38	222.26	112.84	73.36	166.29	272.83
- unweighted	591.56	218.91	96.44	63.61	178.69	177.14
- S.D./mean	0.61	0.29	0.56	0.42	0.45	1.02

Sources: National Economic and Social Development Board, Bank of Thailand, Office of State Universities, and Direk Pattamasiriwat, "Capital Formation in Agriculture: Thailand" TDRI. (Mimeograph).

Table 4.6
Breakdown by Sector of Electricity Users and Consumption

Percent

	MEA			PEA		
	1978	1983	1987	1978	1983	1987
1. No. of Users						
1.1 Households	81.4	82.0	82.8	98.1	98.4	95.2
1.2 Businesses	18.4	17.2	16.4	1.4	1.1	3.8
1.3 Industries	0.002	0.5	0.5	0.1	0.1	0.1
1.4 Others	0.1	0.3	0.3	0.4	0.4	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
2. Electricity Sales						
2.1 Households	18.2	20.4	21.1	26.9	33.2	29.2
2.2 Businesses	76.2	31.4	33.1	24.5	17.7	16.7
2.3 Industries	4.9	46.5	43.6	47.5	45.6	45.8
2.4 Others	0.7	1.7	2.2	1.1	3.5	8.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 4.7
Electricity Rates: Residential,
1971 - Present
(Baht per Unit)

Date	Utilization Levels (kwh)	MEA Rates	PEA Rates	
			EGAT	Diesel
		1/	2/	2/
14 Oct. 1971	0-2	5	4.0	4.0
		1/		
	3-5	5	1.15	1.45
	6-50	0.72	1.15	1.45
	51-130	0.63	1.05	1.40
	131-150	0.63	0.95	1.30
	151-280	0.53	0.95	1.30
	281-500	0.53	0.85	1.15
	501-530	0.42	0.85	1.15
	531-900	0.42	0.75	1.05
	over 900	0.42	0.60	0.95
		1/	2/	2/
Oct. 1972	0-2	5.00	4.00	4.00
		1/		
	3-5	5.00	1.15	1.45
	6-50	0.70	1.15	1.45
	51-130	0.62	1.05	1.40
	131-150	0.62	0.95	1.30
	151-280	0.52	0.95	1.30
	281-500	0.52	0.85	1.15
	501-530	0.41	0.85	1.15
	531-900	0.41	0.75	1.05
	over 900	0.41	0.60	0.95
		1/	2/	2/
Oct. 1973	0-2	5.00	4.00	4.00
		1/		
	3-5	5.00	1.10	1.40
	6-50	0.70	1.10	1.40
	51-150	0.62	1.04	1.35
	151-300	0.52	0.94	1.25
	301-500	0.52	0.84	1.15
	501-550	0.41	0.84	1.15
	551-930	0.41	0.74	1.05
	over 930	0.41	0.60	0.90

Table 4.7 (Continued)

Date	Utilization Levels (kwh)	MEA Rates	PEA Rates	
			EGAT	Diesel
		1/	2/	2/
1 Apr. 1974	0-2	5.00	4.00	4.00
		1/		
	3-5	5.00	1.10	1.40
	6-20	0.70	1.10	1.40
	21-50	0.70	1.15	1.45
	51-150	0.72	1.15	1.45
	151-500	0.74	1.15	1.45
	over 500	0.78	1.15	1.45
		1/	1/	
1 May 1975	0-5	5.00	5.00	
	6-50	0.70	0.70	
	51-150	0.72	0.72	
	151-500	0.74	0.74	
	over 500	0.78	0.78	
		1/	1/	
1 August 1977	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-60	0.90	0.90	
	61-400	0.95	0.95	
	over 400	1.00	1.00	
		1/	1/	
1 Feb. 1980	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-100	1.17	1.17	
	101-150	1.27	1.27	
	151-300	1.35	1.35	
	301-400	1.40	1.40	
	over 400	1.47	1.47	
		1/	1/	
1 Oct. 1980	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-35	1.17	1.17	
	36-100	1.3461	1.3653	
	101-150	1.4461	1.4653	
	151-300	1.5261	1.5453	
	301-400	1.5761	1.5953	
	over 400	1.6461	1.6653	

Table 4.7 (Continued)

Date	Utilization Levels (kwh)	MEA Rates	PEA Rates	
			EGAT	Diesel
		1/	2/	2/
1 Jan. 1981	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-35	1.17	1.17	
	36-100	1.54	1.54	
	101-150	1.64	1.64	
	151-300	1.72	1.72	
	301-400	1.77	1.77	
	over 400	1.84	1.84	
		1/	1/	
1 Apr. 1981	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-35	1.17	1.17	
	36-100	1.83	1.83	
	101-150	1.93	1.93	
	151-300	2.01	2.01	
	301-400	2.06	2.06	
	over 400	2.13	2.13	
		1/	1/	
1 August 1981	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-35	1.17	1.17	
	36-100	1.77	1.83	
	101-150	1.87	1.93	
	151-300	1.95	2.01	
	301-400	2.06	2.06	
	over 400	2.13	2.13	

Table 4.7 (Continued)

Date	Utilization Levels (kwh)	MEA Rates	PEA Rates	
			EGAT	Diesel
		1/	1/	
1 Apr. 1982	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-35	1.17	1.17	
	36-100	1.67	1.83	
	101-150	1.77	1.93	
	151-300	1.87	2.01	
	301-400	2.06	2.06	
	over 400	2.13	2.13	
		1/	1/	
1 Apr. 1983	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-35	1.17	1.17	
	36-100	1.65	1.65	
	101-150	1.75	1.75	
	151-300	1.83	1.83	
	301-400	2.04	2.04	
	over 400	2.11	2.11	
		1/	1/	
1 Feb. 1986	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-35	1.17	1.17	
	36-100	1.60	1.60	
	101-150	1.70	1.70	
	151-300	1.78	1.78	
	301-400	2.04	2.04	
	over 400	2.11	2.11	
		1/	1/	
1 June 1987 - present	0-5	5.00	5.00	
	6-15	0.70	0.70	
	16-25	0.90	0.90	
	26-35	1.17	1.17	
	36-100	1.58	1.58	
	101-150	1.68	1.68	
	151-300	1.76	1.76	
	301-400	2.02	2.02	
	over 400	2.11	2.11	
	over 800	2.43	2.43	

Notes: 1/ flat rate of 5 baht for first 5 units of usage.
2/ flat rate of 4 baht for first 2 units of usage.

Sources: MEA, PEA and TDRI.

Table 4.8
Electricity Rates: Small and Large Businesses,
1971 - 1980
(Baht per Unit)

Date	Utilization Levels	Small			Medium		Large	
		MEA	PEA Rates		MEA	PEA	MEA	PEA
		Rates	EGAT	Diesel	Rates	Rates	Rates	Rates
14 Oct. 1971	0-50	0.36	0.40	0.45	0.28	0.37	0.19	0.34
	51-200	0.32	0.37	0.42	0.28	0.35	0.19	0.31
	201-400	0.25	0.31	0.34	0.25	0.30	0.19	0.29
	401-480	0.18	0.23	0.25	0.25	0.23	0.19	0.23
	over 480	0.18	0.23	0.25	0.17	0.23	0.19	0.23
Oct. 1972	0-50	0.35	0.40	0.45	0.28	0.37	0.19	0.34
	51-200	0.32	0.37	0.42	0.28	0.35	0.19	0.31
	201-400	0.25	0.31	0.34	0.25	0.30	0.19	0.29
	401-480	0.18	0.23	0.25	0.25	0.23	0.19	0.23
	over 480	0.18	0.23	0.25	0.17	0.23	0.19	0.23
Oct. 1973	0-50	0.35	0.39	0.45	0.28	0.37	0.19	0.34
	51-200	0.32	0.36	0.42	0.28	0.34	0.19	0.31
	201-400	0.25	0.30	0.34	0.25	0.29	0.19	0.28
	401-480	0.18	0.22	0.25	0.25	0.22	0.19	0.21
	over 480	0.18	0.22	0.25	0.17	0.22	0.19	0.21
1 Apr. 1974	0-50	0.51	0.60	0.68	0.44	0.58	0.34	0.56
	51-200	0.46	0.56	0.64	0.44	0.54	0.34	0.52
	201-400	0.41	0.50	0.58	0.39	0.48	0.34	0.46
	401-480	0.37	0.42	0.50	0.39	0.40	0.34	0.38
	over 480	0.37	0.42	0.50	0.36	0.40	0.34	0.38
1 May 1975	0-50	0.54	0.60		0.45	0.58	0.38	0.56
	51-200	0.49	0.56		0.45	0.54	0.38	0.52
	201-400	0.43	0.50		0.43	0.48	0.38	0.46
	401-480	0.41	0.42		0.43	0.40	0.38	0.38
	over 480	0.41	0.42		0.40	0.40	0.38	0.38
1 August 1977	0-50	0.68	0.75		0.59	0.73	0.52	0.71
	51-200	0.60	0.69		0.59	0.67	0.52	0.65
	201-400	0.58	0.62		0.57	0.60	0.52	0.58
	401-480	0.56	0.53		0.57	0.51	0.52	0.49
	over 480	0.56	0.53		0.52	0.51	0.52	0.49

Sources: MEA, PEA and TDRI.

Table 4.9
Electricity Rates: Small and Large Businesses, 1980 - present
(Baht per Unit)

Date	Utilization Levels	Small		Large	
		MEA Rates	PEA rates	MEA rates	PEA rates
1 Feb. 1980	0-40(50)	60.00 1/	80.00 2/	0.81	0.92
	41(51)-300	1.07	1.30	0.81	0.92
	301-1000	1.18	1.35	0.81	0.92
	1001-3000	1.30	1.40	0.81	0.92
	over 3000	1.47	1.45	0.81	0.92
1 Oct. 1980	0-40(50)	67.0450 1/	89.765 2/	0.9861	1.1153
	41(51)-300	1.2461	1.4953	0.9861	1.1153
	301-1000	1.2561	1.5453	0.9861	1.1153
	1001-3000	1.4761	1.5953	0.9861	1.1153
	over 3000	1.6461	1.6453	0.9861	1.1153
1 Jan. 1980	0-50	76.92 2/	102.00 2/	1.23	1.36
	51-200	1.49	1.74	1.23	1.36
	201-400	1.60	1.79	1.23	1.36
	401-480	1.72	1.84	1.23	1.36
	over 480	1.89	1.89	1.23	1.36
1 Apr. 1981	0-50	90.52 2/	119.00 2/	1.54	1.67
	51-200	1.83	2.08	1.54	1.67
	201-400	1.94	2.13	1.54	1.67
	401-480	2.06	2.18	1.54	1.67
	over 480	2.23	2.23	1.54	1.67
1 Apr. 1983	0-40	89.72 1/	89.72 1/	1.52	1.52
	41-300	1.81	1.81	1.52	1.52
	301-500	1.92	1.92	1.52	1.52
	1001-3000	2.04	2.04	1.52	1.52
	over 3000	2.21	2.21	1.52	1.52
1 June 1987 - present	0-40	88.12 1/	88.12 1/	1.28(1.29)	1.28(1.23)
	41-300	1.77	1.77	1.28(1.29)	1.28(1.23)
	301-500	1.88	1.88	1.28(1.29)	1.28(1.23)
	301-500	2.21	2.21	1.28(1.29)	1.28(1.23)
	1001-3000	2.43	2.43	1.28(1.29)	1.28(1.23)
	over 3000	2.50	2.50	1.28(1.29)	1.28(1.23)

Notes: 1/ Flat rate for first 40 units.
2/ Flat rate for first 50 units.

Sources: MEA, PEA and TDRI.

Table 4.10
Electricity Rates: Small and Large Industries,
1980 - Present
(Baht per Unit)

Date	Utilization Levels	Small		Large	
		MEA Rates	PEA rates	MEA Rates	PEA Rates
1 Feb. 1980	0-50	0.81	0.94	0.8	0.84
	51-100	0.80	0.91	0.8	0.84
	101-200	0.80	0.91	0.8	0.82
	201-400	0.79	0.88	0.79	0.82
	400-480	0.78	0.85	0.79	0.79
	over 480	0.78	0.85	0.77	0.79
1 Oct. 1980	0-50	0.9861	1.1353	0.9761	1.0353
	51-100	0.9761	1.1053	0.9761	1.0353
	101-200	0.9761	1.1053	0.9761	1.0153
	201-400	0.9661	1.10753	0.9661	1.0153
	400-480	0.9561	1.10453	0.9661	0.9853
	over 480	0.9561	1.10453	0.9461	0.9853
1 Jan. 1981	0-50	1.19	1.34	1.18	1.24
	51-100	1.18	1.31	1.18	1.24
	101-200	1.18	1.31	1.18	1.22
	201-400	1.17	1.28	1.17	1.22
	400-480	1.16	1.25	1.17	1.19
	over 480	1.16	1.25	1.15	1.19
1 Apr. 1981	0-50	1.48	1.63	1.46	1.52
	51-100	1.47	1.60	1.46	1.52
	101-200	1.47	1.60	1.46	1.52
	201-400	1.46	1.57	1.45	1.52
	400-480	1.45	1.54	1.45	1.47
	over 480	1.45	1.54	1.43	1.47
1 Apr. 1983	0-50	1.41	1.46	1.44	1.44
	51-200	1.45	1.45	1.44	1.44
	201-400	1.44	1.44	1.43	1.43
	400-480	1.43	1.43	1.43	1.43
	over 480	1.43	1.43	1.41	1.41
1 June 1987 - present	All	1.23	1.23	1.22	1.22

Sources: MEA, PEA and TDRI.

Table 4.11
Provincial Users and Consumption of Electricity
(Percent of National Total)

Year	Share of Provincial Users	Share of Provincial Consumption	Consumption (units per user)	
			Metropolitan	Provincial
1977	66.3	34.4	10,429	2,774
1978	68.3	34.9	10,880	2,704
1979	69.9	35.9	11,205	2,702
1980	71.8	37.4	10,642	2,490
1981	74.1	38.9	10,308	2,295
1982	76.5	40.9	10,065	2,145
1983	78.4	42.2	10,458	2,097
1984	79.8	42.8	10,846	2,053
1985	80.8	45.3	10,739	2,113
1986	81.9	46.7	10,658	2,060
1987	82.8	47.5	11,507	2,159

Sources: MEA and PEA

Table 4.12
Electricity Expenditure in
Total Cost by Region

Percent

Percent of Electricity cost	Region					Total
	Greater Bangkok	Rural Central	Northeast	North	South	
less than 5	46.1	62.0	64.7	61.4	59.6	59.90
5 - 14	38.3	25.0	24.6	30.7	30.6	29.1
15 - 50	13.0	8.5	9.6	7.4	7.7	8.9
over 50	2.6	4.5	1.1	0.5	2.2	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
No.of Respondents	115	200	187	202	183	887

Source: Rural Industries and Employment Project Survey, TDRI, 1989.

Table 4.13
Electricity Blackouts by Region

Percent

Region	Average Number of Blackouts	Proportion of Respondents Not Adversely Affect by Blackouts
Greater Bangkok	19.55	46.22
Rural Central	21.42	41.28
Northeast	9.63	38.07
North	10.75	50.23
South	28.91	34.25
Total	18.05	41.56

Source: Rural Industries and Employment Project Survey, TDRI, 1989.

Table 4.14
Tap Water Rates: 1981 - Present
(Baht per Cubic Metre)

Year	Utilization Levels (Units)	MWA Household	MWA Government Offices	MWA State Enterprise and Business	PWA All	PWA 1/ All
1972-1981	0-6	free			2.0	
	7-12	0.5			2.0	
	13-25	1.0			2.0	
	26-50	1.5			2.0	
	51-200	2.0			2.0	
	over 200	2.5			2.0	
1981		2/	3/	4/		
MWA	0-10	20	30	50	2.0	
15 Apr.1981-		2/				
10 Sept.1984	11-20	20	2.0	3.25	2.5	
PWA	21-50	1.5	2.0	3.25	3.0	
15 May 1981-	51-80	2.5	3.0	4.00	4.0	
31 Oct.1984	81-100	3.0	3.0	4.00	4.5	
	101-200	3.5	4.0	5.00	5.0	
	201-300	4.5	4.0	5.00	5.0	
	over 300	4.5	4.5	5.50	5.5	
		5/	4/			
1 Nov.1984	0-10	1.90	50		2.25	
		5/				
	11-20	1.90	3.50		2.75	
	21-30	1.90	3.75		3.00	
	31-40	2.15	4.00		3.00	
	41-50	2.40	4.25		3.00	
	51-60	2.65	4.50		4.00	
	61-70	2.90	4.75		4.00	
	71-80	3.15	4.75		4.00	
	81-90	3.50	5.00		4.50	
	91-100	3.75	5.00		4.50	
	101-120	4.00	5.25		4.50	
	121-160	4.25	5.50		4.50	
	161-200	4.50	5.75		4.50	
	201-300	5.00	6.00		4.50	
	over 300	5.00	6.00		5.50	

Table 4.14 (Continued)

Year	Utilization Levels (Units)	MWA			PWA	
		Household	Government Offices	State Enterprise and Business	All	1/ All
		5/	4/		6/	
Oct.1987-pre MWA 1 Oct.1985-present PWA 1 Oct.1987-present	0-10	4.10	------ 50 ------		3.75	(3.75)
	11-20	4.10	----- 6.25 -----		4.50	(4.50)
	21-30	4.10	----- 6.50 -----		6.50	(6.00)
	31-40	4.35	----- 6.75 -----		7.50	(6.00)
	41-50	4.60	----- 7.00 -----		7.50	(6.00)
	51-60	4.85	----- 7.25 -----		8.00	(7.00)
	61-70	5.10	----- 7.50 -----		8.00	(7.00)
	71-80	5.35	----- 7.50 -----		8.00	(7.00)
	81-90	6.25	----- 7.75 -----		8.50	(7.50)
	91-100	6.50	----- 7.75 -----		8.50	(7.50)
	101-120	6.75	----- 8.00 -----		9.00	(8.00)
	121-160	7.00	----- 8.25 -----		9.00	(8.00)
	161-200	7.25	----- 8.50 -----		9.00	(8.00)
	201-300	7.75	----- 8.75 -----		9.00	(8.00)
	301-1000	7.75	----- 8.75 -----		9.25	(8.50)
	1001-2000	7.75	----- 8.75 -----		9.50	(8.50)
	2001-3000	7.75	----- 8.75 -----		9.75	(8.50)
	over 3000	7.75	----- 8.75 -----		10.00	(8.50)

Notes:
1/ Figures in parenthesis are those effective for the period 1 Oct.1985 - 30 Sept.1987
2/ A minimum flat rate of 20 baht for first 20 cubic metres irrespective of utilization.
3/ A minimum flat rate of 30 baht for first 10 cubic metres irrespective of utilization.
4/ A minimum flat rate of 50 baht for first 10 cubic metres irrespective of utilization.
5/ Subject to a minimum payment of 20 baht.
6/ Subject to a minimum payment of 15 baht.

Sources: MWA and PWA

Table 4.15
Average Price and Cost of Tap Water
(Baht per Cubic Metre)

Year	Price		Cost	
	MWA	PWA	MWA	PWA
1977	1.49	n.a.	1.96	n.a.
1978	1.49	n.a.	2.14	n.a.
1979	1.53	n.a.	2.36	n.a.
1980	1.60	1.85	4.56	4.11
1981	2.20	2.32	5.01	4.46
1982	3.03	3.63	5.40	5.28
1983	3.06	3.77	4.97	5.29
1984	3.19	3.81	4.63	5.31
1985	4.93	5.41	5.64	5.97
1986	6.14	6.87	5.63	6.57
1987	6.09	6.87	5.64	6.37
1988	6.10	6.86	5.62	7.35

Sources: MWA and PWA

Table 4.16
Supply Availability of Tap Water

Year	No.of Users to Population (Percent)		Production Capacity to Population (Cubic Metre per Head)	
	MWA	PWA	MWA	PWA
1977	50.0	n.a.	n.a.	n.a.
1978	50.9	n.a.	n.a.	n.a.
1979	50.8	47.0	n.a.	71.4
1980	54.1	49.8	n.a.	67.0
1981	55.6	49.2	n.a.	71.5
1982	58.5	50.4	n.a.	69.6
1983	60.6	49.8	104.7	70.7
1984	62.7	51.7	115.2	68.8
1985	62.9	53.7	120.6	71.8
1986	67.6	55.8	128.3	73.5
1987	69.9	59.7	125.8	76.6
1988	73.3	58.0	122.7	79.3

Note: Population here includes only those in areas covered by such services.

Sources: MWA and PWA

Table 4.17
Water Expenditure in Total Cost by Region

Percent

Percent of Water Cost	Region					Total
	Greater Bangkok	Rural Central	Northeast	North	South	
less than 5	87.13	6.43	4.79	6.56	10.56	17.90
5 - 14	10.89	85.96	83.56	78.69	66.9	69.85
15 - 50	0.99	7.02	11.64	14.75	20.53	11.58
over 50	0.99	0.58	-	-	2.11	0.67
Total	100.0	100.0	100.0	100.0	100.0	100.0
No.of Respondents	101	171	146	183	142	743

Source: Rural Industries and Employment Project Survey, TDRI, 1989.

CHAPTER 5

POLICY BIASES RELATING TO THE DISTRIBUTION AND COST OF FINANCIAL RESOURCES

This chapter presents the results of our work on the distribution and cost of financial resources and attempts to identify the biases in the financial system against provincial industries, especially with regard to the policies and measures of financial authorities. The analysis is separated into five sections as follows:

1. Section 5.1 deals with the banking system, which dominates the financial system. It reviews the main features of the branch banking system which could have constrained the growth of provincial industries.

2. Section 5.2 covers central bank policy relating to the allocation of financial resources, including the Bank of Thailand's rural and agricultural credit measures in conjunction with rediscounting facilities for exports, industry in general, and small-scale industries.

3. Section 5.3 touches on the crucial nature of pricing policy in the money market. A model is used to explain the possible effect of the central bank's control of interest rates, especially with regard to their impact on provincial industries in terms of cost of funds and access to institutional credit.

4. Section 5.4 covers specialized institutions established for the specific purpose of supporting the country's industrial development. These include the Industrial Finance Corporation of Thailand, the Small Industry Finance Office, and the Small Industry Credit Guarantee Fund.

5. Section 5.5 links the analyses of the four previous sections to put forward suggestions and recommendations on how to improve the existing institutional and policy framework so that there is a more favorable environment for provincial industrial development.

5.1 THE BANKING SYSTEM

Thailand's financial system is dominated by commercial banks. Indeed, the banking system used to satisfy all of the credit needs of the organized financial system and, although their combined importance has declined with the emergence of finance companies, commercial banks still provide three-quarters of all of the credit extended within the organized financial system (see Table 5.1). Bearing such a major influence in mind, then, a study of financial system biases against provincial industrial development cannot overlook the influence of the banking system.

Theoretically, as is argued in various textbooks on money and banking, a unit banking system (operating along the lines of the American system) should be much more conducive to promoting the needs of the local business community than a branch banking system. Under a unit banking system, there are a large number of single-office banks spread throughout the country. In such a system, the owners are likely to live in the locality where the bank is situated. Since a bank under such a system does not have any branches outside of its locale and its owners come from the area, there is a greater attachment to the idea of lending to local businesses. All funds mobilized locally are thus likely to be lent back to the area.

Under a branch banking system, the above premise is no longer necessarily true. A branch bank in a certain locale need not belong to people from that locale. It has been argued that "...the 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."[1] Furthermore, financial resources may be transferred across localities to maximize profits and diversify risks. Therefore, a bank is less attached to the local area under a branch system.

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1. Pham Chung, Money, Banking and Income: Theory and Policy, International Textbook Company, 1970.

Because of this lack of attachment, it seems likely that a unit banking system would promote provincial industries better than a branch banking system would. In Thailand's case, however, the banking system adopted from the outset was a branch banking system , due mainly to British influence.

From the start,permission was required from the Ministry of Finance to establish a bank in Thailand. However, banks had complete freedom to set up branches throughout the country until the Commercial Banking Act was enacted in 1962. Prior to the Second World War, there were only 11 banks and four bank branches in the entire country. In addition, domestic banks played a very small role in comparison to foreign bank subsidiaries, because most business was generated from international trade.

The first bank was established in Thailand in 1888. It was the Hong Kong and Shanghai Bank, a subsidiary branch of the Hong Kong and Shanghai Banking Corporation, a British bank.

The first domestic bank branch (established at Phuket in 1910) was also started by a subsidiary of a foreign bank. This British bank, the Chartered Bank, had previously established a subsidiary branch in Bangkok in 1894.

The first Thai bank (today known as the Siam Commercial Bank) was established in 1906; it was also the first Thai bank to establish a domestic branch (in 1926) in Chiang Mai.

It was not until the Second World War when foreign bank subsidiaries were closed down after the Japanese invasion that Thai banks began to gain importance. In 1938, there were only three domestic banks; within ten years, this number increased significantly to 11 banks (see Table 5.2).

Today, there are 15 local banks and 14 foreign bank subsidiaries. Since October 1965 when the last local bank license was granted to the

Asia Trust Bank, no new bank licenses have been granted except to the European Asian Bank (Deutsche Bank) which is a foreign subsidiary bank. In fact, since the Commercial Banking Act was enacted in 1962, there has only been one license granted to a Thai bank and four licenses granted to foreign banks.

The control on the number of commercial banks in conjunction with the ease of opening new branches (especially prior to 1962) have led the Thai banking system to gradually evolve into a branch banking system characterized by a few banks and a large network of branches. Indeed the number of bank offices has increased from just 47 (in 1948) to 2016 (by the end of 1987). Nevertheless, foreign bank subsidiaries act more like unit banks because the number of their branches has been controlled since 1962.[2]

Besides operating under a branch banking system, Thailand's banking system also has certain other characteristic conditions that might form a bias against the development of provincial industries.

1. A major feature of the system is that when all of the commercial banks first started they located their headquarters in Bangkok -- and the headquarters are still in Bangkok. In fact, except for the Bank of Ayudhya, which established its head office in Phra Nakhon Si Ayutthaya in 1948, no other local or regional bank has been established to serve local needs. Even in the case of Bank of Ayudhya, the bank decided, after three years of operation, to move its headquarters to its Bangkok office, which was also established in 1948.

2. Most bank offices are heavily concentrated in the Bangkok Metropolitan Area (BMA). Although provincial bank branches have proliferated since the 1950s, the proportion of bank offices in the Greater Bangkok Area is still high: 37 percent of the total number of offices nationwide.

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2. The role of foreign banks today is quite limited due to the small number of offices which restrict deposit mobilization. At the end of 1987, their combined market share in terms of credit extension in the banking system was only 4 percent.

3. It is also known that bank branch managers are usually sent to their branches from Bangkok; that is, commercial banks have no preferred policy of selecting their branch managers from the area in which the branch is situated. Thus bank managers are less likely to be familiar with businesses in the locality.

4. Provincial bank branch managers have very little power to extend credit. Only a few large banks allow their branch managers to extend credit up to a maximum of baht 1 million per case. This is not only a relatively low figure, but this power is also only given to some of the major branches.

5. The quality of personnel working at provincial bank branches is quite likely to be inferior to that of personnel working in branches in the Greater Bangkok Area. This is because there has been no conscious policy effort to give staff incentives if they choose to work at a provincial bank branch.

