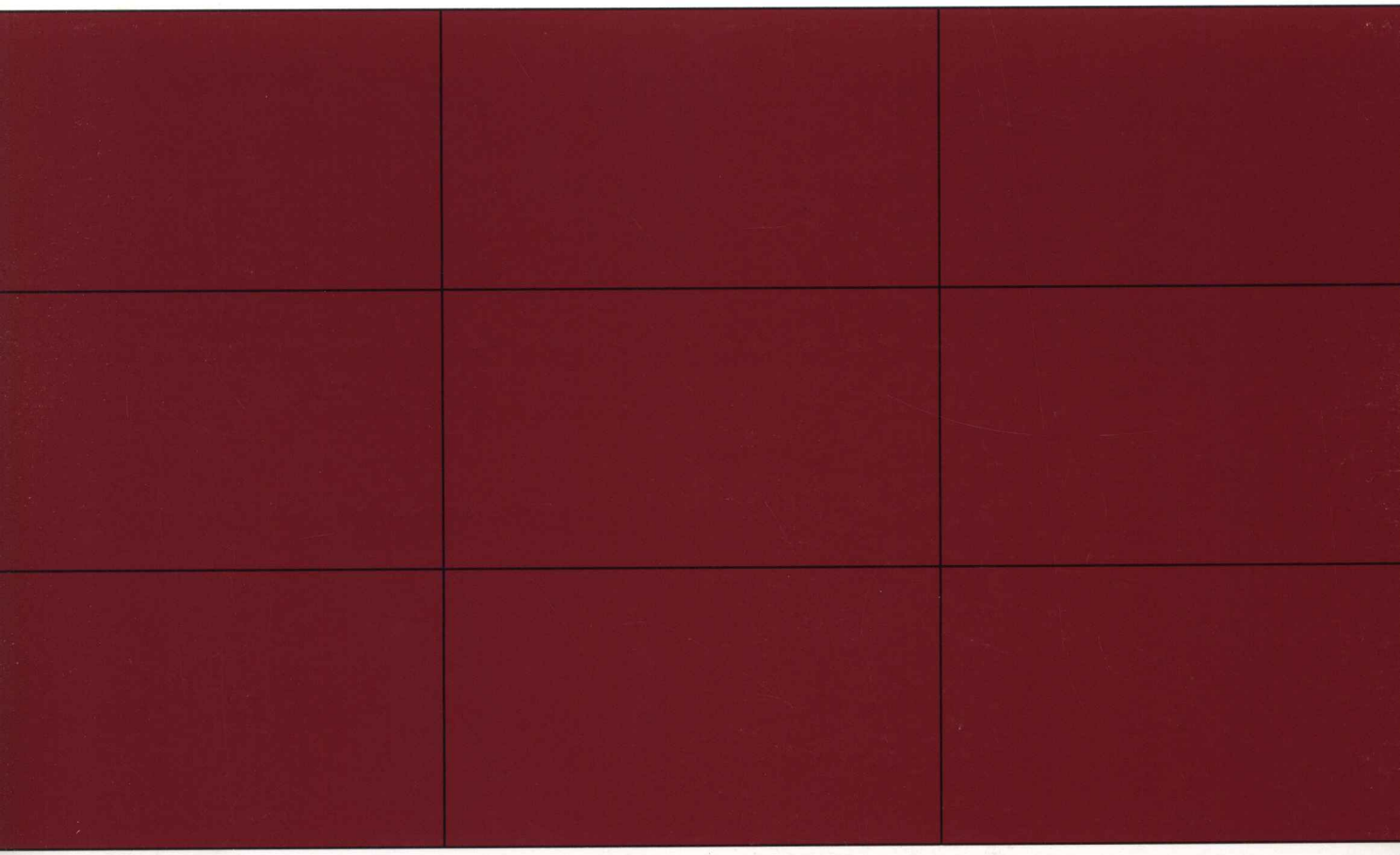
The Role of Demand in Provincial Industrialization



The Role of Demand in Provincial Industrialization

By

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THE ROLE OF DEMAND IN PROVINCIAL INDUSTRIALIZATION

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EXECUTIVE SUMMARY

This study addresses provincial industrialization from the demand point of view in order to (1) understand the present and potential situation of effective demand for provincial industry products, and (2) identify ways to increase and sustain the existing demand. Four sources of demand are covered: (1) household consumers, (2) producers, (3) domestic government, and (4) foreign markets. The analysis focuses on the domestic sources of demand because the influences of policy measures on these sources are likely to be relatively more effective in beginning the process of provincial industrialization. Efforts in the past were focused mainly on supply incentives such as tax privileges to attract investors to the provinces. Responses have been disappointing.

Domestic demand was the most important source of the rapid growth in the industrial sector until recently when it was surpassed by export demand. Value added data indicate that more than 75 percent of all industrial products originated from the Bangkok Metropolitan Region (BMR). Much of the demand for industrial products in the provinces thus has been met by products from the BMR. Meanwhile, increasing population pressure on agricultural land in most rural areas has forced many to seek employment in Bangkok and other major cities where, despite the scope and complexity of their economic activities, insufficient employment could be generated. International and Thai agencies have thus become increasingly convinced that provincial industrialization would generate more employment for the country's growing labor force.

FINDINGS

Demand for provincial industrial products has indeed been limited due primarily to the low purchasing power caused by widespread poverty among the rural households, not by the (very few cases of) product inferiority. An analysis of provincial household expenditure patterns reveals the values of expenditure elasticity of demand for industrial products to be mostly positive, often greater than unity. With the

significant marginal budget share of these products, a substantial potential demand is implied. The directions of change in the values of expenditure elasticity, by major categories of commodity, are also consistent with patterns found in other countries. Literature on factor intensity of rural industrial products purchased further indicated that the poor households tended to buy more of those items which are mostly labor intensive and produced locally, as income increases. Higher income households, however, tend to buy more of the capital and foreign exchange intensive products as their income rises.

Over the last two decades, average household income has increased in all regions but income disparity has also increased, especially between urban and rural households. The latter which is the largest in number also has the lowest average income. Besides the differential natural resource endowments, literature also reveals many government policies to have had negative effects on the income level of village households, the majority of which is in agriculture. The low income thus has limited the demand for both consumer goods and agricultural inputs. Therefore, for potential demand, as implied by the values of expenditure elasticity of demand and marginal budget share, to become effective demand, income of the rural poor households must increase.

The analysis also found that: (1) Provincial industries themselves have been the main source of intermediate demand, and, (2) Government purchases, and direct export, of provincial products have been limited.

Provincial industries are highly dependent on local markets, i.e. about half of them, primarily small operations hiring up to 20 employees and/or having up to 3 million baht of invested capital, are currently selling 80-100 percent of their outputs within the provinces where they are located. However, total sales by this group only account for a small portion of the overall markets. The analysis also reveals that many of the products with positive and/or larger than unity expenditure elasticity of demand are currently being produced in the BMR.

The diversity and value of government purchases of supplies and equipment are found to be substantial but few have been purchased from

provincial producers. In principle, government purchases can be used to raise the demand for provincial industry products through switching of some of these purchases to provincial industrial products - characterized by the "provincial industrial content," i.e., a minimum percentage of value added originated from provincial sources in a product.

Foreign demand, particularly for products by small-scale provincial industries, has been limited and is expected to have a lesser role at the beginning of the provincial industrialization process. However, it will increasingly become the most important source of demand to sustain the industries in the provinces.

SUGGESTED POLICY, STRATEGIES AND MEASURES

Based on the need to generate more employment in rural areas and the currently attractive environment for foreign investment, a two-track industrialization policy is recommended. The first track involves the promotion of small scale industries in the provinces through measures which will increase rural household income and their demand for labor intensive and locally produced goods. The second track continues the promotional schemes to draw large-scale, high technology, international investment, to fully exploit the comparative advantages Thailand currently possesses although the relatively low employment/capital ratio of foreign investment makes this policy track less viable as a tool for provincial employment and income generation. However, in order not to adversely affect the demand facing small provincial industries, the second policy track should focus on exportable or re-export products.

A two-track policy is necessary and practical since the success of each is subject to different conditions and therefore strategies and measures. No one general measure for provincial industrialization will ever work without bias for both the large and small scale industries, thus, conscious decisions must be made and appropriate measures designed and implemented. More importantly, provincial industrialization is not, and should never be, for industrial growth per se. Rather, it must be

implemented for the ultimate purpose of generating additional employment opportunities and higher income for the rural population--a necessary condition for sustained demand, further industrialization and long-term economic development.

For small provincial industries to emerge and grow, measures are needed to: (1) maintain the existing demand, and (2) increase the demand for provincial industrial products. It is also very important to maintain any comparative advantages already exist among the provincial industries. Two sets of strategies and measures, each including both short term and long term measures are suggested. The first involves indirect, but long-lasting, demand generation for the provincial industries. The second involves more direct roles by the government in generating and maintaining demand for the provincial industries.

1. Indirect Measures for Demand Generation through Increasing Household Income

These measures are intended to generate and maintain the demand for provincial industry products through the mechanism of household income, i.e., purchasing power. They result from the analysis of provincial household expenditure patterns. With the trend that more local, labor intensive industrial products will be purchased when income, especially of poor households, rises, measures leading to a sustained increase in their income level are, therefore, needed. Suggested measures include:

(1) Intensification and Diversification of Agricultural Household Production Systems. This does not refer to the conventional multiple season, mono-cropping activities such as the dry season rice production in the irrigated areas. Rather, region specific opportunities, as constrained by the amount and the characteristics of natural resources in rural areas, need to be identified and promoted in order to increase income earning activities. The level and extent of poverty and the size of out-migration qualifies the Northeast as a priority region.

(2) Review and Revision of Pricing Policies. Many agricultural pricing policies have contributed to the relatively low income of the

rural, agricultural households. Among the major crops, sugar cane producers have been the only group to find some success in defending themselves against low product prices. For rice production, the low supply response to prices and the size of population involved, suggest that effective price support programs (backed up with financial and human resources) may be needed, in addition to the elimination of price distortions, e.g., export taxes which have kept the farm gate prices low for a long time. It is more important that the government does not revive any policy, such as the rice premium and the overvaluation of the local currency, which contributed to the low prices of agricultural products and thus the low relative income of rural households.

(3) Minimum Wage Management. This study contends that a lower rate of increase in wage income, spread among a larger number of labor in the provinces, will generate more demand for products by small, local, labor intensive industries than for the highly capital intensive and imported products. If lower labor costs at the international level have been an important factor in attracting recent international investments to the country, a comparative advantage in labor cost in the provinces should attract investments from the BMR and abroad for the same reason. This will increase employment in the provincial areas and at least part of the income earned by those employed is expected to further generate demand for both durable and non-durable consumer goods. To achieve this comparative advantage in the region, wage rates must be able to respond to local market conditions (Charsombut 1990, Loha-unchit 1990).

(4) Human Resource Development. While the minimum wage management and the development of local entrepreneurs (Tambunlertchai 1990) deal with immediate human resource development and compensation issues, it is very important to have plans for longer term human resource improvement as a way to raise the income of the provincial rural population. The low levels of compensation received by in-migrant labor employed in the BMR were found to be associated with the low levels of education they attained. The quality of and accessibility to formal education, beyond the compulsory level, for children of rural households must be improved. Accessibility for qualified students from poor rural households to good secondary schools can be increased, for example, through scholarships.

The extremely small number of teachers with postgraduate degrees in regional teaching institutions indicates that more are needed. For them to maintain and develop their academic and teaching quality, necessary support must be provided. Immediate action includes the setting up of exchange programs between provincial and GBM teaching institutions with participation based on qualifications. Major upgrading of facilities, such as libraries, must be carried out without delay through special budget allocations and direct assistance from recognized GBM-based university libraries through periodic, short, exchange programs between libraries. Staff in the regional teaching institutions must also have more equal opportunities than before for obtaining research grants, and attending refresher courses. Last, but not least important, is better quality education for the staff's children.

(5) Development of Service Industries. Services are income elastic. Many are nontradable and need to be produced near the buyers. As real income increases, provincial households have been purchasing more of many personal items as well as services such as entertainment and recreation and (including reading materials and newspapers). Higher real income also lowers the opportunity costs for the children to attend higher levels of education, another form of service. Nevertheless, the growth in demand for services, "accommodates" the growth in the tradable sector which includes industries. Except for industries such as tourism which is an obvious form of service and lends itself to direct promotion schemes such as increased accessibility, safety and accommodation, etc., long term, sustained increase of rural household income at substantial rates is the best way to promote the development of service industries in the provinces.

2 Direct Measures for Demand Generation

The first set of measures works through implementation of broader levels of policy and strategies/measures. Direct measures here involve changes, modification, and even new tasks in the operation of related government agencies. They include the following:

(1) Government Purchases. Predetermined types or percentage of supplies and equipment for use in government offices are required to be provincial industrial products. Immediate measures include an amendment of existing regulations (Part 2, Section 1, Items 9 and 10) so that purchase priority be given to products with a specified minimum "provincial industrial content," defined as percentage of value added originated from provincial sources. The exact, or the range of this percentage must be carefully looked into and determined by a relatively high level planning agency or agencies.

(2) An Increase in Intermediate Demand through Industry-Industry Subcontracting Activities. Acquisition of intermediate inputs through subcontracting arrangements among industries have not been extensive due to the current business tax systems. Industrial firms subcontracting other industrial firms generally end up paying multiple taxes - tax upon tax. The implementation of a value added tax system is expected to solve this problem and thereby increase inter-industry subcontracting arrangements. Direct measures, such as the local content requirement in the automobile industry, can be applied so that the "provincial industrial content" concept can be used as a basis to qualify firms for lower income or business tax rates. Or a minimum "provincial input content" can be required of some industries. Both concepts, to become effective within a scheduled time frame, could become an incentive for those looking for opportunities to invest in the provinces. The Center for Industrial Information at the Ministry of Industry can help by stepping up its collection and dissemination of information on possible types of subcontract products, and activities as well as who could be involved and where and how these may take place.

(3) Long Term Information Services and Assistance. The need for information with respect to new products and technology and to ways in which existing products and technology could be modified to respond to the changing demand in the markets are found to be strong. The strategy to build up long-term information services and assistance is especially important for small provincial industries currently using simple technology. With the trends for buyers to switch to more "modern"

products as income of rural households continues to rise, the ability in product improvement and modification is crucial to "maintain" the demand facing them. Information acquisition by individual entrepreneurs can quickly become very costly. On the other hand, many government and non-government agencies/organizations can better afford to collect the much needed information and disseminate it widely at much lower cost.

Thus, if higher rural household income is necessary to increase the demand, product improvement is critical to maintain the demand. Before information services become commercially viable for the private sector, at prices affordable by small provincial industries, services by the Provincial Office of the Ministry of Industry could be stepped up, in identifying products that may soon become outdated and their possible substitutes. Simple brochures or leaflets are relatively inexpensive methods for disseminating such information. It is important that existing provincial industries do not lose whatever small share of the market they currently have.

(4) Direct Export by Provincial Industries. This involves the opening of additional ports for export clearance in the provinces. The expansion of markets into neighboring countries which have only recently opened up may affect industries of all sizes. For example, ports for export clearance in Nong Khai and other provinces along the Mae Khong River in the Northeast, or in the North should reduce the transportation costs for industries currently located in those regions. Proximity to the new markets, the similarity in languages and culture, may be an advantageous condition for the small industries in some provincial areas and may help relieve the pressure soon to face them due to local market saturation. The new markets, in addition to the comparative advantage in labor cost in the provincial areas created through the wage rate management measure as suggested earlier, could also become an added factor in attracting even some larger-scale industries. The employment and income generation will be even more significant when this happens.

In addition to opening up regional ports for export, regulations and procedures related to exports need to be synthesized and simplified.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Thailand has experienced both relatively stable and high economic growth rates during the last two decades and never before has the country taken part in such a rapid expansion of its manufacturing sector (to which foreign investment has contributed quite significantly). Among the major reasons for the increase in foreign investment during recent years, in addition to the economic and political stability, relatively lower labor costs, as compared to those in countries such as Taiwan, Korea and the Philippines have also been cited.

A review of the national income account revealed a very impressive increase in the share of the manufacturing sector in GDP, i.e., from 12 percent in 1960 to 23 percent in 1987. During the more recent period of 1976 to 1987, the market price value added originated from this sector has increased by more than 4 times (i.e., from 63,025 million to 295,512 million baht). Even the constant (1972) price manufacturing value added almost tripled. Nevertheless, there is also clear evidence that this industrial expansion has primarily been taking place in the Bangkok Metropolitan Region (BMR) and that, during the same period, the urban-rural/geographical distribution of industrial establishments has become a policy issue of increasing concern to the government.

Currently, Bangkok alone has over 40 percent of the total number of registered factories in the country (Ministry of Industry), contributing about half of the value added originated from manufacturing, on the average, during the last ten years. When value added from other BMR provinces is included the share of manufacturing in GDP originated from this group becomes more than three quarters of the total value for the country (NESDB). On the other hand, the Northeastern region where over one third of the population resides only has 13 percent of the country's

industrial establishments and has been contributing only about 5 percent of the manufacturing value added during the same period.

There is a general perception that only the majority of industrial establishments located in the provinces, outside Bangkok, are small. This is incorrect. A review of the size distribution of industries (NSO 1987) indicated similar patterns of size composition in all regions, with Greater Bangkok Metropolis (GBM) being treated as a separate region. For example, the percentage share of small industries, defined as those employing up to 20 persons, in the regions' total number of factories, ranges from 88 percent in the GBM to 97 percent in the Northeastern region (Table 1.1).

Findings by Kuroda and Kasajima (1987), yield slightly different results, perhaps, partly because of the different interval in the number of employed persons used in their presentation of the statistical table. However, the percentage of small industries in each region, as defined by the number of employees and the size of invested capital still confirms that the majority of industrial establishments in all regions

Table 1.1 Size Distribution of Industries by Size of Employment, by Region

Employment (persons)	WK	BMR	GBM	NE	N	C	S
Less than 10	83.5	77.7	74.2	92.7	91.2	77.7	91.4
10 - 19	8.3	10.7	13.5	4.7	5.3	10.7	4.6
20 - 49	4.7	6.5	7.5	1.9	2.4	6.5	2.0
50 - 99	1.6	2.2	2.4	0.3	0.6	2.2	0.9
100+	1.8	2.7	2.2	0.3	0.5	2.7	1.0
Unknown	0.1	0.1	*	0.1	*	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Summary Statistics of the 1984 Industrial Establishments, various regions (Municipal Areas and Sanitary Districts), NSO, 1985.

Table 1.2 Size Distribution of Industries by Size of Employment and by Size of Invested Capital, by Region

Employment (persons)	WK	GBM	NB-BMR	C	E	N	NE	S
0 - 9	64.0	63.8	36.5	75.4	73.7	61.2	68.9	68.0
10 - 19	18.3	19.6	17.7	13.3	16.7	18.9	19.2	16.1
20 - 49	10.8	11.4	18.5	6.1	5.7	12.2	7.5	10.4
50 - 99	3.5	3.0	9.0	4.6	3.1	4.3	2.4	3.0
100+	3.4	2.1	18.3	0.6	0.8	3.4	2.0	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Invested Capital (million baht)								
Up to 1 million	76.9	78.8	46.5	82.7	84.1	78.4	84.0	79.1
1 - 10	19.0	18.4	36.0	14.2	12.7	19.6	14.6	17.8
10 - 50	3.0	2.2	12.4	1.3	2.4	1.4	1.1	2.8
50+	1.1	0.6	5.1	1.8	0.8	0.6	0.3	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: NB-BMR = Non-Bangkok BMR provinces
Source: Derived from Akira Kuroda and Shuji Kasajima, The Development Strategies for the Small and Medium Scale Industries in Thailand. Small/Medium Industry Promotion and Finance Project (SIPF), the Department of Industrial Promotion, the Ministry of Industry, Thailand, 1987, Tables AP11, AP12.

are small (Table 1.2). For example, industrial enterprises employing up to 19 persons account for 83 percent of total industries in the GBM and 88 percent in the Northeast. In terms of invested capital, small industries with only up to 1 million baht of invested capital account for 79 percent in the GBM and 84 percent in the Northeast.

Distribution of industrial establishments can also be analyzed among regions for any given size (Table 1.3). The results show that for any given size of industries, those located in the BMR, i.e., the GBM plus the NB-BMR in Table 1.3, invariably account for a large majority of the total. For example, the BMR has 55 percent of the industries employing up to 9 persons, 61 percent employing between 10-19 persons and 73 percent employing more than 300 persons. When the sizes of operation were classified by the amount of capital invested, the BMR has 55 percent of the industrial operation with up to 1 million baht of capital invested, 66 percent between 1-10 million and 72 percent of

Table 1.3 Regional Distribution of Industries, by Size of Employment and Invested Capital

Employment (persons)	WK	GBM	NB-BMR	C	E	N	NE	S
0 - 9	100.0	48.1	6.6	10.2	7.6	7.7	13.2	6.6
10 - 19	100.0	51.8	9.2	6.3	6.0	8.4	12.9	5.5
20 - 49	100.0	50.9	17.0	4.9	3.5	9.2	8.5	6.0
50 - 99	100.0	41.0	25.4	6.8	3.3	9.9	8.3	5.2
100-199	100.0	30.8	37.9	4.8	4.0	7.5	9.2	5.8
200-299	100.0	29.9	40.9	2.8	5.5	11.0	4.3	5.5
300+	100.0	30.7	42.6	10.3	2.6	6.2	5.9	1.6
Invested Capital (million baht)								
up to 1 million	100.0	49.4	6.0	9.3	7.2	8.2	13.4	6.4
1 - 10	100.0	46.6	18.9	6.4	4.4	8.4	9.5	5.8
10 - 15	100.0	32.2	37.0	4.1	7.2	6.1	5.7	7.7
15 - 20	100.0	37.2	43.0	2.5	5.4	3.3	3.7	5.0
20 - 49	100.0	36.9	45.2	4.1	3.7	2.0	3.7	4.5
50+	100.0	27.3	44.9	14.0	4.4	4.0	3.8	1.6

Source: Derive from Kuroda and Kasajima, 1987, Tables AP11, AP12

those invested over 50 million baht. Therefore, whatever the size of operation, the absolute number of industrial establishments located in the BMR is always the largest as compared to other regions.

An interesting issue emerges, when the distribution of industries among the regions by size is examined. As the size of the industrial enterprises increases, the combined percentage of those located in the urban-central region (the five provinces around Bangkok) and Bangkok, as a separate region, increases in relation to the remaining regions (see Table 1.3). There also appears to be a redistribution of the relative percentage away from Bangkok into the urban-central region, as the size of employment and invested capital becomes even larger. One testable hypothesis would be that there exists some optimum sizes for industry to be located in Bangkok. Beyond that, certain factors such as land price and the various types of congestion may raise these costs to the point where it becomes more advantageous for factories to be located outside, but still near, Bangkok. Certain government policies which disallow highly polluting and/or heavy industries (often involving relatively

large scale operations, e.g., petrochemicals and related products, multipurpose pharmaceutical active ingredients, synthetics products, and ship yard facilities, etc.) to be located in Bangkok may be partially responsible for this redistribution pattern. However, what needs to be identified and understood are the factors which will help explain why, when not legally required, a relatively large percentage of industrial establishments chose to be located in and around Bangkok (i.e., in the BMR) and why an even larger percentage of industries did so as the size of their operation increases.