6. Even though there is a more even proliferation of provincial bank branches, they have been utilized mainly to mobilize local deposits to finance the needs of Bangkok. This can be shown by the figures in Table 5.3. The Table shows that before 1976 only about half or less of all deposits mobilized in provincial areas went back to the region, while credit extended in the Greater Bangkok Area generally exceeded the deposits mobilized within the BMA.

The above conditions no doubt enhanced the bias of credit provision to provincial areas. Coupled with the fact that banks tend to be more trade-oriented than production-oriented, these conditions are likely to have put provincial industries at a disadvantage compared to Bangkok and to other economic sectors.

Although the proportion of credit extended to the manufacturing sector has increased over the years at the national level and in the Central Region (including Greater Bangkok), this proportion is still

very low and does not show an increasing trend in provincial areas (see Table 5.4).

However, when manufacturing credit and value-added growth rates were compared for the period 1979-1986, the Northeast had the highest relative growth in industrial credit, and the North was next (see Table 5.5).

5.2 FINANCIAL RESOURCE ALLOCATION BY THE CENTRAL BANK

This section reviews the central bank's policy in allocating financial resources to various economic sectors which may directly affect provincial industries. However, we do not discuss policy measures regarding the term structure of interest rates here; they are covered in Section 5.3.

5.2.1 Provincial Credit Policy

Because of the credit extension distortions (between Bangkok and provincial areas) created by the branch banking system, the central bank, in 1975, tried to remedy the situation by introducing a measure to force commercial banks to increase more lending to provincial areas. An adjustment period was allowed, with the measure becoming fully effective in 1977.

Under the measure, banks in outlying districts[3] were to lend at least 60 percent of their deposits mobilized from a particular area back into that locality. Of this amount, one third was to be allocated to the agricultural sector. This may explain why in Table 5.3 the credit-to-deposit ratios in provincial areas jumped significantly in 1977.

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3. Greater Bangkok and capital districts of provinces are not included.

Despite the large jump in lending to provincial areas after the introduction of the provincial credit measure, it is doubtful whether more funds were indeed made available. More than reflecting any real change, it is more likely that the changes in the figures reflect the reclassification of credit extended by banks. It is difficult to imagine that commercial banks could adjust themselves so quickly to the new policy measure, although there was a transitional period of 14 months given to banks to show compliance. It is more plausible that, after the measure was introduced, banks reclassified the credit extended to provincial businesses by bank offices in the Greater Bangkok Area -- which had been previously classified as "credit extended to Bangkok" -- as "provincial credit".

Furthermore, commercial banks can deposit the amount short of the provincial credit requirement in an interest-free account at the Bank of Thailand or purchase government bonds up to 4.5 times the amount of the unsatisfied residual. Because this placement of such funds has nothing to do with correcting the bias toward rural areas, it is not an effective measure for channeling funds back to provincial areas.

Nevertheless, despite the increased credit-to-deposit ratio in provincial areas since 1976, it is still quite evident that banks in provincial areas lend a much smaller amount of their deposits back to the area.

A parallel development was the Bank of Thailand's 1975 compulsory regulation requiring banks to lend at least five percent of their previous year's total credit to the agricultural sector (see Table 5.6). In 1976, the compulsory figure was raised to 7 percent of the total previous year's deposits outstanding. This was followed in 1977 by another increase to 9 percent.

A significant change took place in 1978. Although the 9 percent requirement was maintained for agricultural credit, an additional requirement of 2 percentage points was introduced as a credit requirement for agribusiness.

This agricultural credit measure marked the first time that "industry" entered into the picture. Also, those agro-industries which use raw materials from the agricultural sector and industries which produce farm supplies (such as tractors, power tillers, water pumps, and threshers) can be included as agribusiness.

In 1979, total compulsory credit to be extended to agriculture and agribusiness was raised to 13 percent -- the agriculture credit portion was raised to 11 percent, while credit to agribusiness was maintained at 2 percent.

This agricultural credit policy measure finally evolved (in January 1987) into a rural credit policy that more explicitly supported rural industries as well as agriculture.

With this change, the total compulsory bank rural lending program was not only raised to 20 percent (from 13 percent) of the previous year's total deposits, the amount of credit provided to agro-industry and industries producing farm supplies increased to 6 percentage points. Furthermore, the remaining 14 percentage points could be extended, not only to farmers, but could also include small-scale industries outside of the Greater Bangkok Area (except those located in official industrial estates).

Despite the above policy measures, the credit provided to provincial areas remained insignificant when compared to the credit provided to the Greater Bangkok Area. In 1987, provincial credit accounted for only 23.8 percent of total nationwide credit. It is also noteworthy that, although the share of provincial credit has risen over the years, it has recently reversed its trend (see Table 5.7). Furthermore, the share of provincial credit in the manufacturing sector which is also relatively low, has not exhibited any trend at all since 1979 (see Table 5.8).

5.2.2 Rediscount Facility to the Export and Manufacturing Industries

Another measure the Bank of Thailand used to allocate credit to economic sectors is the rediscount facility it provides to commercial banks. The scheme began in 1956 with the rice-trading rediscount facility. Over the years, its scope expanded to include rediscounts on the trading of many other products (see Table 5.9).

Of all the rediscount facilities provided by the central bank, the most significant is the export -- or packing credit -- scheme that accounts for almost all of the rediscounted amount provided by the Bank of Thailand (see Tables 5.10 and 5.11). Under this scheme, the central bank provided cheap credit to selected sectors at a rate of 5 percent. Since the central bank cannot lend directly to private businesses, the money was channeled through commercial banks which, in turn, were allowed to charge their customers an interest rate of only 7 percent on the reloaned funds.

The interest rates on discounting have changed a number of times. Between 1 October 1984 - 26 March 1986, the rates were raised to 7 percent and 9 percent for banks and exporters. As of 27 March 1986, two sets of rates have been in effect. One is for traditional exports (with interest rates of 5 and 7 percent) while the other is for new export products and small exporters (with rates of 4 and 7 percent).

Bills eligible for bank discounting were export bills not exceeding 180 days. The amount of credit provided ranged from 40-90 percent of the face value of the document, depending on the type of document. In addition, international trading companies were given 10 percent more credit than general exporters.

It is not clear whether the provision of export credit has created bias against provincial industries, because the credit was provided entirely to trade, not to production. Thus, it is difficult to estimate whether the benefits received by exporters were passed back to producers and by how much.

Furthermore, a large part of this rediscounting was given to agricultural commodity and agro-industrial exports which may have benefited provincial industries (see Table 5.9). It is likely, however, that provincial industries gained little from the scheme -- an assertion supported by the small value of commercial bills discounted at the Bank of Thailand's regional offices in comparison to bills discounted at its head office in Bangkok (see Table 5.12).

In addition, how export credit is obtained from commercial banks depends very much on how bankers allocate the credit. Because commercial banks can only charge their customers an interest rate of 7 percent, which gives them a margin of only 2 percentage points (a figure lower than their normal margin of about 4 percentage points), banks tend to use the discounting facility for their good customers or for their own business groups. That this is the case tends to be supported by Duangmanee's study in 1988 which found central bank discounting facility benefits to be highly concentrated; indeed, ten exporters received 70.1 percent of all packing credit provided in 1983.[4] The top firm receiving such credit accounted for 13.6 percent of all packing credit extended. Furthermore, one commercial bank provided a single customer with up to 55.3 percent of all of its packing credit.

Export industries are likely to be more concentrated in the Greater Bangkok Area, because of the more complete exporting facilities available. As such, it is also unlikely that provincial industries, which are usually smaller enterprises and far removed from export activity, could stand to gain much from packing credit.

It was not until 1963 that the Bank of Thailand expanded its rediscounting facility to include manufacturing. Under the scheme, an interest rate of 5 percent for banks with re-lending rate of 7 percent

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4. Duangmanee Vongpratheep, "Credit Allocation of the Bank of Thailand, in The Thai Economy: A Path Towards Peace and Justice, A Collection of Papers in Honor of Dr. Puey Ungpakorn. Published by the Faculty of Economics, Thammasat University, March 1988 (in Thai).

was fixed. Originally, the only bills eligible were those for the purchase of raw materials (to be used in production) with a credit value not to exceed 90 percent of the value of the raw materials. This was expanded in 1964, however, to cover bills resulting from the sale of products and could be paid on installment up to a credit margin of 90 percent. In 1969, industries eligible for such credit were separated into four groups with different credit margins as follows:

1. industries utilizing only domestic raw materials from agriculture were entitled to borrow up to 90 percent of operational expenses;

2. industries utilizing both domestic and imported raw materials from agriculture were entitled to borrow up to 80 percent of operational expenses;

3. industries utilizing only domestic raw materials were entitled to borrow up to 70 percent of operational expenses; and

4. industries utilizing both domestic and imported raw materials were entitled to borrow up to 50 percent of operational expenses.

In 1974, eligibility to receive such support was restructured and expanded to include:

1. basic industries were eligible to receive up to 90 percent of the credit amount required for operations;

2. credit up to 80 percent of the amount required for operations was to be provided to (1) industries at least 20 percent of whose raw materials came from the agricultural sector and (2) industries producing inputs to support agriculture of which not less than 20 percent of their raw materials came from domestic sources;

3. the amount of credit provided to industries which export at least 20 percent of their sales was up to 80 percent of that required for operations;

4. the credit given to industries deriving at least 50 percent of their raw material inputs from domestic sources was 70 percent of that required for operations; and

5. the credit provided to industries with at least half of their production costs coming from domestic raw materials and other domestic expenses was 60 percent of that required for operations.

As can be seen, out of all the industrial classifications receiving support, provincial industries stand to benefit from only 3 out of the 5 industrial groups, that is, the second, fourth and fifth classifications above.

Although in the sixties and seventies the proportion of industrial bills discounted was quite important, its share in total bills discounted at the Bank of Thailand has declined over time (see Tables 5.10-5.11). Furthermore, in recent years, the amount of money utilized under this facility has also declined in absolute terms. There are three main reasons for this phenomenon.

1. The exclusion of bills resulting from the sale of products on installment terms -- beginning in 1969 -- had a negative impact on the utilization of this facility because installment bills made up 90 percent of the industrial bills discounted at the Bank of Thailand in 1969.

2. Manufacturers probably find it easier to use packing credit than to use industrial credit -- mainly because, to get industrial credit, manufacturers would have to divulge details and provide proof of expenses.

Furthermore, if a manufacturer wants to utilize both packing and industrial credit facilities, the manufacturer would not be able to get the full value of credit for both kinds of credit. It is therefore much easier and more convenient to utilize only packing credit.

3. In 1974, the Bank of Thailand decided to limit the use of the facility and spread the benefits of the scheme; thus manufacturers with strong financial positions who had utilized the scheme for five years were not eligible again, except for items which were considered to be important.

Because the interest margin from the discounting of industrial bills is not very profitable, banks may not have found it worthwhile to extend this facility to their more risky customers. In addition, discounted industrial bills are considered to be risk assets while export bills are not.

Realizing the ineffectiveness of promoting small-scale rural industries under the above schemes, in 1978 the Bank of Thailand expanded its rediscount facility to help support small-scale industries in provincial areas.[5] Prior to 1986, the interest rates charged were also fixed at 5 percent for banks and 7 per cent for industries. In 1986, the interest rates were adjusted twice to increase the interest margin and make it more profitable for banks to lend to small-scale industries. The rates were at first raised to 5 percent and 8 percent in January and then changed to 4 percent and 7 percent in March. To induce commercial banks further, beginning in August 1987 the rates were revised to 3 percent and 7 percent to give the banks an even larger interest margin.

Under the rediscount system for small industries, small-scale industries were classified as firms with fixed assets not exceeding 2 million baht and in October 1984 this was increased to 5 million baht. Each firm is allowed a maximum credit of 1 million baht per year.

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5. Not covering the Greater Bangkok Area except for factories located within industrial estates.

To date, however, the rediscount facility has been used very little by small-scale rural industries. In fact, utilization (with an amount of only baht 95 million) only began in 1986; and this low utilization is likely explained by the larger interest margin banks are allowed to charge customers.

Because of the shortcomings in the whole rediscount system -- especially for packing credit -- the central bank in October 1988 introduced major changes into the system. Under the new scheme (which has been fully operational since the beginning of 1989) the central bank provides credit up to 50 percent of the face value of a commercial bill with commercial banks matching the rest from their own funds. The Bank of Thailand will charge commercial banks an interest rate of 5 percent, while commercial banks cannot charge their customers more than 10 percent on the bill's total face value.

There were also revisions in the types of industries eligible to use the industrial credit facility. The major changes included the addition of labor-intensive industries that promote rural development and assembly industries not less than 60% of whose utilized raw materials come from domestic sources. The types of industries deleted from the list include basic and export industries.

5.3 INTEREST RATE POLICY

One of the most significant financial factors which may affect the development of provincial industries is the Bank of Thailand's policy on maximum interest rate ceilings. Indeed, the setting of interest rate ceilings since 1962 could have led to serious distortions in the allocation of financial resources.

Because it is difficult to prove how such distortions could have led to biases against rural industries, the argument here will be based more on theoretical considerations and the fact that provincial industry's access to credit sources is much more limited.

As shown in Tables 5.13 and 5.14, maximum interest rate ceilings have changed over time. However, the frequency of change is small while the response toward changes in the market is known to have been slow and to have led to periods of severely tight money. This is because the interest rate ceilings were generally set below market levels.

Although, theoretically, commercial banks can set rates which are below maximum interest rate ceilings, they have not done so in practice -- for either deposits or lendings. This occurred not only because there was a shortage of domestic funds at maximum interest rate levels, but also because it was condoned by the central bank -- that is, banks are expected to set actual interest rates equal to ceiling rates.

The Bank of Thailand was rather concerned with the instability that could come from bank competition through pricing policies; therefore, the Bank prevented such competition by guaranteeing the commercial bank interest rate margin by setting maximum interest rate ceilings.

An example of the central bank's concern with bank stability is clearly stated in one of its directives which requires commercial banks to maintain a minimum capital-to-risk asset ratio. The present capital ratio is set at 8 percent of risk asset value (see Table 5.15).

However, the minimum capital-to-risk asset ratio is unlikely to have significantly distorted commercial banks' lending, because almost all major types of bank lending are classified as risk assets. Some of the major exceptions include export bills; debentures or debt instruments issued by the Bank for Agriculture and Agricultural Cooperatives or the Industrial Finance Corporation of Thailand; bonds issued by the government or state enterprises; loans to government agencies; and call loans to banks.

Because the maximum interest rate for bank lending was generally set at a level below market rates, and because of their comfortable guaranteed interest rate margin, commercial banks were given incentives to become quite averse to risk. They would tend to lend only to very

good customers with sufficient collateral and to their own family business groups.

It is thus not surprising that the maximum interest rate ceiling on lending has given commercial banks a significant incentive not to lend to smaller and less well-known entrepreneurs. This is likely to have had a strong negative impact on provincial industries. Thus, those unable to receive funds from commercial banks had to turn to the curb or to the unorganized money market where interest rates are much higher. While the maximum interest rate ceiling on lendings has generally been set at 15 percent per year, it is well known that unorganized market interest rates can be as high as 2.3-5.4 percent per month (see Table 5.16).

The Money Market Model

In order to understand this issue better, we constructed a model that included two separate markets: (1) the organized money market represented by banks and (2) the unorganized money market represented by money middlemen. These markets can be shown by the demand and supply schedules in Figure 5.1 and Figure 5.2.

Assuming that there are two credit markets (one a low-risk market mainly served by banks and the other, a higher-risk market served by the unorganized market), the price for money in the organized money market will be determined by the maximum interest rate ceiling ($O\bar{R}$) set by the central bank, while the price in the unorganized money market (OR_2) will be determined by demand and supply.

It can be seen that the demand curve in Figure 5.1 (D_1D_1) is much flatter than that in Figure 5.2 (D_2D_2). The reason for this is that borrowers are financially stronger in the organized money market. They possess more bargaining power and thus do not feel constrained to stick to a single source of financing. Their demand curve is thus more elastic (D_1D_1).

Figure 5.1

Organized Money Market

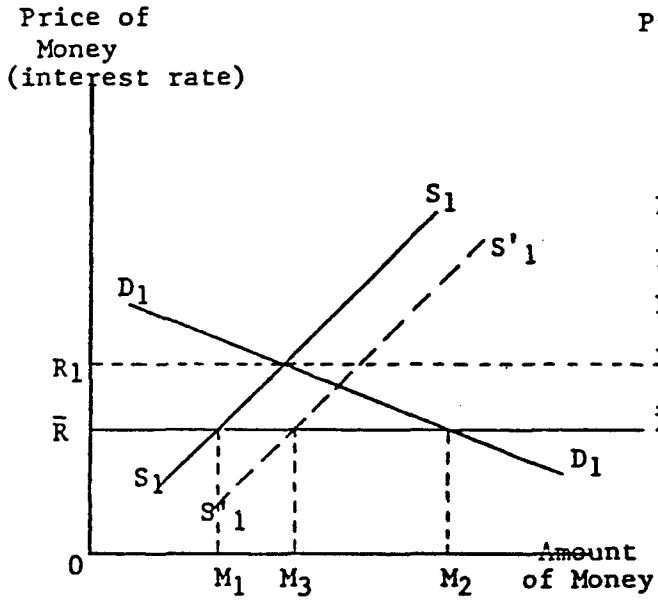
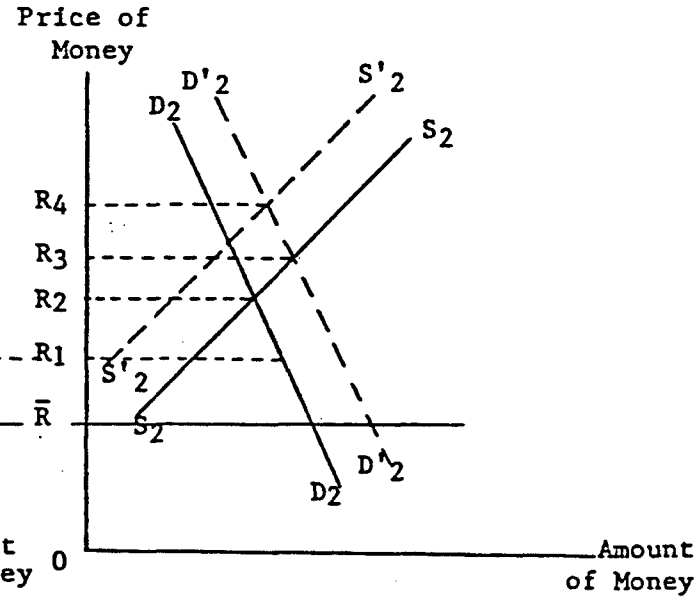


Figure 5.2

Unorganized Money Market



$0\bar{R}$ = maximum interest rate ceiling

Figure 5.2 shows the opposite. Here, borrowers possess less bargaining power and must take whatever is available. Their demand curve is thus inelastic (D_2D_2).

In addition, it can also be seen that the supply curve in Figure 5.1 (S_1S_1) is set at a much lower level than that of Figure 5.2 (S_2S_2). There are two major reasons for this: (1) lending to businesses in the unorganized money market is riskier, leading money lenders to demand a higher price for the same amount of money; (2) the cost of mobilizing funds in the unorganized money market is generally much higher.

Figure 5.2 shows that the unorganized market's less elastic demand curve, in conjunction with the higher supply curve, tend to reinforce each other; the result is a much higher market price or interest rate than obtained from the organized market as shown in Figure 5.1 ($OR_2 > OR_1$). Indeed, one can see quite clearly that the mere existence of market segmentation results in a higher interest rate in the unorganized money market versus the organized money market.

If we go one step further by introducing a maximum interest rate ceiling ($O\bar{R}$) in the organized money market at a level lower than the market rate of interest (OR_1), the result is that the actual interest rate differential between the two markets becomes even wider ($R_2\bar{R}$).

Furthermore, the demand for credit in the organized money market would not be fully met. The maximum interest rate ceiling could also have discouraged savings in the financial system as witnessed by the lower supply at the interest rate ceiling as compared to the market rate. The insufficient supply of funds in the organized money market at the maximum interest rate ceiling would lead borrowers in this market to turn to the unorganized money market to meet their unmet need for funds. This would lead to an increase in demand for funds in the unorganized money market. The demand curve in Figure 5.2 will therefore shift right (D_2D_2 ---> $D'_2D'_2$) and lead to a higher price for money in the unorganized money market (OR_3).

In addition, as the organized financial system becomes more developed and mobilizes more savings into the system through promotion, the supply curve in Figure 5.1 will shift right (S_1S_1 ---> $S'_1S'_1$) which may help to alleviate the excess demand in the organized money market (M_2M_3 < M_1M_2).[6] However, this will cause the supply curve in Figure 5.2 to shift left (S_2S_2 - $S'_2S'_2$), leading to a tighter supply of liquid funds and therefore a higher interest rate (OR_4) in the unorganized money market. In the end, the industries relying on the unorganized money market would be at a further disadvantage. Thus, under the above conditions, provincial industries would likely have to rely more on the unorganized money market.

Even with the introduction of measures to increase access to funds for small-scale provincial industries' in the organized money market (already mentioned in this chapter), it is likely that, because of the excess demand for funds in this market, they would not be able to get much credit. It is likely that commercial banks will practice credit rationing; in addition, commercial banks could even segment this group further into a separate market with some getting credit and some not getting any at all.

Various pieces of evidence seem to support such a view. Even very good investment projects are not supported by commercial banks if they do not have access to high bank officials or if they do not have sufficient collateral. It is well-known that credit is generally provided to the family businesses of bank officials or to the elite who have better access to bankers.

Finance Companies

The situation of finance companies clearly shows further financial system market segmentation. Given the maximum interest rate ceilings in the banking sector, finance companies began to emerge in the late

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6. This could come as authorities and banks promote fund mobilization (e.g., the establishment of new bank branches and the prohibition of fund mobilization by unrecognized or illegal sources).

sixties and the seventies, because there were no laws controlling finance company operations. Commercial banks also set up finance companies to get around the maximum interest rate ceilings. In fact, most of today's major finance companies are, in one way or the other, related to banks.

Finance companies are unlikely to have contributed much to provincial industrial development; in fact, most of them operate out of the Greater Bangkok Area (see Table 5.17).

5.4 SPECIALIZED INSTITUTIONS

In order to promote the development of industries in Thailand, the government has supported the establishment of a number of specialized financial institutions. The contribution of these institutions toward the development of provincial industries is reviewed in this section.

5.4.1 The Industrial Finance Corporation of Thailand (IFCT)

The Industrial Finance Corporation of Thailand is the country's only development finance institution and was established with the explicit objective of promoting the development of industry. It was originally set up in 1952 as a state enterprise under the name of The Industrial Bank.

However, from the outset, the bank faced serious operational problems, especially the inability to disperse available funds. This led the government to restructure the institution with help from the World Bank. A special charter was drawn up in 1959 privatizing the institution under a new name -- the Industrial Finance Corporation of Thailand.

The IFCT was mandated to promote the development of industry and the capital market. Because the domestic capital market was not at all developed at the time that the institution was established and because

of the shortage of domestic funds (especially long-term funds), the IFCT was designed to borrow funds from abroad to meet its lending requirements.

Initially, the IFCT relied mainly on multilateral organizations (such as the World Bank and the Asian Development Bank and concessional aid funds from various foreign governments) to meet all of its funding needs. Nevertheless, as the IFCT became more developed and its name known internationally, it began to borrow directly from international commercial sources because, in comparison to borrowing from multilateral agencies, it was both cheaper and less restrictive to do so.

From the onset, the main activity of the IFCT in support of local industry was the provision of long-term, fixed-rate loans on a project financing basis. Initially, the IFCT made no conscious effort to emphasize the promotion of provincial industries; indeed, most of its loans were in fact to industries in the Greater Bangkok Area (see Table 5.18).

However, IFCT began to pay attention to the issue of provincial industry in 1975 with the establishment of a regional office in Hat Yai, followed by the establishment of two other regional offices in Lampang and Khon Kaen in 1976. To coordinate the activities of the regional offices, the Regional Activities Development Center was established within the IFCT in 1979 and was upgraded into the Department of Branch Operations and Small Industries in 1984. In that same year, the three regional offices were upgraded to branch status. This was followed by the establishment of two other branches in 1985 (in Surat Thani and Phitsanulok) and another one at Nakhon Ratchasima in 1986.

Despite the establishment of provincial offices, the IFCT has not been able to lend more funds to regional areas except for the South (see Table 5.18); and although its share of loans to the Central Region has also increased, it should be noted that provinces in this region are served by the head office in Bangkok, not by the provincial offices.

Nevertheless, the IFCT does provide a larger proportion of its loans to provincial industries than do commercial banks (see Tables 5.7

and 5.18), although its credit outstanding in the financial system is still relatively small -- about 4-5 percent (see Table 5.19). However, it does play a dominant role in providing long-term fixed rate funds. Commercial banks, on the other hand, have not been actively providing term loans in the past and, even when they do, the loans are usually provided on a floating rate basis.

Lately, the IFCT has faced some serious problems regarding its future role. Although it has been able to mobilize baht funds in the past few years, it still relies largely on foreign currency loans. As a result of the increasing instability of the exchange rate throughout the world coupled with the baht devaluation in 1984, the IFCT is facing serious problems of exchange loss in its long-term loan portfolio.

This situation has resulted from the policy of past governments to shield industries from foreign exchange risks. To do this, the IFCT was called on to shoulder the risk. In return, the Ministry of Finance was supposed to help provide an interest-free loan to the IFCT covering any exchange-loss incurred. The loan was to be paid back as a fixed proportion of annual IFCT profits.

Furthermore, the IFCT was also to set aside a sum of money (equal to 1.6 percent of its foreign debt outstanding) every year into a pool for use in case of foreign exchange loss. As long as this pool is sufficient to cover losses, no assistance from the Ministry of Finance is required. Questions are now being raised, however, with regard to the desirability of such an agreement with the Ministry of Finance. Politicians have become reluctant to back any compensation scheme to IFCT to cover its exchange losses.

It seems quite clear, then, that the IFCT will find it increasingly difficult to mobilize funds from abroad. Furthermore, with the local capital market still quite underdeveloped, it seems that the mobilization of any substantial amount of local funds will also be difficult. Its future role therefore remains tenuous at this time.

5.4.2 The Small Industry Credit Guarantee Fund

In 1984, the government asked the IFCT to study the feasibility of establishing a fund that would guarantee funds borrowed by small-scale industries which had insufficient collateral to borrow funds from financial institutions. This finally culminated in the establishment of the Small Industry Credit Guarantee Fund (SICGF) in 1985 -- under management of the IFCT.

The SICGF was established with total funds of 200 million baht (100 million baht came from the Ministry of Finance, 60 million baht from 15 Thai commercial banks, 20 million baht from the state-owned Krung Thai Bank, and 20 million baht from the IFCT). In 1987, the SICGF received additional support from USAID in the amount of US$ 8 million. The SICGF provides guarantees only to small industries with fixed assets less than 10 million baht and to those seeking loans from commercial banks or the IFCT ranging from a minimum of 200,000 baht to a maximum of 5 million baht.

The amount to be guaranteed is normally at least 80 percent of the amount of the loan amount not backed by collateral. The guarantee would also cover the interest for the portion of the loan guaranteed by the SICGF. In return for the SICGF's guarantee, borrowers have to pay an annual fee of 1.5 percent of the guaranteed loan amount.

The conditions under which the USAID funds are loaned are more restrictive. These USAID funds will only cover those with fixed assets of less than 5 million baht and borrowings of not more than 2.5 million baht. Furthermore, USAID funds only cover industries outside of the Greater Bangkok Area.