Another issue of interest which has important policy implications has to do with the definition of provincial industry and provincial industrial products. Most existing literature tends to use geographical location of the production plants as the criterion in classifying a manufacturing establishment as being provincial or urban-based. All the data on provincial industries presented in this report, however, are also based on location, i.e., the place of registration, of a particular industrial enterprise. Undoubtedly, the physical presence of a factory in any provincial area inevitably implies a certain amount of local employment and income generation. Nevertheless, a product finally put on the market by a BMR-based industrial enterprise could have any percentage of intermediate inputs through purchases or subcontracts from its provincial counterpart. Similarly, a product manufactured and sold by an industrial enterprise in the province could have obtained the majority, or even all, of its intermediate inputs from its suppliers in the BMR.

The conventional definition which defines provincial industry as any industrial establishment located outside the BMR is convenient and useful for the general analysis in providing a picture of industrial activity concentration. Given the employment objectives of the Rural Industries and Employment Project, however, a more accurate definition for "provincial industrial products," which will reflect the portion of "provincial industrial content," i.e., the actual contribution to the provincial employment and income generation, of a product is important for policy purposes.

It has been suggested that the percentage of value added originated from the provinces in any industrial product be used as the criteria to identify the provincial industrial products.[1] The final assembly in the BMR of an industrial product using the majority of its inputs from the provinces, for example, is more of a "provincial industrial" product than the other way around and, therefore, should be more eligible for benefits from government measures designed to promote the provincial industrialization process.

An ideal situation for this promotion incentive is when the degree of assistance and amount of benefits received from the government under the provincial industrialization implementation are in direct proportion to the level of "provincial industrial content" in a product. Although this may currently seem an unlikely concept, but, in principle, once the implementation of the planned value added tax system is in effect, the data which will allow the "provincial industrial content" in a product to be derived should be relatively easy to obtain.

However, provincial industries in the rest of this report, except in the discussions on suggested strategies and measures in the final chapter, refer to those defined under the conventional definition, i.e., based on the geographical location of the establishment. This choice was dictated by the format in which industrial data have been collected and published.

Existing research works had identified the major sources of overall industrial growth in Thailand as due primarily to domestic demand (80%) and, to a much lesser extent, export expansion during 1975-78 (Akrasanee 1979 as cited in Balassa et al. 1980). Import substitutions were the second important source of growth when the country started its process of industrial promotion (during 1966-72). Except for certain products which are manufactured specifically for export in response to particular buyer countries, there are good reasons to believe that the majority of manufactured goods is being purchased within the country. An analogy is

1. The definition for provincial products has been suggested by Dr. Gosah Arya.

that most products of provincial industries are probably being consumed by local residents or people in nearby provinces.

Certain commodities in the provincial industry sector may have been produced mainly for export and their export value accounts for quite a significant share in the country's total export, e.g., tapioca pellets, rubber, tin, sugar, etc., (Table 1.4) but foreign market stability can easily be affected by factors outside the country which are often beyond its control. Other goods produced by the provincial industry sector, however, may command quite a significant share in the domestic market - examples in many countries substantiate this. For instance, in Sierra Leone, households at all income levels reportedly allocated more than 75 percent of their consumption expenditure to commodities produced in the rural areas, with an expenditure elasticity of 1.4 (King and Byerlee 1978), whereas poor, small scale farmers in the Pakistan Punjab have reportedly bought almost all their farm tools from local industries (Child and Kaneda 1975). For the purpose of rural industrialization in Thailand, the identification and analysis of the portion of products of provincial industries purchased and consumed by rural households is thus

Table 1.4 Value of Major Exports of Thailand 1983-1986 (in Million Baht)

Year / Rank	1983		1984		1985		1986	
1	Tourism	25,050	Tourism	27,317	Tourism	31,768	Tourism	37,321
2	Rice	20,157	Rice	25,932	Textile	23,578	Textile	31,268
3	Tapioca	15,387	Textile	19,155	Rice	22,524	Rice	20,315
4	Textile	14,351	Tapioca	16,600	Tapioca	14,969	Tapioca	19,086
5	Rubber	11,787	Rubber	13,004	Rubber	13,567	Rubber	15,116
6	Maize	8,486	Maize	10,147	Integrated circuits	8,248	Integrated circuits	11,640
7	Sugar	6,338	Int Cir	7,352	Maize	7,700	Maize	9,261
8	Gems	6,214	Gems	6,129	Gems	6,350	Gems	8,150
9	Int Cir	5,829	Tin	5,280	Sugar	6,247	Sugar	7,271
10	Tin	5,265	Sugar	5,222	Tin	5,647	Prawns	4,391

Source: Reproduced from Annual Statistical Report on Tourism in Thailand 1986, Tourism Authority of Thailand, Bangkok, Table 4.6 Comparison: Revenue from International Tourism and Other Major Exports of Thailand 1982-1986.

essential in order to identify viable means to increase this portion of demand without reducing the portion exported to the BMR and abroad.

With more than three quarters of all households still living in the rural areas throughout Thailand, it is justifiable to focus relatively more attention on the issue of demand by buyers in rural households as a possible venue towards industrial development and expansion in the provinces. This is especially important since existing information shows that both the amount of consumption of many commodities as well as the complexity of the commodity mix have been increasing over time as the average rural household income increases and as a larger variety of commodities becomes available (NSO 1975/76, 1981, 1986). Government policies and actions, if effectively raise rural household income thus will eventually lead to an increase in demand for products by provincial industries as rural households move up to higher income levels.

To the extent that the existing or potential "effective" demand is critical in the consideration for production, rather than the frequently heard of "supply creates its own demand," such effective demand must be sustainable in order for production to continue and eventually grow. In designing strategies to sustain the development and expansion of "town-based industries outside the greater Bangkok area" (USAID 1986:1), i.e., provincial industrialization, as a means to increase employment and ultimately to alleviate poverty in Thai rural areas (USAID 1986:1), an understanding of the demand for industrial products is essential.

On the one hand, although evidence has shown a consistent increase over time in per capita gross regional product/income (GRP) in all the regions, evidence also indicates that impoverishment and increased income disparity prevails. On the other hand, various records and studies have indicated an increase in expenditure by all types of household, including expenditure on industrial products, some of which, particularly those consumed by rural households, are inevitably produced by provincial industries. If this increase in demand can be sustained, there would be a better chance for these provincial industries to succeed and be able to further generate employment and income outside the BMR. There is a need, therefore, to look at the patterns and

changes in household expenditure over time as income increases. In the process, inferences about the demand by provincial (rural) household can be made.

Once income reaches a certain level, rural households may begin to buy seemingly "luxurious" commodities such as television sets which are not produced in the provinces, except in Chiang Mai. "Luxurious goods" in many instances are a matter of degree and, often times, of definition and thus should not be automatically ruled out from the study. For example, given the amount of information about technology, employment opportunities, market, etc., as well as the entertainment which a rural household could conceivably receive from owning a television set, quite usually a small black-and-white set can be obtained for less than 1,000 baht, even if the set only lasts no more than one year, the cost per day for these services would already be cheaper than the fee for daily newspaper subscription. However, not only are subscription and daily delivery services of newspapers currently unavailable for rural villages but also the quality, accuracy and relevance of the information in the newspaper often leaves a lot to be desired. Moreover, observations have been made that a television set is never viewed only by members of the household which owns it but is always shared with neighbors - television viewing time usually becomes a social occasion during which information is exchanged and discussed. The relevant question here should thus be that if the demand for television sets by rural households is found to be high and possibly stable/increasing, i.e., exhibiting a high income elasticity, will that alone be enough for manufacturers in the BMR to start or expand their production in the provincial areas and, if not, why not? What incentive measures may be necessary to bring producers of potentially promising commodities out to the provinces?

1.2 OBJECTIVES OF THE STUDY

Although rural industrialization has been a hot issue for quite some time, a review of literature turned up very few studies on demand for products of the rural industry sector. The majority has dealt with supply related factors such as credits, technical assistance, labor, tax

incentives, etc. Thus, as part of a larger research project on "Rural Industries and Employment," the focus of this paper is to investigate and provide an understanding of this long neglected aspect of provincial industrialization, in Thailand, with the following objectives:

1. To review the major sources of demand for products of provincial industry as defined and studied in existing literature and to identify the relative share of these markets, i.e., provincial, the BMR, and the foreign markets for products of industries in the provinces in order to obtain proxy indicators for the relative importance of these sources of demand. To the extent that information allows, attempts will be made to distinguish the sources of demand between producers and users/consumers, i.e., intermediate and end demand.

2. To examine the patterns and changes in demand for industrial goods by rural households, namely, what types of goods figure largely in rural household expenditure, how the relative shares have been changing among the broad categories of household consumption, how the diversity of household consumption has changed, etc., in relation to changes in factors such as income. Inferences will also be made about the demand for investment goods by rural households. Conclusions could then be drawn to arrive at a set of implications on the categories and types of industrial products with potentially viable demand but which are not currently produced much, or at all, in the provincial areas.

3. Data on the geographical distribution of registered factories will provide a picture on the types of industrial products which are currently produced outside the BMR. Patterns are expected to emerge to provide some implications about government policies which have provided incentives or disincentives for industrial establishments to be located in the provincial areas through their influences on the many sources of demand. Therefore, a review of policies affecting the sources of demand for provincial industry products will also be essential.

1.3 SCOPE AND APPROACH

Information obtained from analyzing the Socioeconomic Survey (NSO 1975/76, 1981, 1986) and the direct interviews, with the geographical distribution of registered industries by type/category of product (Ministry of Industry 1987, NSO 1985) provide a basis for a sketch about the sources of demand for provincial industry products. Demand for such products by rural people is probably not insignificant judging from the size of population. However, local/rural demand should not be the only consideration to promote provincial industry. There is nothing wrong for an industry in the province to produce primarily for export to the BMR and/or abroad. The question is whether the demand for its product from such sources is stable and sustainable. Products with cultural and artistic distinction, as a whole, may be of less concern in this context since their associated income elasticities of import demand by developed countries have been confirmed to be quite favorable (Ho and Huddle 1976) although there remains the issue of what determines which countries the developed countries will import from.

As far as local demand goes, even if the income from an increase in local employment is spent on provincial industrial product, unless those industries reinvest locally or at least in other provincial areas, it is quite possible that capital accumulation still takes place elsewhere if profits were remitted back to the BMR or abroad. The situation will be worse if raw materials consist primarily of nonrenewable resources from the area or renewable resources from outside the provincial areas. However, these issues involve a whole range of incentive measures beyond the scope of a study on the role of demand such as this one and thus will not be covered. At the minimum, suffice it to say that, in the short-term, the local communities may still gain through the additional employment opportunities and through the spending by those employed on categories such as food - especially daily meals, lodging, domestic services, transportation, etc.

Information on registered factories as of 1987, shows approximately 140 types of industries in the whole provincial areas, as compared the total of 236 types being produced in the whole country (Ministry of

Industry 1987). About 51 percent or 71 types out of the 140 types, produced nonagricultural-based products. Only 42 percent of the 18,692 factories located in the provinces (an equivalence of 7,936 factories) are involved in these 71 types of nonagricultural-based products. Many types of the nonagricultural-based industry have only one factory in the whole provincial area.

A closer look at the 7,936 nonagricultural-based industries in the provincial areas further indicates that about a quarter of them are actually various types of repair shop. The remaining industries produce nondurable consumer goods and light capital goods used in agricultural production. About 34 percent of all provincial industries are in food and beverage production, followed closely by garments, textiles, wood products, furniture, pottery, construction materials, small machinery and motor vehicles. Products of the majority of provincial industries can, therefore, be generally characterized as perishable, bulky, and, in some cases, even of inferior quality. This all points to the possibility that they are probably produced primarily for consumption, or use as inputs in agricultural production, by people in and/or near where they are produced. It is not inconceivable, however, that some of them might have been exported to the BMR, other regions, or as export. It is also highly possible that throughout the development process and as income of rural households increases, some industrial products which enjoy an increase in demand are those imported from the BMR, or abroad. In this sense, the improved income and communication may have adversely affected the provincial industries, as the case in Central Nepal. In Central Nepal, when better access, via roads for example, enable people to purchase from larger competitors in town, local small businesses consequently went out of business and the few skilled labor used to work in those industries migrated to the city (Harper 1984:120).

The official records at the Ministry of Industry also showed quite a few types of industry having more than 80 percent of the total number of registered factories concentrated in one single region, other than the BMR (Ministry of Industry 1987). One initial interpretation could, perhaps, be that this is an indication of geographical specialization, for example, natural rubber processing, and rubber products in the

South; cassava pellets in the Northeast, pressed kenaf, tobacco leaves; tobacco leave curing; wood carving; tea leave/powder; shellac/lacquer in the North, etc.

1.4 RESEARCH METHODOLOGY

The fact that not much is known, let alone understood, about the role of demand in the making of provincial industrialization dictates that a research process which is as iterative and cost-effective as possible be adopted so that the study does not get locked in any fixed path. Iterative collection and analysis of information in order to determine the next step of the action is crucial. Thus, in addition to the questionnaires survey run by the Project, several others research methods were employed. Essentially, the main sources of information for this study include:

1. Literature review to learn about the concept, issues and major findings about demand for products by the rural industry sector in other countries and in Thailand. This has helped, to a major part, in the formulation of the scope and approach for the present study.

2. Information on the geographical market distribution of products by provincial industries from the questionnaire survey by the Rural Industries and Employment Project. Interviewees were also asked to compare the current market share with the situation five years earlier, in the hope to obtain information on historical changes. This has not been successful, however, since almost all interviewees tended to answer in relative terms rather than absolute, such as "more or less the same," "higher," or "lower" as compared to the present situation. The response on current market shares does provide a proxy for the interpretation of the relative importance of demand for provincial industrial products originated from the provincial, the BMR and the foreign markets. However, information based on memory and recall invariably raises questions in terms of accuracy. This is especially so for industrial surveys such as this one which was designed to collect data for seven sub-projects. In addition, most industrial surveys tend to encounter

difficulties in that they often include questions on sensitive subjects such as credit, production value, sources of materials, labor, etc. In any case, information on the current and past geographical market share, even if obtainable, only tells us whether the share of the product from each producer sold to each of these geographical markets has been increasing, decreasing or has not changed. It will not tell us who have been and will be buying what. Information from other sources must be obtained.

3. Secondary/existing data on household expenditure from the three Household Socioeconomic Surveys by the National Statistical Office, for 1975/76, 1981/82 and 1986 were analyzed to obtain the patterns and changes in household purchasing behavior over time by region and also by the different levels of administrative units within the region, i.e., municipality, sanitary district and village. Specifically, income elasticities of demand for items which are identifiable as industrial goods in the rural household consumption baskets were calculated. For consistency, however, since later NSO survey reports do not publish information on household income, average household expenditure was used as a proxy for household income and expenditure elasticities were used in place of income elasticities of demand. Admittedly, the NSO surveys have shortcomings and do not provide as much details as one would wish to have, but to carry out a new household expenditure survey is out of question in terms of expertise as well as in terms of time and financial resources available. Imperfect as these survey reports may be, even a quick glance through the NSO Surveys information reveals that household consumption has increased in all regions both in absolute value and in the diversity of the commodity bought by the households.

4. The conduct of in-depth, direct interviews in order to get at another perspective of the patterns and changes in the demand for provincial industrial products over time. It is always important to be able to arrive at the same set of information from more than one source or method in order not only to have a more accurate picture of what is going on but also to cross-check information from different sources and methods. With careful selection of interviewees, information could be obtained on similarities and differences in household purchasing

behavior in relation to factors such as wealth position, household size, contact with outside world, etc. In analyzing the role of government purchases in the process of provincial industrialization, differences between the written standard procedures and regulations and actual practice in, procurement and payment need to be identified. In addition to reviewing the procedure and regulation documents, therefore, direct interviews were conducted with government officials and provincial industrial owners/operators, in a much smaller number than the Project's formal survey sample size, to obtain details on actual practices related to government procurement and payment procedures.

1.5 REVIEW OF LITERATURE

1.5.1 The Issues

The development and growth of rural industry as a sector within the developing countries has recently become the focus of attention for international development agencies as well as national governments. Various policies and incentive measures, mostly intended to affect the supply, e.g., financial assistance for small scale enterprises, have been tried but not with much success. Since in order for the industry to survive, adequate effective demand for its products is critical, many researchers have thus begun to focus their attention on the examination of factors affecting demand for rural industry products and their conclusions varied. Although the main focus of the Rural Industries and Employment Project is to the identify means and approaches to promote industrialization in the provinces, the summary of literature review presented in this section is on rural industry. This is mainly because all of the studies reviewed, when dealing with non-urban based industries, usually focused on "rural" and/or "cottage industries and none on "provincial" industries. Since most areas in Thailand are still primarily rural, it is thus appropriate to try to draw lessons from studies on rural industry studies which have been carried out.

There are two major demand constraints facing the rural industry sector, namely: the limited demand or small market and the inferiority of rural industry products. The first constraint is primarily the result of the prevailing poverty among the rural population who are the main buyers in the rural industry sector. The second assertion is based on the argument that products of rural industries are usually of inferior quality. Therefore, not only do rural households which are currently poor usually have little income left, after paying for their food, to buy any non-food industrial products but also when their income rises, they will buy less of what they are now buying. Studies on the issue of inferiority have yielded different empirical results and opinions. Mainly, two contradictory views exist:

1. Rural non-farm goods and services are inferior (Hymer and Resnick 1969) and the increase in income of the poor may have little effect on the demand for goods and services of the "informal sector" which include products by rural non-farm activities (Pack 1977). The most important non-farm activities are manufacturing, services and commerce respectively (Chuta and Liedholm 1979). Pack, nevertheless, also admitted that "relatively little is known about the magnitude [of the inferiority] involved." (as cited in Chuta and Liedholm 1979).

2. There is a strong, positive relationship between rural income and demand for both rural non-farm, and/or non-food items in general (Mellor 1976, Liedholm and Chuta 1976) and between rural household expenditure and rurally produced consumption items in particular (King and Byerlee 1978, Gibb 1974). More recent studies in India (Bhalla and Chadha 1981 as cited in Ho 1986), Nigeria and Malaysia (Hazell and Roell 1983), Bangladesh (Deb and Hossain 1984, Osmani and Deb 1986), all confirm a relatively strong positive income elasticity of demand for products of rural industries.

The demand for products by the provincial industry sector is thus an important topic in light of the Thai government's policy to improve the overall living standard of the majority rural poor. An effective provincial industry promotion will have great significance at a time when agricultural land expansion has already reached its frontier but

population pressure on land continues. Previous policies and measures to promote industrialization have led largely to a high concentration of activities in the BMR while not enough employment has been generated to ease the increasing pressure on land in the agricultural/rural sector.

Very few research works deal directly with the subject of rural industry although quite a large number focus on the issue of small and cottage industry development and sometimes covered small rural industry in part of their discussion. Rural industrialization was often treated and described solely in the context of traditional cottage industry development (Rau 1985). In the Philippine case, cottage industry activities did not even have to be located in the rural areas, i.e., the characteristics and sizes, i.e., small and medium scale, home labor, low investment and whether predominantly personalized, etc., were used in the classification instead of geographical location.

One general statement can be made, however, that the small industry sector and the rural industry sector, though far from being the same thing, do share many common characteristics and problems. Determinants of the development and expansion of industries in rural areas involve factors affecting both the supply of and the demand for rural industry products. However, if research and studies on rural industry has been limited, there are even fewer which deal directly with the role of demand in rural industry. Historically, factors affecting the supply side have received much more attention from researchers as well as from international development and national government organizations. Weaknesses on the supply side typically covered in rural industry studies include the lack of skills and thus the confidence to invest (Rau 1985), the lack of information about potential products, buyers and technology (Rau 1985, Harper 1984), the lack of financial resources and the limited access to formal financial sector (Ahmed et al. 1978 as cited in Ho 1986, Chuta and Liedholm 1979, Ho 1977 and 1986), etc.

Sources of Demand

Discussions in all studies related to demand for rural industry products identified the major sources of demand as belonging in the following broad categories (see, for example, Liedholm and Chuta 1976, Chuta and Liedholm 1979, Harper 1984, Deb and Hossain 1984, Osmani and Deb 1986):

1. Rural households,
2. Demand from the backward and forward production linkages,
3. Urban or foreign or export sector.
4. Domestic government purchases

Among these sources of demand, foreign markets are obviously the hardest to be directly influenced by domestic government policies. Trade delegations and other forms of international trade negotiations could be arranged but not without high costs. Domestic demand, and to some extent supply, on the other hand, is expected to be more sensitive to manipulation through government policies and instruments.

Evidence which confirms that domestic consumers are the primary source of demand for rural industry products can be found in Africa (Page 1970) and other developing countries - 87% in Jamaica, 89% in rural Honduras, 81% in rural Egypt and 51% in rural Bangladesh (Liedholm and Chuta 1976:48, see also Badgley 1978, Gerry 1974). Onchan et al.'s (1985) findings further supported the attention one should pay to the local consumers - 89 percent of the firms in the Northern region of Thailand and 79 percent in the Northeastern region reportedly claimed that their buyers were mainly from within their province (Onchan et al. 1985: 90-95).

One explanation for consumer demand to have such a large share in the total demand for products of rural industries is probably the limited inter-sectoral linkages, except for the case of Korea and Japan. Whatever inter-sectoral linkages there are have generally been described as being weak (Hirschman 1958). Although backward linkages from large firms to small ones in the form of demand for intermediate or capital

goods, usually referred to as subcontracting arrangements are practiced in Korea, India, Bangladesh, Thailand, and Indonesia (Liedholm and Chuta 1976), they are not extensive. In discussing the demand for products of small industries in Sierra Leone, Liedholm and Chuta (1976) concluded that there were few forward linkages from the small-scale sector to the large-scale sector and,although backward linkages between small-scale industries and the agricultural sector were more extensive, they were still quite limited. Similar situations have been confirmed in other areas such as Malacca (Naerssen 1980), Africa (Page 1970), and India (Chuta and Liedholm 1979).

All national governments are the largest single buyer in any country and could conceivably increase the demand for rural industry products by shifting some purchases from the large-scale, urban-based industries as an initial boost for demand in the rural areas. In India, for example, government purchases of many items such as furniture, print, mechanical services, cleaning materials, certain food items, and many simple day-to-day requirements were reserved entirely for the small-scale sector, and purchasing officers had to show that the same products from a large-scale supplier were at least 15 percent cheaper before being permitted to place an order outside the small-scale sector (Harper 1984:125). A similar approach has also been adopted by the United States government with some success (Carson 1973:363). In reality, however, sales to government are usually hampered by unrealistic standard requirements and purchase procedures which are described as cumbersome, arduous and time consuming (Schatz 1977 as cited in Chuta and Liedholm 1979:76). In addition, the payment processes also often take much longer than a rural/small industry can afford to wait. Finally, the size of purchase and the required uniformity of products further limit participation by small firms in general, and those in the rural areas in particular (Liedholm and Chuta 1976:58).

Absolute Demand and Relative Demand.

In the discussion about market influences on industrial siting and growth, Wheat (1973) argued that market influences explained about 55-75 percent of the variance of the absolute growth, and 35-55 percent for per capita growth. Defining absolute demand as measured by population and income, Wheat maintained that "population represents customers," and that, "population growth, in turn, spurs the growth of market oriented industry." He concluded: relative demand is very important because customer demand depends not only on how many customers there are but also on how much they have to spend, i.e. affluent customers are certainly preferred to poor ones.

Common Characteristics of Rural Industry Contributing to the Demand Constraints.

In the literature reviewed, most industrial enterprises in the rural areas have been generally characterized as being traditional, both in terms of their products and the technology they employ. The production processes are thus usually described as being labor intensive and time-consuming, unable to respond even to urgent household needs. These processes are also highly personalized with the owner being the chief operator employing mainly family labor or hiring very few labor from outside the family. The limited sales are reportedly due partly to the traditional marketing methods, mostly through personal contact with customers - a method which does not enable them to reach a large number of potential customers. These lead directly into another characteristic of small/rural industries - the inability to compete with large-scale, urban-based industrial enterprises. Specifically:

1. The large, urban-based industries have been increasingly making use of the mass media, e.g., radio, television, newspaper, etc., to advertise their products thereby taking some customers away from the rural industry sector and further reducing the already limited demand (Harper 1984: 124). More importantly, there are minimum costs, often more than can be afforded by most rural industries, to employ such sales promotion methods.

2. Small/rural industries are also at another disadvantage when less legitimate forms of persuasion are needed to gain access to purchasing officers in government or larger industry, i.e., a few large bribes are easier to conceal than a number of small ones. Certain "transaction costs" associated with corruption do not vary with the amount changing hands and thus become proportionately more expensive for the small enterprises (Harper 1984:121-124).

3. The inability to fill big orders with standardized products in addition to the fact that large volume buyers prefer to deal with as few suppliers as possible who they can hold responsible. Quite often they also purchase more than one type or item of product and larger scale producers are more likely to either be able to provide or have access to obtain the additional items.

1.5.2 Suggested Solutions

A range of recommendations to create, increase and maintain the demand for products of rural industry has been offered in these studies. They can be summarized into three major categories:

1. Short term or immediate solutions have been suggested through direct government purchases. The aggregate demand for industrial products and thus overall income do not increase in this case. It is simply a shift from urban-based industries to rural-based industries for the purpose of redistributing some benefits. Therefore, unless the benefits to the whole rural industry sector outweigh the costs to the society of such a shift, the whole economy will lose in terms of efficiency. This can be looked upon as the price one has to pay to avoid serious problems resulting from the lopsided growth of industries in the primal cities and increasing unemployment in the rural sector. The increased demand for rural industry as a result of this shift in government purchases is expected to generate local employment and income leading to a reduction of the regional disparity of income.

2. Medium term solutions involve government measures and actions in poverty eradication and income elevating, since "...policies which effectively raise income level in rural areas will have an important indirect effect on the demand for rural non-farm activities," and "...existing customers [in the rural areas] will tend to buy more products from the same sources as their incomes increase...." (Chuta and Liedholm 1979:62). Others who confirmed that income elasticities of demand for products of rural industries are positive and exceed unity obviously will support this solution, because "...any attempt to help small enterprises must start with assistance to their potential customers (Harper 1984:120).

3. For long term solutions, i.e., the sustainability of the demand for products of rural industries, new and/or improved products must be developed in the long-run. If government policies to raise income of rural household are effective while many products by rural industries are highly income elastic, the increased communication with towns and access to "modern," and perhaps cheaper, more standardized commodities produced by urban competitors will eventually pose problems, again, for demand facing rural industries. The rural industry sector thus cannot afford to stand still in terms of technology and designs. Chowdhury (1986) examined and analyzed the potential demand in Bangladesh for "improved and new products," as compared to the "traditional" ones, in expectation of a rise in income level. The same type of commodity was classified as modern and traditional based on the nature of production process involved. For example, for the case of pottery, the improvement of the process over the traditional pottery wheel lies in the use of an improved firing practice coupled with the use of some chemical agents. One major conclusion from Chowdhury's study has been that "...all income elasticities and all but one expenditure elasticities for the modern version were highly significant. None of the products studied was inferior goods." It is the rural and/or urban content in the product that determines its demand, i.e., whether they are made with modern or traditional methods and tools and equipment.

The argument for long-term product development is also implicit in Ho's (1980) conclusion that, "...in early stage of industrialization,

the competitive bases of small-scale enterprises are primarily those related to locational factors, particularly high transport costs. As transportation costs decreased with development, this source of competitiveness weakens. With industrialization, process influences become more important - simple assembly, mixing or finishing (first to emerge in labor abundant countries) are replaced by more sophisticated and larger enterprises." (Ho 1980: 47-48.)

1.5.3 The Issue of Factor Intensity

Whether rural industry development will lead to inefficient use of resources has been an issue of concern by many. Evidence which has been provided by some research has been that lower income households, mainly in the rural areas, and higher income households, in rural and urban areas, do demand products with different input intensities. Based on a study of 203 households visited twice weekly by enumerators over a 12 month-period in Sierra Leone, King and Byerlee (1978) maintained that "...lower income households consume products that require less of the scarce factors, capital and foreign exchange, and more of the abundant factors, i.e., labor...," also, "...there is a definite tendency for labor requirement to decrease and foreign exchange requirements to increase as income rises further," and "...capital requirements fall with increasing incomes, reflecting a substitution of imported goods for capital-intensive domestic goods."

Therefore, according to this hypothesis, as income first increases for the very poor they will continue to consume more of the labor intensive products until their income reaches certain level before they shift away from labor intensive goods toward capital intensive goods. Yet another level of higher income has to be accomplished for foreign exchange intensive goods to replace capital intensive ones. Similar conclusion had also been arrived at by Deb and Hossain (1984) for Bangladesh. They found an increase in capital intensity associated with the consumption baskets as income rises above a certain level. The implication is obvious if these researchers are correct - raising rural household income in order to generate and maintain the demand for rural

industry products will, at least, initially increase the derived demand for the relatively more abundant factor in the developing countries, i.e., labor. Therefore, they conclude, "...there needs be no inherent conflicts between the objectives of output, employment and income distribution," and "more equitable distribution of income should lead to little change in combined marginal requirements of the scarce factors, capital and foreign exchange and a clear increase in employment, which should reinforce improvements in the income distribution." (King and Byerlee 1978:205).

1.6 ORGANIZATION OF THE REPORT

The organization of this research report follows the conventional format in starting off with an introduction which includes sections on research objectives, scope and methodology and a final section on literature review which provides a part of the basis for the research formulation and the classification of the sources of demand for products of provincial industries. The definitions of provincial industry and provincial products are also discussed. In the second chapter, government policies affecting the various sources of demand are reviewed and summarized, followed by the identification and analysis of the patterns and changes of the sources of demand over time in the third chapter. The report concludes with a final chapter on major conclusions from the findings along with recommendations for policy, suggested strategies and measures. For the readers' convenience, extended analytical tables, directly referred to, and supportive tables, not directly referred to in the text, are presented in the appendix at the end of each chapter.

CHAPTER 2

REVIEW OF POLICIES AFFECTING THE DEMAND FOR PROVINCIAL INDUSTRY PRODUCTS

2.1 OVERVIEW

There are many possible ways to categorize the sources of demand, i.e., buyers, based on certain common characteristics. At the broadest level, buyers are divided into two groups: they are either consumers or producers, regardless of their location. Classification could also be based on geographical boundaries whereby buyers are divided on the basis of where they are into domestic rural/urban and foreign buyers. These categories can then be further classified into consumers and producers. As frequently practiced when policy studies on the issue of sources of demand for industrial products were carried out, however, the government which is one of the largest domestic buyers is treated as a separate category. Although buyers in foreign countries contribute to a rather significant source of demand, comparison of behaviors between foreign consumers and producers has not received much attention except in market potentiality research where markets for particular products were being investigated and assessed. However, a limited number of studies have taken place on the issue of income elasticity of demand by buyers in the developed countries for artifacts and handicrafts made in developing countries which are generally relatively labor intensive (see Section on Literature Review in Chapter 1, and, for more details, see, Ho and Huddle 1976).

Based on classification in the previous chapter, policies affecting the following sources of demand for industrial products are examined: namely, (1) domestic households, (2) domestic producers, including both household and non-household levels, (3) the domestic government, and (4) buyers abroad. In this analysis, more emphasis has been placed on the demand of households in the rural areas as compared with households in the municipal areas for reasons to be provided. The review of existing literature further confirms that domestic buyers, especially rural

households, in developing countries, are the primary source of demand for products of rural industries (see, for example, Mellor 1976, Liedholm and Chuta 1976, Ho 1986, Hazell and Roell 1983, Deb and Hossain 1984, and Osmani and Deb 1986, etc.). Although rural industries in this study are defined as all industrial establishments located in both urban and rural provincial areas outside the BMR, for analytical purposes, rural households in this chapter include only village households outside both the municipal areas and the sanitary districts (as classified in the Socioeconomic Survey Reports published by the National Statistical Office).

The emphasis on the consumption behavior and patterns of village households, rather than those of municipal households, has been based on two main criteria: (1) The degree of income discrepancy between the village households and households in other areas, i.e., the similarity of income level and thus demand patterns between municipal households and households in the GBM, and (2) The ratio of Thai population in the village areas. That is:

(1) The differences in the levels of household per capita income and expenditure justify the treatment of rural households as a group in contrast to municipal households. This necessity becomes obvious from the distribution of household income and expenditure per capita among the regions and among the administrative units within each region, i.e., the municipal, the sanitary district, and the village (Table 2.1). The greater differences between municipal and village household incomes within the same region as compared to the differences between municipal household and the GBM household incomes indicate that the level of well-being and the patterns of expenditure of municipal (urban) households in the regions are likely to be closer to that of the average household in Bangkok than to the average village households. The current compositions and trend of urban household expenditure, as detailed in the NSO Socioeconomic survey reports also exhibit significant purchases of relatively more capital intensive goods produced in the BMR as well as foreign exchange intensive goods from abroad. This is due primarily to their relatively more frequent and convenient communications with the BMR. Therefore, the municipal household group in the provinces does not

impress one as a significant potential source of demand for products of provincial industries. The demand of rural village household is thus a more interesting and practical focus as far as industrial development in the provinces is concerned.

Table 2.1 Household Income and Expenditure Per Capita per Year, by Region

	GBM	C	NE	N	S	WK
Household Income per Capita (Baht/year)						
1968/69	3,993	2,790	1,580	1,830	2,056	2,490
1975/76	7,246	5,195	3,030	3,686	4,048	4,206
1981	17,063	10,228	5,910	8,447	8,880	9,008
1986	21,944	11,445	6,257	9,557	10,448	10,133
Average HH Income per Capita by Area in Each Region (baht/year)						
1975/76						
Municipal Area	8,284	8,299	6,671	8,672	7,610	7,735
Sanitary Dist.	7,238	5,948	4,847	4,494	4,726	5,102
Villages	5,354	4,610	2,606	3,101	3,398	3,233
1981						
Municipal Area	20,060	15,758	15,923	19,086	18,307	17,415
Sanitary Dist.	17,160	10,771	8,334	9,528	10,077	9,449
Village	11,441	9,519	5,368	7,345	7,421	6,991
1986						
Municipal Area	24,327	20,369	20,385	22,594	22,070	21,013
Sanitary Dist.	21,015	13,983	10,384	10,520	12,657	11,762
Village	17,172	9,837	5,196	8,363	8,403	7,144
Average HH Expenditure per Capita (baht/year)						
1975/76						
Municipal Area	7,836	8,035	6,851	7,860	6,817	7,272
Sanitary Dist.	6,924	6,393	4,946	4,386	5,353	5,268
Village	5,194	4,940	2,884	3,350	3,824	3,532
1981						
Municipal Area	18,891	16,153	13,471	16,528	15,126	15,309
Sanitary Dist.	15,792	11,294	8,852	9,546	11,065	9,882
Village	11,345	9,840	5,562	7,174	8,085	7,187
1986						
Municipal Area	22,857	18,391	18,006	21,531	19,390	19,010
Sanitary Dist.	20,136	14,057	10,864	10,910	13,431	12,105
Village	16,057	10,789	6,115	8,935	9,672	8,029

Source: Derived from Household Socio-economic Survey Reports, NSO.

A more illustrative method in summarizing the income disparity situation is through the use of income and expenditure indices which were calculated and presented in Tables 2.2 and 2.3. The results show, beyond any doubt, that inter-regional and intra-regional distribution of household income and expenditure among regions, and among areas within each region has consistently worsened over time. The discrepancy

Table 2.2 Inter-Regional and Intra-Regional Disparity of Household Income Per Capita, by Region

	BKK	C	NE	N	S	WK
Inter-regional disparity of HH Income per Capita (GBM = 100)						
1975/76						
Municipal Area	107	107	86	112	98	100
Sanitary Dist.	142	117	95	88	93	100
Villages	167	143	81	96	105	100
1981						
Municipal Area	115	90	91	110	105	100
Sanitary Dist.	182	114	88	101	107	100
Village	164	136	77	105	106	100
1986						
Municipal Area	116	97	97	108	105	100
Sanitary Dist.	179	119	88	89	108	100
Village	240	138	73	117	118	100
Intra-regional disparity of HH Income per Capita (Municipal = 100)						
1975/76						
Municipal Area	100	100	100	100	100	100
Sanitary Dist.	87	72	73	52	62	66
Village	65	56	39	36	45	42
1981						
Municipal Area	100	100	100	100	100	100
Sanitary Dist.	86	68	52	50	55	54
Village	57	60	34	38	41	40
1986						
Municipal Area	100	100	100	100	100	100
Sanitary Dist.	86	69	51	47	57	56
Village	71	48	25	37	38	34

Source: Derived from Household Socio-economic Survey Reports, NSO.

Table 2.3 Inter-Regional and Intra-Regional Disparity of Household Expenditure per Capita, by Region

	BKK	C	NE	N	S	WK
Inter-regional disparity of HH Expenditure per Capita (WK = 100)						
1975/76						
Municipal Area	108	110	94	108	94	100
Sanitary Dist.	131	121	94	83	102	100
Village	147	140	82	95	108	100
1981						
Municipal Area	123	106	88	108	99	100
Sanitary Dist.	160	114	89	96	96	100
Village	158	137	77	100	112	100
1986						
Municipal Area	120	97	95	113	102	100
Sanitary Dist.	166	116	90	90	111	100
Village	200	134	76	111	120	100
Intra-regional disparity of HH Expenditure per Capita (Muni = 100)						
1975/76						
Municipal Area	100	100	100	100	100	100
Sanitary Dist.	88	79	72	56	79	72
Village	66	61	42	42	56	48
1981						
Municipal Area	100	100	100	100	100	100
Sanitary Dist.	84	70	66	58	73	64
Village	60	61	41	43	53	47
1986						
Municipal Area	100	100	100	100	100	100
Sanitary Dist.	88	76	60	51	69	64
Village	70	59	34	41	50	42

Source: Derived from Household Socio-economic Survey Reports, NSO.

indices for municipal areas, by major region, also indicate a smaller degree of income and expenditure disparity as compared with those among the village areas (Tables 2.2 and 2.3).

The level of average income for household, measured in per capita GRP for all regions, increased between 1977 and 1987. However, not only did most regions outside the GBM have much lower levels of per capita GRP at the beginning of this period than the GBM, but their annual rates of growth, some indeed rather high, have also not been enough for the average income to catch up (see Tables 2.4 and 2.5). Great differences

Table 2.4 Growth Rate of Current Prices Per Capita GDP and GRP by Region (%)

	WK	GBM	C	E	W	NE	N	S
1977	13.4	17.1	12.8	15.5	6.5	6.2	1.9	27.7
1978	19.0	22.2	14.7	19.0	10.8	21.0	24.0	18.5
1979	15.8	22.3	21.6	9.0	0.3	17.3	10.2	15.1
1980	20.5	17.8	15.0	26.6	24.5	22.8	19.0	11.1
1981	11.7	13.5	15.7	14.7	27.8	9.5	12.1	5.2
1982	5.6	2.9	3.2	12.2	11.6	8.6	2.5	6.2
1983	8.8	8.2	7.0	7.2	-4.7	15.6	10.2	6.4
1984	4.9	3.8	11.0	3.3	8.5	2.4	8.4	1.7
1985	2.3	0.6	-1.9	10.9	1.6	2.7	1.2	3.6
1986	5.9	10.5	-2.0	13.8	2.5	-1.5	-2.5	1.9
1987	10.7	16.6	8.7	0.3	1.3	5.9	8.0	7.1
Average	10.8	12.3	9.6	12.18	8.25	10.0	8.6	9.5

Source: Derived from Table A2.2.

Table 2.5 Growth Rate of 1972 Prices Per Capita GDP and GRP by Region (%)

	WK	GBM	C	E	W	NE	N	S
1977	4.4	7.3	4.6	8.6	3.4	-3.2	-3.9	11.3
1978	9.8	11.7	2.2	9.3	8.0	10.4	15.4	12.0
1979	3.7	9.6	8.6	-9.7	-11.0	6.1	0.7	3.0
1980	3.5	1.8	1.8	7.4	5.0	6.4	0.7	-8.2
1981	4.0	7.0	9.8	8.2	13.2	1.1	8.7	1.9
1982	1.9	-3.5	2.1	8.9	16.3	5.8	3.0	3.4
1983	5.1	6.2	2.7	1.5	-7.8	9.8	3.9	1.9
1984	5.1	2.9	9.5	4.8	10.6	3.5	9.1	3.2
1985	1.6	-1.0	0.8	6.4	3.3	4.1	2.0	2.7
1986	2.6	5.3	-0.8	4.3	1.4	-3.5	-1.2	2.2
1987	6.5	12.8	2.2	3.1	-3.2	0.1	0.7	2.4
Average	4.4	5.5	4.0	4.8	3.6	3.7	3.6	3.3

Source: Derived from Table A2.3.

of per capita GRP levels between the GBM as a region and all other regions thus remain.

Over the last ten years, the distribution of per capita GRP on a regional basis thus has also shown a consistently worsening trend (Tables 2.6 - 2.7). For example, the difference between the highest real per capita GRP (1972 constant prices) in Bangkok and the lowest in the Northeast increased from 6 to 8 times between 1976 and 1987, with minor fluctuations from year to year throughout the period (Table 2.6).

Table 2.6 Relative Size of Real Per Capita GRP by Region (WK = 1)

Year	GBM	C	E	W	NE	N	S	GBM/NE
1976	2.70	0.84	1.28	1.26	0.43	0.71	0.83	6.24
1977	2.77	0.84	1.33	1.25	0.40	0.66	0.88	6.92
1978	2.82	0.78	1.32	1.19	0.40	0.69	0.90	7.05
1979	2.98	0.82	1.15	1.02	0.41	0.67	0.90	7.27
1980	2.96	0.81	1.20	1.03	0.42	0.65	0.84	6.98
1981	3.10	0.92	1.13	0.92	0.40	0.63	0.77	7.68
1982	2.94	0.92	1.21	1.05	0.42	0.64	0.78	7.00
1983	2.97	0.90	1.17	0.92	0.44	0.63	0.75	6.77
1984	2.91	0.94	1.16	0.97	0.43	0.65	0.74	6.72
1985	2.83	0.93	1.22	0.99	0.44	0.66	0.75	6.39
1986	2.91	0.90	1.24	0.98	0.42	0.63	0.75	6.97
1987	3.08	0.86	1.20	0.89	0.39	0.60	0.72	7.86

Source: Derived from Table A2.3.

Table 2.7 Real Per Capita GRP as Fraction of GBM

Year	GBM	C	E	W	NE	N	S	WK
1976	1.00	0.31	0.47	0.47	0.16	0.26	0.31	0.37
1977	1.00	0.30	0.48	0.45	0.14	0.24	0.32	0.36
1978	1.00	0.28	0.47	0.42	0.14	0.24	0.32	0.35
1979	1.00	0.28	0.39	0.34	0.14	0.22	0.32	0.34
1980	1.00	0.27	0.40	0.35	0.14	0.22	0.28	0.34
1981	1.00	0.30	0.36	0.30	0.13	0.20	0.25	0.32
1982	1.00	0.31	0.41	0.36	0.14	0.22	0.27	0.34
1983	1.00	0.30	0.39	0.31	0.15	0.21	0.25	0.34
1984	1.00	0.32	0.40	0.33	0.15	0.23	0.26	0.34
1985	1.00	0.33	0.43	0.35	0.16	0.23	0.26	0.35
1986	1.00	0.31	0.43	0.34	0.14	0.22	0.26	0.34
1987	1.00	0.28	0.39	0.29	0.13	0.19	0.23	0.32

Source: Derived from Table A2.3.

As of 1987, although household income per capita calculated from the NSO socioeconomic surveys for the Northeast is slightly over one third of that for the GBM (Table 2.1), its real per capita GRP was only an equivalence of 13 percent of Bangkok's GRP, compared with 16 percent in 1976 (Table 2.7). The same relative position applies for all other regions, i.e., their per capita GRP has all become a smaller fraction of the GBM per capita GRP in 1987 than in 1976. Therefore, the relative purchasing power of provincial households remained significantly lower than that of households in the BMR throughout the period of rapid industrial expansion.

That provincial households possess much lower purchasing power than those in the BMR should be apparent from the fact that almost half of the GDP, i.e., the total income of the country, has been generated in the latter. Official information reveals the share of GRP originated in the GBM to be 40 percent of the GDP in 1976 but have risen to 49 percent in 1987 (Table 2.8). Furthermore, as much as 31-44 percent of the GRP in all regions outside the GBM originated from the agricultural sector (Table 2.9), the majority of which is still of a subsistence nature. This essentially means less access to cash income. It is in this context that provincial industries, especially those catering to the rural households have, indeed, been dealing with a small market.

Table 2.8 Distribution of 1972 Prices GRP by Region (%)

	WK	GBM	C	E	W	NE	N	S
1976	100	40.0	4.7	7.8	7.6	15.0	14.8	10.1
1977	100	41.5	4.6	8.1	7.5	13.9	13.5	10.8
1978	100	40.2	4.4	8.2	7.2	14.2	14.5	11.2
1979	100	42.4	4.5	7.2	6.2	14.6	14.0	11.1
1980	100	44.5	4.4	7.1	6.0	15.2	10.9	10.0
1981	100	46.3	4.9	6.8	5.4	14.2	12.6	9.7
1982	100	44.4	4.8	7.3	6.2	14.7	12.7	9.9
1983	100	45.4	4.6	7.1	5.4	15.3	12.5	9.6
1984	100	44.9	4.7	7.1	5.7	15.1	12.9	9.5
1985	100	44.0	4.7	7.5	5.8	15.4	12.9	9.6
1986	100	45.6	4.5	7.7	5.6	14.5	12.4	9.7
1987	100	48.6	4.3	7.2	5.3	13.6	11.7	9.4

Source: NESDB

Table 2.9 Share of Agriculture Value Added in GDP and GRP by Region, 1972 Prices (%)

	WK	GBM	C	E	W	NE	N	S
1980	24.8	4.0	32.0	39.0	39.3	44.4	44.5	41.4
1981	20.5	4.1	29.0	26.0	31.8	37.6	40.4	32.9
1982	20.3	3.8	26.2	25.5	33.8	35.7	37.9	33.0
1983	19.7	3.6	25.3	24.7	31.3	37.2	36.7	33.1
1984	19.4	3.4	24.9	25.2	31.1	35.0	37.2	32.4
1985	19.9	3.8	25.5	24.5	32.1	36.6	35.4	33.0
1986	19.1	3.5	24.5	23.2	32.1	35.1	36.5	33.1
1987	17.3	3.1	22.0	22.0	30.8	33.2	34.0	33.7

Source: NESDB

(2) On the basis that households with different income levels do demand products with different input intensities (King and Byerlee 1978, Deb and Hossain 1984), when the income of poor households first rises, the natural tendency is for them to buy more of the same things they used to buy, quite often produced locally. With further increase in income beyond certain levels, which must be empirically determined, people are expected to substitute quality for quantity, especially for those items for which the amount needed does not increase in proportion to the income increase. The current size of the rural population implies that if correct strategies are adopted to effectively raise the purchasing power of this group, the demand for the products of provincial industries could be expected to increase. For example, in 1975, about 89-96 percent of the population in all regions, except the BMR, resided in rural villages (Table 2.10).