Initially, the SICGF was inactive for two main reasons:

1. The SICGF management staff was quite cautious and conservative in its operations. In the beginning, it only targeted four provinces (Songkhla, Khon Kaen, Phitsanulok, and Kanchanaburi) as eligible to receive SICGF's service. However, with only a small number of projects

coming in, in May 1986, the SICGF decided to provide service to all provinces in the country.

2. Commercial banks were unable to provide the SICGF with projects. This was due to bankers' lack of experience in appraising project loans. In addition, they were unwilling to make any great effort to analyze small-scale projects, which would be costly to them. (The SICGF finally had to take over a large part of the analysis of projects from banks).

At this point, the real number of small-scale industries utilizing SICGF services is still small; however, if one considers the large population of these industries, the absolute number of projects receiving guarantees can be considered satisfactory.

By the end of December 1988, the SICGF had provided guarantees to 260 projects totaling baht 192.48 million and another 29 projects totaling baht 10.07 million with the USAID support component (see Tables 5.20 and 5.21). Greater Bangkok accounted for about one-fifth of the number and amount guaranteed.

Nevertheless, SICGF's future activities are still quite uncertain. With the huge excess liquidity of 1986-1987, commercial banks may have found it advantageous to lend to small-scale industries; however, now that it is forecast that money will become much tighter over the next few years, banks may slow down their lending to small-scale industries. SICGF's activity may therefore be unable to keep pace with expectations.

5.4.3 Small Industry Finance Office

The Small Industry Finance Office (SIFO) was set up in 1964 under the Department of Industrial Promotion, Ministry of Industry, to provide financing to small-scale and cottage industries. It was also mandated to provide assistance to these industries in management, marketing, finance, and production techniques.

Being a government agency, SIFO faced a number of operational problems -- management flexibility, inadequate human resources and skills, and the lack of financing. Furthermore, unlike financial institutions, it must rely entirely on budgetary appropriations.

SIFO emphasizes the promotion of small-scale industries, not necessarily provincial industries; nevertheless, SIFO has, in recent years, provided a more substantial portion of its credit to provincial industries (see Table 5.22). In addition, its share to provincial industries is more significant than the IFCT's share. However, the role of SIFO has declined (see Table 5.19), a major reason for which is its joint venture with the Krung Thai Bank (KTB), which proved problematic. KTB and SIFO set up a fund of 200 million baht: SIFO contributed 50 million baht from government funds and KTB contributed the rest. SIFO was only to lend directly to industries seeking loans in the amount of 300,000-500,000 baht while the joint fund with KTB was to be used to lend to industries requesting loans of 0.5-3 million baht. SIFO was to be responsible for appraising the feasibility of the project, while the KTB was to be responsible for appraising the collateral.

Initially, this cooperative effort worked well. As time went by, however, conflicts arose between the KTB and SIFO. The KTB charged that SIFO had not been careful in appraising loans, because a large number of the loans became problem accounts, while SIFO charged that the KTB was keeping all of the good projects for itself.

The actual result was a decline in their joint lending. SIFO finally withdrew about 23 million baht to lend on its own. However, because SIFO's lending is quite small (at less than half a million baht) it was not able to lend out much money.

5.5 A SYNTHESIS AND POLICY RECOMMENDATIONS

Although there are inherent biases against provincial industries in the branch banking system in Thailand, it is not possible to dismantle the existing system and start anew. More importantly, the branch

banking system does possess certain advantages that are more than able to compensate for its weaknesses.

A branch banking system could help to create a more stable and efficient financial system. Risks could be diversified across regions, while funds could be transferred to be most efficiently used throughout various regions. Furthermore, banks could also exploit the economies of scale that come from size.

The cost of regulating a branch banking system is also much less, although it should be recognized that under the present banking system the central bank has set up quite a cumbersome and costly system for allocating credit to certain sectors in the economy.

Despite what has been written above, the biases against provincial industries in the banking system are likely to be more a result of other factors than because it is a branch banking system. Indeed, the lack of sufficient competition among commercial banks could be a major explanatory factor.

Because there is a lack of competition, banks are not pressured to differentiate their products and client base. If there were sufficient competition, banks unable to compete for large urban clients, would likely turn to smaller-scale enterprises in provincial areas.

As long as banks are kept efficient through competitive pressure while authorities keep watch out for and monitor against fraudulent and unprofessional banking practices, the branch banking system could be both stable and efficient, while at the same time creating different market niches for banks. There need not be any conflict between the objectives of efficiency and stability.

What has actually materialized, however, is a system without competition dominated by a few large banks. In addition, these banks have been used as support bases for family businesses of bankers, exacerbating the problem of income distribution.

History has proven quite clearly that, despite the central bank policy to discourage competition among banks, the system has not turned out to be as stable as was thought. In fact, the central bank had to provide a large number and amount of soft loans to prop up many banks and finance companies in the first half of the eighties.

Related to the issue of competition is the central bank's interest rate policy -- its control of maximum interest rate ceilings on loans and deposits. Competition cannot be fully realized without allowing market forces to come fully into play. Interest rates should thus be freely determined by demand and supply. With flexible interest rates, banks will find it worthwhile to lend to smaller and riskier businesses, because they will be able to cover such costs by pricing their services higher. In short, banks will be better placed to play their role of intermediating and allocating risks.

Under such a market system, interest rates will play a major role in allocating financial resources to various economic sectors and regions. Provincial industries will be able to borrow on equal terms, given their level of risk and ability to bid for financial resources.

The first, best solution would therefore be for the monetary authorities to completely deregulate interest rates and do away with interest rate ceilings. Furthermore, they should see to it that there is no collusion among banks to fix prices. Competition should be actively encouraged.

To guard against any destabilizing bank failures due to competitive pressure, some sort of a deposit insurance scheme should be established. In addition, the central bank would also have to play a more active role than it has in the past in guarding and monitoring the system against unscrupulous banking practices.

With such a system in place, it would be possible to allow establishment of additional banks. This would help provide additional pressure against collusion within the banking system. In short, there should be free entry into and exit out of the system.

Nevertheless, there are a number of reasons for intervening in the market to allocate a certain amount of financial resources to a particular economic sector -- in this case, provincial industry.

1. The recommendation that the financial system be completely deregulated to make it competitive may not be feasible politically due to the power of existing commercial banks. In addition, politicians are unlikely to agree that higher interest rates be permitted for smaller and riskier enterprises (including provincial industries) than for larger and less risky enterprises; there has been a general tendency to equate industrial development with the provision of funds at below market interest rates.

2. Policy makers could have the objective of allocating a certain amount of funds to provincial industries.

3. It could be argued that the credit market for provincial industry has failed. This could be due to a lack of information about and understanding of this sector. The information costs may be too high and thus prohibit financial institutions from wanting to lend to this group.

Given the above reasons, there is a need to allocate some funds to provincial industry. Nevertheless, the existing system under the central bank (which is both ineffective and cumbersome) should be reformed.

The support given to provincial industry is provided under a number of separate measures as discussed in Section 5.2. Furthermore, there are so many details and incomprehensible conditions that it is difficult to keep track of the overall level of support actually given to provincial industries.

Another argument against the central bank's present allocation system is its reliance on commercial banks. It has been shown quite clearly that the rediscounting facility at the Bank of Thailand has not effectively reached small-scale provincial industries -- and

industries in general. Furthermore, the benefits have been highly concentrated.

It would be more effective if the central bank were to allocate a certain amount of money for small-scale provincial industries to be re-lent by a specialized financial institution with developmental objectives. In this case, there would be less opportunity to abuse the funds.

A number of existing institutions can do this, including the IFCT and SIFO. Nevertheless, there are certain disadvantages to their assuming this function:

1. The IFCT is involved in a number of other commercial activities besides small-scale provincial industry; thus, its concentration and emphasis on such industries would not be as strong.

2. The SIFO is a government agency and would not have the operational flexibility and efficiency that comes with a private enterprise.

An entirely different approach would be to set up a new financial institution catering specifically to small-scale provincial industries. However, the creation of such an institution would be difficult and costly.

A safer approach would be to set up the new institution as a spin-off of IFCT's small-scale industry operations in provincial areas. This would provide a strong and experienced human resource base from which the institution could build.

Another alternative would be to privatize the SIFO and make it its own legal entity. However, this option would be less desirable, because it would be difficult to actually restructure SIFO and make it free from bureaucratic procedures if the personnel base were to come from the government sector.

If such a specialized financial institution were established and interest rates allowed to float freely, there would also not be any further need for SICGF. However, if there were to be further control on interest rates, SICGF could be merged with this new institution.

In order to get around the problem of maximum interest rate ceilings on loans to provincial industries, this new institution could charge provincial industries a guarantee fee in addition to interest -- the level would depend on the risk level of the industry. The institution would be structured in such a way as to make it able to generate sufficient income to stand on its own feet. In the beginning, however, the institution would need funding support which could come from the central bank or the Ministry of Finance.

Table 5.1
Credit Extended by Financial Institutions
(Average of Outstanding Amounts at Year End: Percent of Total)

Financial Institutions	1963-67	1968-72	1973-77	1978-82	1983-87
Commercial banks	92.59	81.43	70.78	69.30	74.61
Finance companies	0.00	5.77	17.77	18.21	14.33
Life insurance companies	n.a.	1.27	0.84	0.83	1.16
Agricultural cooperatives	n.a.	1.89	1.76	1.42	0.88
Savings cooperatives	n.a.	1.57	1.17	1.34	2.05
Pawnshops	n.a.	1.58	0.99	0.74	0.62
Credit foncier companies	0.00	n.a.	0.53	0.66	0.41
Government Savings Bank	3.89	1.07	0.36	0.43	0.32
Bank of Agriculture and Agricultural Coop.	1.83	3.57	4.18	3.87	3.04
Industrial Finance Corporation of Thailand	0.86	1.20	1.05	1.04	1.01
Government Housing Bank	0.74	0.45	0.51	2.13	1.57
Small Industries Finance Office	0.09	0.20	0.06	0.03	0.00
Total	100.00	100.00	100.00	100.00	100.00

Source: Bank of Thailand

Table 5.2
Number of Banks and Their Offices

Year	Number of Banks			Number of Bank Offices 1/						
				Provincial					Greater Bangkok	Total
	Total	Domestic Banks	Branch of Foreign Banks	North	North East	South	Central	Total		
1888	1	-	1	-	-	-	-	-	1	1
1898	3	-	3	-	-	-	-	-	3	3
1908	5	2	3	-	-	-	-	-	5	5
1918	5	1	4	-	-	1	-	1	5	6
1928	7	1	6	1	-	1	-	2	7	9
1938	9	3	6	2	-	1	-	3	10	13
1948	18	11	7	8	2	10	4	24	23	47
1958	25	16	9	47	23	63	48	181	93	274
1968	29	16	13	86	69	100	95	350	218	568
1978	30	16	14	210	167	160	279	816	483	1299
1987	29	15	14	321	285	247	418	1271	745	2016

Note: 1/ Including Head Office

Source: Bank of Thailand

Table 5.3
Credit-to-Deposit Ratio by Region

Percent

Year	Provincial					Greater Bangkok	Whole Kingdom
	North	Northeast	South	Central	Total		
1969	56.2	51.2	49.6	41.4	48.9	96.0	85.8
1970	53.6	45.6	68.6	44.2	53.4	103.1	91.6
1971	50.7	39.2	53.1	46.2	47.7	96.9	85.0
1972	48.1	38.6	51.2	40.4	44.3	84.0	73.7
1973	51.5	43.8	55.8	42.1	48.0	98.7	85.1
1974	47.0	43.6	58.6	42.9	47.5	107.7	90.2
1975	54.4	50.4	44.3	48.6	49.4	111.2	92.2
1976	57.1	51.9	49.8	53.4	53.3	108.9	90.8
1977	71.4	66.1	56.4	65.3	65.2	107.9	93.9
1978	79.3	66.1	66.0	76.0	72.7	115.6	101.4
1979	80.6	70.0	73.4	77.9	76.1	130.8	112.4
1980	71.9	59.2	68.3	68.7	67.5	120.9	102.2
1981	74.8	68.8	68.2	65.7	69.1	115.3	98.8
1982	72.2	73.4	70.0	62.1	68.4	107.6	93.7
1983	81.6	88.6	75.8	72.1	78.6	111.0	99.5
1984	85.1	88.4	75.9	74.0	80.1	103.8	95.9
1985	85.5	82.4	70.2	68.8	76.0	104.0	94.5
1986	77.1	76.5	66.2	63.3	69.9	95.2	87.0
1987	74.6	77.1	68.5	62.4	69.6	99.1	90.0

Source: Bank of Thailand

Table 5.4
Share of Manufacturing Credit to Total Credit by Region

Percent

Year	North	Northeast	South	Other Region 3/	Whole Kingdom
1979	8.80	16.31	12.39	18.19	17.31
1980	9.72	15.23	14.04	19.34	18.35
1981	9.86	19.19	13.74	24.29	22.60
1982	8.32	17.67	9.20	23.15	21.15
1983	7.08	17.17	9.17	23.88	21.53
1984	7.30 1/	16.48	8.57	24.48	22.03
1985	7.97 2/	17.23	9.73	25.65	23.15
1986	8.92 2/	16.93	10.58	24.99	22.76
1987	9.98 2/	18.09	10.62	26.29	24.15

Notes: 1/ As of the end of October
2/ As of the end of November
3/ Including Greater Bangkok

Source: Bank of Thailand

Table 5.5
Growth Rate of Manufacturing Credit and Value-added
by Region: 1979-1986

Percent per Year

	North	North East	South	Other Region 1/	Whole Kingdom
Manufacturing credit	15.83	19.63	12.06	17.65	17.52
Manufacturing value added	6.16	5.60	7.13	11.49	10.93
Elasticity of credit/value added	2.57	3.51	1.69	1.54	1.60

Note: 1/ Including Greater Bangkok

Source: Bank of Thailand

Table 5.6
Commercial Banks' Compulsory
Agricultural and Rural Credit
(Percent of Deposit in Previous Year)

Year	Agriculture 1/	Agro-business	Total
1975 2/	5	-	5
1976	7	-	7
1977	9	-	9
1978	9	2	11
1979	11	2	13
1980	11	2	13
1981	11	2	13
1982	11	2	13
1983	11	2	13
1984	11	2	13
1985	11	2	13
1986	11	2	13
1987	14 3/	6	20

Notes: 1/ Excluding promissory notes discounted at the Bank of Thailand.
2/ The figure for 1975 is based on percent of credit extended in the previous year.
3/ Includes lending to small-scale industries in rural areas. (except those located at official industrial estates).

Source: Bank of Thailand

Table 5.7
Commercial Bank Credit Extended
to Greater Bangkok and Other Provinces

Percent

Year	Greater Bangkok	Provincial	Total Credits
1969	87.6	12.4	100.0
1970	86.5	13.5	100.0
1971	86.4	13.6	100.0
1972	84.5	15.5	100.0
1973	85.0	15.0	100.0
1974	84.7	15.3	100.0
1975	83.5	16.5	100.0
1976	80.9	19.1	100.0
1977	77.2	22.8	100.0
1978	76.2	33.8	100.0
1979	77.2	22.8	100.0
1980	76.8	23.2	100.0
1981	75.1	24.9	100.0
1982	74.1	25.9	100.0
1983	72.1	27.9	100.0
1984	72.2	27.8	100.0
1985	72.8	27.2	100.0
1986	73.9	26.1	100.0
1987	76.2	23.8	100.0

Source: Bank of Thailand

Table 5.8
Manufacturing Credit by Region

Percent

Year	North	Northeast	South	Central	Whole Kingdom
1979	2.95	3.78	3.22	90.05	100.00
1980	3.22	3.36	3.43	89.99	100.00
1981	2.88	4.14	2.83	90.15	100.00
1982	2.69	4.64	2.11	90.56	100.00
1983	2.32	5.10	2.10	90.48	100.00
1984	2.27 1/	4.70	1.88	91.15	100.00
1985	2.41 2/	4.53	1.98	91.08	100.00
1986	2.63 2/	4.35	2.20	90.82	100.00
1987	2.48 2/	3.06	2.01	91.45	100.00

Notes: 1/ As of the end of October
2/ As of the end of November

Source: Bank of Thailand

Table 5.9
Rediscounts of Promissory Notes Arising from Exports at Bank of Thailand Head by Type of Commodity, 1963-1987

Percent

Commodity	1963-72	1973-77	1978-82	1983-87
1.Agricultural Products	72.6	31.0	31.7	31.7
Rice	35.8	12.5	14.5	15.6
Maize	22.6	8.2	4.7	6.3
Rubber	3.6	2.8	3.8	2.3
Kenaf	4.3	1.4	0.2	0.3
Sea food	2.5	2.2	4.9	4.8
Beans	0.4	1.1	1.5	0.8
Sorghum	0.6	0.4	0.6	0.3
Wood	0.0	1.1	0.1	0.3
Coffee	0.0	0.0	0.0	0.3
Castor	1.3	0.5	0.3	0.2
Lac	0.0	0.4	0.1	0.1
Feather	0.0	0.1	0.3	0.2
Others	1.5	0.3	0.7	0.2
2.Manufacturing Products	23.1	65.5	61.8	55.7
Sugar	9.0	29.0	14.5	6.7
Tapioca Products	9.0	17.4	19.6	16.4
Jute & Kenaf products	0.5	1.4	1.0	0.6
Tobacco leaves	1.9	2.5	2.6	1.4
Cloth & Clothing	1.2	6.8	8.3	8.8
Molasses	0.1	2.7	1.0	0.6
Canned food & Frozen Meat	0.5	3.2	6.9	12.0
Wood Products	0.3	0.4	1.5	1.4
Aluminum Products	0.6	0.5	0.2	0.1
Iron Products	0.0	0.1	1.3	2.0
Precious Stones	0.0	0.2	1.4	2.0
Leather & Leather Products	0.0	0.0	0.5	1.2
Others	0.0	1.3	3.0	2.5
3.Others	4.3	3.5	6.5	12.6
Total	100.0	100.0	100.0	100.0

Source: Bank of Thailand

Table 5.10
Bills Discounted at the Bank of Thailand

Million Baht

Year	Exports	Industries	Small-Scale Industries	Total
1962	660.0	0.0	0.0	660.0
1963	551.4	0.5	0.0	551.9
1964	913.2	3.4	0.0	916.6
1965	850.7	25.8	0.0	876.5
1966	549.5	1,055.1	0.0	1,604.6
1967	848.5	1,461.0	0.0	2,309.5
1968	571.4	1,446.4	0.0	2,017.8
1969	632.1	2,081.3	0.0	2,713.4
1970	903.4	864.1	0.0	1,767.5
1971	1,742.4	1,518.4	0.0	3,260.8
1972	2,754.9	2,558.3	0.0	5,313.2
1973	3,160.1	2,546.0	0.0	5,706.1
1974	7,879.9	2,417.1	0.0	10,297.0
1975	10,465.8	4,741.6	0.0	15,207.4
1976	16,749.6	5,560.3	0.0	22,309.9
1977	19,858.0	7,037.2	0.0	26,895.2
1978	24,592.3	6,855.5	0.0	31,447.8
1979	39,164.5	7,298.3	0.0	46,462.8
1980	46,493.0	8,091.9	0.0	54,584.9
1981	56,890.1	5,062.8	0.0	61,952.9
1982	65,832.5	6,050.0	0.0	71,882.5
1983	77,234.3	3,784.3	0.0	81,018.6
1984	87,802.4	3,169.3	0.0	90,971.7
1985	89,168.2	2,027.9	0.0	91,196.1
1986	92,964.1	1,267.0	13.5	94,244.6
1987	78,240.5	1,225.4	38.0	79,503.9

Source: Bank of Thailand

Table 5.11
Share of Bills Discounted at The Bank of Thailand

Percent

Year	Exports	Industries	Small-Scale Industries	Total
1962	100.00	0.00	0.00	100.00
1963	99.55	0.45	0.00	100.00
1964	96.55	3.45	0.00	100.00
1965	74.15	25.85	0.00	100.00
1966	34.25	65.75	0.00	100.00
1967	36.74	63.26	0.00	100.00
1968	28.32	71.68	0.00	100.00
1969	23.30	76.70	0.00	100.00
1970	51.11	48.89	0.00	100.00
1971	53.43	46.57	0.00	100.00
1972	51.85	48.15	0.00	100.00
1973	55.38	44.62	0.00	100.00
1974	76.53	23.47	0.00	100.00
1975	68.82	31.18	0.00	100.00
1976	75.08	24.92	0.00	100.00
1977	73.83	26.17	0.00	100.00
1978	78.20	21.80	0.00	100.00
1979	84.29	15.71	0.00	100.00
1980	85.18	14.82	0.00	100.00
1981	91.83	8.17	0.00	100.00
1982	91.58	8.42	0.00	100.00
1983	95.33	4.67	0.00	100.00
1984	96.52	3.48	0.00	100.00
1985	97.78	2.22	0.00	100.00
1986	98.64	1.34	0.02	100.00
1987	98.41	1.54	0.05	100.00

Source: Bank of Thailand

Table 5.12
Bills Discounted at the Bank of Thailand's Head Office and Branches
(Percent of Value)

Year	Exports		Industries		Small Industries		Total	
	H.O.	Branches	H.O.	Branches	H.O.	Branches	H.O.	Branches
1962	100.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
1963	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1964	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1965	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1966	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1967	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1968	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1969	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1970	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1971	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1972	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1973	100.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00
1974	99.38	0.62	84.45	15.55	0.00	0.00	95.87	4.13
1975	99.26	0.74	93.02	6.97	0.00	0.00	97.32	2.68
1976	97.69	2.31	94.03	5.97	0.00	0.00	96.78	3.22
1977	96.41	3.59	95.28	4.72	0.00	0.00	96.11	3.89
1978	96.20	3.80	99.11	0.89	0.00	0.00	96.83	3.17
1979	93.95	6.05	99.04	0.96	0.00	0.00	94.75	5.25
1980	92.17	7.83	98.63	1.37	0.00	0.00	93.13	6.87
1981	94.43	5.57	97.70	2.30	0.00	0.00	94.70	5.30
1982	94.20	5.80	97.23	2.77	0.00	0.00	94.45	5.55
1983	92.35	7.65	95.39	4.61	0.00	0.00	92.49	7.51
1984	93.11	6.89	95.00	5.00	0.00	0.00	93.17	6.83
1985	91.78	8.22	91.52	8.48	0.00	0.00	91.78	8.22
1986	92.31	7.69	87.48	12.52	22.71	79.29	92.24	7.76
1987	90.62	9.38	92.26	7.74	22.12	77.88	90.61	9.39

Source: Bank of Thailand

Table 5.13
Interest Rate Ceiling of Commercial Banks

End of	Deposits					Loans and Overdrafts	
	Saving	Fixed					
		3-6 months	6-12 months	1-2 years	over 2 years	Priority Sectors	General Sectors
1962	-	6.00	8.00	7.00	7.00	12.00	15.00
1963	4.50	5.00	6.00	7.00	7.00	10.00	15.00
1964	4.50	5.00	6.00	7.00	7.00	10.00	15.00
1965	4.50	5.00	6.00	7.00	7.00	10.00	15.00
1966	3.50	5.00	6.00	7.00	7.00	9.00-12.00	14.00
1967	3.50	5.00	6.00	7.00	7.00	9.00-12.00	14.00
1968	3.50	5.00	6.00	7.00	7.00	9.00-12.00	14.00
1969	3.50	5.00	6.00	7.00	7.00	9.00-12.00	14.00
1970	3.50	5.00	6.00	7.00	7.00	9.00-12.00	14.00
1971	3.50	5.00	6.00	7.00	7.00	9.00-12.00	14.00
1972	3.50	5.00	6.00	7.00	7.00	8.50-11.50	14.00
1973	3.50	5.00	6.00	7.00	7.00	8.50-11.50	14.00
1974	4.50	6.00	7.00	8.00	8.00	12.50-15.00	15.00
1975	4.50	6.00	7.00	8.00	8.00	12.50-15.00	15.00
1976	4.50	6.00	7.00	8.00	8.00	12.50-15.00	15.00
1977	4.50	6.00	7.00	8.00	8.00	12.50-15.00	15.00
1978	4.50	6.00	7.00	8.00	8.00	12.50-15.00	15.00
1979	5.50	6.00	7.00	9.00	9.00	15.00	15.00
1980	8.00	9.00	10.00	12.00 1/	0.93 3/	18.00	18.00
1981	9.00	10.00	11.00	13.00 2/	14.00	19.00	19.00
1982	9.00	10.00	11.00	13.00 2/	14.00	19.00	19.00
1983	9.00	10.00	11.00	13.00 2/	14.00	17.50	17.50
1984	9.00	13.00	13.00	13.00	14.00	17.50	19.00
1985	8.00	13.00	13.00	13.00	14.00	17.50	19.00
1986	7.25	9.50	9.50	9.50	9.50	15.00	15.00
1987	7.25	9.50	9.50	9.50	9.50	15.00	15.00

Notes: 1/ For 1-3 year deposits
2/ For 1-2 year deposits
3/ For 3-5 year and greater than 5 year deposits respectively

Source: Bank of Thailand

Table 5.14
Interest Rate Ceiling of Finance Companies
(Percent per Annum)

At Year End	12-Month Borrowing Rate	Loan Rate
1980	15.00	20.00
1981	16.00	21.00
1982	16.00	21.00
1983	16.00	19.50
1984	16.00	21.00
1985	16.00	21.00
1986	13.50	18.50
1987	13.50	18.50
1988	13.50	18.50

Source: Bank of Thailand

Table 5.15
Minimum Equity to Risk Assets Ratio of Financial Institutions

Announcing Date	Effective Date	Minimum Equity /Risk Assets Ratio (Percent)
Commercial banks		
May 1,1962	May 1,1962	6.0
June 29,1970	October 1,1970	7.5
June 29,1970	October 1,1971	9.0
January 7,1980	February 1,1980	8.5
April 18,1983	May 1,1983	8.0
Finance companies		
July 4,1975	January 1,1976	2.0
	July 1,1976	3.5
	January 1,1977	5.0
December 9,1981	February 19,1982	5.0
	April 1,1982	6.0

Source: Bank of Thailand

Table 5.16
Interest Rates in the Unorganized Money Market, 1957-1982

Percent Per Month

Region	1957 1/	1962 2/	1967-8 2/	1971 2/	1971-2 3/	1972-3 2/	1981-2 4/
Central							
- L	n.a.	2.50	n.a.	n.a.	n.a.	n.a.	n.a.
- B	3.08	2.30	1.98	n.a.	1.62	n.a.	3.26
North							
- L	n.a.	3.80	n.a.	n.a.	n.a.	n.a.	n.a.
- B	n.a.	4.80	n.a.	3.73	2.53	n.a.	n.a.
Northeast							
- L	n.a.	5.40	n.a.	n.a.	n.a.	n.a.	n.a.
- B	n.a.	4.30	n.a.	n.a.	2.70	4.24	4.51

Notes: L = Information supplied by Lenders
B = Information supplied by Borrowers

1/ Median
2/ Weighted Average by Amount of Loans
3/ Simple Average
4/ Weighted Average by Number of Loan Agreements

Sources: 1957 Data from Uthis Narksawat, The Debt Burden of Farmers and Rice Trading in Central Thailand: 1957-1958, Agriculture Economic Department, Bangkok, 1958. pp. 53, 55-56.