The percentages of population in non-urban areas had dropped by 1985. However, the decline has not been significant because, excluding those in the GBM, as much as 88-94 percent of Thai population still live in rural areas, i.e., only 6-12 percent, nationwide, live in urban areas. The percentage of urban population for the country increases to about 17-18 percent when those in GBM are included. The mere size of rural village household group, therefore, further justifies the focus on

Table 2.10 Percent Population, Percent Population in Municipal Area, Household Size, by Region

	GBM	C	NE	N	S	WK
% Population by Region						
1960	8.1	23.4	34.2	21.8	12.5	100.0
1970	8.9	21.9	35.0	21.8	12.4	100.0
1980	10.5	21.7	35.0	20.0	12.6	100.0
1986	10.3	22.4	35.0	19.8	12.5	100.0
% Population in Municipal Area by Region						
1975	100	9.7	4.3	6.6	11.3	16.6
1980	100	10.1	4.3	7.0	12.3	17.6
1985	100	10.3	5.9	7.9	12.5	17.8
Average HH Size						
1968/69	6.2	5.6	6.0	5.6	5.3	5.7
1975/76	5.7	5.2	5.9	5.0	5.3	5.5
1981	4.2	4.3	5.1	4.1	4.4	4.5
1986	3.8	4.2	4.9	3.9	4.2	4.3

Source: Statistical Yearbook, various volumes, NSO.

the behavior, patterns and changes of rural household expenditure in an exercise to identify the potential demand for products manufactured by provincial industries.

Equitability of income itself may not be desirable if the overall average is low. Income disparity on the other hand indicates different opportunities and could thus be turned into an incentive for economic improvement. Only when the disparities are severe and keep on worsening consistently over time that the issue becomes a problem, sometimes to the point of causing disruption in or a slow down of economic growth. This section provides a brief overview of income distribution situations in Thailand and a review of policies which may have had influences on the distribution. In principle, the level of household income is the most important determinant of the level of household demand for goods. However, a seemingly high income figure for any one household does not always imply a high command over products, if income level of other households are in fact much higher. Competition among buyers dictates

that the relatively larger share of the total demand for any goods would still be purchased by the higher income households.

Therefore, although the absolute levels of household income are not unimportant, an accurate picture of relative income levels, i.e., income distribution, and what contributes to such differences, provide a practical basis for more realistic and thus viable corrective policy formulation, measure design, and implementation. Only when the picture shows how much some groups are worse off relative to others that the argument to increase their well-being becomes convincing and acceptable. More importantly, the absolute levels of income and their growth could be misleading as an indicator for the government in its decision to focus its efforts and resources in order to improve the well-being of the poorer population. For example, the average growth rates of the GRP during 1977-1986, based on both current and constant prices, for the Northeast which is the poorest region have been only slightly lower than the national average and are in fact higher than many other regions (see Tables 2.4 and 2.5). For those in favor of "efficiency" as oppose to "equitability" consideration, such growth rates will be handy to support their arguments. A review of the income distribution situation over the last two decades indicates that this may well have been the case.

2.1.1 Inter-regional Disparity

Household income and expenditure.

Relative to the GBM, per capita GRP in real terms for all regions shows a worsening situation. With the exception of the Central region, per capita GRP in all other regions has become an increasingly smaller fraction of per capita GRP in the GBM (Table 2.7). Average household income and expenditure data from the NSO socioeconomic survey reports for 1968/69, 1975/76, 1981/82 and 1986 also indicate widening gaps over time between the GBM and other regions in the rest of the country (Table 2.11). On a regional average basis, although both the North and the South have shown an improved situation relative to the national average, the gaps between the average income for households in these region and

in the GBM has definitely become wider (Table 2.11). Average household expenditure, as expected, shows less differences (also Table 2.11) among the regions. This is because the poorer households would have undoubtedly financed some of their expenditure through borrowing while higher income households, with a higher propensity to save, do not spend their whole incremental income.

Table 2.11 Average Household Monthly Income, Expenditure and Discrepancy Index, by Region

	GBM	C	NE	N	S	WK
Average HH Monthly Income (Baht)						
1968/69	2,063	1,302	790	854	908	1,183
1975/76	3,442	2,251	1,490	1,536	1,788	1,928
1981	5,972	3,665	2,512	2,886	3,256	3,378
1986	6,949	4,006	2,555	3,106	3,657	3,631
Average HH Monthly Expenditure (Baht)						
1968/69	1,664	998	540	688	765	916
1975/76	3,323	2,375	1,612	1,592	1,913	2,004
1981	5,735	3,795	2,555	2,782	3,343	3,374
1986	6,587	4,187	2,354	3,242	3,901	3,783
HH Income as Fraction of GBM HH Income						
1968/69	1.00	0.63	0.38	0.41	0.44	0.57
1975/76	1.00	0.66	0.43	0.45	0.52	0.56
1981	1.00	0.61	0.42	0.48	0.55	0.57
1986	1.00	0.58	0.37	0.45	0.53	0.52
HH Expenditure as Fraction of GBM HH Expenditure						
1968/69	1.00	0.60	0.32	0.41	0.46	0.55
1975/76	1.00	0.71	0.48	0.47	0.57	0.60
1981	1.00	0.66	0.45	0.48	0.58	0.59
1986	1.00	0.64	0.36	0.49	0.59	0.57

Source: Derived from Household Socioeconomic Survey Reports, various Issues, National Statistical Office, Office of the Prime Minister, Bangkok.

Household income and expenditure per capita.

For a more accurate picture of income distribution among regions, average household income and expenditure (as in Table 2.11) were adjusted by average household size in each region to arrive at household income and expenditure per capita (see Table 2.1). The reason for such adjustment is obvious when one looks at the change in the average household size during the last two decades (Table 2.10). Even if real income had remained constant over time, members of a smaller household, compared to a larger one, are expected to enjoy a larger share of the household's pool of resources. Therefore, when household income rises at a faster rate in the better off regions where the average household sizes have also been decreasing at a faster rate, the resulting discrepancy indices of household income and expenditure per capita, thus, indicate an even greater disparity of inter-regional distribution (Tables 2.2 and 2.3).

2.1.2 Intra-regional Disparity

Distribution of household income and expenditure per capita among households in the municipal area, the sanitary district and the village within all regions also showed sign of deterioration from 1975/76 to 1981 and 1986 (Table 2.3), although for any given period, the household expenditure per capita among these areas within a region did exhibit a relatively more equal distribution as compared with household income per capita as mentioned. For example, the differences between household expenditure per capita for a municipal household and a household in the village between 1975/76 and 1986 increased from 2.0 to 2.4 times for the country, from 2.4 to 3 times for the Northeast, and from 1.8 to 2.0 times for the South, etc. (derived from Table 2.3). The difference between municipal and village household income per capita during the same period for the country increased from 2.4 to 3 times, and from 2.6 to 4 times in the Northeast (derived from Table 2.1).

2.1.3 Implications on Household Demand for Rural Industry Products

The increasing disparity in household income and expenditure reflects widening gaps in purchasing power among households in different regions and among different types of household within the same region (see, also, Jitsuchon 1988: 14-16). At the bottom of the purchasing power scale are the rural village households which have been and will remain the majority household in the foreseeable future unless some relatively unconventional measures are adopted. An investigation into what might have constituted to the worsening distribution of income may provide a basis for the setting of strategies to correct the situation thereby increasing the general ability to purchase and the demand for provincial industry products in specific. A stable trend in income increase and, consequently, demand for products of provincial industries would then become a sustaining factor for the expansion of the provincial industry sector. Raising the income levels of poor households and changing income distribution, however, are a complicated and time consuming process. That is why improving income distribution which was explicitly declared as a goal since the Fourth Social and Economic Development Plan (1977-1981) is still a long way from becoming reality. The productivity of the agricultural sector within which the majority of Thais lives has not increased to even maintain a constant share in GDP. Meanwhile, the manufacturing sector has been experiencing such favorable growth rates that development experts have begun to look upon that sector as a means to provide the much needed employment for the rural population.

Many policy statements have been made and measures carried out to promote the development of provincial industry. Government interventions in the past mainly involved the manipulation of various policies affecting the supply side, including specific and direct measures such as banking and credits as well as many other macro-level policies - all treated in detail in other sub-projects under the Rural Industries and Employment Project. The process of "rural industrialization and/or rural industry development" has always been treated as a search for measures to be adopted to "attract" industrial establishments into the provincial areas outside the BMR. One of the

stated intentions was to create additional sources of employment for rural households which would then provide the necessary sources of demand to sustain those industries. It has seemed to escape the advocates of such strategy that if effective demand exists, there will be no need for government interventions to "facilitate" the emergence and expansion of industries in the provincial areas, i.e., profit maximizing behavior will lead the entrepreneurs there. On the other hand, no amount of supply side incentives, e.g., import duty exemption, tax holidays, subsidies or even special rebates, can attract industrial establishments to the provinces if demand is simply nonexistent. Therefore, unless we begin to understand what constitutes demand for products from the provincial industry sector, its constraints and potentiality, most efforts will be a waste of valuable resources. As part of the Rural Industries and Employment Project, this study thus addresses itself to deal with issues influencing the demand facing industries in the provincial areas. Among them, government policies play an important role and those affecting household income and its distribution will be examined first in the following section.

2.2 POLICIES AFFECTING HOUSEHOLD DEMAND THROUGH INCOME LEVEL AND DISTRIBUTION

Among the determinants of the levels of demand, income is probably the most important one, as compared to other variables, e.g., the size of population, the level of education which sometimes serves as a proxy for taste, etc. It is also obvious that both private market forces and specific government policies have influences on the levels of household income and its accessibility to many non-pecuniary benefits, some of which could be translated into monetary value. It is thus appropriate, at this point, to take a step back from the previous section, in which the changes and trends in income distribution were examined, to identify factors that may have affected such changes and trends. A review of existing research work provides the basis for summarizing the impact of some government policies on income distribution in this section.

2.2.1 The Industrial Expansion and Distribution and the Implications on Income Distribution

The number of registered factories in Thailand, according to the records compiled by the Ministry of Industry (MOI), increased almost 4 times between 1977 and 1987. As of 1977, when all factories registered with the Ministry of Industry were grouped into 58 major categories, 40 categories had more than 50 percent of each category total located in greater Bangkok metropolis (the GBM). The total number of Bangkok-registered factories in those 40 categories added up to 64 percent of all factories in the country (Table 2.12). The number of factories in Bangkok for all 58 categories accounted for 68 percent, i.e., only 32 percent of all factories in the country were located in the remaining 70 provinces. In Bangkok alone, the number has increased from over 7,000 to almost 22,000 from 1977 to 1987. The total number of factories outside the GBM has also increased, rather impressively, by almost 5 times. In relation to total land area, it is obvious that there is a much higher concentration in the GBM, i.e., a much larger number of factory per unit of land area.

Information on registered factories, however, should best be treated as another indicator of the structure and change of the manufacturing sector. The information may not reflect a totally accurate picture of the structure of the manufacturing sector of the country and thus must be used with caution for the following reasons:

1. There exists quite a large number of industrial factories, mostly small-scale to medium-scale, which are currently operating without ever having applied for a license and, therefore, are not included in the official records.

2. There also exists quite a considerable number of factories which are currently manufacturing products other than or in addition to what they have registered for, without applying for a change in the license.

3. The official information only show the registration records, thus, unless the factories which have stopped operating report their

close-down to the Ministry of Industry, they will still appear on the records as if they are still in business.

Table 2.12 Number and Share of Factory by Type, by Region

	Number of Factories						% in GBM	
	2520			2530				
	GBM	RK	WK	GBM	RK	WK	2520	2530
Crop drying	23	100	123	40	266	306	19	13
Animal and dairy	73	22	95	165	219	384	77	43
Vegetables, fruits	29	13	42	66	126	192	69	34
Fish	16	16	32	33	139	172	50	19
Vegetable oils	18	39	57	36	133	169	32	21
Seeds, grains	57	71	128	119	220	339	44	35
Cassava	0	254	254	1	1,298	1,299	0	0
Flour	129	115	244	343	849	1,192	47	29
Sugar	4	57	61	16	146	162	6	10
Tea, coffee, candies	54	16	70	120	59	179	77	67
Condiments	19	51	70	44	228	272	27	16
Other condiments	36	5	41	70	29	99	88	71
Ice	19	245	264	98	646	744	7	13
Animal feeds	6	66	72	25	274	299	8	8
Alcohol & beverages	3	5	8	4	24	28	38	14
Drinking water	13	11	24	64	55	119	54	54
Tobacco	5	1	6	8	4	12	83	67
Weaving	223	201	424	499	435	934	52	53
Clothing	672	16	688	1,828	111	1,939	98	94
Mat, rug, net	11	18	29	35	35	70	38	50
Fiber, synthetics	19	14	33	37	43	80	58	46
Leather	50	11	61	399	197	596	82	67
Lumber	401	418	819	710	1,268	1,978	49	36
Bamboo, rattan	60	37	97	122	293	415	62	29
Wood products	218	91	309	896	666	1,561	70	57
Pulp, paper, products	69	22	91	334	81	415	76	80
Printing	422	95	517	1,490	366	1,856	82	80
Chemicals	82	48	130	154	166	320	63	48
Paints	46	23	69	80	49	129	67	62
Pharmaceutical product	166	4	170	239	41	280	98	85
Cosmetics	62	7	69	126	26	152	90	83
Petroleum, products	11	5	16	13	13	26	69	50
Rubber and products	161	106	267	310	569	879	60	35
Plastic	392	34	426	1,423	210	1,633	92	87
Pottery, glass	25	80	105	49	249	298	24	16
Bricks	4	47	51	5	473	478	8	1
Cement, concrete	66	85	151	215	895	1,110	44	19
Metal and products	1,798	200	1,998	5,356	1,091	6,447	90	83
Ag. machinery	493	446	939	796	2,997	3,793	52	21
Machine tool	122	14	136	312	41	353	90	88
Other machine & repair	303	40	313	874	234	1,108	97	79

Table 2.12 (continued)

	Number of Factories						% GBM	
	2520			2530				
	GBM	RK	WK	GBM	RK	WK	2520	2530
Electronics	28	1	29	80	10	90	96	89
Electrical appliances	203	42	245	727	281	1,008	83	72
Ship, boat	69	30	99	108	140	248	70	44
Vehicle	305	93	398	878	650	1,528	77	57
Bicycle, motorcycle	72	21	93	204	171	375	77	54
Bicycle, motorcy repair	317	135	452	1,283	1,684	2,967	70	43
Wheel	12	0	12	29	5	34	100	85
Medical tools	14	3	17	60	14	74	82	81
Watch, jewelry	88	2	90	229	14	243	98	94
Musical eq., toy	119	6	125	291	43	334	95	87
Electricity	1	5	6	1	6	7	17	14
Gas, nonnatural	10	10	20	12	31	33	50	36
Packaging	18	9	27	109	155	264	67	42
Cold storage	34	13	47	77	144	221	72	35
Other repair	36	2	38	71	13	84	95	84
Laundry	7	4	11	28	12	40	64	70
Quarrying	0	185	185	1	458	459	0	0

Note: RK = the rest of the country.
Source: Industrial Directory by Province, Ministry of Industry.

When factories were regrouped into the 21 standard TSIC categories, more than half of the categories (16 in 1977 and 12 in 1987) had more than 50 percent of the factories located in Bangkok (Table 2.13). The overall share of factories in Bangkok dropped to 55 percent by 1987, but this might not represent an improvement in terms of distribution of employment or income and other benefits when the relative sizes of the industrial establishments are taken into account.

Table 2.13 Number and Share of Factory by TSIC Group, by Region

	2520			2530			% in GBM	
	GBM	RK	WK	GBM	RK	WK	2520	2530
Food	483	1,070	1,553	1,176	3,872	5,048	31	23
Beverages	16	16	32	68	79	147	50	46
Tobacco	5	1	6	8	4	12	83	67
Clothing	672	16	688	1,828	111	1,939	98	94
Leather	50	11	61	399	197	596	82	67
Furniture	278	128	406	1,018	959	1,977	68	51
Printing	422	95	517	1,490	366	1,856	82	80
Textile	253	233	486	571	513	1,084	52	53
Wood, products	401	418	819	710	1,268	1,978	49	36
Paper & products	69	22	91	334	81	415	76	80
Petroleum, products	11	5	16	13	13	26	69	50
Rubber, products	161	106	267	310	569	879	60	35
Plastic	392	34	462	1,423	210	1,633	92	87
Pottery, glass	25	80	105	49	249	298	24	16
Nonmetal mineral	70	132	202	220	1,368	1,588	35	14
Chemicals	356	82	438	599	282	881	81	68
Metal, products	1,798	200	1,998	5,356	1,091	6,447	90	83
Machinery	946	501	1,447	2,062	3,282	5,344	65	38
Electrical app.	203	42	245	727	281	1,008	83	72
Transport	775	279	1,054	2,502	2,650	5,152	74	48
Medical eq., watch	102	2	107	289	28	317	95	91
Total	7,248	3,661	10,909	21,878	17,931	39,809	66	55

Source: Factory Directory, Ministry of Industry.

Similar information on registered factories can also be obtained from the Summary Statistics of the 1984 Industrial Establishments (Municipal Areas and Sanitary Districts) (NSO 1987). The information, which has been adjusted by NSO with additional information from its own surveys to more closely reflect the structure and distribution of the types and number of industrial factories, was summarized and presented in Table 2.14. For convenience, the MOI data in Table 2.13 for 1987 is reproduced here for comparison.

Not only has the majority of factories been located in the GBM, but as the size, measured in number of employees and invested capital, of the operation increase, a relatively larger percentage of factory also tends to be located in Bangkok and the BMR (see, for example, Tables 1.2 and 1.3). Since the share of labor employed by the whole manufacturing

Table 2.14 Comparison of NSO and MOI Number and Share of Factories by TSIC Group, by Region, 1984 and 1987

	NSO 1984				MOI 1987			
	GBM	RK	WK	%GBM	GBM	RK	WK	%GBM
Food	823	3,671	4,494	18	1,176	3,872	5,048	23
Beverages	38	103	141	24	68	79	147	46
Tobacco	2	502	504	*	8	4	12	67
Clothing	5,261	10,443	15,704	34	1,828	111	1,939	94
Leather	768	183	951	81	399	197	596	67
Furniture	829	788	1,617	51	1,018	959	1,977	51
Printing	1,067	896	1,963	54	1,490	366	1,856	80
Textile	602	682	1,284	47	571	513	1,084	53
Wood, products	538	630	1,168	45	710	1,268	1,978	36
Paper & products	325	48	373	87	334	81	415	80
Petroleum, products	16	5	21	76	13	13	26	50
Rubber, products	134	175	309	43	310	569	879	35
Plastic	397	119	516	77	1,423	210	1,633	87
Pottery, glass	50	253	303	16	49	249	298	16
Nonmetal mineral	157	1,404	1,561	10	220	1,368	1,588	14
Chemicals	464	169	633	73	599	282	881	68
Metal, products	2,956	4,451	7,407	40	5,356	1,091	6,447	83
Machinery	279	537	816	34	2,062	3,282	5,344	38
Electrical app.	207	51	258	80	727	281	1,008	72
Transport	643	1,156	1,799	36	2,502	2,650	5,152	48
Medical eq., watch	26	15	41	63	289	28	317	91
Others	667	1,128	1,795	37	4,840	5,255	10,095	48
Total	16,249	26,893	43,142	38	21,878	17,931	39,809	55

Note: MOI = Ministry of Industry
Sources: 1. Factory Directory, Ministry of Industry.
2. Summary Statistics of the 1984 Industrial Establishments (Municipal Areas and Sanitary Districts), All Regions and Whole Kingdom. Bangkok, NSO.

sector has only increased from 8 to 11 percent from 1979 to 1987 (Table 2.15), it becomes clear that the much praised expansion of the industrial sector has not offered much employment generation in the provinces. It is frequently argued, and it is true, that the manufacturing sector in major cities such as the GBM has provided many jobs for migrant labors who could then help support their families in the rural areas through remittance. However, it can also be argued that for every person hired in a factory in the BMR, many more remain jobless. Moreover, the high costs of living in the BMR, especially in Bangkok, might have prevented any significant remittance, particularly

Table 2.15 Employment and Share by Major Economic Sector (Thousand Persons), (Percent)

Sector	1979	1980	1981	1982	1983	1984	1985	1987
Agri.	15,019	15,943	17,528	16,844	17,401	18,130	15,092	14,925
	(71.10)	(71.14)	(72.30)	(78.08)	(69.54)	(67.61)	(62.65)	(58.06)
Mining	39	37	61	62	51	117	97	77
	(0.18)	(0.16)	(0.25)	(0.29)	(0.20)	(0.44)	(0.40)	(0.30)
Manuf.	1,725	1,789	1,742	1,347	1,842	1,986	2,312	2,832
	(8.17)	(7.98)	(7.18)	(6.24)	(7.36)	(7.41)	(9.60)	(11.01)
Const.	410	436	468	380	512	533	737	1,051
	(1.94)	(1.95)	(1.93)	(1.76)	(2.04)	(1.99)	(3.06)	(4.09)
Pub. Util.	49	49	49	49	49	49	49	117
	(0.23)	(0.22)	(0.20)	(0.22)	(0.19)	(0.18)	(0.20)	(0.46)
Trading	1,742	1,916	2,046	1,361	2,194	2,214	2,739	3,066
	(8.25)	(8.55)	(8.44)	(6.31)	(8.77)	(8.25)	(11.37)	(11.93)
Transp.	425	456	394	289	535	517	600	693
	(2.01)	(2.03)	(1.62)	(1.34)	(2.14)	(1.93)	(2.49)	(2.70)
Services	1,815	1,887	2,056	1,344	2,537	3,365	2,558	2,934
	(8.59)	(8.42)	(8.48)	(6.23)	(10.14)	(12.55)	(10.62)	(11.41)
Others	-	0.5	0.3	-	4.8	5.0	7.9	11
	-	(0.00)	(0.00)	-	(0.02)	(0.02)	(0.03)	(0.04)
Total	21,123	22,410	24,242	21,574	25,024	26,815	24,091	25,705
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

Sources: For 1978-1985, reproduced from TDRI 1987, Productivity Changes and International Competitiveness of Thai Industries, p.2-54, Table 10.
For 1987, from Report of the Labor Force Survey, Whole Kingdom, (Round 2) May 1987, Table 8, NSO.

by those employed as laborers. Interviews and observations reveal that it is not uncommon for many to come back to work, after visiting their home in the rural villages, to bring with them bags of home-grown rice and other homemade preserves to help cut down their expenses. A large number of in-migrant workers in Bangkok have also been known to have left their children at or sent them back for the grandparents to take

care of, because "school fees and food are so much cheaper at home," and because "there are simply too many temptations in Bangkok for kids to grow up with, especially since both of us (interviewee and his wife) have to go to work every day."

The high concentration of factories in the BMR could be viewed as a natural trend, though not without help from both the intentional as well as the unintended impact of some government policies, as the economy grows and people are free to invest wherever the payoffs are considered high. Efficiency has been, perhaps implicitly, chosen over equity and this has resulted in the worsening distribution of income as discussed in Section 2.1 above. Just as the majority of Thailand's export to the rest of the world only two decades ago was mainly primary products, from both the agricultural and industrial sectors with little processing, the majority of current exports from the rest of the country to the BMR are primarily unprocessed raw materials. Therefore, as more industrial products are made available from the BMR in the local markets in the provinces, the overall terms of trade, as well as the "balance of trade," or "trade deficit" between the BMR and the rest of the country becomes increasingly disadvantageous for the latter.

2.2.2 The Fiscal Systems and the Distribution of Income

Fiscal policies, carefully designed and implemented with proper monitoring, could be highly effective as a corrective measure for income disparity. On the other hand, they could also easily make the situation worse. Relatively speaking, the revenue systems through manipulation of various tax schemes is generally expected to have a more direct impact on income disparity, since they directly affect the levels of disposable income, than the public expenditure system, the impact of which is often more difficult to assess and measure. However, there are many "social" indicators which can be and have been used by researchers to approximate the effect of government expenditure on income redistribution (Meesook 1978). Many studies dealing with the impact of the fiscal systems and their implementation on income distribution, to date, share the general conclusion that government revenue and expenditure policies in Thailand

have contributed to an increasing disparity of income distribution (see, for example, Meesook 1978, Krongkaew 1975 and 1980, Likitkijsomboon 1985, and Sussangkarn et al. 1988).

The Tax Structure and its Impact on Income Distribution.

Existing studies on the impact of the tax structure on household income redistribution have generally reached similar conclusions that the tax structure has been at best neutral but, more likely, has been contributing to the increasing income disparity among geographical regions as well as among the different income classes within any region (Sussangkarn et al. 1988, Likitkijsomboon 1985). For example, a study recently carried out under the auspices of the Thailand Development Research Institute, employing the general equilibrium approach, concluded that "...apart from income tax on households, the degree to which the tax system affects the distribution of income appears to be rather mild. It would not be too far off the mark to say that indirect taxes are almost neutral in their effects." (Sussangkarn et al. 1988:2).

Earlier studies concluded differently. Many of them, however, dealt with specific taxes such as the rice premium and the rice export tax, 21 percent of which was found to have fallen on foreign consumers and 79 percent on Thai farmers (Siamwalla et al. 1981 as cited in Sussangkarn et al. 1988:47). A study examining the impact of public revenue and expenditure policies on the distribution of household income in 1972 as compared with that in 1963 and 1969 concluded that the government "...has, at best, effected no change in the distribution of household income, and, at worst, has caused the distribution to become slightly more unequal" (Krongkaew 1975: Abstract, also see, Table 2.16). The same study also characterized the revenue system in 1972 as being regressive although it was only apparent at lower income brackets. The reason for the regressive nature which, effectively, put a heavier burden on poorer households was, "mainly because of the high dependency of the Thai government on indirect tax as its source for the bulk of its revenue" (Krongkaew 1975: Abstract). Another study, based primarily on similar assumptions and concept to those employed by Krongkaew, also

found the tax rates by income class to exhibit a generally regressive structure (Likitkijsomboon 1985 as appears in Table 2.17). Furthermore, both authors' calculation of the Gini coefficients for the pre-tax and post-tax household incomes showed greater inequality for the income distribution after-tax for all periods of the study, except one when the coefficient remains the same for the pre-tax and post-tax incomes, between 1963 and 1981 (Table 2.18).

Table 2.16 Effective Tax Rates by Income Class based on Adjusted Income: 1963, 1969 (%)

Income class (baht/year)	1963	1969
≤ 3,000	12.3	13.0
3,000- 5,999	12.1	11.5
6,000- 8,999	11.1	12.7
9,000-11,999	11.1	13.5
12,000-14,999	11.8	15.1
15,000-17,999	11.8	14.6
≥ 18,000	10.1	12.3
National Average	11.3	12.7

Source: Krongkaew as cited in Sussangkarn 1988, p. 51.

Table 2.17 Effective Tax Rates by Income Class based on Adjusted Income, 1981 (%)

Income class (baht/year)	N	NE	C	S	BKK	WK
<1,395	78.8	41.0	45.1	80.2	78.5	53.7
1,395 - 3,974	43.7	50.9	57.3	77.1	79.4	52.6
3,975 - 7,999	29.2	34.7	38.2	61.4	61.2	37.6
8,000 - 13,269	38.5	28.9	36.4	30.9	43.2	34.3
13,270 - 20,399	26.3	24.4	39.0	27.7	70.9	31.2
20,400 - 29,999	23.8	28.0	27.0	36.0	48.0	33.5
30,000 - 38,899	24.2	24.7	26.0	41.5	47.3	33.5
38,900 - 52,299	26.8	19.5	28.6	40.7	45.3	33.5
52,300 - 81,019	25.3	18.6	26.1	24.5	46.7	29.9
>81,020	15.3	14.5	27.4	24.6	43.0	23.7
National Average	24.3	23.7	30.6	31.9	45.7	31.8

Source: Likitkijsomboon 1985, as cited in Sussangkarn 1988, p. 52.

Table 2.18 Gini Coefficients of Income Distribution: Pre-Tax and Post Tax, 1963, 1969, 1981

Year	Money Income		Adjusted Income	
	Pre-tax	Post-tax	Pre-tax	Post-tax
1963	0.563	0.610	0.456	0.460
1969a	0.523	0.561	-	-
1969b	0.556	0.585	0.482	0.482
1972	0.605	0.648	-	-
1981	-	-	0.528	0.561

Source: Reproduced from Sussangkarn et al. 1988, Table 4.3, originally:
1. 1963 and 1969b from Krongkaew 1975:143
2. 1969a from Krongkaew 1976: 183
3. 1972 from Krongkaew 1980:59
4. 1981 from Likitkijsomboon 1985:94.

Fewer studies have been carried out using income elasticity of taxation as a measurement for the impact of the government revenue system on household income distribution. Observation has been made about the few existing studies that the results have not been conclusive (Thanapornpan 1985) and often times even dubious. It was also noted that contradictory conclusions were drawn and presented at different times, sometime without explanation, from apparently the same study by the same author (Salkin 1973 and 1974 as cited in Thanapornpan 1985). Thanapornpan also pointed out that the values of income elasticity of taxation are clearly sensitive to the definition of income employed by the researchers - the main reason rendering Thepthana's findings (1979) practically meaningless when the author failed to take into account the different definitions of the "urban" and "rural" areas employed in the 1962/63, 1968/69, and 1971/73 NSO socioeconomic surveys (when the sanitary districts were included as part of urban areas in one year and in the rural area in another). Since the sanitary districts are a middle category between the municipal (urban) and the village (rural) areas in terms of development and income, their inclusion and/or exclusion affects the results of income elasticity of taxation study in such a way that intertemporal comparison for those periods becomes meaningless. Another study of the impact of indirect taxes on income

distribution for 1963 and 1974 concluded that the tax system has not only been regressive but increasingly so over time, i.e., the income elasticity of taxation was 0.872 in 1963 and dropped to 0.802 by 1974 (Salkin and Chalayonwatn 1974 as cited in Thanapornpan 1985:85-86).

The Rice Premium. Many export tax schemes have been in effect at one time or another but none as widely known and studied as the rice premium. The best survey and analysis of existing literature on the subject of the rice premium was carried out by Rangsan Thanapornpan in 1985 when 321 items of books, articles, theses and dissertations, etc., were reviewed. Most researchers concluded that the rice premium as a tax was found to be regressive with respect to household income classes. The rice tax structure was at best proportionate to income. The regressiveness of the rice premium worsens when the implicit subsidies provided for the urban consumers of rice by rice farmers were taken into account (Thanapornpan 1985). The rice premium also contributed to income inequality between urban and rural sectors, and between the agriculture and non-agriculture sectors, resulting in imbalanced growth and net transfer of resources away from the rural, agricultural sector. The effect of the rice premium on income distribution worked through the cost of living in urban areas which were kept artificially low through the suppression of domestic prices of rice. As a result, the adoption of modern technology and specialization in rice production were not worth attempting, thereby accounting for the long-term trends of low productivity and thus low income among the rice-growing households which include virtually all Thai farmers. On the other hand, the low rice prices have made possible the policy in keeping wage rates in the BMR low which has led to an expansion in industrial investments by both local and foreign entrepreneurs.

The Impact of Public Expenditure on Income Distribution

It has been more than ten years since Meesook's study on the impact of public expenditure in providing social services on the redistribution of household income in which she "...takes as its starting point that the equitable provision of social services by the government is one way of bringing about greater equity" (see, Meesook 1978:1). This study

remains one of the more thorough and easy to understand examinations of the issue. Using the province as the unit of observation, with the extensive use of the actual budget expenditure data and by dividing selected economic and social indicators into two broad categories: (a) descriptive indicators designed to give some idea of the existing state of affairs, and (b) policy-related ones which either directly represent the magnitude of governmental effort to affect descriptive indicators or indirectly reflect such an effort, Meesook was able to reach some rather significant conclusions.

One of the main conclusions is that although the criticality of the income disparity across different population groups, notably between the urban and the rural population was explicitly recognized in the Fourth Plan, no serious efforts were made to correct the situation. This was because "...existing development priorities are such that the provision of social services such as education, pipe water and electricity have not been allocated sufficient funds to meet the Plan's objectives," and, there was "...no attempt to bring the standard of social services in rural areas up to that in urban areas" (Meesook 1978:78). This was substantiated by the positive correlation coefficients between government expenditures per capita at the provincial level on many items and the per capita gross provincial product (Meesook 1978:52-57). Selected indicators confirm that the situation has not changed much since Meesook's analysis. Some indicators in fact have shown signs of further deterioration in the disparity in social services provided by the government (Table 2.19).

Major recommendations made by Meesook thus are still valid when she suggested that, "...the reduction of economic and social disparities requires a radical change in attitude among government officials, a conscious shift in emphasis which will focus efforts and funds on the poorer areas. For disparities across provinces to reduced, government expenditures at the provincial level on a per capita basis must be higher for the poorer provinces, i.e., "they would have to be negatively correlated with the level of per capita GPP..." (Meesook 1978: 80).

Table 2.19 Selected Socio-economic Indicators by Region

		GBM	NE	N	S	C-E
Population/Gov't Employee,	1970	14	75	62	32	37
	1986	14	48	27	31	31
% Pop in Municipal Areas	1970	81.1	3.7	5.9	10.6	9.5
	1985	100.0	5.9	7.9	12.5	10.3
% Econ Active Pop in Agr	1970	19.9	91.3	85.6	71.8	71.5
	1984	14.7	91.2	75.5	76.9	60.3
Pop/square kilometer	1976	2,935	87	53	76	93
	1987	3,583	112	62	95	113
Median Age of Pop	1970	18.5	15.2	16.2	16.4	16.6
	1986	23.5	18.5	21.0	19.5	21.0
Birth per 1,000 Pop	1972	37	35	26	36	29
	1980	25	25	19	27	22
Death per 1,000 Pop	1972	7	7	7	6	6
	1980	4	5	5	4	6
Infant Mortality	1976	52	17	30	16	28
	1984	11	9	15	11	12
Family Planning Recipients per 1,000 Population						
	1972-73	6	24	26	14	20
	1986	25	29	37	24	28
% Pop Economically Active	1970	54	84	75	71	73
	1984	46	58	60	52	54
% Literacy	1970	90	86	74	76	84
	1980	n.a.	n.a.	83	86	91
% Population 6+ w/o Schooling	1970	17	26	33	38	25
	1984	10	11	14	18	13
% Student in Population	1970	27	19	20	23	23
	1980	n.a.	18	n.a.	21	21
Number Student/Teacher	1973	24	33	30	28	28
	1980	n.a.	20	n.a.	20	21
Pop/Provincial Hospital Bed	1973	579	2,565	1,626	1,296	1,199
	1985 (1986 for NE)	n.a.	1,361	1,438	1,085	1,072
Population per Government Doctor						
	1973	2,033	43,439	19,768	23,737	15,897
	1985 (1986 for NE)		13,793	19,983	16,516	12,393

Table 2.19 (continued)

		GBM	NE	N	S	C-E
Population per Nurse	1973	892	14,720	7,628	6,456	5,031
	1985		5,013	6,367	4,722	4,147
% Houses with Local Materials	1970	5.3	25.5	29.3	34.1	26.1
	1986	5.1	7.4	12.8	8.4	7.5
% Houses Owned	1970	49.4	88.0	90.2	85.1	83.6
	1986	30.0	83.1	81.7	70.2	69.4
% Houses with Toilet	1970	93.6	18.3	32.3	15.1	35.7
	1986	98.5	43.7	75.7	44.7	77.9
% Villages with Electricity	1976		9	20	15	35
	1984		51	67	54	80
Pop/Registered Vehicle	1969	19	442	312	206	135
	1986	4	54	21	22	18
% Households with Radio	1970	83	56	66	61	83
	1985	77	73	73	63	80
% Households with TV Set	1970	55	4	3	3	12
	1985	80	22	34	33	51
Number of Crimes/1,000 Pop	1974	184	306	405	802	369
	1985	12	2	2	3	4
% Criminal Cases with Arrest	1980	97	92	90	87	93
	1985	91	74	70	68	76

Sources: 1. Statistics prior to 1980 are from, Oey Astra Meesook, "A Study of Disparities in Income and Social Services Across Provinces in Thailand," Research Report Series No. 7, Faculty of Economics, Thammasat University, September 1978, Table 2.1.4.

2. Statistics since 1980 are from Statistical Yearbook various volumes, NSO, and Statistical Reports of Region for the North, South and Eastern Regions, NSO.

2.2.3 Education and Human Resource Development and Income Distribution[1]

The causal-effect relationship between the level and quality of education, and income distribution is a difficult one to sort out. Low household income on the one hand raises the opportunity costs for

1. Much of this section is from Chapter 4 in Sussangkarn, et al. 1988.

allowing children to attain education beyond the compulsory level. The low levels of education attained in turn preclude the opportunities for higher paying jobs. So the vicious circle continues. Education treated explicitly as a factor affecting income distribution was analyzed in a recent study by Sussangkarn et al. (1988) from which several main issues are summarized and presented. The authors concluded that not only has the formal educational system not offered equal access to people with different income levels, it has in fact also become part of the problem in worsening the household income distribution through its, perhaps unintentionally, favorable treatment toward the better off groups (Sussangkarn et al. 1988). Children from low income families not only encounter higher opportunity costs and thus less chance to attend school beyond the compulsory level but also tend to be discriminated against in another context, i.e., "the imbalance in economic structure means good school, universities and teachers tend to be located in the relatively richer part of the country, results in even less accessibility by children of poor households, often in more remote areas, thereby worsening the inequality in education," and "...poverty thus has a tendency to perpetuate across generations" (Sussangkarn et al. 1988:65).

That job opportunities in the provinces are limited can be seen readily from official information on the number of in-migrating labor employed in the GBM which increased, for all levels of education, more than 8 times between 1976 and 1986. The majority of these in-migrant labor have very little formal education. In 1976, over 90 percent of in-migrant labor into the GBM had completed up to the primary level of education. This percentage dropped down to 74 in 1986 but the absolute number has increased nearly 7 times (from 34,353 to 231,267 persons) during the ten year period (Table 2.20).

By dividing the labor market within the private sector into the "formal," i.e., unionized market of large firms and professional occupations and the "informal" market, the researchers found similar employment behaviors between the formal sector and the government sector in that they both favor employees with higher education. The majority of people who have had only primary education end up working in the agricultural and/or the informal sector. Given the low value added per

Table 2.20 In-Migrant to GBM Employed, by Level of Education Completed

	1976			1981			1986		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Persons	37,792			79,308			311,681		
Level of Education Completed									
None	0.9	0.3	0.6	1.9	0.5	1.4	0.7	0.2	0.6
Up to Primary	90.9	47.0	43.9	85.8	33.3	52.5	74.2	44.1	41.5
Secondary	5.5	4.4	1.1	7.9	5.7	2.2	12.6	9.0	3.6
Vocational	0.9	0.5	0.4	1.3	0.8	0.5	4.0	2.7	1.3
University	1.1	0.8	0.3	1.5	1.1	0.4	4.7	3.4	1.3
Teacher's Col.	0.4	0.1	0.3	1.1	0.5	0.6	2.2	1.3	0.9
Others	0.3	0.1	0.2	0.5	0.4	0.1	1.5	0.6	0.9
Total	100.0	53.2	46.8	100.0	42.3	57.7	100.0	49.9	50.1

Sources: 1. Survey of Migration into Bangkok Metropolis, 1976-1981, NSO.
2. Employment and Unemployment of Migrants to the Bangkok Metropolis, the Vicinity of Bangkok Metropolis and the Regional Urban Growth Center, 1986, NSO. (Hereafter referred to as Survey of Migration, 1986).

capita in the agricultural sector, the income gaps between the agricultural and non-agricultural households have exhibited a widening trend through time. There is also a positive relationship between the rate of increase in household income and the level of education of household head (Table 2. 21). Unequal access to higher education is also apparent since the system tends to benefit students from households with parents who have attained higher level of education. The unequal accessibility is further exemplified by the levels of average household income. The average family income of university students exceeds that of the population in general by 5-7 times (Table 2.22). Thus, it is clear that the better off households more than proportionately benefit from the higher education system, primarily owned and run by the government.

To compound the problem, many agencies are involved in the design and administration of the formal education system. Various government agencies, including NESDB, the Ministries of Education, Interior and University Affairs, and the National Education Council under the Office

Table 2.21 Mean Per Capita Household Income, by Education of Household Head (Baht per Month)

Education Level	1981	1985/86	% Change
Less than Grade 4	641	641	0
Primary	652	694	6
Secondary	1,446	1,642	13
Vocational	1,771	2,065	17
Bachelor Degree	2,337	2,925	25
Above Bachelor Degree	3,683	5,710	55

Source: Socioeconomic Surveys, 1981 and 1985/86 as appears in Sussangkarn et al. 1988, p. 85.

Table 2.22 Average Monthly Income of the Family of University Student and Other Population Groups, 1983 (Baht/Month)

Family of	Average Family Income
Students in Public Universities	11,197
Students in Private Universities	15,380
Farmer Family	578
Manual/Production Worker Family	1,362
Total Population	2,380

Source: Reproduced from Sussangkarn et al. 1988, p. 87.

of the Prime Minister, all have responsibility for administering the formal education system at different levels of schooling. The overall trend is one which "...leads to too little coordination between the different levels of education and too much uniformity in curriculum for the diverse needs" (Sussangkarn et al. 1988:90).

Although the majority of those who completed only primary education still tend to find employment in the agricultural sector, information from the Labor Force Surveys Reports (NSO) shows an increasing percentage of agricultural workers who have completed education at the secondary and the university levels between 1971 and 1986 (Table 2.23). It is possible that the higher percentages may indicate the inability to find job in the "formal" and/or nonagricultural sectors due to inappropriate training for the rapidly changing economy. It could very well indicate a more limited absorptive capacity of the industrial

Table 2.23 Selected Employment and Education Indicators, by Region

	GBM	C	NE	N	S	WK
% Govt Employee in Total Employed Persons in Region						
1971	14.0	4.8	2.8	1.7	2.9	3.7
1980	14.7	6.0	3.0	3.7	5.7	5.3
1986	17.3	6.2	4.1	5.4	6.6	6.5
% Unpaid Family Members in Total Employment in Region						
1971	21.9	48.6	61.4	57.7	50.6	53.8
1980	14.4	40.7	59.8	50.1	38.8	46.8
1986	11.1	38.8	53.7	44.5	38.4	42.3
% University Graduates Employed in Agriculture						
1971	*	0	0	0.05	0	0.01
1980	0.02	*	*	*	*	*
1986	0.05	0.1	0.1	0.04	0.8	0.2
% Secondary/vocational Graduates Employed in Agriculture						
1971	0.4	0.4	0.4	0.4	0.5	0.4
1980	0.3	0.9	1.1	1.0	1.6	1.0
1986	0.2	2.5	2.0	2.5	3.5	2.1

Note: * = less than 0.01%
Source: Derived from Report of the Labor Force Survey, 1971, 1980 and 1986, NSO.

sector than was hoped for at the beginning of the industrialization process, i.e., some who have been educated and intended to leave the farming sector have been forced back to the farm. On the other hand, it is not impossible that a small percentage might have chosen to work on the farm. The result, nonetheless, reflects higher levels of education of farmers on average. The issue is thus whether this will become a trend which will continue long enough to make a difference, i.e., whether it will lead to a more rapid adoption of modern technology in agriculture, and, ultimately begin to reduce the income gaps. And if this is a viable trend, it is then even more important to increase the accessibility to quality education for children from the poor households, especially those in the remote, rural areas, so that the education system ceases to be one of the causes of income disparity.

The levels of wage and salary received by labor reflect their productivity which is partly determined by formal education attained. By

raising the average level and quality of education attained by rural people, they will need less time to accomplish job specific training and will be able to start working at an initial payment which is higher than the current average. Providing scholarship at the secondary level of education to qualified students from poor rural households is one way to increase accessibility. To increase the quality of education in the provinces, however, it is obvious that a larger number of teachers with postgraduate degree are definitely needed.

Information on 69 higher education institutions, i.e., above the secondary level, and including the two public universities (Khon Kaen University and Sinakarintharavirot University), in 17 provinces in the Northeast for 1988 reveals, for example, that there were a total of 30 social sciences doctoral degree holders (the number goes up to 104 when education, humanities, business and arts are included) in the whole region (Rural Systems Research Project, Khon Kaen University 1988). This is rather a small number compared to any public university in Bangkok. Thammasat University in the GBM has 91 regular permanent staff members with doctoral degree in social sciences teaching in its graduate programs alone, i.e., not counting those teaching at the undergraduate level, (Graduate School at Thammasat University 1988). A larger number is thus needed. In order for them to maintain the academic and teaching quality, they must be able to keep up with the development in their field of study and be able to conduct research. The current supportive systems including research funds, library material coverages, as well as many other logistics such as transportation, microcomputers, etc. are generally highly limited.

In addition to formal education, flexible and timely retooling for labor, including those already with a higher education, in order to keep up with the speed of technological development is crucial to sustain economic growth in general and the rapid expansion of the manufacturing sector in particular. Many private enterprises and organizations have started to provide this type of education but it is limited to their own staff and training provided by private nonprofit as well as government organizations tend to take place in Bangkok (See Na Ranong, 1990). The curriculum and working skill mismatch is substantiated by the increasing

unemployment incidence associated with higher levels of educational attainment in the vocational branch (see Table 2.24). The limited flexibility and adaptability of the current curriculum is probably recognized but the costs of frequent curriculum revision as well as replacement of training tools and equipment, on the other hand, may raise the costs for vocational education even higher and further reduce access for children of poor households. The immediate and more pragmatic answer may lie in the provision of specialized, but short and periodic training courses. The project survey results and interviews with industrial entrepreneurs confirm a strong need for well designed short courses to prepare new graduates for their jobs because "we have to train workers we accept for work. They don't seem to learn anything useful from school..." (see Charsombut 1990).

Table 2.24 Unemployment Rates by Educational Attainment, 1986

Educational Attainment	Municipal Areas		Nonmunicipal Areas	
	Male	Female	Male	Female
Less Than Grade 4 or None	3.4	2.8	2.1	3.6
Lower Elementary	2.9	2.3	2.4	4.4
Upper Elementary	7.5	5.3	4.5	5.6
Lower Secondary	7.2	7.8	7.2	6.1
Upper Secondary	9.5	11.1	13.8	19.8
Vocational	12.1	11.0	12.7	15.1
University: Academic	4.8	10.8	11.8	14.3
University: Tech Vocational	15.1	16.3	25.4	47.5
Teacher Training	8.9	6.6	5.8	12.3

Source: NSO Report on Labor Force Survey, 1986.

2.2.4 The Rural Employment Generation Program

An effort first known as the "Project for Local Development and Employment Provision in Rural Areas During the Dry Season," which later became the "Project for Local Development and Employment Provision in Rural Areas," was launched in 1975 to (1) generate local employment in rural areas during the dry season, and (2) reduce the flow of seasonal migrants into urban areas, especially the Bangkok metropolis. It was

allocated a total budget of 2,500 million baht and put into operation during May to July of 1975. The project was evaluated as being rather successful in meeting its main objective in generating employment for the rural population through the employment of villagers and purchase of materials in its construction of durable structures, mostly small-scale, for local use. Its role in increasing the role of Tambon (sub-district) Council in local development was also acceptably successful. The project was later re-enacted as a program in 1976 with a new title, Tambon Development Project, and a larger budget of 3,500 million baht, as well as an expanded list of objectives. Implementation of the Program was delayed until 1977 which turned out to be a very bad year for agriculture because of the extensive and severe droughts. The Program was revived in 1978 as the "Program for Economic Restoration for Rural Areas Suffering from Natural Disasters" with a budget of 1,600 million baht and lasted from January through June.