1962 Data from Panthum Dissayamonton, Agricultural Credits in Thailand, 1962/63. pp. 40, 43.

1967-68 Data from Uthis Narksawat, Debt Burden and Rice Trading of Farmers in Central Thailand. pp. 92-93, 98 and 101.

1971 Data from Panthum Dissayamonton,Agricultural Credits in Northern Thailand: 1971/1972. p. 36.

1971-2 Data from The Ministry of Agriculture and Agricultural Cooperatives, Survey of Debts of Farmers in Thailand. p.9.

1972-3 Data from Panthum Dissayamonton, Agricultural Credits in Northeastern Thailand. p. 42.

1981-2 Data from Tangon Munjaiton, "Factors Affecting Variation in Interest Rate, Ph.d. Dissentation, University of Hawaii. pp. 109-110, 120.

Table 5.17
Offices of Finance Companies
(at End of June, 1988)

Year	Bangkok		Provincial		Total
	Head Offices	Branches	Head Offices	Branches	
Finance Companies	20	2	-	3	25
Finance and Securities Companies	68	4	14	19	105
Credit Foncier Companies	19	-	-	-	19
Securities Companies	11	-	-	-	11
Total	118	14	14	22	160

Source: Bank of Thailand

Table 5.18
Distribution of IFCT Long Term-Loan Approvals by Region
(Percent of Total)

Year	North	Northeast	South	Central	Greater Bangkok	Total
1960-1964	8.3	8.6	3.4	1.6	78.0	100.0
1965-1969	4.3	8.1	5.1	14.8	67.6	100.0
1970-1974	2.1	1.6	3.3	21.9	71.1	100.0
1975-1979	4.6	3.0	6.9	26.7	58.8	100.0
1980-1984	6.9	5.3	5.8	26.0	56.1	100.0
1985-1988	4.2	3.9	10.2	29.3	52.3	100.0

Source: The Industrial Finance Corporation of Thailand

Table 5.19
Market Share of Manufacturing Credit by Institution

Percent

Year	Commercial Banks	Finance Companies	SIFO	IFCT	Total
1980	70.09	24.09	0.18	5.64	100.00
1981	73.43	21.06	0.09	5.41	100.00
1982	72.29	22.41	0.06	5.24	100.00
1983	76.75	18.96	0.04	4.26	100.00
1984	78.97	16.46	0.03	4.54	100.00
1985	79.62	15.25	0.03	5.10	100.00
1986	79.91	14.95	0.03	5.11	100.00
1987	83.18	12.35	0.02	4.45	100.00

Source: Bank of Thailand

Table 5.20
SICGF Credit Guarantee Approvals by Region, 1986-1988

Million Baht

Region	1986		1987		1988		1986-1988	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
North	8	4.22	39	21.85	27	16.73	74	42.80
Northeast	2	1.07	14	6.09	21	17.50	37	24.66
South	3	1.26	22	14.44	26	26.34	51	42.04
Central	-	-	22	17.21	27	26.16	49	43.37
Greater Bangkok	3	1.90	21	17.33	25	20.37	49	39.61
Total	16	8.45	118	76.90	126	107.11	260	192.48

Source: The Small Industry Credit Guarantee Fund

Table 5.21
Distribution of SICGF's Credit Guarantee Approvals by Region
(Percent of Total)

Region	1986	1987	1988	1986-1988
North	49.94	28.42	15.62	22.24
Northeast	12.66	7.92	16.34	12.81
South	14.91	31.74	32.26	31.29
Central	-	9.41	16.76	13.08
Greater Bangkok	22.49	22.51	19.02	20.58
Total	100.00	100.00	100.00	100.00

Source: The Small Industry Credit Guarantee Fund

Table 5.22
Distribution of SIFO Loans by Region

Million Baht

Region	1979-1983		1984-1988	
	No. of Project	Amount	No. of Project	Amount
North	13	3,600	170	35,925
Northeast	5	2,600	130	28,150
South	2	550	41	5,925
Central	14	5,190	60	2,455
Greater Bangkok	24	14,600	62	30,210
Total	58	26,540	463	102,665

Source: The Small Industries Finance Office

CHAPTER 6

HUMAN RESOURCE DEVELOPMENT AND MINIMUM WAGE RATE POLICIES

In this chapter, the focus will be on the government's policy towards education, the educational system and the minimum wage rate policy. The government's investment in human capital -- like investment in public infrastructure -- is expected to have a positive effect on the level of industrial development, while a different price structure could discriminate against provincial industries.

Section 6.1 will review past educational policies and measures of the government with emphasis on the resulting biases in the distribution of such resources between Greater Bangkok and the other regions.

Section 6.2 will focus on the government's minimum wage rate policy and the potential bias against industrial development in the provincial areas.

Section 6.3 will attempt to synthesize the results from the study in order to offer policy recommendations that would support provincial industrial development.

6.1 THE DISTRIBUTION AND COST OF EDUCATION

6.1.1 Historical Development of Education in Thailand

Prior to the introduction of a formal educational system, temples were the providers of basic education in Thailand. In 1892, the government set up basic education schools in all temples in Bangkok and in the major cities. These schools provided four year courses separated

into two levels of two years each. In the same year, the government established the first teacher training school in the country.

The first formal educational program was drawn up by the government in 1898 modeled on the British system. However, compulsory education was not introduced into Thailand until 1921 with the promulgation of the Primary Education Act B.E. 2464. The Act emphasized the intention of the state to make basic education available to every Thai citizen.

With the introduction of the First National Economic Development Plan in 1960, elementary school education was extended from 4 years to 7 years, although compulsory education remained fixed at 4 years. In the case of secondary schools, the curriculum was separated into two levels of 3 years and 2 years, respectively.

The system was again changed in 1978 to comprise six years of elementary school education and six years of secondary school education, a system that remains intact today. This was followed by the Elementary School Act of 1980, which made it compulsory for children aged between 8-15 years to go to school until they have completed six years of elementary education.

During the 1960s and 1970s, the government was committed to extending compulsory education to the masses irrespective of geographical areas. This included the establishment of schools in remote areas to provide education to the rural population. As a result, the number of teacher training colleges increased significantly.

Other than the teacher training colleges, there were very few vocational colleges, especially in technical fields. In terms of the educational budget, vocational education received more emphasis in the mid-sixties to the mid-seventies (see Table 6.1). Since then, government policy do not seem to have given emphasis towards vocational training, as witnessed by the rapidly declining share of such expenditures in the education budget -- from about 14 percent in the early seventies to less than 7 percent in recent years.

Since the late 1970s more than half of the educational budget has been allocated to elementary education with secondary education generally receiving 15-20 percent. However, there seemed to have been an increase in the secondary school budget in the past decade. Higher education accounted for 13-14 percent of the educational budget in recent years, and there has been no clear increase in emphasis over the past two decades.

The country's first university - Chulalongkorn University - was established in Bangkok in 1916. This was followed by the establishment of a number of other state universities in Bangkok as shown in Table 6.2.

It was not until 1960 that the first regional university outside of Bangkok - Chiangmai University in the North - was established. This was followed by the establishment of Khon Kaen University in the Northeast in 1965 and Prince of Songkla University in the South in 1967.

Since then, no new state colleges or universities have been established in the regions outside of Greater Bangkok except for the Maejoe Institute of Agricultural Technology which was set up in the North in 1975.

6.1.2 The Distribution of Education

The literacy rate in Thailand continued to increase significantly with the introduction of national development plans -- from 71.3 percent in 1960 to 79.2 percent in 1970 and 88.8 percent in 1980 (see Table 6.3). Nevertheless, there remained discrepancies in such rates among regions and provinces. It was relatively low in the North and South with rates in 1980 of 82.5 percent and 84.3 percent, respectively, against 92.2 percent in Greater Bangkok.

Furthermore, a survey by the National Statistical Office in 1985 found that literacy levels were lower in rural areas as compared to

urban areas in all regions (the difference was least in the Central Region) (see Table 6.4).

It should be pointed out, however, that there are significant flaws in the calculation of the literacy rate, because it is based on the number of people who had attended 4 years of elementary schooling, instead of the number of people with the ability to actually read and write. This could be the reason why the use of literacy rates in Chapter 4 as one of the explanatory variables in the regression model did not yield satisfactory results. It is very likely that the literacy rates in all regions are overstated. However, those in the rural areas are likely to be overstated to a larger degree than those in the urban areas, especially Greater Bangkok.

Looking at the distribution of public primary education, it was found that the government had been quite successful in extending such services to the provincial areas. While the number of primary schools per 1,000 school-age population in Greater Bangkok was less than 1 in 1988, it was greater than 4 in all the other regions (see Table 6.5). In terms of the number of primary school teachers per 1,000 school-age population, there were more than 40 for the provincial areas, compared to fewer than 20 for Greater Bangkok (see Table 6.6).

There are several reasons why the numbers were lower in Greater Bangkok. First, the fixed overhead which would have to be incurred by the government is greater in the provincial areas because the population in these areas is sparsely distributed over wide areas. This is supported by statistics in Tables 6.7 and 6.8 which show that the number of students and teachers in a primary school is on average much higher in Greater Bangkok than in the other regions.

Second, there is likely to be greater participation in education by the private sector in Greater Bangkok as compared to the provincial areas. Although statistics in Tables 6.9 and 6.10 include both private primary and secondary schools, they clearly show that private schools are more prevalent in Greater Bangkok. This was also supported

by the much lower percentage of the school-age population in Greater Bangkok attending public primary schools (see Table 6.11).

The government's commitment towards providing secondary education to the masses in the provincial areas seems to have been much less than the primary school level. There was not much difference between Greater Bangkok and the other regions with respect to the number of public secondary schools per 1,000 school-age population (see Table 6.5). In fact, the number of public secondary school teachers per 1,000 school-age population was clearly higher in Greater Bangkok as compared to the other regions (see Table 6.6).

This was also true of the percentage of school-age population attending public secondary schools, which was higher in Greater Bangkok than in the other regions (see Table 6.11). Nevertheless, the higher figure in Greater Bangkok could partly be due to the fact that many families in the provincial areas send their children to attend schools in Bangkok, given the perception that the quality of education is higher in the capital. This could partly explain the much higher percentage of school-age population in private schools in Greater Bangkok (see Table 6.12).

Notwithstanding the above, public primary and secondary school statistics in Table 6.13 show that the average number of students per teacher was relatively similar for all geographical regions. This is probably because of a conscious effort by the government to provide equal educational opportunity to all regions. There is widespread belief, however, that despite the apparent attempt by the government to provide elementary education to everyone, the quality of education is higher in Bangkok.

In the case of higher education, it is quite clear that resources have been distributed unequally between Greater Bangkok and the other regions as shown in Table 6.2. Not only are there many more universities and colleges in Greater Bangkok, the capacity to produce graduates is also much larger.

The statistics in Table 6.14 show quite clearly that the number of students who managed to pass the state university entrance examination were mainly from Greater Bangkok -- 9,020 out a total of 15,299 entrants in the 1986-87 school year.

The difference was even more significant if measured in relative terms against the population. Utilizing a population base of one million persons, there were 1,091 students from Greater Bangkok who passed the university entrance examination against 204, 172, 110 and 74 students from the Central, Southern, Northern and Northeastern Regions, respectively (see Table 6.15).

6.1.3 The Cost and Control of Education

Educational fees in Thailand are strictly controlled by the government through the legal power granted it. This applies equally to private schools and colleges. Because such fees have been set very low over a long period of time, the government continues to shoulder a large part of the educational cost through subsidies from the educational budget. Although such strict control may be desirable to guarantee equal access to education for the masses in the early stages, it has now resulted in a number of undesirable side effects.

One widely known effect is the exacerbation of the problem of unequal distribution of income. The higher income groups in society, especially in Bangkok, have gained relatively more from the educational subsidies provided by the government than the poor -- that is, for education above the primary school level.

The control of school fees has resulted in a system whereby many reputable private schools now charge lump-sum entrance fees covered up in the form of donations. Because the poorer masses are less likely to have sufficiently large savings to pay for such donations, their chances of sending their children to reputable private schools, where quality is thought to be higher, are much less.

In a system where school fees are not controlled, the poor may still be at a disadvantage to send their children to reputable schools. However, because a large lump-sum payment is not required, they may be in a better position, especially if scholarships are also provided to the needy.

Because most good schools and universities are located in Bangkok, it is more costly for the regional population to get access to the same quality of education as those in Bangkok.

It is also widely known that students in state universities generally come from well-off families. Because the state heavily subsidizes higher education, it has indirectly contributed to the unequal distribution of income in society.

Another undesirable effect of the control of educational fees is likely to be the under-investment in education by the private sector. Having to rely on low school fees makes it difficult for private institutions to invest in facilities, equipment and the upgrading of teaching skills.

In addition to controlling educational fees, the government also exercises a tight grip in other areas, such as the establishment of new educational institutions, the setting of educational curricula, etc.

In spite of such control, it is questionable whether the government has been able to sufficiently and effectively supply the manpower needs of the economy. For example, it is now widely known that there are serious shortages of well-educated workers, such as engineers, technicians, scientists, bankers, financial analysts, etc. In contrast, the rapid decline in the population growth rate of the past decade has now resulted in an oversupply of primary school teachers.

With its bureaucratic structure, it is only natural that the government does not have the flexibility to respond quickly enough to such changes as compared to the private sector.

6.2 THE MINIMUM WAGE RATE POLICY

According to the Heckscher-Ohlin Theory, a region with a greater endowment of labor will have a relatively lower wage rate, which will result in the region possessing a comparative advantage in the production of labor-intensive goods. The theory is based on the assumption that factor prices are determined by market forces through demand and supply.

However, in the real world, the actual wage rate can turn out to be quite different from the market wage rate. This is likely to happen when the government steps in to introduce a legal minimum wage rate.

Since a legal minimum wage rate policy raises the actual wage rate of a region, the comparative advantage which that region is supposed to possess in terms of labor-intensive industries may no longer hold. This distortion can lead to an inefficient utilization of resources and slow down the development of the region. Because Thailand has introduced legal minimum wage rates since 1973 and because such wage rates have been set at different levels for different regions, it is possible that the measure could have distorted the industrialization process of each region -- in addition to distorting the comparative advantage of the country against other countries.

Given the above reasoning, the objective of this section is to investigate the Thai government's minimum wage rate policy in order to see whether such a policy could create biases towards the development of provincial industries.

6.2.1 History of Legal Minimum Wage Rates in Thailand

A legal minimum wage rate was introduced in Thailand on 14 February 1973. Initially, the minimum wage rate was made compulsory for only four provinces: Bangkok, Samut Prakan, Nonthaburi, and Pathum Thani. The wage rates for these provinces were set at the same level of 12 baht

per day. In June 1974, the Greater Bangkok Area was covered through by the addition of two additional provinces -- Samut Sakhon and Nakhon Pathom.

In addition, since October 1974, the legal minimum wage rate policy has been expanded to cover the whole country. Under the system utilized until 1981, there were three tiers of minimum wage rates, depending on the region (see Table 6.16). The minimum wage rate for Greater Bangkok was set at levels which were 7 baht per day higher than those in the Central and Southern regions, and 9-10 baht per day higher than those in the Northern and Northeastern regions.[1]

In October 1981, there was another significant change in the minimum wage rate system. Although Greater Bangkok remained as a separate group, there was a reclassification of each of the other regions into two separate groups. One group makes up the more developed or major provinces, while the other group consists of the remaining provinces, or the "other provinces" group.

The major provinces include Chiangmai in the North; Nakhon Ratchasima in the Northeast; Saraburi and Chon Buri in the Central Region; and Ranong, Phangnga and Phuket in the South.

Initially, the wage levels in these major provinces were set at the same level as Greater Bangkok. Since October 1982, it has been lower than Greater Bangkok. It is now 70 baht per day against 78 baht per day for Greater Bangkok.

However, the minimum wage rate in the major provinces of the South since 1982 has been higher than the major provinces in other regions and it is presently only 3 baht (3.8 percent) lower than the wage rate in Greater Bangkok. Furthermore, the minimum wage rates for major

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1. Although initially four provinces in the Northeast -- Nakhon Ratchasima, Udon Thani, Khon Kaen and Ubon Ratchathani -- were included in the same group as that of the Central and Southern provinces, they were separated out and placed back into the same group as other Northeastern provinces in 1977.

provinces in the South have been set at the same level as Bangkok for a much longer period -- from 1 October 1981 to 1 April 1987.

As for the "other provinces" in the four regions of the country, a new uniform minimum wage level has been introduced since 1981 and is presently 13 baht (16.7 percent) lower than in Greater Bangkok.

A tripartite Wage Committee consisting of Labor Department officials, representatives of employers and representatives of employees would meet each year to negotiate for a legal minimum wage rate to be used in the following year. In 1989, three independent members were added to the Wage Committee, while the three original parties each reduced their representation from five to four members. Some major factors considered in setting the wage levels include the cost of living, employers' ability to pay, the employment situation, economic conditions, and the impact on investment.

However, the final say for the legal minimum wage rate rests mainly with the Ministry of Interior. In practice, if there were disagreements in 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.

6.2.2 Change in Real Minimum Wage Rates

Minimum wage levels increased most significantly during the 1979-1982 period, probably due to the high inflation rate during this time (see Tables 6.16 - 6.19). It has been increasing at a slower pace during the eighties -- that is, until the last change which became effective in April 1989.

The changes in minimum wage levels for all regions over time seem to have quite similar patterns, that is, they have more or less moved in parallel--except for the major provinces in the four regions, whose wage levels jumped significantly in October 1982 when they were raised to the same level as Greater Bangkok.

Because the cost of living in Greater Bangkok is likely to be much greater than in other provinces, the setting of legal minimum wage rates in the outlying provinces at levels similar to Greater Bangkok could have made it difficult for these provinces to take advantage of their lower labor costs. This is brought out clearly if we look at the real minimum wage rates for each region deflated by the consumer price indices. The results show that there were certain periods when the real minimum wage rates in the major provinces have been higher than Greater Bangkok (see Table 6.17). This is particularly true for major Southern provinces including Ranong, Phangnga and Phuket, which since 1 October 1981 have had higher real minimum wage rates than Bangkok, although the difference has lessened in recent years.[2]

The higher real minimum wage rates of these major provinces as compared to Greater Bangkok during certain periods seemed to have been the result of setting nominal minimum wage levels in these provinces at the same or similar levels with Greater Bangkok without adequately considering differences in inflation between these provinces.

It is also noteworthy to point out that real legal minimum wage levels did not show a declining trend in any regions (i.e. the setting of minimum wage rates have been able to match inflation). Nevertheless, the real wage rates of all regions increased at a rather slow pace in the 1980s in contrast to the 1970s, which is probably a reflection of the low economic growth during the earlier part of the decade.

Although the real legal minimum wage rates in the provincial areas have not been much lower than in the Greater Bangkok Area, the per-capita income of the provincial areas have been very much lower. For example, in 1986, the lowest real minimum wage rate was in the Northeast at about 88 percent of the level in Greater Bangkok. This is in stark

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2. It should be pointed out that the comparison of real minimum wage rates among regions may be somewhat misleading due to the differences in the cost of living and consumption patterns among regions. Nevertheless, the use of changes in real minimum wage rates may be acceptable.

contrast to the Northeast's per-capita income, which was only about 15 percent of the level in Greater Bangkok (see Tables 6.18 - 6.19).

Although the per-capita income figures may be somewhat distorted as a large part of the income accounted for in the Greater Bangkok Area may have been produced by the other regions, it is still very likely that income levels in the Northeast are much lower than the 88 percent figure shown by the minimum wage rate levels.

A comparison of the increase in real legal minimum wage rates to the increase in real per capita Gross Domestic Product of each region in Table 6.20 tells us that real minimum wage rates have increased at a faster pace than has the real per-capita Gross Domestic Product in regions outside of Greater Bangkok. The opposite is true for the Greater Bangkok Region.

This is another serious bias against development of the provinces. While the income levels of these provinces have been rising more slowly than in Greater Bangkok, the authorities have raised their real legal minimum wage level by more than that of Greater Bangkok. This is likely to make these provinces lose the comparative advantage -- in terms of cheaper labor -- that they should possess over Greater Bangkok.

6.2.3 Potential Biases Against Provincial Industries

It can be seen from the above discussion that wage levels in the provincial areas have not been set at levels which are significantly different from Greater Bangkok, especially if one considers the much lower income levels in the provincial areas. In addition, real wage levels based on 1976 prices in certain areas were found to be higher than in Greater Bangkok. It is therefore possible that the comparative advantage of provincial areas in terms of labor-intensive industries could have been diminished through the setting of minimum wage levels.

A number of conditions have to be met in order for the legal minimum wage rates to be effective in practice.

First, the legal minimum wage must be set at a level which is actually higher than the market wage level. Although market wage figures in Thailand are difficult to find and may not be accurate, the figures in Table 6.21 show that only in the North and Northeast were the legal minimum wage rates set at higher levels than the actual wage rates. There could thus be distortions in the North and Northeast from the minimum wage policy for those enterprises that strictly follow the law.

Second, employers and employees are ready to adhere to the minimum wage policy. The existence of actual wage rates in the North and Northeast that are lower than the legal minimum wage levels seems to imply that the minimum wage policy is ineffective, because employers were actually paying wages below the levels set by the law.

Although it is highly likely that small enterprises will pay wages lower than minimum wage levels, larger enterprises will find it more difficult to escape notice and are more likely to adhere to the policy. This would tend to reduce the comparative advantage of larger-scale, labor-intensive industries in the provincial areas.

Surveys conducted by the Department of Labor and the Bank of Thailand found that large firms in all regions, in addition to paying higher wages than smaller firms, pay wages that are higher than the legal minimum wage rates (see Table 6.22). Only the wages of small firms in the Central, Northern and Northeastern Regions, and of medium size firms in the Northeastern Region, were found to be anywhere near the legal minimum wage rates. All the others had much higher actual wage rates. This seems to imply that the distortion from legal minimum wage rates may not be large in the past.

Third, the relative market wage rates among the regions are different from the relative legal minimum wage rates. If such relative legal wage rates were more or less similar to relative market wage rates, there may not be biases against provincial industrial development, although it could affect Thailand's comparative advantage with other countries. In Tables 6.23 and 6.24, it can be seen quite

clearly that -- compared to Greater Bangkok -- the actual relative wages of the other regions are much lower than the legal relative minimum wage rates of these regions. The difference is especially great in the North and Northeast. This again points out the biases of legal minimum wage rates against provincial industrial development, particularly in labor-intensive industries.

6.3 A SYNTHESIS AND POLICY RECOMMENDATIONS

Despite whatever changes have taken place, the educational system in Thailand remains tightly controlled. Although this may be desirable in the early stages of development in order to guarantee the availability and standardize the quality of education to the masses, the system may have to be modified to better meet the future development needs of the Thai economy when manpower requirements are expected to become more complex.

As was pointed out in Section 6.1, the present system seems to have exacerbated the problem of income distribution in the country. Furthermore, Greater Bangkok has gained more than the provincial areas from past and present government educational subsidies for education above the primary school level.

Because the country has now reached a stage of development where there are clearly defined markets for education in the more developed areas, the need to subsidize education is no longer as great as in the past. In addition, the private sector has increasingly been able to strengthen its role in this area, especially in Bangkok.

Based on the most recent figures in 1986, the private sector was able to produce 12.2 percent of graduates at all levels of education (see Table 6.25). The strength seemed to be greatest in the area where the government is weakest -- that is, in vocational education, where the private sector managed to produce 44.8 percent of the graduates in the country.

However, the private sector is also strong in higher education, accounting for 23 percent of the total graduates in 1986, although it only accounted for 8.1 percent of pre-primary and primary school graduates.

Nevertheless, if only Bangkok was considered, the private sector seemed to be strong in most areas. In 1984, it accounted for up to 40 percent of the graduates from pre-primary and primary schools; 75.7 percent of all vocational graduates; and 37.8 percent of all higher education graduates (see Table 6.26).

It may therefore be desirable for the government to liberalize the educational system and become less directly involved in the provision of such services, except for areas outside Greater Bangkok where the private sector is still weak. In the more developed areas, it should retain mainly a regulatory role.

One area which should be liberalized is the setting of educational fees. In order to reduce the inequity created by the present system, whereby the rich seem to have gained more from the educational subsidies than the poor, educational fees should be floated. If subsidies are to be given to the poor, it should be in the form of a direct grant to them instead of an artificially low educational fee.

In addition, the educational subsidies to be provided should be implemented in a more selective way and targeted towards those who are in greatest need.

As for the rich, they must be made to pay for the full cost of their children's education. An alternative approach would be to introduce an educational tax levied on those who had gained most from educational subsidies provided by the government. The subsidy savings resulting from the floating of educational fees should help to increase the government's ability to extend education more widely to the poor, especially those in the provincial areas. It should also help to promote public and private investment in education.

However, care should be taken to float the educational fees in a gradual manner in order to reduce political resistance to such liberalization. It may also be desirable to start with higher education, because it is confined to a much smaller group of people who are generally better off than the masses.

With the liberalization of educational fees, the private sector could be relied on to play an increasing role in the educational sector, especially in areas where direct government support is no longer needed. This should help to economize public resources, which could be utilized to develop education in more backward provincial areas.

Serious thought should also be given to the privatization of state universities. These institutions should be made to stand on their own feet instead of relying on government subsidies. Not only would this reduce the government's financial burden, it would also help to enhance the efficiency of such institutions and make them better cope with the rapidly changing needs of society.

Privatization of state universities should also help to reverse the brain drain from such institutions, which have acted to constrain the country's capacity and capability to produce the high quality manpower that Thailand will need in the future.

In short, the government should increasingly rely on market forces and competition to improve the educational system. This would help to relieve the government's burden in areas that no longer require public sector support and free it to pursue areas that are in greater need of attention.

One natural area would be to extend and improve the quality of education in provincial areas. Now that the population growth rate has dropped significantly and the economy is moving towards a more advanced stage, increased emphasis must be placed on the raising of educational standards.

In order to increase the pool of quality manpower, the government should try to tackle more effectively the significant drop in students at the secondary school level (see Tables 6.27 and 6.28). In 1987, fewer than a third of school-age children attended secondary schools in the provincial areas. Greater Bangkok was only a little better, with 47 percent of the school-age population attending secondary schools.

In the area of higher education, the government should promote the establishment of new colleges and universities outside of Greater Bangkok in order to increase the provincial population's access to education. In fact, it may consider banning new state universities or colleges in Greater Bangkok in order to reverse the bias of the past.

The above action should indirectly benefit provincial industries, as it would create a local market demand for goods and services in these areas. Successful examples of such cases include the existing regional universities, which have helped to generate demand in their respective locations. To directly help provincial industries, the government should emphasize the provision of technical assistance to local entrepreneurs in the form of training programs and relevant information.

In the case of labor, the approach should not be towards artificially raising income through the setting of legal minimum wage rates. Rather, the government should attempt to upgrade labor skills through training programs and through incentives to promote private sector participation in the upgrading of labor skills. Higher labor skills will cause wage rates to rise automatically.

There is a definite need to get rid of minimum wage rates especially in provincial areas, because they were found to be a potential obstacle to the development of provincial industries.