This rural employment generation program which re-started in 1980 and has been carried out annually in May-July, is now officially titled "The Rural Employment Generation Program," more commonly referred to by the public as the "Kor Sor Chor Program." For the 1980 program, the budget allocation between (1) projects related to water resource development, and (2) projects involving maintenance and/or construction of other types of common structures for local use was on a 70-30 ratio. A third category of project, to raise agricultural productivity and promote health, was added in the 1981 program with a modified budget allocation ratio of 50-30-20 percent. To make sure that the objective on employment generation is fulfilled, it has been mandatory since the program was first implemented that, within any one project, 70 percent of the expenditure must be spent on labor and only 30 percent on materials. Exceptions were sometimes made, but the share of expenditure on labor had never been permitted to fall below 50 percent of any total sub-project expenditure.

An evaluation of the 1981 program resulted in the implementation of two major sets of activities: (1) the provision of basic technical knowledge at the local level through country-wide training of village technicians and the production and distribution of manuals on the

construction of water resource project, road and building, and (2) the drafting of the "Five-year Tambon Development Plan" by tambon councils so that priorities could be screened and ranked in advance. As time passed, the objectives and implementation of the program have become increasingly defined. More specific details have been provided in relation to the type of projects and activities which are and are not permitted to be carried out under the Program.

The Rural Employment Generation Program is the only government program which has been explicitly cited as having even a mildly positive effect on improving income distribution among its beneficiaries, though not a very large group of population (Krongkaew at al. 1985:63). The distribution of projects and actual expenditure under the Program by region over the past seven years period between 1980-1986 indicates a higher concentration of Program resources in the poorer regions (Tables 2.25 and 2.26).

The Gini coefficient analysis by Krongkaew for the Central Region showed an improvement in income distribution among those employed in Program activities. There are implications that the Program might have also contributed to an improvement, or at least has not worsened, the income distribution among regions. The percentage distribution of both actual project expenditure and the number of projects by region exhibit a generally inverse relationship with the average household monthly income and GRP per capita (Table 2.27). Due to its seasonal duration, dictated by its mandatory purpose, the size of the Program budget and coverage of activities have rightly been limited and, perhaps, explain to some degree the relatively small number of beneficiaries. Nevertheless, the Program has not been above criticism, especially in its budget allocation and disbursement. On the other hand, the philosophy and implementation of the Program seems to merit careful study and, perhaps, can be applied, with modifications, in other areas of government expenditure.

Table 2.25 Distribution of Projects under the Rural Employment Generation Program, by Region, 1980-1986

	C	NE	N	S	WK
Number and Share of Projects by Region					
1980	13,831	27,730	13,324	6,605	61,490
(%)	22	45	22	11	100
1981	10,481	27,910	13,248	8,039	59,678
(%)	18	47	22	14	100
1982	4,999	9,971	4,381	3,162	22,513
(%)	22	44	19	14	100
1983	4,449	8,495	4,148	2,547	19,639
(%)	23	43	21	13	100
1984	4,254	6,622	3,025	1,843	14,744
(%)	29	45	20	12	100
1985	3,658	5,669	2,782	1,559	13,668
(%)	27	42	20	11	100
1986	3,286	4,363	3,329	1,821	12,799
(%)	26	34	20	14	100
Total	43,958	90,760	44,237	25,576	204,531
(%)	21	44	22	12	100

Source: Evaluation Report of the Rural Employment Generation Program, 1986, Whole Country, and the Northeastern Region, The Secretariat Office of the Prime Minister.

Table 2.26 Distribution of Actual Project Expenditure under the Rural Employment Generation Program, 1980-1986

	C	NE	N	S	WK
Actual Expenditure and Share by Region (million baht)					
1980	521	1,425	703	334	2,983
(%)	18	48	24	24	100
1981	439	1,590	638	371	3,038
(%)	14	52	21	12	100
1982	380	899	389	256	1,924
(%)	20	47	20	13	100
1983	389	893	414	278	1,974
(%)	20	45	21	14	100
1984	386	892	370	281	1,929
(%)	20	46	19	14	100
1985	355	856	539	263	2,013
(%)	18	42	27	13	100
1986	284	379	195	130	989
(%)	29	38	20	13	100
Total	2,754	6,934	3,248	1,913	14,849
(%)	18	47	22	13	100

Source: Same as Table 2.24

Table 2.27 Average Household Monthly Income and GRP Per Capita as Compared with Regional Share of Rural Employment Generation Program Projects and Expenditure

	Average HH Monthly Income		GRP Per Capita		Rural Employment Generation			
					% Projects		% Expenditure	
	1981	1986	1981	1986	1981	1986	1981	1986
Region								
C	3,665	3,757	12,036	17,637	17.6	25.7	14.4	28.7
S	3,256	3,542	12,710	15,542	13.5	14.2	12.2	13.2
N	2,886	3,032	9,585	13,112	22.2	26.0	21.0	19.7
NE	2,512	2,466	6,257	8,321	46.8	34.1	52.3	38.4

Sources: 1. Average household monthly income from Table 2.11.

2. GRP per capita in current market prices from Gross Regional Product 1986. Gross Regional and Provincial Product Unit, National Income Division, NESDB.

3. Rural Employment Generation Program projects and budget expenditure from Evaluation Report of the Rural Employment Generation Program. Various issues, Office of the General Secretariat, Office of the Prime Minister.

A few observations are made here which may provide a basis for improvement of the Program's implementation:

(1) As of 1986, as many as 24 percent of nonparticipants in the Central region still appeared to be uninformed about the Program. They were reportedly "unaware of the existence of the Program" (Table 2.28). When the high percentage (31%) of those participants who "...were asked by the village headmen and/or the head of the sub-district (kamnan) to work in the Program" or those in the Northeastern region who reportedly "had applied but not chosen" (30%), are taken into account, the question arises as to whether this was caused by inadequate publicity or whether favoritism was at work among the administrators of the Program. In addition, the high percentage of people who "had applied but were not chosen" could be a useful indicator that there is still a large number of people in need of temporary, seasonal off-farm employment.

Table 2.28 Selected Indicators in Relation to Participation and/or Non-Participation in the Rural Employment Generation Program (% in Region)

	C	NE	N	S	WK
Reasons for Non-Participation					
Unaware of the Program	24	7	8	8	12
Applied but not chosen	2	30	8	4	10
Engaged in other activities	20	39	48	59	40
Methods of Gaining Access to Program Work					
Voluntary application	34	58	54	71	56
Asked by local authorities	31	16	35	22	26
Opinion and/or Experience with Program Payment					
Wage rate too low	10	4	3	5	6
Payment was delayed	1	8	7	3	5
Received only part of payment	0	*	2	*	1
Have not received payment**			6		

Notes: * Less than 0.5.
**Assumed payments have been delayed so that at the time of interview, the participants have yet to received their payments.

(2) In view of the Program which was originally designed and which is still aimed at responding to low employment opportunities during the dry season in rural areas, payment problems encountered by villagers such as "long delay, or having received only part of the payment," or "having received nothing to date" (Table 2.30), do not reflect well on the Program and may, in fact, defeat its purpose.

(3) The "saturated need for projects, the types of which have been defined by the Program," mentioned in many evaluation reports should not be taken literally. This is especially important since recommendations and/or comments made by Program administrators at provincial, district, and tambon levels, as compared to recommendations made by villagers, on what should and should not be carried out in the areas have consistently shown major disagreements, sometimes to the point of contradictions.

However, since the present study is not an evaluation of the Rural Employment Generation Program, it is adequate to simply conclude at this point that refinement and modifications may be needed so the Program's positive effects on income distribution will continue and, hopefully, be shared among a larger population in the rural area. Indirectly, this will be expected, in part, to help sustain the demand for goods and services including the products of provincial manufacturers.

2.2.5 Agricultural Pricing Policies

A study of the impact of government interventions in the pricing of agricultural products on net resource transfer between the agriculture and the government sector, between the agricultural and the rest of the economy as well as the impact on income distribution has recently been conducted (Siamwalla et al. 1987). The study provided detailed analysis for four major crops - rice, sugar cane, maize and rubber. Other crops mentioned, but not included in the quantitative analysis, are cassava, soybeans, and cotton (Siamwalla et al. 1987:132-135). The authors found that organizations representing producers for all farm crops, with the exception of sugar cane, are quite weak. As a result, they have not been effective in their efforts to raise the crop prices received by farmers.

Major findings of the Siamwalla et al. study are summarized and presented in this section (see, also, Table 2.29). For example, on the issue of net resource transfer between agriculture and the government, defined as "...the difference between the total revenue from the agricultural sector minus the government expenditure on the agricultural sector," the authors concluded that:

Table 2.29 Summary of Effects of Agricultural Pricing Policies (Million baht)

Year	Net Transfer from Agriculture to Government		Resource Flow from Agricultural to the Rest of the Economy		
	Road Included	Road Excluded	Cumulative Effect		
			Direct	Total(1)	Total(2)
1960	174	602	n.a.	n.a.	n.a.
1961	-2	670	n.a.	n.a.	n.a.
1962	-546	203	n.a.	n.a.	n.a.
1963	-637	172	n.a.	n.a.	n.a.
1964	-628	382	n.a.	n.a.	n.a.
1965	-1,477	-166	6,682	n.a.	n.a.
1966	-2,690	-795	5,787	n.a.	n.a.
1967	-3,966	-1,321	8,291	11,439	12,046
1968	-4,904	-1,594	7,953	11,041	12,346
1969	-5,153	-1,621	5,745	9,287	11,032
1970	-5,944	-2,523	3,175	6,166	8,048
1971	-6,334	-2,816	4,372	7,841	9,166
1972	-6,068	-2,394	5,684	9,678	10,246
1973	-4,602	-1,641	13,716	18,805	19,451
1974	-2,169	184	24,164	28,196	29,074
1975	-4,546	-1,703	13,462	17,964	21,822
1976	-6,179	-2,666	5,772	10,568	13,049
1977	-6,925	-2,946	6,319	11,830	16,239
1978	-7,132	-3,565	7,856	12,798	16,474
1979	-7,870	-4,037	6,737	11,697	17,300
1980	-8,396	-4,068	8,419	12,939	17,797
1981	-8,142	-4,420	8,870	13,762	19,571
1982	-9,587	-5,764	1,600	5,599	7,615
1983	n.a.	n.a.	1,269	5,567	10,342
1984	n.a.	n.a.	948	5,609	9,127

Notes: See definition and calculation in Siamwalla et al. 1987:158 for:
1. Total (1): Based on equilibrium exchange rate taking into account only the trade policies,
2. Total (2): Based on equilibrium exchange rate

Source: Compiled from Siamwalla et al. 1987, Tables 6.5-6.6.

"With roads included, the net flow of resources has been from the government to agriculture, and this flow has increased over time. This is because, as the economy has grown, taxation from agriculture has not kept pace. General government revenues, presumably from other sectors, have, on the other hand, continued to be used to provide increasing resources to agriculture...[there is] a clearly increasing bias towards agriculture in government investment and a declining bias against agriculture in government expenditures...[This is because] agriculture, particularly rice culture, is intensive in public capital, notably in irrigation, which, for technical reasons, has to be undertaken by the government." (Siamwalla et al. 1987:207-212).

Government interventions through direct use and/or pricing of resources and commodities directly interfere with the market mechanisms, thereby effectively altering the relative prices. As a result, transfers of resources take place among producers and consumers facing different aspects of intervention such as in the case of the rice premium (Thanapornpan 1985). The effect of agricultural pricing policies, on resource transfer between the agricultural sector and the rest of the country, although limited to four major commodities, was calculated and conclusions reached by Siamwalla et al. that, although the net transfer from the agricultural sector to the rest of the economy has remained positive, the trend has been generally a declining one (Siamwalla et al. 1987:218-221) such that:

"Proportionate to the size of the agricultural sector, therefore, the rate of extraction has gone down. If one offsets the extraction from the agricultural sector against the continually increasing flow of government resources back to the agricultural sector, the downward trend would be emphasized" (Siamwalla et al. 1987:221).

Other forms of agricultural pricing interventions by the government include price support programs, especially for rice, which were never effective. The distributive share of the economic rent generated by the

rice market intervention in 1983, for example, was such that 54 percent went to the rice millers and exporters, 27 to government officials and political parties, 6 to farmer leaders and 13 percent to the farmers (Pinthong 1984 as cited in Siamwalla et al. 1987). In effect, the price support program for rice, over the years, has worked for the government in allowing it "to fill the G-to-G orders" and "to buy off farmers protests" (Siamwalla et al. 1987:49-54).

Therefore, government interventions have resulted in a positive net flow of resources from the government to the agricultural sector. On the other hand, the agricultural pricing policies have caused a net, and relatively small, transfer of resources out of the agricultural sector to the rest of the country. The net effect of the agricultural pricing policies on the agricultural, primarily rural, household income should be obvious. In terms of income distribution, the Siamwalla et al. study found that government policies in agriculture during 1980/81 mainly benefited, "...rich urban households...," and "rice farmers, rich, middle and poor all suffer from the intervention as do the rich non-rice farmers. Income disparities in the rural areas are reduced as a result of the intervention, but in the urban areas they are aggravated. The rural/urban differential is also increased" (Siamwalla et al. 1987:238).

The analysis also showed that if direct policy interventions were removed, the number of rice farmers categorized as poor would drop by 15 percent and 7 percent for farmers of other crops. This could be a significant implication for strategy formulation to reduce poverty incidence and would be one of the means of increasing the purchasing power of the rural households.

2.2.6 Foreign Exchange Policies and Income Distribution[2]

Foreign exchange policies in Thailand have been such that the baht/dollar exchange rate varied only within limits of less than 2 percent between 1955-1981 and these relatively stable rates were maintained

2. This Section is drawn mostly from Siamwalla and Setboonsarng, 1988.

mostly through conservative fiscal and monetary policies (Siamwalla and Setboonsarng 1988). Measures such as import restriction, protective tariffs and bans on some items, etc., have been adopted but they have never been deployed extensively (Siamwalla and Setboonsarng 1988:3). Nevertheless, the study has been able to show that although the exchange rates appeared to be quite stable over time, but the effective or "equilibrium" rates were actually higher and were quite sensitive to the various agricultural pricing and trade policies implemented by the government.

Hence, the general trend until recently has been an overvaluation of the domestic currency. To the extent that an overvaluation of the domestic currency leads to a reduction in the value of foreign currency earned by exporters and makes imports cheaper, it becomes a convenient measure to lower the costs for new and expanded industries for which imported capital goods, and sometimes raw materials, are required. Such a measure, on the other hand, discourages the production of exportable commodities, mainly agricultural output in Thailand's case. That is:

> "The trade policies thus caused the value of the foreign exchange earned by the export sector to be lower than what it would have been otherwise. The consequent overvaluation of the domestic currency penalized the agricultural sector, which produces mostly unprotected tradable goods" (Siamwalla and Setboonsarng 1988:19).

The effect of trade and macro-level policies on what the authors termed "equilibrium exchange rate" was calculated with and without the adjustment to eliminate the current account deficit to illustrate the differences between the actual exchange rates and what they would have been without the interventions. The study then went on to estimate the effect on foreign exchange earnings for four major crops (the results are reproduced in Table 2.30). The differences between the actual and the equilibrium exchange rates and the sizable negative impact on foreign exchange earnings measured in millions of constant US dollars (Table 2.30) are indicators of yet another government policy which was perhaps intended to affect the production in the nonagricultural sector

but has had significant indirect effect on agricultural product prices and thus on the production and income of agricultural households.

Table 2.30 Actual and Equilibrium Exchange Rates, Effect on Foreign Exchange Earnings

Year	Actual Exchange Rate	Equilibrium Exchange Rate (baht/dollar, nominal)		Total Cumulative Effect on Foreign Exchange Earnings (million constant US$)	
		EER1	EER2	Total 1	Total 2
1961	20.87	-	-	n.a.	n.a.
1962	20.69	22.72	23.28	n.a.	n.a.
1963	20.65	22.36	23.57	n.a.	n.a.
1964	20.65	22.11	22.48	n.a.	n.a.
1965	20.65	22.46	22.70	n.a.	n.a.
1966	20.62	22.79	23.18	n.a.	n.a.
1967	20.57	22.34	22.91	-355.27	-368.47
1968	20.64	22.81	24.36	-294.18	-306.81
1969	20.75	23.49	25.57	-261.55	-288.13
1970	20.83	23.50	26.07	-192.25	-220.54
1971	20.83	24.03	25.77	-111.04	-146.60
1972	20.83	23.55	23.98	-191.29	-236.27
1973	20.49	22.39	22.68	-310.79	-359.27
1974	20.25	20.87	21.21	-554.76	-606.29
1975	20.26	21.70	24.16	-447.36	-489.76
1976	20.30	22.35	23.93	-357.62	-437.90
1977	20.30	22.84	26.06	-229.00	-304.92
1978	20.24	22.53	25.29	-242.17	-335.47
1979	20.33	22.52	26.46	-236.51	-334.74
1980	20.38	22.19	25.32	-234.86	-366.36
1981	21.72	23.73	27.62	-137.84	-276.03
1982	22.90	25.50	27.27	- 59.11	-159.94
1983	22.90	25.72	30.18	- 65.82	-130.16
1984	23.54	26.41	29.51	0.52	- 95.09

Sources: 1. Actual and equilibrium exchange rates: reproduced from Siamwalla and Setboonsarng, 1988, Table 4.5.
2. Total cumulative effects on foreign exchange earnings: reproduced from Siamwalla and Setboonsarng 1988.

2.3 POLICIES AFFECTING OTHER SOURCES OF DEMAND

In addition to the domestic household sector which can be divided into those in the urban and rural areas, other major sources of demand

for products of the provincial industries include intermediate demand by other producers of goods and services through what is often referred to as production linkages, the final demand from foreign buyers (of both investment and consumption goods) and from the domestic government. As stated in the beginning, the emphasis of this study is on domestic sources of demand which are expected to be more responsive to government policies. Among the domestic sources of demand, more information exists, and is available, although the understanding of the patterns and changes of household demand has been limited, as compared with the information on production linkages. The latter is necessary to infer about intermediate demand. In addition to the lack of information, it would not have been realistic nor feasible for any one study such as this to try to give equal attention to all sources of demand facing the provincial industry sector. Discussion on policies that affect other sources of demand, besides households, in the following sections must thus be brief.

2.3.1 Production Linkages

Agriculture-Industry Linkages.

To the extent that almost all households in village areas are engaged in agricultural production of one form or another, village households, as producers, thus provide another source of demand for industrial products. Specifically, this includes demand for inputs in agricultural production such as pesticides and fungicides, chemical fertilizers, tools and equipment, and for materials for agricultural activity related field structures, etc. The levels of agricultural household demand for these inputs are determined by factors including household income, forms and degree of modernization of production technology (many of them could be affected by government policies) as well as direct government policies designed to influence the production and pricing of these inputs. In order to provide direct assistance to the agricultural sector, various policy measures have been designed and implemented and the results vary. The effects, direct and indirect, of policies on household income, the major determinants in the demand for

consumption goods as well as agricultural inputs, have already been discussed quite extensively in the previous section and will not be repeated here. Suffice it to say that the relatively low income of the majority of rural, agricultural households has partly accounted for not only the limited demand for consumer goods but also the low level of input use in general and the slow adoption of more modern technology in particular. The productivity of this sector has thus remained rather low, further contributing to the worsening of the relative income situation over time.

Forward Linkages.

Less than a decade ago, forward linkages between agriculture and the provincial industries were limited to rather basic processing of a few major agricultural outputs such as rice, cassava, kenaf, para-rubber and cattle and buffalo hides. Such forward linkages have currently extended to include production, such as canned and other forms of preserved fruits and vegetables, meat and fresh fish, but they are still considered quite limited. There is evidence that local industries emerge in relation to changes in agricultural practice. The proliferation of private fish ponds in the Northeastern region of the country has provided substitute sources for public/common water fish which are rapidly becoming very scarce in many areas. The village common fish ponds project, implemented by the Fisheries Department has been assessed to further reduce the availability of fish from public water bodies (Somnasaeng et al. 1988). Private fish ponds, usually located in rice fields, are susceptible to the annual water scarcity problem during the dry season and quite often must be harvested and the fish preserved, usually by simple, traditional methods in the household. The product is either consumed within the household or sold to the market. The seasonal water scarcity means that the fish harvested by any one household is sometimes too much for its own consumption and thus is sold to commercial "pla ra" (fermented fish) makers.

Backward linkages.

In comparison, backward linkages from the agricultural sector to the provincial industry sector are, perhaps, relatively more prevalent than the forward linkages but are also limited. The most common forms include direct and non-durable inputs such as chemical fertilizers, pesticides and indirect or durable inputs such as tools and equipment. Existing information indicates the overall demand for these inputs to be on rising trends (see Tables 3.17 to 3.19). Certain policy measures have definitely contributed to an increase in the number of backward linkages. In addition to the conventional backward linkages mentioned above, some newer examples are available from the Thai rural areas:

1. The innovation of small rice mills, and more importantly, the policy leading to their registration in the village, which rapidly becomes widespread, have undoubtedly increased both the number of rice mills and the number of transactions between the small rice farmers and the rice mills. Farmers no longer have to travel long distances to sell their rice to the large-scale rice mills, usually located in or near town but can actually pay to have the rice milled for household consumption. This was mostly milled manually on a daily basis before the arrival of small rice mills in the village. These small village rice mills, in turn, have generated another backward linkage - in providing rice bran for pig feeds on a scale larger than individual household.

2. Activities under the agricultural land leveling policy have indirectly made available the backhoe for private fish pond excavation in Northeast Thailand. The machines are hired during the off peak hours from the government by farmers for the construction of fish ponds - a task that used to be both labor intensive and time consuming. The promotion of private fish ponds in the Northeastern was a policy once considered by the government but evaluated as not being economically feasible for farmers and so it was not implemented. The policy has, however, resulted in fingerlings research and development in the Fisheries Department. This was quickly adopted and continued by the private sector, currently the main source of commercial fingerlings for

the private fish ponds. Although the production of fingerlings itself can hardly be classified as an industry, many sophisticated inputs must obviously be provided by the industrial sector. Fish pond operation is also likely to create increased demand for some inputs from the industrial sector such as feeds, nets, medical supplies, etc.

3. The multipurpose, large-scale water resource development projects, one of the priority policies constructed by the Department of Irrigation, has definitely led to an increase in demand for agricultural inputs in that the irrigation aspect of these projects allows a second and sometimes a third cropping, to take place. The increased rounds of cropping not only increase the frequency of contact between farmers and the crop processors but also raise the demand for inputs, especially fertilizers and pesticides. The multiple cropping seasons, wherever they can be practiced, and particularly for rice, have also forced farmers to abandon the conventional methods of manual threshing and land preparation using animals due the shorter time between the cultivating seasons. Farm machines have to be employed instead of animal and human labor in these areas (see Section on The Agricultural Producers in Chapter III). The lack of widespread irrigated agricultural land in the Northeast partly explains the slow adoption of many farm inputs.

4. Any land policy which affects the size distribution of farms and the forms of land ownership will indirectly affect the types of input and technology adopted. This is mainly because, "...inputs demanded by large scale farmers are imported or from urban producers. Traditional tools are typically provided by rural enterprises. Many farm inputs reflecting intermediate technology, such as improved implements, irrigation pumps and motors and power tillers fabricated in light engineering workshops located in rural towns, are typically produced by small enterprises...." (Johnston and Kilby 1975:75). Evidence in Thailand is found in the production of small agricultural machinery in which the number of registered enterprises in the provinces (2,997) as of 1987 outnumbers that in Bangkok (796) (see Table 2.12).

Thus, land allocation and land reform policies, when effective, can significantly affect the demand for agricultural inputs. Currently,

there are 14 government agencies involved in land allocation including, for example, the Forest Department, the Public Welfare Department, the Land Department, the Office of Accelerated Rural Development and the Office of Land Reform for Agriculture, etc., (Arbhabhirama et al. 1988). In principle, the major objectives in land reform involve reallocation of agricultural land so that the landless and the small farmers can at least maintain their subsistence livelihood through the term-purchasing and/or purchasing of agricultural land from the Office of Land Reform. However, although the Office has been empowered to expropriate as well as purchase land from large holders, no expropriation has ever been implemented since the Office's creation in 1973 and this, perhaps, is the main reason for the "way below target" performance of the Office (Phantumvanit et al. 1989:3). The increasing number of landless farmers, in the meantime, would account, to some degree, for the low demand for inputs especially for those having long term soil conservation and field improvement implications such as fertilizers, materials for small weir construction, etc.

Industry-Industry Linkages.[3]

If literature on household demand is scanty, those on intermediate demand by industrial producers are even more scarce. Therefore, much in this section has to rely on inferences from examples in other countries. When 20 two digit industries were divided into large and small firms, it was found that all small industry groups and the majority of the large scale industrial firms had more backward than forward linkages with the rest of the economy (Meller and Marfan 1981: 56). This relationship is also true of provincial industries in Thailand. Examples can be found for ready-made clothing and household textile items, such as mattresses, cushions, where the links are between the larger town-based businesses and the household "cottage industries." Also, backward linkages from large firms to small ones are in the form of demand for intermediate or capital goods, usually referred to as "subcontracting arrangements," a

3. For details analysis of inter-industry and spatial linkages in Thailand, see Rachain Chintayarangsan, "Industrial Structure and Inter-Industry Linkages," Rural Industries and Employment Project, Thailand Development Research Institute, 1990.

practice which is quite prevalent in Asia (Watanabe 1972, Vepa 1971, Mead 1982 and 1985). The analogous situations include the production of vehicle parts by provincial factories for larger firms in the BMR, the production of semi-finished furniture or furniture parts by provincial industries for larger furniture manufacturers in the BMR, etc. Forward linkages also exist between large producers of plywood and metal (steel, iron, or aluminum) bars, and paint in the BMR and provincial furniture factories.

The more separable stages are involved in a production process, the more likely it is that those stages may be carried out by separate entities thereby creating intermediate demand among the producers. Sophistication of the production process is obviously related closely to the stage of development and the level of technological advancement of the country in general. To the extent that the majority of provincial industries tend to obtain the majority of their inputs from provincial sources, including a relatively large proportion from their own provinces (Chintayarangsan 1990: Table 2.1.1), government policies which restrict one activity may not only reduce the potential linkages among industries but may also effectively prevent the establishment of some other industries. For example, the policy which restricts the transport of livestock across provincial borders resulted in the existing small-scale, out-of-date technology slaughterhouses outside the BMR because of the small amount of meat demanded within any one province. Further restrictions on the setting up of modern-standard slaughterhouses in the Northeast, for example, have eliminated the derived demand for cattle hides by local investors who were interested in opening a tanning factory.

2.3.2 Domestic Government Purchase as a Source of Demand

The government is inevitably one of the biggest single buyers of many products. To develop new sources of demand, many governments have developed programs to purchase rural non-farm products, such as in India (Harper 1984:125). However, sales to government are usually hampered by procedures which are "arduous and time consuming," "require unrealistic

quality standards," and, "...often uniformity of products and the size of purchase usually limit the participation of small firms in general and rural firms in particular" (Liedholm and Chuta 1976, Chuta and Liedholm 1979, Fisseha and Davies 1981, and Kilby 1982). The Thai government is no exception in that its purchases and payments are also governed by rules and regulations necessary for the administration of an organization of its size. An understanding, even at a general level, of the purchasing and payment procedures becomes important to evaluate the possibility of its role, especially in increasing demand, in the process of provincial industrialization.

To the extent that budget expenditure related to personnel such as salary and wages, honorarium, etc., will have its effects on the demand for provincial industry products through household expenditures which have been analyzed elsewhere in this report, the focus of this section is limited to the issue of direct purchase of supplies and equipment by the government for which procedures have to be followed. Government offices at almost all levels are also engaged in the purchase of land as well as construction materials for offices and for employee housing. However, although construction contracts are quite often granted to contractors from the BMR, most basic materials for construction are purchased locally due primarily to their bulk and weight. Therefore, procedures (and later on the analysis of budget allocation in Chapter 3) regarding the land and construction category are not covered here.

A review of the standard procedures in the "Regulations of the Office of the Prime Minister on Budget Administration at the Changwat Level, B.E. 2524 (1981)" yields very little useful information due to the generality of the document. The "Regulations of the Office of the Prime Minister on Supplies and Equipment, 1978 (including all amendments through 1988)" (Vichailaksana and Vichailaksana 1988) gives more working details on procurement procedures to be followed by all agencies. The standard procedures do specify the minimum and maximum time allowed for certain actions to be carried out but the actual time in concluding each purchase and payment differ greatly. It is the actual length of time between procurement and payment as well as the convenience, or difficulty, in collecting payment that is relevant to cost consideration

by business enterprises. To obtain information on actual practices which are not part of the standard procedures described in the official documents, a different research method was adopted. Most of the information in this section is the result of direct and intensive interviews with both government officials and industrial entrepreneurs, mostly in the Northeastern Region.

Given the focus of this study on the demand for provincial industry products, the procurement and payment procedures reviewed do not include supplies and equipment that need to be imported from abroad. The issue of "...less legitimate forms or persuasions to obtain an order," which is one of the issues discussed in the literature as a limiting factor on the demand for rural industrial products (Harper 1984:122-125), is also intentionally left out.

For government purchase of supplies and equipment, the standard regulations clearly stipulate that first priority be given to products from Thai enterprises (Vichailaksana and Vichailaksana 1988:Part 2, Section 1, Items 9 and 10). This may have significant implications for the provincial industrialization process as will be discussed at the end of this section.

For domestic suppliers who deal with sales to the government, there are three major steps in the process of any sale: (1) pre-contract, (2) contract and delivery, and (3) payment collection. Since, except in the cases of drugs and medical supplies, the same set of regulations and rules governs the procedures or purchase of most government offices regardless of their locations, the standard practices are thus reviewed and summarized here without making the distinction. The effects on provincial industries will be inferred when relevant and information is available. However, a detailed analysis of the government procurement process is a topic which deserves a full study in its own light and cannot even be attempted here. Review and discussion in of the subject this section will thus be brief but will hopefully shed some light on the issue.

Pre-contract. This stage starts with the announcement by a government office of the items (with specifications) it intends to buy and with either invitation for bidding or price searching, depending on the nature and total value of the items. Standard regulations require that only those eligible to participate (as defined in the announcement) can, and are required to, submit their sealed bids or offered prices, complete with the time within which the prices remain effective and the proposed delivery time. In practice, eligible and interested sellers must also submit certified copies of (a) its business registration, (b) its trade registration, (c) a statement of consent from the bidder's spouse, and (d) the authorization when represented by other party. When the intended purchase is of more than 400,000 baht, a 5 percent deposit (in cash or bank check) by bidders is required. Those who do not win could then apply for the return of their deposits but the successful bidder winner will get his deposit back after the contract is signed. According to interviews with key informants the actual process is rather costly, especially if the sellers are dealing with more than one government office, both in terms of document reproduction, deposit money, and time ("it often takes many trips - which may take weeks, to the procurement office to obtain all the details and/or even the required forms for the bidding,") "Unless you have a long rope to pay (financially strong), you cannot and do not want to sell to the government offices."

The above process is typical only if (a) the standard prices of the items of purchase set by the Bureau of Budget are the same or higher than the going market prices, and (b) a budget line item has already been allocated for the purchase. When the budget allocated price is lower than the market price or when no budget has even been allocated, negotiations usually take place to convince the seller to participate. Such compromises often resulted in either substandard products, e.g., storage cabinets with empty door frames, no glass on the doors (budget will be requested later for the glass) or a long and painful process of payment collection while funds are juggled and manipulated.

Infrequent updating of standard Bureau of Budget approved prices and specifications, especially those "designed" by the buying office in

the provinces, thus contribute to reasons which make sales to government unattractive. The special designs are generally "out-of-date in terms of material requirements compared to the prices the offices want to pay." The prices of standard supplies and equipment are adjusted more frequently, although they still do not reflect market situations. This is because "The big producers in Bangkok have better access to negotiate with the Bureau of the Budget." Well established provincial producers of furniture interviewed reportedly refused to enter the competition for contracts for these "buyer designed" items. "Specifications and prices for these items," explained the key informants, "are usually adapted from some standard ministry designs, sometimes from 10 years earlier. Additional specifications are thrown in without appropriate adjustment on the prices." Out-of-towners, first-timers and, sometimes, local producers who are desperate for business are those who usually accept the job and proceed to produce the ongoing market standard products. The result is predictable - the producers finally deliver the "not per specifications" outputs and end up either "very unhappy" or losing their shirt." Upon inspection, quite often, the producers were told by the buying agency to make corrections which may involve taking the finished products apart and reassembling them in an acceptable ways. There are times, however, when the inspecting and accepting committee accepts the products, if properly made by current market standards, on the grounds of trying to be "realistic." This, of course, raises another issues among the producers, i.e., that they are not receiving equal treatment from government buyers.

Contract and Delivery. After the bid winner is announced, the buying office then proceeds to obtain final approval from the Bureau of the Budget to engage in the actual purchase. If the "approved price" turns out to be lower than the offered price by the bid winner (which seems implausible but has happened), further negotiation is necessary to either (a) convince the seller to accept the lower price, or (b) convince the Bureau of the Budget to adjust the approved price. Either way, time is lost. If this process drags on, the seller, especially in the case of an industrial producer, may face higher raw material and input prices than when he entered the bid for the contract. For any item involving more than 5 days until delivery time, a contract has to

be signed. Upon the signing of the contract, the bidding deposit will be returned to the bidder who won the bid, but not before he delivers a commodity damage deposit to the buyer, equivalent to 10 percent of the value of the purchase. This could be cash, a bank guarantee document, cashier's check or government bond. This damage deposit is to be held by the buying office for 12 months from the date of delivery. In the case of a bank guarantee, it is issued at a fee and only if the seller maintains a deposit equal to the guaranteed amount for the whole guarantee period or provides land as collateral. An additional fee of 1.5 percent of the amount of the guarantee will be charged to the sellers if the land collateral option is chosen.

Upon delivery, an inspecting and accepting committee is appointed to make sure the items are as per specifications, are the agreed number and are delivered on time. When all the committee members are satisfied and have signed for acceptance of the purchased items, the payment process can then be started. In practice, payments are processed by another office and is another step which, according to key informants, can take a long time, if the committee members are not satisfied or not available to perform the task.

Payment Collecting. The finance office in the buying organization will process and approve payment upon receipt of the proper documents, including, for example, the bills from the seller or delivery notes, a signed inspection and acceptance statement and a covering letter requesting payment from the supplies and equipment procurement office. Official sources estimate that it should take between 1-2 weeks from delivery to final payment, i.e., when a check is issued, if payment is to be made from the local office. Information from the sellers reveals otherwise. The Changwat Administration Offices are the only ones they know of that has been able to arrange for payment within two weeks. This is due, primarily, to the fact that the offices are usually quite small and the people working in the relevant units such as procurement and finance, as well as those acting as inspecting committee members, are often sitting in the same room - a fact which expedites the process.

When large numbers of a standard item are purchased by the central procurement office and distributed to the final users within the agency, e. g., filing cabinets and desks for a university, the inspection itself could take anywhere from a few weeks to months to complete. The majority of the committee members are regular teaching staff who not only have to teach but are often also responsible for other administrative tasks within the university and their faculties. The payment approval and issuance of the check by the finance office, usually requiring three signatures including that of the head of the organization, also takes a while even if things go smoothly. The situation which the sellers fear the most, according to key informants, is to be told that the disbursement of the approved budget has "not yet arrived" or "already run out" when it is time for payment collection. An even worse situation for the sellers is when no budget has ever been approved for the item and ways which are unofficial and definitely not written anywhere in the standard regulations must be found by the buyer to get around the problem in order to make the payment. This process has been known to take as long as 6-8 months before an item worth a few thousand baht was paid up. One producer interviewed claimed the average outstanding unpaid bills by all government buyers usually account for 40-50 percent of his total sale value at any time.

Implication on Provincial Industries.

It is true that the relative percentage of small to large industries in the provinces is no different from that in the BMR but the small absolute number of registered industries in the provinces and the much larger geographical boundaries means that there are very few industries per land area. Much fewer are those of medium and large scale. As of 1986, for example, while there was one factory, of any size, per every 0.10 square kilometer in GBM, or 10 factories per one square kilometer, there was only one factory for every 24 square kilometer in the North, 23 square kilometers in the Northeast, 15 square kilometers in the South and 8 square kilometers in the Central Region (Table 2.31). Essentially, for each 100,000 rai of land area, there are 1,600 factories in Bangkok, and 102 in the non-Bangkok BMR whereas there are only 6 to 19 in the other regions. Once employment size is taken

into account, for example, the average population per factory employing 20 persons and above, it becomes clear that the provincial industry

Table 2.31 Index of Industry Concentration, 1986, by Region

	BKK	BMR-BKK	NE	N	C	S
Sq Km per Factory	0.10	1.57	23.22	23.97	8.14	15.35
Population/Factory Employing 20 and More persons	2,776	2,799	73,040	42,299	13,686	11,842
Factory/Sq Km	10.0	0.64	0.04	0.04	0.12	0.06
Factory/100,000 Rai	1,600	102	6	6	19	10

Sources: 1. Land area and population: Statistical Yearbook 1987-88, NSO.
2. Number of Factory: Ministry of Industry

sector, in its existing capacity cannot be expected to generate any significant employment opportunities, to ease the population pressure on agricultural land and curtail the influx of labor looking for jobs in the BMR and other main cities, unless expeditious policy measures are taken. Calculation for the Northeastern region shows, for example, that with 58 percent of its population economically active in all activities and about 90 percent of them economically active in agriculture (data from Table 2.19), a population of 73,040 per one industry employing 20 or more persons still leaves over 4 thousand persons to be employed in nonagricultural works.

The basis for regional focus in the industrialization process can be derived from information such as that on the percentage of in-migrants to the BMR by region of origin (Table 2.32) and that on the increase in the percent of total agricultural households by region having to work regularly in both agricultural and nonagricultural activities (Table 2.33). For example, although in-migrants from the Central Region accounted for quite a large percentage (32%) of total in-migrants (including all categories) in 1986, female in-migrants alone from the Northeast already accounted for a higher percentage of the

total in-migrants (35%) - the percentage rose to 39 when both male and female in-migrants from the Northeast were taken into account.

Table 2.32 In-migrants to GBM by Region of Origin, 1976 and 1986

	Center		North		Northeast		South	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
1976								
Both Sexes (100.0)	13.6	28.3	4.9	6.1	8.1	29.0	3.8	6.2
Male (47% of Total)	13.2	17.3	5.4	6.0	8.8	27.8	3.8	7.1
Female (53% of Total)	13.8	28.6	4.5	6.2	7.5	28.1	3.8	5.4
1985								
Both Sexes (100.0)	12.3	17.6	4.2	10.0	8.0	35.1	3.4	8.6
Male (39% of Total)	15.6	18.8	4.7	10.4	8.5	29.7	3.6	8.0
Female (61% of Total)	10.3	16.8	3.7	9.7	8.2	38.6	3.2	9.2
1986 (August)								
Both Sexes (100.0)	11.1	20.8	5.6	14.7	4.6	34.7	3.3	5.3
Male (42% of Total)	13.6	22.7	6.9	14.3	4.8	28.9	4.2	4.6
Female (58% of Total)	9.3	1.9	4.6	14.9	4.4	38.9	2.7	5.7

Sources: 1. For 1976, Survey of Migration into the Bangkok Metropolis, B.E. 2519-2524, NSO.
2. For 1985, 1986, Survey of Migration into the Bangkok Metropolis, 1985, 1986, NSO.

Table 2.33 Percent of Labor in Agricultural Household by Type of Employment

Region		Ag. Only	Non-Ag. Only	Both
Center	1978	75.8	2.8	6.1
	1983	60.3	3.3	21.5
North	1978	76.8	1.5	5.0
	1983	48.6	1.9	33.4
Northeast	1978	82.3	1.2	3.3
	1983	69.9	1.1	16.5
South	1978	70.0	3.5	6.8
	1983	60.7	2.7	19.2
Whole	1978	78.1	1.9	4.7
	1983	61.8	1.9	21.9

Source: Computed from:
-Agricultural Census Report Thailand 1978, NSO.
-Intercensal Survey of Agriculture 1983, NSO.

Besides those looking for jobs, other in-migrant categories reported by NSO include those who are in the GBM for education and those accompanying their spouses. The need for employment by in-migrants originated from different regions is thus more accurately reflected by the number of job searchers. Data on the sub-category of job searching in-migrants to GBM by region of origin indicate that 54 percent of all female job searchers came from the Northeast whereas 43 percent of all male job searchers came from the same region (Table 2.34). The absolute number of migrant laborers, on the other hand, clearly indicates that rural/provincial people who have left home in search for job in GBM and

Table 2.34 Job-Searching In-migrants in GBM and the BMR, 1986, by Region of Origin

	Center		North		Northeast		South	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
In-migrants to GBM								
Person								
Male	10,935	27,064	4,629	21,980	1,988	54,694	0	5,370
Female	7,476	27,005	6,635	24,332	4,977	91,458	2,080	5,326
Total	18,411	54,069	11,264	46,312	6,965	146,152	2,080	10,633
Percent								
Male (43%)	8.6	21.4	3.7	17.4	1.6	43.2	0.0	4.2
Female (57%)	4.4	16.0	3.9	14.4	2.9	54.0	1.2	3.1
Total (100%)	6.2	18.3	3.8	15.7	2.4	49.4	0.7	3.6
In-migrants to the BMR								
Person								
Male	15,181	7,395	0	5,893	1,874	30,218	525	404
Female	9,926	29,537	802	17,900	893	5,115	0	4,740
Total	25,107	36,932	802	23,793	2,767	35,333	525	5,144
Percent								
Male (47%)	24.7	12.0	0.0	9.6	3.0	49.1	0.9	0.7
Female (53%)	14.4	42.9	1.2	26.0	1.3	7.4	0.0	6.9
Total (100%)	19.3	28.3	0.6	18.2	2.1	27.1	0.4	3.9
Percent of In-migrants to GBM plus the BMR								
Male	13.9	18.3	2.5	14.8	2.1	45.1	0.3	3.0
Female	7.3	23.7	3.1	17.7	2.5	40.5	0.9	4.2
Total	10.2	21.3	2.8	16.4	2.3	42.6	0.6	3.7

Source: Survey of Migration, 1986, NSO.

the BMR are, in fact, only a small portion of the labor force. The percentage distribution of migrant labor by origin also points to the Northeast as a priority region for employment and income generation.

While advantageous supply conditions are important, effective demand is even more important as incentive for industrial enterprises to emerge outside the BMR. Standard regulations on the purchase of supplies and equipment do require the buying agencies to give priority to products by domestic firms and those violating this requirement are subject to investigation. As an initial step toward increasing the demand for provincial industry products, the requirement can, perhaps, be modified to further stipulate that government buyers in the provinces give priority consideration to products by provincial industries. However, for government purchase to become an effective tool in provincial industrialization, the procedures and the practices involved in the transaction process with the producers/sellers will need major changes. Government offices at all levels must understand and share the commitment to achieve the objectives and all purchasing personnel must be held responsible to expedite the processes with speed and efficiency. As in many cases, the standard regulations, though not designed for speedy transaction processes, are quite neutral. It is the actual practices and the attitudes of those involved that enterprises selling to the government have cited as "really slowing things down."

2.3.3 Foreign Markets as a Source of Demand

As a policy research, this study has taken the position that domestic markets are more susceptible to domestic policy manipulation and thus a more effective venue for provincial industrialization. This is not the same as saying that the export component, and its potential, is not important. Nevertheless, the relative role of export in the making of provincial industry market is currently quite limited in that quite a small portion of total products by provincial industries finds its way directly to foreign markets (see Chintayarangsan 1990 and Section on Foreign Demand in Chapter 3). The products of rural industry in many countries, including Thailand, do enter the international markets. In fact, for some provincial industries, foreign markets are

the major component of their total market. Examples include carpets from Iran (Dhamija 1976), canned juices and ceramics from Thailand, etc. However, export development and promotion involve a whole set of criteria and strategies which are quite different and could not be identified within the research framework of this paper. For example, the characteristics of the demand elasticities of buyers abroad would become the central issue and research methodologies different from one adopted here would be needed to identify them. Existing literature reportedly found that "income elasticities of demand exceeded one in high income countries for products such as wood carvings, brassware and earth ware (Huddle and Ho 1972). With only a few exceptions, small-scale traditional products and goods of "cultural and artistic distinction" "consistently had income elasticities of import demand exceeding unity, with the weighted total elasticity being well over 2," and "income elasticities of demand for U.S. consumption of these categories were even higher..." (Ho and Huddle 1976: 232-251). On the other hand, little is known, due to limited research about the factors determining the proportion of the total market captured by each exporting country (Huddle and Ho 1972).

Until relatively recently, Thailand exported primarily products from the agricultural sector with very little processing. As recently as in 1984, rice was the second most important foreign exchange earner next to tourism and the whole cereal category still contributed the highest value of export in 1986 (see NSO 1987-88: Tables on Value of Exports by Principal Commodity). Many policies and policy measures have been implemented to increase the ability of Thai industries to compete with other exporting countries - firstly within markets in Thailand through import substitutions and, currently, more as exports to other countries. These policy measures range from indirect ones through the manipulation of foreign exchange rates to more direct measures such as subsidies and tax incentives. These topics were treated in details in studies on international trade and thus will not be covered except for brief statement drawn mainly from the work of Akrasanee et al. (1987).

Evidence shows rapid rates of growth for some export categories, primarily handicrafts, produced by the small-scale industry sector. For

example, the category of carpets, mats, lace, and embroidery, not all of them produced by provincial industries, showed a growth rate of over 200 percent between 1983 and 1986. However, the high growth rates must be interpreted with care, since "evidence indicated limited foreign markets for small enterprises" (Liedholm and Chuta 1976: 59) and the high rates of growth are a result of calculation which is "based on a very small base, e.g., an increase from 0.01 percent of total export in 1972/73 to 0.40 percent in 1982/83 in the Bangladesh experience, for example, does not necessarily imply large potential of export demand," (Osmani and Deb 1986: 167).

Major Policies affecting Exports of Industrial Products.

The first impression one gets in reviewing the baht/dollar exchange rate is its "stability," i.e., it varied only within limits of less than 2 percent between 1955-1981 (Siamwalla and Setboonsarng 1988). A closer look reveals that the trend during that period was an overvaluation of the domestic currency. This trend is quite consistent with, and partly because of, the import substitution policy in the 1960's. However, one of the effects of an overvalued domestic currency in the context of trade is well known - less export in relation to import activities. In the case of Thailand, the most major impact was on the agricultural sector, which is the largest production sector, producing and exporting "mostly unprotected tradable goods" (Siamwalla and Setboonsarng 1988). Also adversely affected, of course, were the nonagricultural products intended for the export markets, especially those produced by small to medium size provincial industries. On the other hand, the overvaluation lowered the costs of imported capital goods and raw materials for the relatively larger scale industries, the majority of which are located in the Bangkok and other BMR provinces.