Table 6.1
Structure of the Educational Budget

Percent

Year	Adminis-tration	Elementary Education	Secondary Education	Higher Education	Vocational Education	Library and Museum	Other	Total
1960	6.3	56.6	13.5	6.7	10.5	1.0	5.4	100.0
1961	13.2	52.7	14.2	7.4	9.9	1.6	0.9	100.0
1962	13.6	51.0	15.1	7.6	10.1	1.3	1.2	100.0
1963	12.0	50.8	15.3	9.4	9.6	2.8 1/	NA	100.0
1964	8.8	56.3	8.7	11.7	11.4	3.1 1/	NA	100.0
1965	7.9	56.9	8.4	11.8	11.9	2.5	0.6	100.0
1966	8.9	54.9	8.6	14.5	11.2	1.3	0.7	100.0
1967	7.5	51.4	10.0	15.1	14.4	1.0	0.7	100.0
1968	6.4	50.9	9.5	16.0	14.8	1.0	1.4	100.0
1969	5.3	53.7	9.0	13.0	16.7	0.9	1.4	100.0
1970	5.6	55.7	10.3	12.8	14.1	0.9	0.7	100.0
1971	5.0	54.9	10.5	13.7	13.9	0.9	1.2	100.0
1972	5.5	55.2	10.8	12.4	14.4	0.9	0.9	100.0
1973	5.1	54.8	11.5	12.7	14.3	1.1	0.5	100.0
1974	5.4	54.1	11.4	13.5	13.8	1.0	0.9	100.0
1975	5.7	54.3	12.8	12.2	13.0	1.2	0.8	100.0
1976	4.6	56.6	12.3	14.2	10.0	1.3	0.9	100.0
1977	4.2	56.6	13.4	12.9	10.9	1.3	0.8	100.0
1978	4.1	53.9	16.8	12.9	9.9	1.4	0.9	100.0
1979	4.5	53.2	16.5	13.6	9.9	1.5	0.8	100.0
1980	4.6	53.6	15.9	13.7	9.4	2.0	0.8	100.0
1981	4.1	54.3	16.0	13.5	9.5	1.8	0.8	100.0
1982	5.0	53.8	16.5	12.1	9.7	1.9	0.9	100.0
1983	4.7	55.2	16.1	12.1	9.3	1.7	1.0	100.0
1984	1.7	56.2	18.5	11.7	9.3	1.8	0.8	100.0
1985	1.7	57.1	19.0	10.4	9.3	1.9	0.6	100.0
1986	1.7	57.4	18.9	10.7	8.9	1.8	0.5	100.0
1987	1.7	57.8	18.9	12.2	6.9	1.8	0.6	100.0
1988	1.7	57.3	19.0	12.7	6.8	1.8	0.7	100.0
1989	1.9	56.4	19.0	13.4	6.7	1.9	0.8	100.0
1990	2.1	55.4	19.4	13.9	6.6	2.0	0.7	100.0

Note: 1/ Including other budget.

Source: Budget Bureau, Ministry of Finance.

Table 6.2
Public Universities and Their Graduates

Institution	Year of Establishment	Graduates* 1985
Greater Bangkok		
1 Chulalongkorn University	1916	2866 (1116)
2 Thammasat University	1933	1868 (367)
3 Kasetsart University	1943	1674 (517)
4 Silpakorn University	1943	508 (12)
5 National Institute of Development and Administration	1966	- (265)
6 Mahidol University	1969	1201 (826)
7 Ramkhamhaeng University	1971	
8 King Mongkut's Institute of Technology Thonburi	1971	
9 King Mongkut's Institute of Technology Lartkrabang	1971	623 (68)
10 King Mongkut's Institute of Technology North Bangkok	1971	18570 (-)
11 Sukhotthaithammathirat Open University	1978	2355 (-)
North		
1 Chiangmai University	1960	2159 (90)
2 Maejoe Institute of Agricultural Technology	1975	7805 (-)
Northeast		
1 Khonkaen University	1965	960 (49)
South		
1 Prince of Songkhla University	1967	1513 (70)
Nationwide		
1 Srinakharinwirot University	1974	7612 (398)

Note: * Graduates figures show those who completed their bachelor's degrees while figures in parenthesis are those who completed their master's and doctoral degrees.

Source: Ministry of University Affairs

Table 6.3
Literacy Rate
(Percent of Population over 10 Years old)

Region	1960	1970	1980
Greater Bangkok	73.4	83.1	92.2
Central	76.5	85.8	89.5
North	60.9	62.5	82.5
Northeast	75.4	85.7	92.3
South	66.5	75.4	84.3
Kingdom	71.3	79.2	88.8

Source: National Statistical Office, Population and Housing Censuses of 1960, 1970 and 1980.

Table 6.4
Literacy Rates of Urban and Rural Areas
(Percent of Population over 7 Years old)

Region	Municipal Area	Non-Municipal Area	Total
Bangkok Metropolis	92.7	-	92.7
Central*	90.4	88.6	88.8
North	91.9	84.7	85.3
Northeast	92.5	88.6	88.8
South	88.4	80.9	81.8
Kingdom	91.9	86.7	87.7

Note: * Including Pathumthani, Nontaburi, Samut Prakarn, Samut Sakhon and Nakhon Pathom.

Source: National Statistical Office, Survey of Literacy Rate 1985.

Table 6.5
Average Ratio of Number of Public Schools to School-Age Population

Schools per 1,000 Persons

Region	1984	1985	1986	1987	1988
Primary Schools					
Greater Bangkok	1.015	0.992	0.931	0.908	0.875
Central	4.649	4.455	4.480	4.171	4.432
North	5.016	5.658	6.080	5.983	6.009
Northeast	4.142	4.140	4.252	4.311	4.373
South	4.343	4.298	4.332	4.287	4.227
Whole Kingdom	4.045	4.104	4.204	4.131	4.173
Secondary Schools					
Greater Bangkok	0.200	0.202	0.204	0.205	0.204
Central	0.266	0.269	0.283	0.289	0.287
North	0.231	0.231	0.264	0.274	0.272
Northeast	0.184	0.190	0.198	0.181	0.196
South	0.268	0.275	0.282	0.282	0.254
Whole Kingdom	0.220	0.224	0.236	0.232	0.255

Sources: Office of the National Primary Education Commission;
Secondary Education Division, Department of General Education,
Ministry of Education, and National Statistical Office.

Table 6.6
Average Ratio of Number of Teachers in Public Schools
to School-Age Population

Teachers per 1,000 Persons

Region	1984	1985	1986	1987	1988
Primary Schools					
Greater Bangkok	18.728	18.421	17.541	16.707	16.110
Central	49.940	48.195	47.762	48.182	46.590
North	56.453	57.195	57.190	57.608	57.420
Northeast	43.045	45.135	45.616	46.382	47.647
South	48.639	45.967	45.945	47.649	47.069
Whole Kingdom	44.482	44.686	44.534	44.951	44.831
Secondary Schools					
Greater Bangkok	20.445	20.988	21.684	22.065	22.501
Central	13.108	12.772	13.517	13.798	14.120
North	10.299	10.814	11.453	11.749	12.158
Northeast	10.352	9.264	9.301	9.257	9.242
South	13.449	13.459	13.988	14.037	12.894
Whole Kingdom	12.530	12.200	12.596	12.719	13.925

Sources: Office of the National Primary Education Commission;
Secondary Education Division, Department of General Education,

Table 6.7
Average Number of Students per Public School

Region	1984	1985	1986	1987	1988
Primary Schools					
Greater Bangkok	356	361 *	331	337	376
Central	186	195 *	179	201	202
North	192	171 *	151	153	171
Northeast	209	217 *	214	208	234
South	206	196 *	195	193	224
Whole Kingdom	205	203 *	192	195	215
Secondary Schools					
Greater Bangkok	1,795	1,845	1,868	1,861	1,859
Central	851	852	843	801	803
North	801	809	741	711	729
Northeast	968	955	834	846	761
South	907	862	766	801	785
Whole Kingdom	998	993	919	914	888

Note: * Including pre-primary schools

Sources: Office of the National Primary Education Commission;
Secondary Education Division, Department of General Education,
Ministry of Education, and National Statistical Office.

Table 6.8
Average Number of Teachers per Public School

Region	1984	1985	1986	1987	1988
Primary Schools					
Greater Bangkok	18	19 *	19	18	18
Central	11	11 *	11	12	11
North	11	10 *	9	10	10
Northeast	10	11 *	11	11	11
South	11	11 *	11	11	11
Whole Kingdom	11	11 *	11	11	11
Secondary Schools					
Greater Bangkok	102	104	106	107	110
Central	49	47	48	48	49
North	45	47	43	43	45
Northeast	56	49	47	51	47
South	50	49	50	50	51
Whole Kingdom	57	54	53	55	55

Note: * Including pre-primary schools

Sources: Office of the National Primary Education Commission; Secondary Education Division, Department of General Education, Ministry of Education, and National Statistical Office.

Table 6.9
Average Ratio of Number of Private Schools to School-Age Population

Schools per 1,000 Persons

Region	1984	1985	1986	1987	1988
Greater Bangkok	0.482	0.487	0.471	0.466	0.457
Central	0.139	0.140	0.140	0.143	0.161
North	0.096	0.099	0.100	0.103	0.109
Northeast	0.038	0.042	0.042	0.044	0.044
South	0.136	0.135	0.133	0.133	0.130
Whole Kingdom	0.134	0.137	0.136	0.139	0.157

Note: Including pre-primary, primary and secondary schools under the jurisdiction of the Office of the Private Education Commission. School age population is defined to be between 4-18 years old.

Sources: Office of the Private Education Commission, Ministry of Education and National Statistical Office.

Table 6.10
Average Ratio of Number of Teachers in Private Schools to School-Age Population

Teachers per 1,000 Persons

Region	1984	1985	1986	1987	1988
Greater Bangkok	10.037	9.983	9.822	9.675	9.472
Central	2.841	2.892	2.958	3.016	2.850
North	2.213	2.289	2.330	2.356	2.380
Northeast	0.761	0.762	0.732	0.693	0.670
South	2.535	2.533	2.473	2.462	2.367
Whole Kingdom	2.759	2.783	2.794	2.800	3.035

Note: Including pre-primary, primary and secondary schools under the jurisdiction of the Office of the Private Education Commission. School age population is defined to be between 4-18 years old.

Sources: Office of the Private Education Commission, Ministry of Education and National Statistical Office.

Table 6.11
Percentage of School-Age Population Attending Public Schools

Percent

Region	1984	1985	1986	1987	1988
Primary Schools					
Greater Bangkok	36.16	35.82	30.86	30.58	32.88
Central	86.53	86.91	80.08	83.94	89.36
North	96.16	96.83	91.60	91.69	102.70
Northeast	86.67	89.71	90.80	89.53	102.27
South	89.64	84.04	84.40	82.83	94.65
Kingdom	82.86	83.33	80.84	80.43	89.82
Secondary Schools					
Greater Bangkok	35.87	37.19	38.14	38.24	38.00
Central	22.65	22.97	23.87	23.14	23.04
North	18.54	18.67	19.56	19.45	19.79
Northeast	17.81	18.17	16.53	15.33	14.91
South	24.30	23.74	21.61	22.57	19.90
Whole Kingdom	21.97	22.24	21.74	21.24	22.64

Sources: Office of the National Primary Education Commission; Secondary Education Division, Department of General Education, Ministry of Education, and National Statistical Office.

Table 6.12
Percentage of School-Age Population Attending Private Schools

Percent

Region	1984	1985	1986	1987	1988
Greater Bangkok	23.23	22.45	21.57	20.87	25.40
Central	6.34	6.42	6.46	6.61	6.84
North	4.90	5.13	5.12	5.25	5.52
Northeast	1.38	1.42	1.33	1.28	1.26
South	5.53	5.45	5.24	5.21	5.24
Whole Kingdom	6.11	6.09	6.00	5.99	7.43

Note: Including pre-primary, primary and secondary schools under the jurisdiction of the Office of the Private Education Commission. School age population is defined to be between 4-18 years old.

Sources: Office of the Private Education Commission, Ministry of Education and National Statistical Office.

Table 6.13
Average Number of Students per Teacher in Public School

Region	1984	1985	1986	1987	1988
Primary Schools					
Greater Bangkok	19	19 *	18	18	20
Central	17	18 *	17	17	19
North	17	17 *	16	16	18
Northeast	20	20 *	20	19	21
South	18	18 *	18	17	20
Whole Kingdom	19	19 *	18	18	20
Secondary Schools					
Greater Bangkok	18	18	18	17	17
Central	17	18	18	17	16
North	18	17	17	17	16
Northeast	17	20	18	17	16
South	18	18	15	16	15
Whole Kingdom	18	18	17	17	16

Note: * Including pre-primary schools

Sources: Office of the National Primary Education Commission; Secondary Education Division, Department of General Education Ministry of Education, and National Statistical Office.

Table 6.14
Number of Students Who Passed
the University Entrance Examination
by Regional Affiliation

Region	1984/85	1985/86	1986/87
Greater Bangkok	8,494	8,701	9,020
Central	2,218	1,907	1,817
North	1,206	1,150	1,142
Northeast	1,372	1,300	1,361
South	1,122	1,086	1,175
Kingdom	14,504	14,798	15,299

Source: Ministry of University Affairs

Table 6.15
Number of Students Who Passed
the University Entrance Examination out of
One Million Population by Regional Affiliation

Region	1984/85	1985/86	1986/87
Greater Bangkok	1,082.59	1,081.94	1,090.56
Central	256.83	216.88	204.18
North	120.25	113.00	110.50
Northeast	77.43	72.13	74.26
South	173.01	163.38	172.26
Kingdom	285.99	286.32	290.56

Sources: Ministry of University Affairs and
National Economic and Social Development Board

Table 6.16
Nominal Minimum Wage Rate by Region

Baht Per Day

Effective Date	Greater Bangkok	North		Northeast		Central		South	
		Chiangmai	Other Provinces	Nakhon Ratchasima	Other Provinces	Saraburi and Chonburi	Other Provinces	Ranong, Phangnga and Phuket	Other Provinces
17 Apr 1973	12a/	-	-	-	-	-	-	-	-
1 Jan 1974	16a/	-	-	-	-	-	-	-	-
14 Jun 1974	20	-	-	-	-	-	-	-	-
1 Oct 1974	20	16	16	18b/	16	18	18	18	18
16 Oct 1975	25	16	16	18b/	16	18	18	18	18
1 Oct 1977	28	19	19	19	19	21	21	21	21
1 Oct 1978	35	25	25	25	25	28	28	28	28
1 Oct 1979	45	35	35	35	35	38	38	38	38
1 Oct 1980	54	44	44	44	44	47	47	47	47
1 Oct 1981	61	61	52	61	52	61	52	61	52
1 Oct 1982	64	61	52	61	52	61	52	64	52
1 Oct 1983	66	63	56	63	56	63	56	66	56
1 Jan 1985	70	65	59	65	59	65	59	70	59
1 Apr 1987	73	67	61	67	61	67	61	73	61
1 Jan 1989	76	69	63	69	63	69	63	73	63
1 Apr 1989	78	70	65	70	65	70	65	75	65

Notes: a/ Applicable to Bangkok Metropolis, Samut Prakan, Nontaburi and Pathum Thani only.
b/ Including Udon Thani, Khon Kaen and Ubon Ratchathani.

Source: Department of Labour, Ministry of Interior.

Table 6.17
Real Minimum Wage Rate by Region
(Constant 1976 Baht per Day)

Effective Date	Greater Bangkok	North		Northeast		Central		South	
		Chiangmai	Other Provinces	Nakhon Ratchasima	Other Provinces	Saraburi and Chonburi	Other Provinces	Ranong, Phangnga and Phuket	Other Provinces
17 Apr 1973	16.55a/	-	-	-	-	-	-	-	-
1 Jan 1974	19.41a/	-	-	-	-	-	-	-	-
14 Jun 1974	21.35	-	-	-	-	-	-	-	-
1 Oct 1974	21.09	17.19	17.19	18.62b/	16.55	19.00	19.00	19.69	19.69
16 Oct 1975	25.69	16.45	16.45	18.13b/	16.11	18.82	18.82	18.66	18.66
1 Oct 1977	24.90	17.21	17.21	17.35	17.35	18.92	18.92	19.37	19.37
1 Oct 1978	28.16	20.89	20.89	21.65	21.65	23.68	23.68	24.30	24.30
1 Oct 1979	32.40	26.70	26.70	26.84	26.84	28.85	28.85	28.70	28.70
1 Oct 1980	33.48	29.22	29.22	28.26	28.26	30.10	30.10	30.72	30.72
1 Oct 1981	33.65	36.09	30.77	34.88	29.73	35.49	30.25	36.48	31.10
1 Oct 1982	34.06	35.04	29.87	33.33	28.42	34.29	29.23	36.82	29.92
1 Oct 1983	33.66	34.46	30.23	32.76	29.12	34.02	30.24	36.46	30.94
1 Jan 1985	35.88	35.73	32.44	34.85	31.64	35.58	32.29	38.11	32.12
1 Apr 1987	35.13	35.02	31.89	34.31	31.23	34.54	31.44	37.98	31.74
1 Jan 1989	35.17	34.68	31.67	33.97	31.02	34.20	31.23	36.52	31.52
1 Apr 1989	37.26	35.18	32.67	35.18	32.00	34.69	32.22	37.52	32.52

Notes: a/ Applicable to Bangkok Metropolis, Samut Prakan, Nontaburi and Pathum Thani only.
b/ Including Udon Thani, Khon Kaen and Ubon Ratchathani.

Sources: 1. Nominal Minimum Wage Rate from Department of Labor, Ministry of Interior.
2. Consumer Price Indices from the Bank of Thailand, Monthly Bulletin, various issues.

Table 6.18
Percentage of Real Minimum Wage Rate in Provincial Areas Compared to Greater Bangkok

Percent

Effective Date	Greater Bangkok	North		Northeast		Central		South	
		Chiangmai	Other Provinces	Nakhon Ratchasima	Other Provinces	Saraburi and Chonburi	Other Provinces	Ranong, Phangnga and Phuket	Other Provinces
17 Apr 1973	100a/	-	-	-	-	-	-	-	-
1 Jan 1974	100a/	-	-	-	-	-	-	-	-
14 Jun 1974	100	-	-	-	-	-	-	-	-
1 Oct 1974	100	81.51	81.51	88.29b/	78.47	90.09	90.09	93.35	93.36
16 Oct 1975	100	64.03	64.03	70.57b/	62.71	73.26	73.26	72.64	72.64
1 Oct 1977	100	69.12	69.12	69.68	69.68	75.98	75.98	77.79	77.79
1 Oct 1978	100	74.18	74.18	76.88	76.88	84.09	84.09	86.29	86.29
1 Oct 1979	100	82.41	82.41	82.84	82.84	89.04	89.04	88.58	88.58
1 Oct 1980	100	87.28	87.28	84.41	84.41	89 90	89.90	91.76	91.75
1 Oct 1981	100	107.25	91.44	103.66	88.36	108.44	89.90	108.41	92.42
1 Oct 1982	100	102.88	87.70	97.86	83.44	100.68	85.82	108.10	87.84
1 Oct 1983	100	102.38	89.81	97.33	86.51	101.07	89.84	108.32	91.92
1 Jan 1985	100	99.58	90.41	97.13	88.18	99.16	89.99	106.22	89.52
1 Apr 1987	100	99.69	90.78	97.67	88.90	98.32	89.50	108.11	90.35
1 Jan 1989	100	98.61	90.05	96.59	88.20	97.24	88.80	103.84	89.62
1 Apr 1989	100	94.42	87.68	94.42	85.88	93.10	86.47	100.70	87.28

Notes: a/ Applicable to Bangkok Metropolis, Samut Prakan, Nontaburi and Pathum Thani only.
b/ Including Udon Thani, Khon Kaen and Ubon Ratchathani.

Sources: 1. Nominal Minimum Wage Rate from Department of Labor, Ministry of Interior.
2. Consumer Price Indices from the Bank of Thailand, Monthly Bulletin, various issues.

Table 6.19
Percentage of Real Per Capita Income in Provincial Areas
Compared to Greater Bangkok
(at 1976 Prices)

Percent

Year	Greater Bangkok	North	Northeast	Central	South
1975	100.0	28.4	18.3	33.3	31.0
1976	100.0	27.4	16.7	30.5	32.7
1977	100.0	24.6	15.0	30.9	34.3
1978	100.0	26.8	16.7	32.0	37.1
1979	100.0	28.3	17.9	33.5	38.5
1980	100.0	28.4	18.0	32.6	39.8
1981	100.0	26.8	15.5	43.9	35.4
1982	100.0	26.1	16.0	46.0	35.7
1983	100.0	27.4	17.5	45.8	36.8
1984	100.0	29.4	17.9	48.6	36.5
1985	100.0	29.4	18.2	50.0	37.4
1986	100.0	27.9	17.6	52.4	37.2
1987	100.0	20.0	12.4	35.3	26.5

Sources: 1. Nominal Per Capita Income from the National Economic and Social Development Board.
2. Consumer Price Indices from the Bank of Thailand, Monthly Bulletin, various issues.

Table 6.20

Indices of Real Minimum Wage Rate
and
Real per Capita Income by Region
(1975=100)

Year	Greater Bangkok		North			Northeast			Central			South		
			Real MWR			Real MWR			Real MWR			Real MWR		
	Real MWR	Real Per Capita Income	Chiangmai	Other Provinces	Real Per Capita Income	Nakhon Ratchasima	Other Provinces	Real Per Capita Income	Saraburi and Chonburi	Other Provinces	Real Per Capita Income	Ranong, Phangnga & Phuket	Other Provinces	Real Per Capita Income
Apr 1973	64.42	na	-	-	na	-	-	na	-	-	na	-	-	na
Jan 1974	75.55	na	-	-	na	-	-	na	-	-	na	-	-	na
Jun 1974	83.11	na	-	-	na	-	-	na	-	-	na	-	-	na
Oct 1974	82.09	na	104.50	104.50	na	102.70	102.73	na	100.96	100.96	na	105.52	105.52	na
Oct 1975	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Oct 1977	96.92	117.20	104.62	104.62	101.80	95.70	107.70	96.00	100.53	100.53	108.80	103.80	103.80	129.50
Oct 1978	109.61	125.80	126.99	126.99	110.80	119.42	134.39	106.80	125.82	125.82	112.60	130.23	130.23	140.10
Oct 1979	126.12	135.10	162.31	162.31	117.00	148.04	166.60	114.80	153.29	153.29	114.70	153.80	153.80	145.30
Oct 1980	130.32	136.90	177.63	177.63	117.50	155.87	175.42	115.60	159.94	159.94	114.70	164.63	164.63	150.40
Oct 1981	130.98	136.80	219.39	187.05	110.70	192.39	184.54	99.40	188.58	160.73	154.40	195.50	166.67	133.50
Oct 1982	132.58	133.60	213.01	181.58	107.70	183.84	176.41	102.40	182.20	155.31	161.70	197.32	160.34	134.70
Oct 1983	131.02	139.80	209.48	183.77	113.10	180.69	180.76	112.00	180.77	160.68	161.20	195.39	165.81	139.10
Jan 1985	139.67	140.40	217.20	197.20	121.30	192.22	196.40	116.70	189.05	171.57	176.00	204.23	172.13	141.10
Apr 1987	136.75	172.80	212.89	193.86	121.90	189.24	193.85	117.60	183.53	167.06	183.00	203.54	170.10	147.80
Jan 1989	136.90	na	210.82	192.52	na	187.37	192.55	na	181.72	165.94	na	195.71	168.92	na
Apr 1989	145.04	na	213.86	198.60	na	194.04	198.63	na	184.33	171.20	na	201.07	174.28	na

Notes: a/ Applicable to Bangkok Metropolis, Samut Prakan, Nontaburi and Pathum Thani only.
b/ Including Udon Thani, Khon Kaen and Ubon Ratchathani.

Sources: 1. Nominal Minimum Wage Rate from Department of Labor, Ministry of Interior.
2. Consumer Price Indices from the Bank of Thailand, Monthly Bulletin, various issues.
3. Per Capita Income from National Economic and Social Development Board.

Table 6.21
Comparison of Actual Wage Rate of Unskilled Labor to Legal Minimum Wage Rate

Baht Per Day

Year	Greater Bangkok		North		Northeast		Central		South		Whole Kingdom	
	Legal MWR	Actual Wage	Legal MWR	Actual Wage	Legal MWR	Actual Wage	Legal MWR	Actual Wage	Legal MWR	Actual Wage	Legal MWR	Actual Wage
1979	45.00	41.68	35.00	27.32	35.00	26.80	38.00	31.32	38.00	33.68	-	na
1980	54.00	52.48	44.00	40.24	44.00	37.92	47.00	45.44	47.00	48.28	-	45.72
1981	61.00	58.96	52.00	44.96	52.00	52.38	52.00	50.50	52.00	50.15	-	51.46
1982	64.00	61.46	52.00	51.92	52.00	58.31	52.00	58.42	52.00	57.00	-	61.27
1985	70.00	80.07	59.00	55.87	59.00	53.62	59.00	64.83	59.00	66.33	-	71.02
1986	73.00	84.00	61.00	56.00	61.00	57.00	61.00	73.00	61.00	68.00	-	77.00

Sources: 1. Actual wage rates of 1979-1982 from Wage Structure Surveys jointly conducted by the Bank of Thailand and the Department of Labor, Ministry of Interior.
2. Actual wage rates of 1985-1986 from Wage Structure Surveys conducted by the Department of Labor, Ministry of Interior.
3. Legal minimum wage rates from Department of Labor, Ministry of Interior.

Table 6.22
Average Daily Income of Unskilled Workers
by Region and Size of Firm,
1986

Baht Per Day

Region	Small	Medium	Large	Total
Greater Bangkok	79.90	90.81	96.97	92.60
Central	67.63	78.03	84.25	75.60
North	67.98	70.46	77.27	71.22
Northeast	61.85	65.05	88.55	67.27
South	72.07	79.16	81.05	76.36
Whole Kingdom	72.14	81.83	91.86	83.57

Note: 1. Small firms refer to those having 1-49 employees.
2. Medium firms refer to those having 50-299 employees.
3. Large firms refer to those having more than 3,000 employees.

Table 6.23
Actual Wage Rate of Unskilled Labor by Region

Percent

Year	Greater Bangkok	North	Northeast	Central	South
1979	100.00	65.55	64.30	75.14	80.81
1980	100.00	76.68	72.26	86.59	92.00
1981	100.00	76.26	88.84	85.65	85.06
1982	100.00	84.48	94.87	95.05	92.74
1985	100.00	69.78	66.97	80.97	82.84
1986	100.00	66.67	67.86	86.90	80.95

Sources: 1. Data of 1979-1982 from Wage Structure Surveys jointly conducted by the Bank of Thailand and the Department of Labor, Ministry of Interior.
2. Data of 1985-1986 from Wage Structure Surveys conducted by the Department of Labor, Ministry of Interior.

Table 6.24
Percentage of Nominal Minimum Wage Rate in Provincial Areas Compared to Greater Bangkok

Percent

Effective Date	Greater Bangkok	North		Northeast		Central		South	
		Chiangmai	Other Provinces	Nakhon Ratchasima	Other Provinces	Saraburi and Chonburi	Other Provinces	Ranong, Phangnga and Phuket	Other Provinces
17 Apr 1973	100.00a/	-	-	-	-	-	-	-	-
1 Jan 1974	100.00a/	-	-	-	-	-	-	-	-
14 Jun 1974	100.00	-	-	-	-	-	-	-	-
1 Oct 1974	100.00	80.00	80.00	90.00b/	80.00	90.00	90.00	90.00	90.00
16 Oct 1975	100.00	64.00	64.00	72.00b/	64.00	72.00	72.00	72.00	72.00
1 Oct 1977	100.00	67.86	67.86	67.86	67.86	75.00	75.00	75.00	75.00
1 Oct 1978	100.00	71.43	71.43	71.43	71.43	80.00	80.00	80.00	80.00
1 Oct 1979	100.00	77.78	77.78	77.78	77.78	84.44	84.44	84.44	84.44
1 Oct 1980	100.00	81.48	81.48	81.48	81.48	87.04	87.04	87.04	87.04
1 Oct 1981	100.00	100.00	85.25	100.00	85.25	100.00	85.25	100.00	85.25
1 Oct 1982	100.00	95.31	81.25	95.31	81.25	95.31	81.25	100.00	81.25
1 Oct 1983	100.00	95.45	84.85	95.45	84.85	95.45	84.85	100.00	84.85
1 Jan 1985	100.00	92.86	84.29	92.86	84.26	92.86	84.29	100.00	84.29
1 Apr 1987	100.00	91.78	83.56	91.78	86.56	91.78	83.56	100.00	83.56
1 Jan 1989	100.00	90.79	82.89	90.78	82.89	90.79	82.89	96.05	82.89
1 Apr 1989	100.00	89.74	83.33	89.74	83.33	89.74	83.33	96.15	83.33

Notes: a/ Applicable to Bangkok Metropolis, Samut Prakan, Nontaburi and Pathum Thani only.
b/ Including Udon Thani, Khon Kaen and Ubon Ratchathani.

Source: Department of Labor, Ministry of Interior.

Table 6.25
Number of Graduates of Public and Private Educational Institutions by Level of Education in 1986

Level of Education	Public	Private	Total
Elementary	946,338	83,765	1,030,103
Secondary	544,228	68,055	612,283
Vocational	54,645	44,311	98,956
Higher Education	115,675	34,617	150,292
Total	1,660,886	230,748	1,891,634

Source: Educational Planning Division, Office of the Permanent Secretary, Ministry of Education.

Table 6.26
Percentage of Graduates from Private Institutions by Level of Education, 1984
(Percent of total Graduates)

Level of Education	Bangkok	Outside Bangkok	Total
Elementary	40.1	4.6	7.0
Secondary	20.4	11.1	12.8
Vocational	75.7	33.8	48.9
Higher Education	37.8	4.6	22.6
Total	37.0	7.5	12.4

Source: Educational Planning Division, Office of the Permanent Secretary, Ministry of Education.

Table 6.27
Proportion of School-Age Population Attending Primary School, by Region

Year	Greater Bangkok	Central	North	Northeast	South	Kingdom
1980	76.68	55.56	71.00	64.68	71.59	66.50
1981	77.02	70.30	70.71	65.56	69.52	69.10
1982	76.21	88.28	71.70	65.45	68.90	72.33
1983	71.23	72.27	69.92	55.13	68.98	64.42
1984	73.99	72.34	71.53	65.31	70.89	69.09
1985	71.68	72.12	72.40	49.15	72.40	62.49
1986	69.70	78.00	76.39	69.28	69.47	72.24
1987	68.38	76.74	76.90	71.35	70.55	72.95

Note: Includes both pre-primary and primary (Pathom 1-Pathom 6) private and public schools.
School age population is defined to be between 4-12 years old.

Sources: Office of the Permanent Secretary, Ministry of Education and National Statistical Office.

Table 6.28
Proportion of School-Age Population Attending Secondary School, by Region

Year	Greater Bangkok	Central	North	Northeast	South	Kingdom
1980	42.45	24.56	18.74	17.76	28.45	24.19
1981	39.69	22.72	18.36	17.48	26.70	22.91
1982	41.35	23.47	19.39	18.11	27.13	23.64
1983	43.26	24.61	20.03	18.31	27.94	24.29
1984	45.92	25.83	21.16	19.32	28.61	25.45
1985	46.46	25.61	21.34	14.96	28.30	23.74
1986	46.92	26.22	21.55	17.55	27.13	24.73
1987	46.90	26.08	21.39	16.21	25.82	23.95

Note: Including lower secondary (M1-M3) and upper secondary (M4-M6) private and public schools but excluding vocational schools.
School age population is defined to be between 13-18 years old.

Sources: Office of the Permanent Secretary, Ministry of Education and National Statistical Office.

CHAPTER 7

INVESTMENT ZONES AND INDUSTRIAL ESTATES

7.1 REVOLUTIONARY DECREE 227 OF 1972

Although the Board of Investment (BOI) was established in 1960, there were no specific policies formulated to promote industrial development in terms of geographical areas until the Third Plan (1972-1976). Under this Plan, the government began to emphasize the decentralization of industry away from Bangkok.

In response to such a policy, a Revolutionary Decree was issued in October 1972 providing a number of investment incentives for areas designated as promoted investment zones. These incentives, which provide favorable treatment in the payment of import duties, business taxes, and corporate income taxes, are given in Table 7.1.

The following year, in 1973, the BOI designated 72 districts in 21 provinces as promoted zones for industries (see Table 7.2). The only province and district in the Greater Bangkok Area included in this group was Nakhon Pathom's capital district, although Greater Bangkok was also given promotional status in the case of export industries.[1]

It is not certain, however, how the promoted zones in 1973 were formulated. Because they covered such a wide spread area, it was difficult for the BOI to concentrate its resources on any particular region. Furthermore, it was difficult for the government to invest adequately in infrastructure development in all these areas.

It is therefore not surprising to find that the pattern of investment promotion before and after 1973, when the investment zones

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1. Nevertheless, for agribusiness and agro-industries, the Bangkok Metropolitan Area was the only area excluded from investment promotion within the country.

were announced, did not change significantly (see Table 7.3). The number of BOI projects located in promoted zones 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.

7.2 INVESTMENT PROMOTION ACT OF 1977

BOI's power in designating promoted investment zones was again formally incorporated with the introduction of the Investment Promotion Act in 1977. This was followed by a redefinition of promoted zones in 1978 that scaled down the previously promoted areas into four zones as follows:[2]

zone 1 covering San Kamphaeng district in Chiang Mai and the capital district of Lamphun;[3]

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.

It is again not known how these areas were selected. However, a close look at these areas seem to indicate that the focus is to select a few major provinces in each region as promoted investment poles. Conspicuously absent from the list are provinces in Greater Bangkok. Nevertheless, industrial estates, including export processing zones, were also designated as promoted investment zones. Thus, certain areas within the Greater Bangkok Area were covered.

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2. Within the four zones, areas within city planning zones and areas banned from the establishment of factories by the Department of Industrial Works in the Ministry of Industry, were excluded from investment promotion.

3. Since 1981, Mae Sod district in Tak was included in zone 1.

In addition, the Greater Bangkok Area continued to receive incentives which were granted to export industries prior to the Investment Promotion Act of 1977 (see Table 7.4). The only change was the larger deduction allowed for increased export income (5 percent versus 2 percent) in the calculation of corporate income tax.

Furthermore, it should be pointed out that, although the Greater Bangkok Area was not designated as a promoted zone, it continued to receive substantial normal investment promotion privileges including exemption of the import duty and business tax on imported machinery; exemption of up to 90 percent of the import duty and business tax for imported raw materials or intermediate inputs; exemption from corporate income tax for a period of three to eight years; permission to carry over losses incurred during the income tax holiday period up to five years after the expiration of the holiday; and exemption from personal income tax for dividend payments made by promoted firms during the corporate income tax holiday period.

The BOI, following its 1978 announcement, continued to grant all the extra promotional privileges provided under the 1972 Revolutionary Decree except for the exemption of import duty and business tax on imports of raw materials and intermediate inputs. This left favorable treatment only in terms of reductions of the business tax on sales and of the corporate income tax.

The BOI, under the powers granted under this Act, formulated two sets of incentives with zones 1-2, industrial estates and export processing zones receiving slightly more favorable terms than zones 3-4 in terms of the level of business tax exemption and the level of deductions for corporate income tax calculation (see Table 7.5).

The extra corporate income tax incentive granted under the 1972 and 1978 directives for promoted investment zones is really not much more attractive than the incentive granted to projects outside of promoted zones, which are already entitled up to eight years of full corporate income tax exemption. This made the deductions allowed

in the calculation of corporate income tax almost totally ineffective (see Tables 7.1 and 7.5).

In 1983 and 1985, the BOI announced new investment promotion zones. However, these announcements did not give any reasons for such actions. Furthermore, they were made without repealing the 1978 announcement.

The announcements made it unclear on what level of incentives was to be given to industrial estates outside of Greater Bangkok. Contrary to the 1978 directive, which already granted a 50 percent reduction of corporate income tax for all industrial estates, the 1983 announcement grants such an incentive only for large projects earning net foreign exchange of 1 million U.S. dollars, and classified as export or agro-industries.

With the 1978 announcement still in effect, this would be ineffective, since all projects in promoted investment zones are still entitled to such a privilege. The new directive can be effective only if the BOI chose to ignore the announcement of 1978.

Furthermore, the business tax incentive for industrial estates was first reduced in 1983 before being increased in 1985 to a level higher than that granted during the previous seven years.

In addition, the 1983 directive concerning industrial estates outside of Greater Bangkok also exposed contradictions in the BOI's policy. It is not clear whether the BOI wants to promote general industrial development in provincial areas or whether it wanted to promote only certain types of large and modern industries in these areas. The directive seemed to imply that small local industries would not be given incentives if they locate in industrial estates outside of Greater Bangkok.

One thing is clear from the 1983 directive, however, that is, the BOI decided to grant larger business tax exemptions on sales for promoted areas (see Table 7.5). Given that provincial businesses tend to evade paying both corporate income tax and business tax, it is very

likely that these additional incentives were not effective in encouraging provincial industries, except for larger firms with standard accounting practices.

The question is therefore whether it is the BOI's intention to promote large-size industries in provincial areas (which would imply mainly investments coming from outside the provincial areas) or to promote indigenous industries in these provincial areas.

It is also unclear how much more incentives were granted in actual practice to projects located in the investment zones by the BOI. Although the directives empowered the BOI to grant extra privileges, actual practice could be quite different, because the incentives were given only at the discretion of the BOI.

As can be seen in Table 7.6, the proportion of promoted projects in the four promoted zones before and after 1978, which was the year the reclassification of promoted zones took place, did not exhibit any significant change at all. During 1974-78, the proportion of promoted projects in the four zones as compared to all other provinces was only 7.6 percent while it remained at 7.5 percent during 1979-87.

7.3 RECENT RECLASSIFICATIONS OF PROMOTED INVESTMENT ZONES

The promoted investment zones were revised again in 1987, when all areas except Greater Bangkok were designated as promoted zones.[4]

There was an attempt to cut down incentives granted to non-promoted areas or Greater Bangkok. Exemptions from machinery taxes were abolished for industries setting up in the Bangkok Metropolitan Area and Samut Prakan and cut in half for the other four provinces -- except for export industries and projects located in industrial estates or BOI-

4. Mab Ta Put and Laem Chabang industrial estates, which were designated as promoted zones beginning with 1985, were left out of the promoted list in 1987, although they were quickly reinstated as promoted areas in 1988.

promoted industrial zones. Corporate income tax holidays were also reduced, and promotion conditions made more stringent for these provinces (see Table 7.7).

However, the BOI announcement in 1987 was ambiguous. Although the 1978 and 1985 directives were repealed, the 1983 directive was not. It is therefore not explicit whether the incentives for the four promoted zones of 1983 still remain in effect.

Nevertheless, the 1987 BOI announcement raised the amount of incentives granted to promoted zones (see Tables 7.5 and 7.7). In addition to previously granted incentives, there were also exemptions from taxes on imported machinery, raw materials and intermediate inputs. Furthermore, the corporate income tax incentive was more favorable to provincial industries, since it was no longer granted to Greater Bangkok in normal cases (see Table 7.8).

The level of incentives granted to industries in the promoted zones differed between targeted and non-targeted industries (see Table 7.7). The targeted industries include export industries, agro-industries, natural resource-based industries, engineering industries and other industries that the BOI deemed to be important to the economy and society.

Shortly after issuing the main directive in September 1987, two other directives were issued in October and December of the same year to modify the previous directives. Such frequent changes are bound to make it difficult for investors to follow BOI policy.

However, after less than a year, another revamping took place. Under the new system, investment promotion was divided into three zones: Greater Bangkok, the inner ring provinces and the outer ring provinces.

The outer ring is designated by the BOI as the promoted investment zone that includes all provinces nationwide except for Greater Bangkok, Samut Songkhram, Ratchaburi, Kanchanaburi, Suphan Buri, Ang Thong, Phra Nakhon Si Ayutthaya, Saraburi, Nakhon Nayok, Chachoengsao, and Chon

Buri. Provinces in this zone receives the greatest amount of promotional privileges.

The inner ring consists of major provinces in the Central Region including Samut Songkhram, Ratchaburi, Kanchanaburi, Suphan Buri, Ang Thong, Phra Nakhon Si Ayutthaya, Saraburi, Nakhon Nayok, Chachoengsao and Chon Buri. The normal investment incentives in this area consist of a 50 percent reduction in machinery taxes and a corporate income tax holiday of three years. However, additional incentives may be acquired for export industries, agro-industries, engineering industries together with their supporting industries, industries utilizing domestic resources, industries earning or saving 2 million U.S. dollars worth of net foreign exchange, and industries located in industrial estates or BOI-promoted industrial zones (see Table 7.9).

Industries locating in the third zone -- Greater Bangkok -- would not normally be entitled to receive any investment incentives unless they are export industries, supporting industries for engineering products and industries located in industrial estates or BOI-promoted industrial zones (see Table 7.10).

The new classification seems to convey the impression that the government is serious about emphasizing the promotion of industrial development in less developed provinces, because the more developed provinces in the inner ring together with Greater Bangkok were excluded from the promoted zone. The provinces outside of the promoted zone are entitled to receive far fewer promotional privileges except for certain cases (see Tables 7.7, 7.9 and 7.10).

In addition, the BOI began to expand its offices to provinces outside of Bangkok in 1988, with the establishment of the first local office in Nakhon Ratchasima. In 1989, a second office at Surat Thani was set up. These two offices are now using the facilities provided by the Industrial Finance Corporation of Thailand's regional branches. There are also plans for a further 11 local BOI offices to be established.

In spite of the above, the appearance that the government is trying to promote industrialization in less-developed provincial areas has always been misleading. This is because there continue to be so many exceptions to the BOI promotional rules. One of the more significant exceptions is the designation of many specific areas in Greater Bangkok as promoted zones or industrial estates. Some of these areas are shown in Table 7.11.

It can be seen that the promoted investment zones in Greater Bangkok are not only numerous, but they are also confined to some very small, specific areas. This raises serious questions about whether political influence were brought to bear in these instances, because there does not seem to be any reason why such exceptions were given to the Greater Bangkok Area -- especially when some of these estates are operated by the private sector. The more important fact is that such exceptions erased any advantages which were supposed to be given to the less-developed and less-promoted provinces.

7.4 THE EFFECTIVENESS OF INVESTMENT ZONES IN PROMOTING PROVINCIAL INDUSTRIAL DEVELOPMENT

Although the relative number of projects granted investment promotion status in Greater Bangkok by the BOI has gradually fallen over the years, it is still mainly concentrated in this region (see Table 7.12). In general, the investment incentives combined with the designation of promoted investment zones by the BOI has not been very effective in accelerating provincial industrial development. This is due to a number of factors.

First, there have been too many and too frequent changes in policies and measures. The changes in designated promotional zones, and in the incentives granted to these zones, make it difficult for investors to keep track of the BOI's policy. It also makes it difficult for any policy measure to really establish its potential impact.

Second, BOI is trying to promote too many conflicting objectives at the same time. For example, BOI has set policies in recent years to cover specific types of industries, larger size firms in terms of employment, firms earning a certain amount of foreign exchange and firms locating in specific areas in Greater Bangkok. This multitude of objectives has led to many loopholes. BOI thus does not actually end up favoring development of provincial industries compared to industries located in Greater Bangkok.

Third, the incentive system is getting to be quite complex and cumbersome to administer. This is related to the BOI's increasing multitude of increasingly detailed objectives. BOI's frequent changes in directives are difficult to understand and follow, and small provincial investors are thus more likely to get confused with the system.

In addition, it is also difficult to define or interpret which industries the BOI wants to promote. For example, it is just too simple to grant incentives for firms that save or earn foreign exchange of 2 million US dollars, because they may actually be net users of foreign exchange. It is difficult to know how to actually calculate such a figure.

Fourth, the extra incentives granted to industries locating in provincial areas in the past has been confined mainly to business and corporate income tax exemption. These exemptions have not been very much larger than the normal incentives granted by BOI, although there was an attempt in recent years to reduce the normal incentives granted to projects in Greater Bangkok.

The more important fact is that provincial industries generally evade taxes. Because tax collection is likely to be more lax and difficult in provincial areas, it is doubtful whether the BOI incentives effectively promote provincial industrial development.[5] Other measures may be much more effective than tax incentives.

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5. The exception is for large, modern factories that would have more standardized accounting systems, making tax evasion more difficult.

Fifth, there is no clear focus on whether the BOI wants to promote large, modern provincial industries, which would be funded by investors outside of the provincial areas, or to promote indigenous local industries, which would be mainly small-scale industries. If such a focus is not clear enough, it would be difficult to design appropriate measures and to evaluate their impact.

In fact, some believe -- given the incentives provided -- that BOI's actual practice has been to favor modern, large-scale industries. If this were so, it is only natural that small indigenous industries would not have access to promotion, despite the granting of incentives to industries located in provincial areas.

7.5 INDUSTRIAL ESTATES

The first industrial estate in Thailand was established at Bangchan in 1972 under the Department of Industrial Works in the Ministry of Industry. The purpose was to provide industries with land and infrastructure services. It covered 510 rai, which is considered to be small (see Table 7.13). The investment funds for the estate came from government budget allocations during 1969-1974.

In the same year that the Bangchan Industrial Estate became operational, the government, citing industrial pollution, an unorganized industrial sector, the public sector's inability to provide services efficiently and the need for export-processing zones, issued a Revolutionary Decree in order to establish the Industrial Estate Authority of Thailand (IEAT).[6] Under the decree, the Bangchan Industrial Estate was merged into the IEAT, which was set up as a state enterprise.

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6. Revolutionary Decree No. 339 issued on 13 December 1972.

The IEAT was supposed to organize industrial estates, which -- in addition to managing these estates -- would provide land and infrastructure services to industrial factories.

In order to attract investors into export-processing zones, the Revolutionary Decree provided incentives in the form of exemption from import duties and business taxes on imported machinery and raw materials. In the case of foreign investments, skilled foreign manpower would be allowed into the country; remittances of funds out of the country would also be treated favorably.

At the time of the establishment of the IEAT, there were further plans to develop additional industrial estates. However, these plans did not receive governmental support. The second industrial estate was not established until 1977 at Bangpoo (see Table 7.13). It is a privately owned estate that is operated by the IEAT.

In the same year that Bangpoo Industrial Estate was established, the Industrial Estate of Thailand Act was promulgated. Under this Act, the IEAT was granted the power to reclaim land according to the Land Reclamation Act. In addition, the IEAT was given the power to oversee private industrial estates.

As for investment incentives for factories locating in industrial estates, they were now to be granted solely by the Investment Promotion Act at 1977 which is under the BOI's jurisdiction.

The IEAT Act of 1977 also requires the IEAT to obtain Cabinet approval for investing in the expansion or establishment of industrial estates. Such support continued to elude the IEAT until the early 1980s, when another two industrial estates were established: the Lat Krabang Industrial Estate in 1983 and the Bangpli Industrial Estate in 1984. There was also a privately operated industrial estate established in 1984, known as Navanakhon (see Table 7.14).

Despite the small number and size of private and public industrial estates, the demand for factory land in these estates remained dormant

for most of the years up until the economic boom which took place in the past 2-3 years.

In 1988, many private industrial estates were established. Suddenly, there was a lack of land in industrial estates. This has continued to attract the private sector to invest in industrial estates. The IEAT, on the other hand, has been slow in responding to such market forces.

A major reason for the lack of interest in industrial estates in the past is that the level of industrial development in Thailand has not yet reached the stage where there are sufficient large and modern industries to require the sophisticated and more expensive services which are offered by the estates. The lack of enforcement of pollution control measures by the authorities has also made it less costly to set up factories outside of industrial estates.

However, the more important factor is that small household industries find it more convenient and less costly to establish factories in the same place as their home. For this reason, they are reluctant to locate in industrial estates.

It is therefore not surprising that, until only recently, there has been little demand to set up factories in industrial estates. At present, such demand is still concentrated in the Greater Bangkok Area, where foreign investment is more concentrated and there are more large-scale industries.

Any artificial attempt to develop industrial estates in provincial areas without concern about the potential for investment by Bangkok or foreign investors would therefore fail, since there would not be a sufficient number of modern, large scale industries locally to make it economical. This is probably why the Northern Industrial Estate has not been successful until recent years.

Another observation about the industrial estates established in Thailand so far is that they are relatively small and do not provide the

full range of services provided by industrial estates in other countries. For example, they do not provide housing, public parks, commercial complexes and entertainment centers for those working in the estates. They only provide land and infrastructure services, including some basic water pollution control systems.

In addition, publicly-owned industrial estates are generally much smaller than privately owned industrial estates. This could reflect a lack of commitment or resources on the government's part.

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.

7.6 A SYNTHESIS AND POLICY RECOMMENDATIONS

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 not sufficiently transparent or clear, as witnessed by the complexity and frequent changes of such measures.

More importantly, the priority given by the BOI in actual practice towards developing provincial industries is likely to have been much less significant than other objectives -- such as the promotion of large-scale, import-substituting industries in the 1960s and 1970s and the promotion of export industries in the 1980s -- which were not geographic specific and which ended up mainly concentrated in Greater Bangkok. The BOI's preoccupation with meeting other objectives is

likely to have led to a neglect of developing provincial industries, despite the theoretical provision of incentives to areas outside of Greater Bangkok.

However, the author believes that it unlikely that, even with a clearer and stronger policy emphasis towards provincial industries by the BOI, there would necessarily be much more development of such industries than had been the case. This is because certain major obstacles makes the risk of investing in provincial areas so prohibitive that it could not be surmounted even with the granting of substantial economic incentives.

First, there is a dearth of information on regions and provinces, which is likely to make investors wary of investing in provincial areas. Even now that investors have shown increasing interest, both domestically and abroad, in investing in the provinces, one frequently hears complaints of the lack of information to make confident decisions on investment. It is surprising that such complaints also come from local entrepreneurs who should be in a better position to understand their locality.

Second, there is a shortage of indigenous entrepreneurs capable of evaluating the investment potential of and operating a modern manufacturing business. People in provincial areas are more confidence in the business of commodity trading. Even in such cases, the businesses remain small and largely family oriented; without sufficient management skills, expansion would only lead to failure.

Third, there are insufficient supporting facilities and services in provincial areas, such as public infrastructure and governmental agencies with decision-making authority. In many instances, although the physical structure is in place, the decision-making authority remains primarily in Bangkok.

Given the above constraints, economic incentives alone would not be effective in promoting provincial industries. In addition, the use of economic incentives to promote industrial development is likely to lead

to a distortion in the economy, which would lead to a less-than-optimal utilization of scarce economic resources.

It is therefore recommended that there be a fundamental review and change in the BOI's present strategy of promoting provincial industries -- a strategy that seems to be relying solely on the granting of economic incentives. If possible, economic incentives to industries should be reduced or ended entirely and replaced by active promotion through non-incentive schemes.

However, if economic incentives were to remain in place, the whole incentive structure would have to be revamped to make it simple to understand and implement. In addition, economic incentives should be given to broad economic sectors -- not very specific ones.

The new incentive system should reduce as much discretionary decision-making power as possible -- that is, if a project meets the set of established investment promotion criteria, incentives should be granted automatically. Such an automatic system has a number of advantages. First, it would greatly reduce the difference between declared policy and its actual implementation.

Second, it would be more difficult for projects to be influenced by political considerations due to policy transparency.

Third, the cost of policy implementation would be reduced to a minimum, thereby freeing BOI resources for other activities.

Nevertheless, the investment promotion criteria should also be carefully formulated with a view towards encouraging competition and the efficient utilization of economic resources. The BOI should not act to guarantee a certain market to a given number of manufacturers. This should also apply to the Ministry of Industry in its granting of licenses to construct and operate factories.

The argument that the domestic market is not large enough to accommodate more than a certain number of manufacturers is no longer a

valid one now that the Thai economy is highly integrated into the world economy. There should be equal treatment of the domestic and foreign markets.

Instead of emphasizing the granting of economic incentives, the BOI should shift its role towards becoming an investment information center. While the goal of promoting investment should be maintained, the means should be changed. The major goal of investment promotion should be to increase the availability and reduce the cost of economic information so that investors can make more informed judgments.

The BOI should actively set up an economic data bank covering provincial industries in various regions and provinces. It should compile and publish resource and market profiles of all the regions and provinces in the country together with all other relevant economic statistics which would assist investors in understanding the investment climate and potential of each regional area and province.

The BOI could also promote studies of particular industries, taking into account the resource endowment of each region and province, and then disseminate such results to the public.

Care must be taken, however, to distinguish research, statistics and information that could be provided by the public sector from very detailed and specialized information that they could only be obtained from commercial sources.

Because of the inflexibility of governmental regulations, which have prohibited the timely release of many types of economic data and information, the BOI could also take up the role of an information intermediary through the establishment of a public economic data and information bank relating to investment and industries. As an extension of its role as an information center, the BOI could also become involved in the training of provincial entrepreneurs. Furthermore, it could try to bridge the gap between entrepreneurs in Bangkok and the provinces by promoting a forum for the exchange of ideas and the transfer of management, marketing and production technology.

How actively the BOI chooses to support the training of provincial entrepreneurs would depend very much on whether it is BOI's strategy to promote investment coming from outside the region or to promote mainly indigenous industries. It is recommended here that the BOI does both, because it is likely to be more effective in promoting the pace of provincial industrial development.

Although many governmental agencies already provide training to provincial entrepreneurs, their services are unlikely to be sufficient. Furthermore, there may be particular types of skills and know-how which are not presently provided by courses of other government agencies.

The obvious area in which the BOI should be providing training courses and technical support is the evaluation of investment projects, because it would fit into the BOI's goal of promoting investment. The support could cover areas of marketing, finance and/or technology.

In carrying out such a function, it would not be feasible for the BOI to have its own experts. What it could do is to act as the organizer and sponsor of such activities.

There should also be a major revamp of the present structure of industrial zones and industrial estates. Although there are now many industrial estates, they are quite small and spread out in many areas. This makes it difficult to regulate industries, especially with regard to environmental protection. Furthermore, it results in costly infrastructure investments which are not effectively and fully utilized.

First of all, there should be a more serious designation of industrial zones covering a much wider area. Industrial estates would be allowed to be established only within such industrial zones; however, there should be no banning of factories outside industrial zones, because this would effectively kill small industries. It is only within such industrial zones that the government will give higher priority and commitment towards providing the necessary public infrastructure.

In order to more effectively control pollution from industries and to promote the establishment of factories in industrial estates, the government should strengthen its environmental regulations and its implementation with a more active persecution and punishment of violators.

As for the IEAT, its role should be confined to that of regulating industrial estates. It is a state enterprise and therefore does not have as much flexibility in managing industrial estates. Furthermore, if it competes with the private sector, there is a conflict of interest regarding its role as both an operator and a regulator of industrial estates. It is also unfair for to IEAT compete directly with the private sector because the IEAT may be in a position to get special treatment from other government agencies and state enterprises.

More important, events of recent years clearly show that the private sector has the capability to establish and operate its own industrial estates. There is therefore no real need to spend public resources to set up such estates.

It is also likely to be more expensive for IEAT to establish an industrial estate, compared to the private sector. Because the IEAT does not have sufficient financial resources of its own and it is required to ask for Cabinet approval every time it wants to set up an industrial estate, it would not have the flexibility to negotiate land purchases. News of an impending IEAT project is bound to quickly lead to a significant jump in land prices, which would end up killing the feasibility of the project.

Table 7.1
Promotional Privileges Granted to Promoted Investment Zones
under Revolutionary Decree 227 in 1972

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1. Exemption of up to 50 percent and up to 5 years from payment of import duty and business tax on raw materials and intermediate products imported for production except for raw materials and intermediate products which are produced domestically and whose prices and quality are similar to imports.

2. Exemption of up to 90 percent and up to 5 years from payment of business tax on sales of output starting from the day that income is earned from the operation.

3. Permission to deduct twice the amount of operational expenses on transportation, electricity and tap water in the calculation of corporate income tax according to the conditions, method and time period to be set by the BOI.

4. Permission to deduct from net profit of up to 25 percent of the investment cost in establishing facilities in order to facilitate operations outside of the normal depreciation allowances. This can be deducted in one year or spread out over several years.

5. An additional exemption of 50 percent from payment of corporate income tax for a period of 5 years after the normal corporate income tax holiday period of 3-8 years has expired.[1/]

1/ Income tax exemption is not given in some cases for projects outside of investment promotion zones.

Source: BOI

Table 7.2
Promoted Investment Zones, 1973-1978

Province	District
1. Krabi	Muang Krabi, Khlong Thom, and Ao Luk.
2. Kanchanaburi	Tha Maka.
3. Khon Kaen	Muang Khon Kaen, 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 Kamphaeng, 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, Kham Thale So, Sung Noen, Sikhiu, 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 Photharam.
14. Lampang	Muang Lampang, Ko Kha, Mae Tha, and Hang Chat.
15. Lamphun	Muang Lamphun, and Mae Tha.

Table 7.2 (continued)

Promoted Investment Zones, 1973-1978

Province	District
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

Table 7.3

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
Chiangmai	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

Source: Board of Investment

Table 7.4
Promotional Privileges Granted to Export Industries
under the 1972 Revolutionary Decree
and the 1977 Investment Promotion Act

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1. Exemption from import duty and business tax on imported raw materials and intermediate inputs used in the production of exports.

2. Exemption from business tax for producers and sellers of domestic raw materials and intermediate inputs used in the production of exports by promoted firms.

3. Exemption from import duty and business tax in the case of reexports for promoted firms.

4. Exemption from export duty and business tax for exports of promoted firms.

5. Permission to deduct 5 percent[1/] of the increase in export income over the previous year from the calculation of corporate income tax.

1/ It was 2 percent under the Revolutionary Decree of 1972.

Source: BOI

Table 7.5
Promotional Privileges Granted to Promoted Investment Zones under BOI's Announcements in 1978, 1983 and 1985

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1. Zones 1-2, Industrial Estates and Export Processing Zones

1.1 Reduction of business tax from sales of output starting from the day that income is earned from the operation.

1978: 50 percent for 5 years.[1/]
1983: 75 percent for first 3 years and
50 percent for another 2 years.
1983: 50 percent for first 3 years
for industrial estates.
1985: 90 percent for first 3 years and
75 percent for another two years.

1.2 A reduction of corporate income tax based on the following choices:

1.2.1 A 50 percent reduction of corporate income tax for a period of five years.[2/]

1.2.2 Permission to deduct twice the amount of operational expenses on transportation, electricity and tap water in the calculation of corporate income tax for a period of eight years starting from the day that income is earned from the operation.

1/ For products whose business tax rates are higher than 12 percent, the BOI may consider reducing the tax rate by more than half.

2/ The reduction is given for industrial estates outside of Greater Bangkok only in the following cases:

1. Investment size of not less than 300 million baht (not including land and working capital).

2. Employing not less than 200 full time workers.

3. Earn a net foreign exchange of not less than 1 million U.S. dollars annually for the first 3 years of operation.

4. Agro-industries utilizing domestic agricultural inputs and exporting not less than 50 percent of production.

5. Projects deemed important by the BOI.

Table 7.5 (continued)

1.2.3 Permission to deduct 10 percent of the investment cost in establishing facilities in order to facilitate operations outside of the normal depreciation allowances. This can be deducted in one year or spread out over several years. However, this must not exceed ten years starting from the day that income is earned from the operation.

2. Zones 3-4

2.1 Reduction of business tax from sales of output starting from the day that income is earned from the operation.

1978: 75 percent for 5 years.[3/]
1983: 90 percent for the first 3 years
and 75 percent for another 2 years.

2.2 A reduction of corporate income tax based on the following choices:

1.2.1 A 50 percent reduction of corporate income tax for a period of 5 years.

1.2.2 Permission to deduct twice the amount of operational expenses on transportation, electricity and tap water in the calculation of corporate income tax for a period of ten years starting from the day that income is earned from the operation.

2.2.3 Permission to deduct 20 percent of the investment cost in establishing facilities in order to facilitate operations outside of the normal depreciation allowances. This can be deducted in one year or spread out over several years. However, this must not exceed ten years starting from the day that income is earned from the operation.

3/ For products whose business tax rates are higher than 12 percent, the BOI may consider reducing the tax rate by more than 75 percent.

Source: BOI

Table 7.6

Number of Firms with Promotional Certificates

Location	1959-73	1974-78	1979-87	Unknown
Promoted Zones	22	19	43	114
Zone 1: Chiangmai and Lamphun	8	10	5	22
Zone 2: Saraburi and Nakhon Ratchasima	11	7	21	49
Zone 3: Khon Kaen	1	1	4	4
Zone 4: Songkhla	2	1	13	39
Other Provinces	369	249	567	1201
Whole Kingdom	391	268	610	1315

Source: Board of Investment

Table 7.7
Extra Privileges Granted to Promoted Investment Zones
under the BOI's Regulations of 1987 and 1988[1/]

1. Target Industries[2/]	2. Non-Target Industries
1.1 Exemption from tax on machinery	2.1 Same
1.2 Exemption of 50 percent from import duty and business tax on raw materials and intermediate inputs used in the production of goods for the domestic market for a period of one year.	2.2 None
1.3 Exemption from import duty and business tax on raw materials and intermediate inputs used in the production of goods for export for a period of 5 years.	2.3 None
1.4 Exemption from corporate income tax 1987: for 4 years 1988: for 5 years with an additional year exempted in the following cases:	2.4 Exemption from corporate income tax 1987: 4 years 1988: 4 years with an additional year exempted in the following cases:[3/]
a) save or earn foreign exchange of not less than one million U.S. dollars annually.	a) Same
b) agro-industries or industries utilizing domestic inputs or parts of not less than 50 percent of the total value of inputs or parts.	b) Same
c) employ not less than 200 full time workers.	c) Same
d) 1988: located in industrial estates or industrial areas promoted by the BOI.	d) Same

Table 7.7 (continued)

1. Target Industries	2. Non-Target Industries
e) projects which the BOI deemed important.	e) Same
1.5 An additional exemption of 50 percent of the corporate income tax for a period of 5 years after the normal corporate income tax holiday period.	2.5 Same
1.6 Exemption of 90 percent of business tax on sales of output for 5 years starting from the day that income is earned.	2.6 Same
1.7 Permission to deduct twice the amount of operational expenses on transportation, electricity, tap water in the calculation of corporate income tax for a period of 10 years starting from the day that income is earned.	2.7 Same
1.8 Permission to deduct 25 percent of the investment cost in establishing facilities in order to facilitate operations outside of the normal depreciation allowances. This can be deducted in one year or spread out over several years.	2.8 Same

1/ Unless otherwise noted, the incentives are the same for 1987 and 1988.

2/ Target projects are those in export industries, agro-industries, natural resource-based industries, engineering industries and other industries which the BOI deemed to be important to the economy and society.

3/ However, the total income tax holiday for any project cannot exceed 8 years.

Source: BOI

Table 7.8
Conditions for BOI Investment Promotion Privileges
of Provinces in Greater Bangkok under the 1987 Regulation

Bangkok Metropolis and Samut Prakan	Samut Sakhon, Pathum Thani, Nonthaburi and Nakhon Pathom
1. Full exemption of tax on machinery[1/]	1. Full exemption of tax on on machinery[2/]
1.1 Projects exporting not less than 80 percent of their sales or projects with at least one million baht in investment (excluding land) exporting not less than 50 percent of their sales in the first two years and not less than 80 percent of their sales thereafter.	1.1 Same
1.2 Projects located in industrial estates or industrial areas promoted by the BOI.	1.2 Same
2. Corporate income tax holiday of 3 years satisfying 2 out of 4 of the following cases:[3/]	2. An additional corporate income tax holiday of 1 Year for each of the following cases:[4/]
2.1 Projects exporting not less than 80 percent of their sales or projects with at least one million baht in investment (excluding land) exporting not less than 50 percent of their sales in the first two years and not less than 80 percent of their sales thereafter.	2.1 Agro-based projects or projects utilizing domestic agricultural inputs or projects utilizing domestic materials or parts of not less than 60 percent of the total value of raw materials and parts.
2.2 Projects which save or earn net foreign exchange of not less than 1 million U.S. dollars annually.	2.2 Same

Table 7.8 (continued)

Bangkok Metropolis and Samut Prakan	Samut Sakhon, Pathum Thani, Nonthaburi and Nakhon Pathom
2.3 Projects that employ not less than 200 full time workers.	2.3 Same
2.4 Projects located in industrial estates or industrial areas promoted by the BOI.[5/]	2.4 Same

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1/ In December 1987, industrial estates in Greater Bangkok were granted such a privilege with no conditions.

2/ An exemption of 50 percent is granted in normal cases.

3/ In December 1987, industrial estates in Greater Bangkok were granted the same privileges for non-promoted areas within Samut Sakon, Pathum Thani, Nonthaburi and Nakhon Pathom.

4/ A tax holiday of 3 years is granted in normal cases.

5/ This was left out in the announcement in September, but it was included in an announcement a month later.

Source: BOI

Table 7.9
Conditions for BOI Investment Promotion Privileges
in the Inner-Ring Provinces under the 1988 Regulation

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1. Full Exemption from Tax on Machinery

1.1 Projects exporting not less than 80 percent of their sales or projects with at least one million baht in investment (excluding land) exporting not less than 50 percent of their sales in the first two years and not less than 80 percent of their sales from the third year onwards.

1.2 Projects producing products that are used as raw materials or parts in the production of engines, machinery, electrical and electronic goods whose bases are concentrated mainly in these areas.

1.3 Projects producing engineering products.

1.4 Projects relating to agro-business, promoting the utilization of domestic agricultural products, or utilizing domestic raw materials or parts of not less than 60 percent of the total value of raw materials and parts.

1.5 Projects located in industrial estates or industrial areas promoted by the BOI.

2. Corporate Income Tax Holiday of 4 Years

2.1 Projects that save or earn net foreign exchange of not less than 2 million U.S. dollars annually.

2.2 Projects producing products that are used as raw materials or parts in the production of engines, machinery, electrical and electronic goods whose production bases are concentrated mainly within these areas.

2.3 Projects producing engineering goods.

2.4 Projects relating to agri-business, promoting the utilization of domestic agricultural inputs, or utilizing domestic raw materials or parts of not less than 60 percent of the total value of raw materials and parts.

2.5 Projects located in industrial estates or industrial areas promoted by the BOI.

Source: BOI

Table 7.10
Conditions for BOI Investment Promotion Privileges
in Greater Bangkok under the 1988 Regulation

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1. Exemption of Tax on Machinery

1.1 Projects exporting not less than 80 percent of their sales or projects with least one million baht in investment (excluding land) exporting not less than 50 percent of their sales in the first two years and not less than 80 percent of their sales from the third year onwards.

1.2 Projects producing products which are used as raw materials or parts in the production of engines, machinery, electrical and electronic goods whose production bases are mainly concentrated in Greater Bangkok. 1/

1.3 Projects located in industrial estates or industrial areas promoted by the BOI.

2. Corporate Income Tax Holidays of 3 Years

2.1 Projects exporting not less than 80 percent of their sales or small projects with less than one million baht in investment (excluding land) exporting not less than 50 percent of their sales in the first two years and not less than 80 percent of their sales from the third year onwards and located in industrial estates or industrial areas promoted by the BOI.

2.2 Projects producing products which are raw materials or parts used in the production of engines, machinery, electrical and electronic goods whose production bases are mainly concentrated in Greater Bangkok and located in industrial estates or industrial areas promoted by the BOI. 2/

1/ Not included in 1987.
2/ Not included in 1987.

Source: BOI

Table 7.11
Specific Areas Granted
Investment Promotion Status by the BOI[1/]

Year	Sub-district	District	Province	Area (rai)
1976	1. Klong Nerng	Klong Luang	Pathum Thani	915
	2. Praeksa	Samut Prakan	Samut Prakan	3500
1979	1. Praeksa	Samut Prakan	Samut Prakan	and
	Bang Poo	Samut Prakan	Samut Prakan	4800
	2. Kannayao	Bang Kapi	Bangkok	
	Bang Chan	Min Buri	Bangkok	700
	3. Lumplathien	Lat Krabang	Bangkok	1008
1981	Bang Kradi	Pathum Thani	Pathum Thani	1448
1984	Bang Saothong	Bang Pli	Samut Prakan	455
1985	1. Klong Nerng	Klong Luang	Pathum Thani	1009
	2. Lat Krabang Industrial Estate		Bangkok	1292
	3. Northern Industrial Estate		Lamphun	1760
	4. Laem Chabang Industrial Estate		Chon Buri	2800
	5. Mab Ta Put Industrial Estate		Rayong	7882
1988	1. Laem Chabang Industrial Estate		Chon Buri	2800
	2. Mab Ta Put Industrial Estate		Rayong	7882
1989	Mab Ta Put Industrial Estate		Rayong	7882

[1/] These areas were not chosen because of any geographical or public administration classification, and each area is much smaller than sub-districts.

Source: BOI

Table 7.12

Number of Firms with Promotional Certificates by Region

Region	Start-Up Year						
	1959-73	1974-78	1979-87	1988	1989	Unknown	Total
Greater Bangkok	328	220	459	110	1	856	1974
Central	35	27	86	17	0	292	457
North	17	13	15	3	0	39	87
Northeast	4	2	13	4	0	25	48
South	7	6	37	14	0	103	167
Whole Kingdom	391	268	610	148	1	1315	2733

Source: Board of Investment

Table 7.13
Industrial Estates Operated by
the Industrial Estate Authority of Thailand

Industrial Estate	Year Operational	No. of factories at year end 1988	Land Area (rai)		Remaining Land at year end 1988 (rai)	
			GIZ	EPZ	GIZ	EPZ
1. Greater Bangkok						
1.1 Bang Chan	1978	68	510	-	-	-
1.2 Bang Poo 1,2 1/	1977,1987	138	2644	237	1189.2	152.3
1.3 Lat Krabang 1,2	1983	79	761	188	-	-
1.4 Bang Pli	1984	77	797	-	-	-
1.5 Lat Krabang 3 1/	1989	2	411	563	-	-
1.6 Samut Sakhon	in process	-	1000	-	1000	-
2. Central						
2.1 Laem Chabang	1989	2	2312	1098	2069	1098
2.1 Map Ta Put	1989	9	5030	-	3455.9	-
3. North						
3.1 Northern	1985	42	356.6	785.3	168.8	433.5
4. South						
4.1 Kanchanavanich 1/	1989	-	170	170	170	170
4.2 Phuket 1/	in process	-	500	-	500	-

Note: 1/ Private industrial estate operated by the IEAT.

Source: IEAT

Table 7.14
Industrial Estates Operated by
the Private Sector

Industrial Estate	Year Operational	No. of factories at year end 1988	Land Area (rai)	Remaining land at mid-1988 (rai)
1. Greater Bangkok				
1.1 Navanakorn	1984	161	7245	2026
1.2 Bangkradi	1988	40	954	36
1.3 Maboonkrong	1988	-	1410	1310
1.4 Emthai	1988	-	533	533
1.5 Minburi	1988	n.a.	370	250
2. Central				
2.1 Rojana	1987	-	533	533
2.2 Sriracha	1988	-	599	599
2.3 Bangpakong Sriracha	1989	-	216	216
3. Northeast				
3.1 Suranaree	1987	n.a.	530	480

Source: Thai Factory Development Company Limited

CHAPTER 8

THE TAX STRUCTURE AND SYSTEM

8.1 INCOME TAXES

There are two major types of income taxes in Thailand: the personal income tax and the corporate income tax. Both types of income tax have increased in importance over the years (see Table 8.1).

The personal income tax rate structure, which has always been progressive, applies uniformly across all provinces in the country. Furthermore, provincial and local authorities are not allowed to collect a personal income tax.

As such, there is no bias against provincial areas in the rate structure of the personal income tax. If there were to be any bias, it would be due to the actual collection of taxes.

In 1986, personal income tax collected as a proportion of gross regional product was 2.8 percent for Greater Bangkok but they were much lower in the other regions -- less than 1 percent except for the North which was about 1 percent (see Table 8.2). In fact, Greater Bangkok alone contributed 79.8 percent of all personal income tax collected in 1988 (see Table 8.3).

The much lower level of personal income tax collected in regions other than Greater Bangkok could be the result of more widespread tax evasion. Furthermore, it could be due to more lax implementation in provincial areas.

It is therefore safe to say that there is no bias against provincial areas in the personal income tax structure. In fact, the bias may be against Bangkok, where tax evasion is more difficult due to the withholding of taxes by companies.

As for the corporate income tax, it was based in the early days on a progressive rate structure with three different net profit brackets (see Table 8.4). The structure therefore favors smaller businesses. Given that provincial industries are generally much smaller, it would have benefited them, although there are also a large proportion of small-scale industries in Greater Bangkok.

The progressive corporate income tax rate structure was utilized for almost 20 years, from 1959-1977. There was only one change in the tax rate in 1972: it was raised by 5 percentage points for all net profit brackets.

Since the end of 1977, the corporate income tax structure has changed to a single rate structure, although the rates are different for companies listed in the stock exchange and non-listed companies. The former are now subjected to a 30 percent tax on net profit while the latter pay a 35 percent tax on net profit.

Similar to the personal income tax, there is no bias against provincial areas in the corporate income tax structure. The tax rate structure applies to the whole country irrespective of geographical area, while local authorities are not empowered to collect such taxes.

However, for small companies that do not have good accounting systems to enable the calculation of reliable net profit figures, corporate income tax is to be collected based on gross income instead of net profits. The tax rate in this case is 5 percent of gross income.

This is, in fact, a sales tax rather than an income tax. To the extent that it distorts relative prices, it could create biases in the economy, although it would be difficult to prove that provincial industries will be hurt by such a tax more than industries in Greater Bangkok.

Because it is a sales tax, however, it would tend to hurt products that pass through more stages of production due to the accumulation of taxes at various stages of production.

Whatever geographical bias there is in the corporate income tax is -- as with the personal income tax -- likely to be due more to collection than to the rate structure. While Greater Bangkok's corporate income tax was about 2.6 percent of the gross regional product in 1986, the proportions for the other regions were all lower than 0.3 percent (see Table 8.5). In fact, Greater Bangkok alone contributed 96.6 percent of all corporate income tax collected in 1988 (see Table 8.6).

8.2 BUSINESS TAX

Originally, a business tax was collected from wholesalers and retailers. But due to the difficulty of collecting from a very large number of taxpayers, the government in 1961 changed the collection system to one that emphasizes tax collection mainly from manufacturers and importers. The system has remained intact to this day.

Prior to 1961, the range of the business tax was rather limited while the tax rates were relatively low. The change in 1961 introduced numerous categories of business tax together with a much wider range of business tax rates which were generally higher than the old rates.

In theory, the business tax in Thailand is a single-stage tax which is collected either from manufacturers, importers, operators, insurers, contractors or others. At present, there are 14 categories of businesses. However, the major category of business tax that affects industries is that imposed on sale of goods. It is collected mainly from manufacturers.

The business tax, which includes 21 rates and varies between 0.5-50 percent, applies uniformly across all provinces in the country as is the case with most major types of taxes. The tax rates are therefore not biased against provincial industries.

Greater Bangkok does nevertheless pay a much higher business tax relative to gross regional income than the other regions. In 1986, the amount of business tax collected as a percentage of gross regional product was 5 percent for Greater Bangkok, and much less than 1 percent in the other regions (see Table 8.7). About 91 percent of the income from the business tax was collected within the Greater Bangkok Area (see Table 8.8).

An additional ten percent of central government business tax is collected and earmarked by the government as municipal income. This system is also applicable for all municipal areas, so there is no bias against provincial areas.

Because the business tax is applied to the gross sales value of a business, it creates problems of tax pyramiding. Industries with many stages of production would be made to pay a larger proportion of business tax. It could also lead industries to integrate vertically in order to reduce their taxes. As such, there is a bias towards subcontracting in industries. Although this could present a bias against the development of small-scale industries, it is uncertain how this would affect provincial industrial development.

The TDRI field survey found that only about 12 percent of firms subcontracted their activities both to household (6-7 percent) and to other firms (about 5 percent). Firms were also found to accept subcontracting work from other firms; and this accounted for about 6-7 percent of total firms surveyed (see Tables 8.9 - 8.10).

In order to alleviate the problem of such tax pyramiding, there was an attempt in 1974 to restructure the business tax on the sale of goods. Final goods were to be taxed at higher rates than intermediate

goods, while the typical tax was set at the lowest level for raw materials (see Table 8.11).

Nevertheless, the problem of tax pyramiding remains. This has finally led the Ministry of Finance to consider the replacement of the business tax with a value added tax (VAT) of 10 percent.

To the extent that VAT makes it more difficult for small-scale and provincial industries to evade taxes, the introduction of VAT could negatively affect such industries. In addition, industries that do not have good accounting systems would have to incur the costs of improving their accounting systems. However, the Ministry of Finance has exempted businesses with less than 240,000 baht of annual income from paying such a tax.

A feature of the VAT system that could affect provincial development is a plan to allow local authorities to collect such a tax on their own to be used for local development.

8.3 TRADE TAXES

After the Second World War, Thailand's trade policy was rather restrictive, since the country lacked foreign exchange and was forced to pay war reparations. In order to import or export goods, permission must be obtained from the authorities. In addition, there was tight foreign exchange control together with the use of a system of multiple exchange rates.

In 1955, there was a significant reversal in trade policy, as the foreign trade and the exchange rate regime were liberalized. Although tariffs are collected on imported goods, much of the quantitative restrictions on trade have been lifted. As for export taxes, the only major one was that collected on rice, in the form of the rice premium, which was fixed at specific rates.

During the 1960s, the main emphasis of import tariffs was to provide income to the government and to protect import-substituting industries. On the other hand, major export commodities, including rice, rubber, wood and leather were also taxed.

According to a study by Suwankiri, the effective rates of protection based on tariffs in 1962 were highest for final goods -- 109 percent for consumer durables and 86 percent for consumer non-durables. They were lower for intermediate and capital goods at 74 percent and 42 percent, respectively (see Table 8.12). The top three industries with the highest effective rates of protection were beverages, automobiles and petroleum products (see Table 8.13).

This was confirmed by Wongwuttiwat's study, which also found the effective rates of protection to be higher for consumer goods and lower for machinery in 1964, 1971 and 1974 (see Table 8.14). As for intermediate products, protection was higher for those in the second group or those closer to being final goods, although it was still lower than for consumer goods in 1971 and 1974. Beverages and tobacco continued to receive high protection for the three years included in the study.

The same study by Wongwuttiwat also found that export industries received negative protection for all three years studied. The effective rate of protection for the non-import competing industry group was highest in 1964 and 1971, although it was less protected than the import-competing industry group in 1974.

The pattern of import protection seemed to have remained the same in the 1970s despite the attempt to promote export industries. Studies by Akrasanee found that the export industry group was still heavily taxed (negatively protected) in 1969, 1971, 1974 and 1978 (see Table 8.15).

Furthermore, the non-import competing industry group was the most highly protected group in 1969 and 1971 while the import-competing industry group was the most highly protected group in 1974 and 1978.

Provincial industrial development could be affected, given that export industries tend to utilize more domestic natural resources and therefore could find it advantageous to situate near raw material sources. This is because most of the country's natural resources are from outside of Greater Bangkok. This is especially true for agro-based industries in Thailand, where a large proportion of provincial industries, such as rice mills, saw mills, sugar mills, tapioca flour mills, canned food factories and others, rely on agricultural raw material inputs.

The lower protection accorded to resource-based industries was confirmed by a study of effective rates of protection in the 1980s which found that agriculture, other primary products and agro-processing industries received less protection than the other manufacturing industries (see Table 8.16). This was particularly so for the textile product industry and the consumer goods and motor vehicle industries.

In addition, the negative protection of exports could indirectly affect provincial industrial development through the income effect. The tax on agricultural exports, especially rice, would tend to reduce rural incomes, which in turn could lead to a lower demand for industrial products. Given that the rural population consume more goods produced within their localities than does the population in Greater Bangkok, the income transfer through export taxes could negatively affect provincial industrial development.

Recognizing that the import tariff structure created distortions against certain types of industries, the government attempted to restructure import tariffs in 1985. The result was that final goods are to be taxed more heavily than raw materials and intermediate goods, while raw materials are to be taxed less heavily than intermediate goods (see Table 8.17).

Although the import tax remains a major tax in Thailand, its overall nominal rate has declined over the years, from 23 percent of import value in 1966 to 11.4 percent of import value in 1988 (see Table 8.18). The fall in the overall nominal rate of the export tax is even more significant, from 13 percent of export value in 1964 to 0.2 percent of export value in 1988.

Table 8.1
Major Taxes as a Proportion of GDP

Percent

Year	Business Tax	Personal Income Tax	Corporate Income Tax	Import Taxes	Export Taxes	Total Tax Revenue
1963	2.24	0.69	0.47	4.08	1.71	11.84
1964	2.40	0.72	0.48	3.80	2.15	12.45
1965	2.42	0.76	0.58	3.36	1.86	12.32
1966	2.47	0.69	0.58	3.45	1.34	11.68
1967	2.69	0.78	0.60	3.96	1.22	12.53
1968	2.70	0.84	0.66	4.26	1.34	13.19
1969	2.65	0.92	0.66	4.23	1.17	13.07
1970	2.51	0.88	0.61	3.67	0.58	11.58
1971	2.61	0.95	0.64	3.45	0.27	11.39
1972	2.56	0.92	0.59	3.30	0.24	11.21
1973	2.52	0.79	0.68	3.11	0.47	11.00
1974	2.68	0.75	1.00	3.00	1.79	12.98
1975	2.65	0.90	1.20	2.81	0.47	11.55
1976	2.69	0.88	1.08	2.74	0.39	11.33
1977	2.85	0.94	1.16	3.09	0.42	12.24
1978	2.79	1.10	1.32	3.01	0.40	12.34
1979	2.58	1.06	1.33	2.94	0.51	12.50
1980	2.79	1.10	1.46	2.96	0.51	13.44
1981	2.83	1.19	1.77	2.88	0.37	13.27
1982	2.74	1.46	1.56	2.46	0.22	12.81
1983	2.82	1.61	1.45	3.08	0.29	14.18
1984	3.10	1.77	1.50	3.05	0.19	14.00
1985	2.91	1.96	1.52	3.03	0.11	14.29
1986	2.57	1.76	1.42	2.84	0.07	14.09
1987	2.81	1.56	1.43	3.24	0.11	15.05
1988	3.53	1.67	1.87	4.00	0.06	16.49

Source: Bank of Thailand's Monthly Statistics, various issues.

Table 8.2
Proportion of Personal Income Taxes to Gross Regional Product

Percent

Year	Greater Bangkok	Rural Central	Northeast	North	South
1982	3.180	0.191	0.562	0.686	0.653
1983	3.114	0.213	0.604	0.810	0.750
1984	3.209	0.198	0.628	0.801	0.834
1985	3.266	0.230	0.719	0.929	0.951
1986	2.519	0.249	0.781	1.022	0.964
1987	2.334	0.204	0.705	0.917	0.841

Sources: Revenue Department and NESDB.

Table 8.3
Collection of Personal Income Tax by Region

Percent

Year	Greater Bangkok	Rural Central	Northeast	North	South	Whole Kingdom	Total Amount Collected (million baht)
1982	83.96	2.18	4.61	5.04	4.20	100.00	13,712
1983	81.90	2.27	5.20	5.94	4.69	100.00	15,383
1984	82.01	2.08	5.11	5.86	4.94	100.00	16,945
1985	79.90	2.39	5.68	6.49	5.55	100.00	18,255
1986	76.15	3.05	6.72	7.68	6.40	100.00	16,788
1987	78.68	2.41	6.10	7.07	5.74	100.00	17,952
1988	79.81	2.77	5.45	6.27	5.69	100.00	20,855

Sources: Revenue Department and NESDB.

Table 8.4
Corporate Income Tax Rates
(Percent of Net Profit)

Year	Net Profit Bracket (Baht)	Listed Companies	Unlisted Companies
1959-15 Sept.1972	0-500,000	15	15
	500,000-1,000,000	20	20
	Over 1,000,000	25	25
16 Sept.1972-30 Dec.1977	0-500,000	20	20
	500,000-1,000,000	25	25
	Over 1,000,000	30	30
31 Dec.1977-30 Dec.1980	All	30	35
31 Dec.1980-30 Dec.1981	All	35	45
31 Dec.1981-31 Dec.1985	All	30	40
1 Jan.1986-present	All	30	35

Source: Revenue Department

Table 8.5
Ratio of Corporate Income Taxes to Gross Regional Product

Percent

Year	Greater Bangkok	Rural Central	Northeast	North	South
1982	2.311	0.092	0.163	0.171	0.474
1983	2.575	0.104	0.134	0.199	0.289
1984	2.951	0.102	0.074	0.163	0.287
1985	3.167	0.118	0.089	0.186	0.329
1986	2.639	0.145	0.128	0.203	0.299

Sources: Revenue Department and NESDB.

Table 8.6
Collection of Corporate Income Tax by Region

Percent

Year	Greater Bangkok	Rural Central	Northeast	North	South	Whole Kingdom	Total Amount Collected (million baht)
1982	90.11	1.55	1.98	1.85	4.50	100.00	9,284
1983	92.45	1.51	1.57	2.00	2.47	100.00	11,268
1984	94.29	1.34	0.75	1.49	2.12	100.00	13,553
1985	93.78	1.48	0.85	1.57	2.32	100.00	15,081
1986	92.60	2.05	1.28	1.77	2.31	100.00	14,462
1987	95.28	1.43	0.65	1.24	1.40	100.00	18,113
1988	96.57	0.23	0.61	0.97	1.62	100.00	27,010

Source: Revenue Department

Table 8.7
Ratio of Business Tax to Gross Regional Product

Percent

Year	Greater Bangkok	Rural Central	Northeast	North	South
1982	5.337	0.639	0.401	0.419	0.901
1983	5.462	0.708	0.374	0.446	0.754
1984	6.137	0.735	0.421	0.448	0.767
1985	6.107	0.699	0.423	0.487	0.820
1986	5.013	0.598	0.403	0.459	0.609
1987	5.052	0.650	0.374	0.421	0.648

Sources: Revenue Department and NESDB.

Table 8.8
Collection of Business Tax by Region

Percent

Year	Greater Bangkok	Rural Central	Northeast	North	South	Whole Kingdom	Total Amount Collected (million baht)
1982	87.87	4.55	2.05	1.92	3.62	100.00	21,987
1983	88.45	4.65	1.98	2.01	2.90	100.00	24,984
1984	89.21	4.39	1.95	1.87	2.58	100.00	29,789
1985	88.83	4.32	1.99	2.02	2.85	100.00	30,700
1986	89.24	4.31	2.04	2.03	2.38	100.00	28,506
1987	90.15	4.08	1.71	1.72	2.34	100.00	33,915
1988	90.98	4.04	1.51	1.55	1.92	100.00	48,149

Source: Revenue Department

Table 8.9
Firms that Accepted
Subcontracting Work

Region	Number with Subcontracting	Total number of Respondents
Greater Bangkok	11	112
Rural Central	20	207
North	9	207
Northeast	14	218
South	10	218
Kingdom	64	962

Source: Rural Industries and Employment Project Survey, TDRI, 1989.

Table 8.10
Number of Firms Subcontracting Activities to Outsiders

Region	Firms	Households	Total number of respondents
Greater Bangkok	8	2	118
Rural Central	5	15	209
North	7	14	204
Northeast	15	14	218
South	13	19	214
Kingdom	48	64	964

Source: Rural Industries and Employment Project Survey, TDRI, 1989.

Table 8.11
Typical Business Tax Rate by Group of Product

Percent

Group of Product	Manufacturer	Importer	Exporter
First Account: Final products	9.0%	9.0%	Exempt
Second Account: Intermediate products	5.0%	5.0%	Exempt
Third Account: Raw materials	1.5%	1.5%	Exempt
Others	1.0%	1.0%	Exempt

Source: Royal Decree (No.54), B.E. 2517 (1974).

Table 8.12
Effective Rates of Protection,
1962

Percent

Industry Group	Tariff Only	Tariff Plus BOI Incentives
1. Non-durable consumer goods	86	134
2. Durable consumer goods	109	116
3. Intermediate goods	74	115
4. Capital goods	42	56

Source: Trairong Suwankiri, "The Structure of Protection and Import Substitution in Thailand", M.A. Thesis, University of the Philippines, April 1970.

Table 8.13
Effective Rates of Protection,
1964

Percent

Industry	Tariff Rates	Tariff Only	Tariff Plus BOI Incentives
Beverages	207	309	
Automobiles	45	118	122
Petroleum products	60	104	
Dairy products	41	97	250
Plastic articles	45	81	
Textile fabrics	30	75	104
Tobacco	65	75	
Fats & oils	31	73	185
Thread & yarn	22	68	98
Livestock & meat	39	67	
Motorcycles & bicycles	28	66	95
Wood products includes furniture	29	63	
Wood & manufactured wood	30	62	
Glass & glass products	34	58	72
Rubber products	28	57	86
Paper & paper products	10	51	65
Rolling mill products	12	49	89
Sugar	26	48	
Electrical machinery	22	45	58
Shoes	30	43	
Non-electrical machinery	15	37	53
Cereal products	42	15	88
Agricultural machinery	0	7	21

Source: Trairong Suwankiri, "The Structure of Protection and Import Substitution in Thailand", M.A. Thesis, University of the Philippines, April, 1970.

Table 8.14
Effective Rates of Protection
1964, 1971 and 1974

Percent

Industry Group	1964		1971		1974	
	Balassa	Corden	Balassa	Corden	Balassa	Corden
Processed food	61.38	37.33	211.86	205.92	-50.25	-71.19
Beverages & tobacco	81.49	65.47	464.87	177.88	441.00	409.83
Construction materials	26.85	21.26	30.36	23.41	-15.19	-15.93
Intermediate products I	8.11	6.54	23.6	15.28	17.49	10.37
Intermediate products II	78.03	54.55	75.16	50.32	79.70	55.74
Consumer non-durables	55.68	42.44	145.86	57.44	120.38	61.84
Consumer durables	25.68	21.96	142.67	93.20	196.37	144.75
Machinery	-7.02	-5.80	9.93	7.58	16.20	12.49
Transport equipment	420.83	121.69	344.10	146.45	310.23	181.10
Non-import competing	266.83	182.96	182.50	175.00	18.70	14.04
Import competing	65.16	58.21	97.16	56.10	92.55	57.57
Export	-56.98	-41.9	-36.40	-24.29	-81.94	-72.46

Source: Pairote Wongwuttiwat,"The Structure of Differential Incentives in the Manufacturing Sector: A Study of Thailand's Experience during 1945-1974", M.A.Thesis, Thammasat University, June 1975.

Table 8.15

Average Rates of Protection 1/

Percent

Industry Group	Nominal				Effective			
	1969	1971	1974	1978	1969	1971	1974	1978
Processed food	n.a.	50.9	5.8	9.0	n.a.	205.9	-46.4	78.5
Beverages & tobacco	n.a.	116.5	150.1	69.1	n.a.	139.2	946.2	4.0
Construction materials	n.a.	21.8	32.9	12.2	n.a.	23.4	49.3	91.7
Intermediate products I	n.a.	11.4	0.3	14.8	n.a.	15.3	-6.7	16.2
Intermediate products II	n.a.	36.1	30.0	19.2	n.a.	50.3	75.4	55.3
Consumer non-durables	n.a.	44.9	39.8	64.6	n.a.	57.4	134.6	212.4
Consumer durables	n.a.	45.0	48.2	57.3	n.a.	93.2	136.2	495.6
Machinery	n.a.	10.2	28.0	21.4	n.a.	7.6	23.7	58.3
Transport equipment	n.a.	58.8	37.9	80.5	n.a.	146.5	135.0	417.2
All industries	n.a.	n.a.	30.8	27.3	n.a.	87.2	18.6	70.2
All industries excluding food, beverages & tobacco	n.a.	n.a.	n.a.	36.4	n.a.	44.2	45.9	90.3
Non-import competing	57.6	71.2	34.6	50.8	180.0	175.0	39.7	99.6
Import competing	21.6	33.6	24.8	35.7	50.0	56.1	44.8	85.9
Export	-34.7	7.4	-6.5	-13.7	-56.1	-24.3	-39.9	-40.3

Note: 1/ Based on Corden's formula.

Source: IBRD, Industrial Development Strategy in Thailand, 1980, Table 7.

Table 8.16
Summary of Changes in Nominal and Effective Protection Rates in the 1980s

Percent

	Sep. 1981	Mar. 1983	Oct. 1984	Nov. 1984	Apr. 1985
Nominal Rates					
Overall averages:					
Effective nominal tariff rate	10.5	12.3	12.6	11.8	n.a
Weighted by import value	14.3	16.2	16.6	15.3	18.5
Unweighted	31.0	32.6	32.8	29.9	33.8
(standard deviation)	(30.1)	(28.6)	(28.7)	(26.3)	27.3
Sectoral averages (weighted):					
Consumer goods	25.0	22.6	27.8	20.7	24.8
Intermediate products	13.2	15.7	16.0	14.5	14.1
Raw materials	2.3	3.2	3.1	2.9	5.1
Capital goods	14.1	18.0	19.1	17.4	22.3
Automotive products	36.5	40.4	40.4	41.3	63.0
Effective Rates					
Sectoral averages (unweighted):					
Agriculture	25.1	25.6	26.5	24.0	28.0
(standard deviation)	(27.2)	(27.3)	(28.9)	(26.3)	(29.4)
Other primary products	5.0	7.2	7.5	6.8	10.5
(standard deviation)	(9.0)	(9.8)	(11.0)	(10.0)	(12.4)
Agro-processing	115.4	139.0	138.0	130.3	135.2
(standard deviation)	(218.3)	(266.8)	(266.1)	(264.9)	(264.4)
Other manufacturing	77.4	67.4	65.3	57.0	66.3
(standard deviation)	(133.8)	(92.1)	(81.7)	(66.8)	(69.6)
of which: Textile products	248.5	144.4	127.8	108.0	118.4
Chemical products	54.3	52.9	51.9	46.6	44.5
Machinery	14.1	23.6	23.6	21.0	29.3
Cons. goods & motor vehicles	34.9	33.4	33.5	30.6	45.6
Overall averages:	66.7	66.4	65.3	59.0	65.9
(standard deviation)	(140.2)	(140.4)	(136.7)	(131.3)	(132.0)

Table 8.16 (Continued)

	Sep. 1981	Mar. 1983	Oct. 1984	Nov. 1984	Apr. 1985
Effective Rates					
Sectoral averages (weighted):					
Agriculture	10.9	11.3	12.2	11.0	13.2
Other primary products	5.7	7.9	8.4	7.6	10.7
Agro-processing	24.7	30.3	32.3	28.7	32.8
Other manufacturing	53.6	50.2	49.8	44.5	51.9
of which: Textile products	110.4	61.1	61.9	55.5	59.9
Chemical products	49.3	54.0	52.5	46.7	9.2
Machinery	18.9	29.1	29.1	25.9	34.9
Cons. goods & motor vehicles	51.5	54.6	53.6	648.3	70
Overall averages:	27.9	27.9	28.5	25.5	30

Notes: The effective rates of protection represent the potential incentive effects of the tariff structure and were calculated according to Corden's methods using input coefficient from the 1980 Input-Output table.

Nominal rates of protection are weighted by 1984 import value at the 6 digits BTN Code level. Effective rates are weighed by 1980 value-added at the world prices at the input-output sector level.

Source: Bhattacharya and Brimble (1986).

Table 8.17
Structure of Import Tariff

Percent

Category of Goods	Before Adjustment	After Adjustment Since 5 April 1985
1.Necessary Goods Which Are Not Produced Domestically	0-5	0-5
2.Primary Goods	5-15	5-15
3.Intermediate Goods	15-30	15-35
4.Final Goods	30-60	35-60
5.Luxury Goods	60-150	60-200

Table 8.18
Average Nominal Import and Export Tax Rates

MIllion Baht

Year	Import Taxes	Imports	Import Rate (percent)	Export Taxes	Exports	Export Rate (percent)
1963	2,780	12,803	22.18	1,164	9,676	12.03
1964	2,840	14,253	19.86	1,609	12,339	13.04
1965	2,830	15,433	22.65	1,570	12,941	12.13
1966	3,496	18,504	23.16	1,361	14,099	9.65
1967	4,285	22,188	22.42	1,319	14,166	9.31
1968	4,974	24,103	22.56	1,568	13,679	11.46
1969	5,437	25,966	20.81	1,505	14,709	10.23
1970	5,404	27,009	19.57	848	14,772	5.74
1971	5,287	26,794	20.94	414	17,275	2.40
1972	5,610	30,875	22.36	406	22,491	1.81
1973	6,905	42,184	19.83	1,041	32,226	3.23
1974	8,365	64,044	13.31	5,001	49,799	10.04
1975	8,527	66,835	14.21	1,435	45,007	3.19
1976	9,499	72,877	17.09	1,361	60,797	2.24
1977	12,458	94,177	15.59	1,684	71,198	2.37
1978	14,683	108,899	15.87	1,944	83,065	2.34
1979	17,286	146,161	11.83	3,020	108,179	2.79
1980	19,463	188,686	10.32	3,379	133,197	2.54
1981	21,896	216,746	10.10	2,811	153,001	1.84
1982	20,183	196,616	10.27	1,794	159,728	1.12
1983	28,014	236,609	11.84	2,619	146,472	1.79
1984	29,692	245,155	12.11	1,862	175,237	1.06
1985	30,742	251,169	12.24	1,079	193,366	0.56
1986	31,106	241,358	12.89	806	233,383	0.35
1987	40,002	334,209	11.97	1,301	299,853	0.43
1988	58,664	513,114	11.43	870	403,570	0.22

Source: Bank of Thailand's Monthly Statistics, various issues.

CHAPTER 9

SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

The main objective of this research work is to identify the potential biases of government policies and measures against provincial industries so that policy recommendations leading to a coherent industrial strategy can be formulated to promote provincial industrial development. Despite the inability of the research work to include all public sector policies, measures and institutions, it was able to cover a wide range of such areas, including the institutional structure of industrial policy formulation and implementation; the distribution of public resources and infrastructure; the distribution and cost of financial resources; the distribution and cost of education together with the minimum wage rate policy; investment promotion and industrial estate policies; and the tax system and structure.

The study found that there were and continue to be a wide range of policies and measures that are biased against the development of provincial industries. Many of these policies and measures can be traced to the very centralized nature of the government system. However, there are in many cases valid economic considerations for such biases. It is therefore not appropriate to simply suggest that all such biases be swept away and that new biases be created and implemented in favor of provincial industries. A wider perspective would have to be taken in the formulation of a set of industrial strategies that would be both beneficial to provincial industries and to the country as a whole in the longer term.

Based on the results of the study, policy recommendations to promote the development of provincial industries can be grouped into 3 major areas or approaches. They are:

1. The utilization of direct and indirect economic incentives.

2. The utilization of policy measures to redistribute a larger share of the country's resources back towards provincial areas such as through infrastructure development and educational investment.

3. The formulation of a financial and technical assistance package to directly support provincial industries.

9.1 ECONOMIC INCENTIVES

Although the study has found that economic incentives are biased against provincial industries, it is not recommended that there be a complete reversal of such incentives to create biases favorable to provincial industries. The manipulation of market prices, whether through output or input prices together with the provision of government subsidies, is likely to lead to sub-optimal utilization of economic resources. This would not be beneficial to the economy in the longer term.

The best action for the government concerning economic incentives would be to reduce them to the fullest extent possible and to neutralize their effect with respect to geographical location. Through the neutralization of such incentives, provincial industries would have gained over their past positions. If this tactic proves insufficient, other approaches should be utilized to promote provincial industry instead.

In the area of public utility pricing, the study found that such biases have declined over the years. However, there are biases remaining in certain areas such as bus service and retail gasoline/diesel pricing.

In the case of investment promotion privileges, there also seemed to be biases against provincial industries, despite the Board of Investment's stated intention to promote them. The recommendation here is to reduce the investment promotion incentives to the minimum;

whatever incentives that remain should be neutral with respect to geographical area.

In order to better control the growth of industries and their impact on the environment and to enable the efficient provision of public infrastructure services, industrial zones should be designated in various regions and/or provinces in the country. Industrial estates should be permitted to be established only within such industrial zones.

Because the private sector possesses the capability to invest in industrial estates on its own, the Industrial Estate Authority of Thailand's role should be revised to cover only regulatory functions.

One move that should help to substantially reduce the bias against provincial industries is the abolishment of legal minimum wage rates. It was pointed out in Chapter 6 that the establishment of minimum wage rates in the country has distorted the underlying relative factor endowments of the various regions; this not only adversely affects provincial industries but could also lead to sub-optimal utilization of economic resources for the country as a whole. If the abolishment of minimum wage rates is politically unfeasible, the wage rates should be set in such a way as to make them least effective in practice.

In the financial market, interest rates should be allowed to fluctuate freely. Although this could mean that provincial industries generally would have to pay a higher rate than industries in Greater Bangkok, it would at least help to increase the accessibility to credit lines of financial institutions, where interest rates are lower than in the unorganized money market.

Provincial industries do not seem to have gained from the subsidized interest rates offered by the Bank of Thailand. On the contrary, there is evidence that only a handful of large business groups have gained. Such subsidized credit should therefore be abolished except for that granted to small scale industries.

9.2 Redistribution of Economic Resources

Instead of relying on economic incentives to promote provincial industries directly, a better approach would be to provide indirect support in the form of capital investment in infrastructure and human resource development. This is not expected to provide quick results, although it should establish a strong foundation upon which provincial industries can build in the future.

As widely suspected, the study found that public infrastructure and higher levels of education had been and continued to be concentrated in the Greater Bangkok Area, although there are valid economic arguments for such developments. Because of the lumpiness of capital, it is not possible to spread them out evenly across wide areas of the country.

The relatively better public infrastructure and educational facilities are major factors leading to the significant rural population migration into Bangkok. However, it has now reached a stage where there could be diseconomies from the over concentration of the population in the Greater Bangkok Area. There is therefore some justification for the reversal of such a trend by the redistribution of such investment resources to other regions.

Furthermore, it may also be time for resources to be redistributed back to the regional areas on equity grounds. This would be particularly true for higher education. Every Thai citizen should be given an equal opportunity to obtain a good education.

However, any effort to redistribute infrastructure expenditures to the provincial areas would have to take into consideration the lumpiness of capital and the critical mass that would be required to make such capital investment effective. Except for the case of education, it is not recommended that the infusion of capital to provincial areas be distributed equally across provinces.

The approach that should be chosen instead is to identify a number of growth poles where such infrastructure investments can be

concentrated. However, the selection of such growth poles must be based mainly on their economic feasibilities.

In addition to electricity and water supply, investment in roads and communications should receive high priority. This is because high transportation and communications costs are major factors preventing the development of industries in provincial areas.

In order to allow the government to concentrate its effort in building public infrastructure and providing education to the provincial areas and to allow a greater mobilization of resources for such actions, the government should increasingly rely on the private sector to take over a greater role in the development of the infrastructure and education, especially in the Greater Bangkok Area where there are well-developed markets.

The government should continue to give its support towards privatization. In fact, privatization should be extended to cover activities not purely under the jurisdiction of state enterprises. For example, state universities should also be privatized in order to enhance their operational efficiency and flexibility and to reduce the government's financial burden.

9.3 FORMULATION OF A FINANCIAL AND TECHNICAL ASSISTANCE PACKAGE

In addition to the indirect general support given to provincial industries in the form of infrastructure and human resource development, the government should also consider extending a financial and technical assistance package to these industries. This is justifiable on the grounds that there could be a market failure in the economy that would require the intervention of the government.

In formulating such assistance, the government must make the distinction between measures directed at local indigenous industries and measures aiming to attract investment from outside the locality. In the latter case, there is no real need to provide financial and

technical assistance to such industries other than relevant general information for potential investors.

To support indigenous industries, the government should provide financial assistance through a specialized financial institution with the major objective of promoting such industries. It should not provide such assistance through existing financial institutions, because it could result in conflicts of interest. Furthermore, past experience has shown that it is ineffective to rely on commercial institutions to undertake projects that are mainly developmental in nature.

The best option would be to spin off part of the Industrial Finance Corporation of Thailand and set up a separate institution with the clearly stated objective of promoting small-scale industries in the provincial areas. The new institution should not only provide financing to industries, but it should also provide other types of technical and advisory services. Furthermore, it should consider extending equity financing or venture capital type of activities to these industries.

The study found that public extension services to support industries are still quite inadequate and unknown among industrialists; the government should thus consider strengthening such services to include the provision of information and training programs to upgrade the capability of local entrepreneurs in such areas as general management, financial management, marketing, etc. In addition, a restructuring of government extension services to emphasize provincial industries over Greater Bangkok should be undertaken.

Because the public sector is unlikely to have sufficient resources and flexibility to carry out such activities alone, private sector and educational institutions should be strengthened and mobilized to play a larger role in this area.

In order to promote industrial investment from outside the locality -- either from Greater Bangkok or abroad -- the role of the Board of Investment should be modified. With the demotion of economic incentives, the Board of Investment's (BOI) resources could be freed to

concentrate on the collection and compilation of information relating to the investment climate in various regions of the country, such as resource and market profiles. Although such information will be useful to potential investors outside of the locality, local investors may also gain from better information regarding the investment climate within their own locality.

Furthermore, the BOI may also act as a catalyst for exchange programs between indigenous local industrialists and industrialists in Greater Bangkok and abroad in order to promote technology transfer to the provincial areas.

In addition to the three approaches discussed above, the government should seriously consider decentralizing decision-making to local authorities and institutions. This applies equally to state enterprises. The decentralization of decision-making should help to reduce the systematic biases against provincial areas, in addition to improving the public services provided to them.

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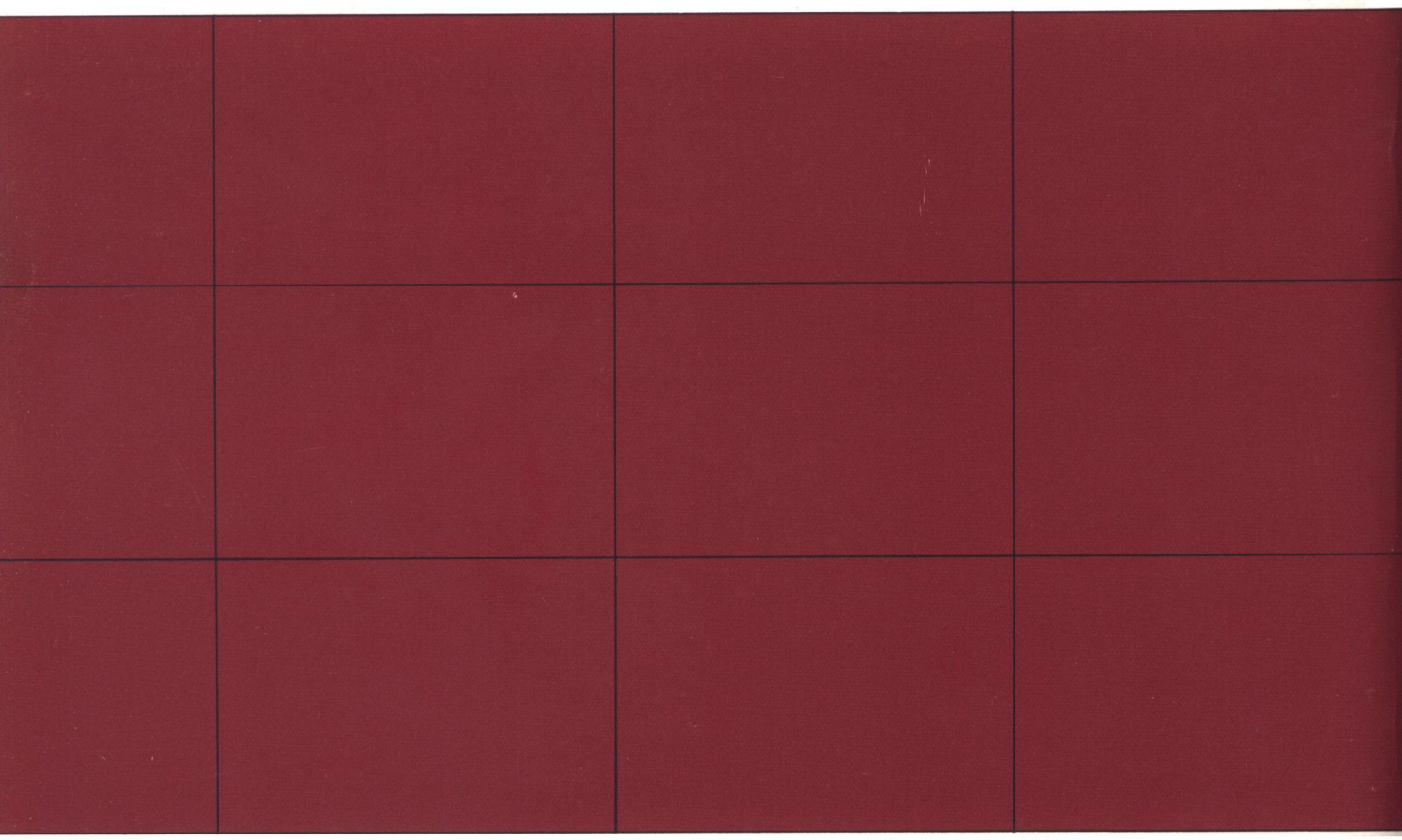

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