The industrialization process in Thailand began in the early 1960s aiming at import substitutions. Increasing trade deficits in the early 1970s forced the government to put more focus on export promotion through various instruments which have had different results for industries in the BMR and the provinces. For example, the incentives offered by the Board of Investment to export-oriented industries have

not had much success, because, in general "...the promoted enterprises in the past could make higher profits in domestic market" (Akrasanee et al. 1987: 2-17). The benefits from BoI incentive schemes have been even less effective for provincial industries since few are involved in production for export except some rather large-scale enterprises established by investors from the BMR or as joint ventures between Thai and foreign investors. The BoI has also been less effective in its influence on provincial industry participation for a number of reasons already covered elsewhere, ranging from the difficulties in interpreting the incentives themselves to the potentially higher costs incurred by provincial industries in applying for the promotion privileges (Lohaunchit 1990).

Other export promotion schemes include the exemption of duties and taxes on imported inputs, the refund of taxes on domestic inputs by the Customs Department, the rediscounting facilities administered by the Bank of Thailand, etc. However, "estimation of effective exchange rates and effective promotion rates revealed that the incentive measures, enabling exporters to reduce a small portion of their operating costs, were far from adequate to compensate for the bias against export industries resulting from the country's protective tariff structure" (Tambunlertchai et al. 1981 as cited in Akrasanee et al 1987: 2-24). In particular, "...in light of the insufficient infrastructure and a far-reaching distance to the market, incentive measures have not provided sufficient compensation for the disadvantage of regional locations" (Akrasanee et al. 1987: 2-27). Therefore , it could be concluded at this point, that the promotion of export from provincial industries, especially small to medium sizes, has been highly limited.

Finally, although not a policy or policies <u>per se</u>, the time-consuming, complicated and sometimes inconsistent regulations and export procedures have been cited by many modern, large-scale, industries in the BMR, as well in the provinces, as being one of the major deterrents for a more rapid expansion of the export sector. Provincial industries are in an especially disadvantageous position considering the number of ports of clearance for exports, in addition to the cumbersome procedures which often must be approved in Bangkok.

Table A2.1 Discrepancy Indices of Household Income Per Capita by Region

	GBM	C	NE	N	S	WK
Discrepancy Index of HH Income per Capita (WK = 100)						
1968/69	160	112	63	73	82	100
1975/76	172	124	72	88	96	100
1981	189	114	66	94	98	100
1986	217	113	62	94	103	100
Discrepancy Index of HH Income per Capita (GBM/each region)						
1968/69	1.00	1.43	2.53	2.18	1.94	1.60
1975/76	1.00	1.39	2.39	1.96	1.79	1.72
1981	1.00	1.67	2.89	2.02	1.92	1.89
1986	1.00	1.92	3.51	2.30	2.10	2.17

Source: Derived from Household Socioeconomic Survey Reports, NSO.

Table A2.2 Per Capita GDP and GRP by Region (Current Prices)

	WK	GBM	C	E	W	NE	N	S
1976	7,830	20,030	6,366	10,121	10,740	3,248	5,955	7,107
1977	8,879	23,463	7,181	10,694	11,440	3,449	6,069	9,073
1978	10,571	28,668	8,239	13,919	12,682	4,175	7,523	10,756
1979	12,238	35,070	10,017	15,175	12,715	4,896	8,289	12,376
1980	14,744	41,300	11,517	19,220	15,832	6,012	9,866	13,745
1981	15,925	47,785	14,652	19,752	16,265	6,067	10,101	13,460
1982	16,824	49,179	15,114	22,168	18,145	6,586	10,357	14,294
1983	18,298	53,189	16,165	23,757	17,291	7,610	11,412	15,213
1984	19,194	55,188	17,939	24,550	18,763	7,792	12,369	15,471
1985	19,627	55,528	17,593	27,221	19,060	8,001	12,518	16,032
1986	20,790	61,358	17,235	30,989	19,538	7,879	12,208	16,339
1987	23,021	71,566	18,742	31,094	19,795	8,343	13,185	17,506

Source: 1976-1979 from Statistical Yearbook, NSO, 1980-1987 from Gross Regional and Provincial Product, NESDB.

Table A2.3 Per Capita GDP and GRP by Region (1972 prices)

	WK	GBM	C	E	W	NE	N	S
1976	5,126	13,823	4,302	6,549	6,453	2,215	3,653	4,256
1977	5,350	14,831	4,499	7,111	6,676	2,143	3,509	4,739
1978	5,873	16,567	4,600	7,774	6,968	2,366	4,048	5,308
1979	6,092	18,153	4,994	7,020	6,205	2,511	4,077	5,467
1980	6,304	18,631	5,084	7,541	6,514	2,671	4,107	5,267
1981	6,671	20,696	6,134	7,526	6,152	2,695	4,205	5,117
1982	6,799	19,969	6,265	8,199	7,152	2,852	4,331	5,292
1983	7,146	21,204	6,434	8,326	6,597	3,133	4,501	5,392
1984	7,507	21,810	7,043	8,727	7,297	3,243	4,912	5,562
1985	7,626	21,581	7,102	9,288	7,536	3,378	5,012	5,714
1986	7,821	22,720	7,046	9,687	7,640	3,260	4,953	5,843
1987	8,327	25,628	7,202	9,984	7,395	3,261	4,989	5,984

Source: Same as in Table A2.2.

CHAPTER 3

SOURCES OF DEMAND FOR PROVINCIAL INDUSTRY PRODUCTS - PATTERNS AND CHANGES

The rapid growth of the manufacturing sector suggests that demand for industrial products has been on a rising trend. However, the high concentration of industrial establishments in the GBM and surrounding provinces also suggests that the same degree of industrial development and expansion has not been taking place in the provincial areas where the majority of population lives. A first logical question that arises is whether the slower growth outside the BMR is related more to supply or demand conditions. Judging from the government's past efforts in it's industrial promotion, supply incentives certainly do not seem to be lacking. Problems thus may be related to the demand aspect. Therefore, in this chapter, the various sources of demand for industrial products, with special reference to those produced outside the BMR, are examined in order to try to understand the limitations on, and potential for, the development and expansion of provincial industries from the point of view of demand.

Based on the sources of demand discussed in earlier chapters, the following sources of demand for industrial products, particularly those produced in the provincial areas, are examined, namely: (1) the domestic households, as consumers and producers, (2) the non-household domestic industrial producers, (3) the domestic government, and (4) the foreign markets.

To the extent that the majority of the Thai population is still currently involved in agricultural production and lives in rural areas, rural households provide two sources of demand. They demand consumer goods, not an insignificant portion of which are industrial products, and inputs for their agricultural production, e.g., machinery, tools, equipment, fertilizers, pesticides, construction materials for agricultural activity related structures, etc. An increasing number of households in the rural areas are also engaged in nonagricultural

production activities, usually referred to as cottage industries. Some households may only be involved in this non-farm production seasonally during the time when they are free from the agricultural activities. Certain members of some households, however, may have been engaged in nonagricultural production on a relatively more regular basis if there is already adequate family labor to fulfill necessary agricultural tasks and if there appears to be adequate demand for the non-farm products. Relatively common nonagricultural activities include, for example, mat making, weaving (cotton and silk), the production of household textile items, water jar making, and various bamboo and wood products. These activities generate both backward and forward demand in relation to the manufacturing sector. Cotton weaving, for example, generates backward linkage from households to the industrial sector through its demand for cotton yarns, local wood product activities provide partially finished furniture for furniture factories in the BMR or other major cities, etc. Household industries which are less commonly seen, or totally disappeared in some areas include village metal work, salt making, charcoal making, etc. This is primarily due to the severe scarcity, or the lack of locally available fuel wood (Subhadhira et al 1987).

3.1 DOMESTIC HOUSEHOLD DEMAND FOR CONSUMPTION GOODS

There is strong evidence that households in all areas, i.e., in the municipal areas, sanitary districts and villages throughout the country are currently buying more manufactured products in terms of variety as well as in terms of the total amount of money spent, when compared to earlier time. To the extent that the main purpose of this study is to identify ways which may make industrialization possible in areas outside the BMR where, as of 1986, 90 percent of the total Thai population still live, discussion about domestic household demand is focused mainly on households in the provincial areas. The degree of and trend in, intra-regional income disparity indicate, however, that an even more specific focus is essential. With the high discrepancy of income between urban and rural households in the provinces, an analysis of household purchasing behavior on a regional average basis may yield misleading results regarding the true potential and limitations on demand for

products by provincial industries. Moreover, with the majority of provincial households located in the villages and their income levels much lower than the municipal household average, the village households deserve a separate treatment. This distinction would be especially important if Johnston and Kilby's (1975) conclusion is correct that with an initial increase in income, the poor and moderately poor households, tend to buy more locally produced, labor intensive products. Moreover,

> "...the market for rural industry products is severely limited at current level of income. However, it is poverty itself rather than competition from substitute products. In general, rural industry products have an edge over substitute products in terms of either elasticity, or marginal budget share or both. Thus it is likely that demand will expand considerably with increases in income... (Osmani and Deb 1986:158).

Therefore, although comparisons will be made between municipal and village households for their purchasing behavior and their expenditure elasticities of demand for industrial products, relatively more details and implications in relation to village households as the main potential source of demand will be discussed.

Even periodic visitors to any Thai rural village during the past ten years will have noticed that not only is there an increase in the number of general stores in most rural villages in the Northeast, for example, but also that the range of nonagricultural products available in any of these stores has also increased significantly. Usually on display are such items as instant noodles, various brands of canned fish, detergent, bath soap, shampoo, rolled toilet paper, combs, rubber and plastic slippers, batteries, monosodium glutamate, cigarettes, liquor, and even certain leading brands of soft drink, etc. The majority of these products are obviously imports from Bangkok and other BMR provinces.

An even larger collection of items which are clearly produced by local industries, also available in these stores although they differ

in details from region to region. Examples in clude preserved meat, fruits and vegetables, bottled fish sauce, bagged fermented fish (pla ra), candies, cookies, partially prepared items such as fresh noodles and curry paste, ready-to-serve food such as bakery products wrapped in plastic bags, steamed fish (especially the highly popular horse mackerel), school exercise books, plastic containers and utensils such as water basins and the 10-litre rectangular containers for water fetching (highly popular in the Northeastern region), and ready-made clothing items (especially work-clothes), etc.

By following a rural village household through its daily routine and a walking through a local house, one sees quite a sophisticated composition of items which have been purchased over the years by the household. Both the variety and value (by unit price) of goods purchased increase with an increase in the household wealth position. In the Northeast, for example, earthen pots and some aluminum pots and pans are used in cooking and simple enamel plated metal dishes and spoons are used to serve meals in the poor households. For better-off households, aluminum and stainless steel pots and pans, some simple and relatively cheap china or heat-resistant plastic dishes and aluminum or stainless steel spoons are used. One also observes more use of items such as drinking glasses and plastic cups as compared with the small aluminum water basin shared by everybody. It is also not uncommon to see electric fans, irons, small burners and even rice cookers in the relatively "rich" households in villages where electricity is available. Interviews with villagers reveal that the fuel wood scarcity in many areas has actually made buying preserved food a much cheaper option than to start the fire and cook the dishes to serve with rice. Examples of food bought from the village stores are such as steamed fish or bagged fermented fish (pla ra), commercially produced outside the village. The latter is then spiced up with lots of chilli and local herbs. In many areas in this region, rice is only cooked once a day. Also, since fewer people than before currently have access to enough fish from public water bodies, many can no longer rely on homemade pla ra sauce, an indispensable seasoning ingredient for the cooking of practically all dishes. More and more Northeasterners have had to resort to purchasing bottled fish sauce, produced locally as well as imported from the BMR.

Increased scarcity of fuel wood has also led some food stalls and some relatively better-off households in villages and small rural towns to resort to cooking with charcoal and gas stoves.

As household income increases, a household is expected to fulfill more of its demand for consumption through purchases as opposed to home-produced goods, partly due to increasing purchasing power and partly to the increasing opportunity cost of family members, not to mention the increased availability of many commodities in the local markets. In addition to this voluntary adjustment, however, provincial households in general, especially those in the rural areas, are also increasingly being forced to buy, rather than to produce, many items they need due to the scarcity of many natural resources such as those mentioned above. This in itself may be an indicator that the demand for many consumer goods from many industries may be on the rise and may represent a significant potential market for those who are interested in investing in the provinces.

It is in this context that the patterns, changes, and trends of household demand are important. It is worth finding out, therefore, what types of commodity these households have been buying, i.e., what potential demand exists in the provincial areas that may contribute to the consideration for the establishment or the expansion of industrial production into such areas.

Based on information in the NSO Socioeconomic Survey Reports for 1975/76, 1981 and 1986, the patterns, changes and trends in household expenditure are identified in terms of expenditure share, expenditure elasticity and marginal budget share. To the extent that GBM has been treated as a separate region and its household expenditures were reported as such, information for the households in other regions thus represents that related to provincial households, outside of the BMR. Wherever information is available, differences in expenditure among different income decile groups are compared in order to infer about consumption behavior when household income level increases. Double-log simple regressions between income deciles and expenditure by households were run to obtain another estimate for the expenditure elasticities of

demand. Although the usefulness of this latter exercise is severely limited by the format of data presentation on household expenditure, is sufficient, however, to indicate the general direction of change in the provincial household demand for industrial products.

3.1.1 Expenditure Share.

The definition of consumer expenditure as defined by the National Statistical Office was adopted although modification was made during the analysis of household expenditure behavior. For example, the purchase of vehicles and records of expenditure on items for the house such as furniture and fixtures, cooking stoves, refrigerators, television sets, electric fans and rice cookers, etc., which are more in line with the concept of investment in durable consumer goods - defined as those with a service life beyond one year - were all referred to as consumption by the NSO definition. However, a shift in expenditure into these categories from more basic human needs items such as food implies great differences in the household's command over resources - usually related to different wealth positions. The more sophisticated a product is, furthermore, the more likely it will be produced by larger scale, urban-based and relatively more capital-intensive enterprises. A distinction is thus made for the expenditure by provincial households between non-durable and durable consumption goods.

Analysis of data in the three socioeconomic surveys reveals consistently decreasing trends in the share of expenditure, despite an increase in absolute value, in the categories of food and beverages, tobacco, and apparel. The relative shares for medical and personal care, as well as for the reading, recreation and education category, on the other hand, have been rather constant over the same period of time for some regions. The most noticeable increase has been in the share for the categories of housing operation and improvement, and transport and communication (Table 3.1). An increase in absolute value of household expenditure on food and beverages and apparel associated with a decrease in their share in total consumption is consistent with individual consumption behavior - where an income effect leads to an

increase in demand. Given that quality is being substituted for quantity when income rises, resulting in further increase in the absolute value of food expenditure, its share in total consumption may increase for those households starting at a low enough level of income but eventually this share will decrease if the income level keeps improving. The decreasing trends in the share for tobacco and alcoholic expenditure may indicate the limited capacity of human body to consume such products although the absolute value can continue to increase for quite some time through substitution of quality for quantity.

As the economic well-being of a household improves, relatively more household resources are expected to be devoted to investment, i.e., the purchase of durable goods as well as the improvement of the residential quarter itself. This is confirmed by the growing share of expenditure on housing operation and improvement in all regions from 1975 to 1986 (Table 3.1). It is noteworthy that, on the average, a household in the Northeastern region which has the lowest average household income turns out to have spent the highest share (26%) of its total expenditure on housing operation and maintenance by 1986. This may be explained partially by the large number of out-migrating labor from this region, an equivalence of 40 percent of total in-migrants from all regions to the GBM between 1976 and 1986 (Tables 2.32 and 2.33). More often than not, the remittance sent home by migrant laborers is spent on real assets such as land purchasing (or redeeming in some cases) and the construction, improvement and expansion of the family house. This is especially true for households with member working in the Middle East. Interviews in several villages in many Northeastern provinces reveal a figure as high as one member in every 4-5 households being employed at any one time in some Middle East countries. This is a phenomenem observable through the growing number of "Bann Sa-u," i.e., literal translation: "Saudi Arabia Houses," which are mostly relatively large in size, made of concrete blocks with glass windows and painted in bright colors.

Table 3.1 Share of Household Expenditure by Major Categories, by Regional Average, 1975, 1981 and 1986

	North			Northeast			Central			South		
	1975	1981	1986	1975	1981	1986	1975	1981	1986	1975	1981	1986
Total	100	100	100	100	100	100	100	100	100	100	100	100
Food/Beverage	50.0	47.0	39.4	52.2	50.0	41.3	46.1	46.5	41.2	48.6	48.4	42.2
Alcoholic Beverage & Tobacco	4.4	4.0	3.0	3.8	3.6	2.8	3.4	3.7	3.3	4.0	3.9	3.2
Apparel	10.2	8.0	9.0	12.1	8.8	7.7	11.7	7.0	5.6	10.3	9.4	8.1
Housing	17.0	21.9	25.3	15.3	20.1	26.4	16.9	23.8	23.5	15.0	18.8	21.9
Personal & Medical Care	7.1	5.8	6.4	6.0	5.9	6.4	7.4	7.2	6.2	6.3	5.4	6.4
Transport/ Communication	6.5	8.4	10.8	6.4	6.8	10.2	8.0	6.9	12.8	10.3	9.4	12.3
Reading, Ed., &Recreation	3.8	3.3	4.0	3.2	3.0	3.6	3.8	3.6	4.4	4.3	3.3	4.4
Misc.	1.0	1.3	2.1	1.0	1.8	1.7	2.8	2.2	2.9	1.2	1.4	1.4

Source: Derived from Household Socioeconomic Survey Reports, NSO.

Explanation of household consumption behavior based on shares of expenditure does not take one very far, especially since expenditures were only reported in very broad categories. In order to understand the situation with respect to provincial household demand for industrial products, particularly provincial industrial products, two other main characteristics of the consumption, i.e., the expenditure elasticity and the marginal budget share based on more detailed classification of products, provide a clearer picture.

3.1.2 Expenditure Elasticity.

Household consumption expenditures, excluding the miscellaneous category, were grouped into 12 categories, the values of expenditure elasticity calculated and the directions of change in these values identified. The results presented in Table 3.2 are quite consistent with findings in other countries (Africa and Asia), i.e.,

"...when income for low and medium income rural households increases the trend is a less than proportional increase in expenditure on food and beverages, and textile and clothing but a more than proportionate expenditure (an increase in expenditure elasticity) on items such as...cosmetics, combs, brushes, plastic and leather sandals, light fixtures, wooden furniture, and brick and paint for home improvement. In the Indian and Pakistan Punjab households of the large-scale mechanized farmers one typically observes such consumer durables as an air conditioner, a car and television sets; on a small farm the comparable items are an electric fan, a bicycles, and a transistor radio... [and when] more income is channeled to consumers in the lowest expenditure deciles where the marginal propensity to consume food grains is even higher...Of industrial processed foods, there is greater marginal consumption of milk products, tobacco, edible oils, and sweeteners by the intermediate income group (Johnston and Kilby 1975:305-307).

Table 3.2 Direction of Change in Expenditure Elasticity, between the periods 1975/76-1981 and 1981-1986, by 12 Major Categories, by Region (+ for increase, - for decrease)

	C	S	N	NE
Food and Beverages	-	-	-	-
Prepared Food	-	-	-	-
Alcoholic Beverages	+	-	-	-
Tobacco Products	-	-	-	-
Apparel	-	-	-	-
Housing	+	+	+	+
Medical Care	+	-	+	+
Personal Care	+	+	+	+
Transport & Communication	+	+	+	+
Recreation & Reading	-	+	+	-
Education	+	+	+	+
Misc.	+	-	+	-

Source: Derived from Household Socioeconomic Survey Reports, NSO.

Further remark was made by Johnston and Kilby that "much of the rural consumption is in a less-processed form, supplied by small scale, less capital-intensive enterprises" (Johnston and Kilby 1975).

The consumption patterns of Thai provincial households, though not identical to that which Johnston and Kilby found in other countries, do exhibit similar trends. Average household total expenditure, as a proxy for household income, has increased for all administrative areal units in all regions. Given a smaller base, i.e., the average monthly household income in 1975, village household income experienced the highest growth rate as compared with households in municipal areas and in sanitary districts. Absolute value of expenditure on items which are obviously industrial products registered an increase between 1975 and 1986 (NSO: 1975/76 and 1986). Not only do the majority of the categories have a positive expenditure elasticity but many of them also have greater than unity value (Table 3.3). Although the category grouping based on the NSO socioeconomic surveys inevitably obscured the manufactured and non-manufactured nature of the commodities within some categories such as the food, enough details are available for trend analysis with respect to demand for manufactured goods. For example, a list of expenditure elasticity for items which are identifiable as industrial products in the NSO household socioeconomic survey reports, and which were purchased by provincial household for the period 1975-1986, was derived for all regions and all administrative units within the regions (Table A3.1). The value of expenditure elasticity of demand could be used as a first approximation or as an indicator to reflect the potential purchasing behavior of the household, if its income increases, with respect to particular items. Expenditure on tuition was included to serve as an indicator for purchase of products such as stationery which are associated with school attending .

From the list of industrial products identified and presented in Table A3.1, those with positive value of expenditure elasticity of demand for all regions and all administrative units within the regions are presented in Table 3.4.

Table 3.3 Household Expenditure Elasticity for Selected Industrial Product Categories, for the Periods 1975-1986, by Region and Areas

	North				Northeast				Central				South			
	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil
Milk, Cheese, Eggs	1.28	1.23	1.25	1.25	1.37	0.80	1.06	1.59	1.42	1.15	1.12	1.56	1.24	1.11	1.10	1.32
Oils & Fats	0.82	0.42	1.05	0.84	0.91	0.49	0.39	1.07	0.60	0.30	0.77	0.65	0.75	0.24	0.47	0.88
Sugar and Sweets	0.63	0.83	0.71	0.62	0.56	0.65	1.60	0.48	0.74	1.06	1.05	0.66	0.47	-0.20	-0.80	0.66
Spices, Coffee, Tea	1.01	1.55	1.02	0.88	0.73	1.35	0.97	0.66	1.26	1.42	1.49	1.18	0.84	0.74	0.84	0.82
Prepared Food	2.29	1.58	1.97	2.88	3.03	2.37	3.04	3.98	2.18	1.66	1.78	2.53	1.95	2.07	1.77	1.95
Alcoholic Beverages	0.99	0.94	0.69	0.96	1.22	1.35	0.41	1.21	1.44	1.67	1.77	1.33	1.25	2.10	1.72	0.97
Cigarettes	0.68	0.59	0.33	0.78	0.25	0.26	-0.52	0.78	1.02	0.67	1.06	1.12	0.87	0.51	0.72	1.11
Cloth and Clothing	0.35	0.56	0.20	0.33	0.09	0.35	0.06	0.10	-0.58	-0.41	-0.39	-0.68	0.47	0.19	0.45	0.51
Footwear	1.08	0.80	0.96	1.17	0.76	0.52	1.82	0.64	0.65	0.56	0.70	0.66	1.23	-4.30	1.18	1.41
Fuel and Light	1.30	1.16	1.48	1.30	1.38	1.09	1.23	1.47	1.42	1.51	1.63	1.33	1.21	1.26	1.44	1.14
Textile Furnishing	0.17	0.53	0.26	0.13	0.76	0.29	0.16	0.85	-0.10	-0.23	-0.63	0.06	1.21	0.37	1.28	1.34
Minor Equipment	0.69	0.57	1.47	0.58	1.25	-0.23	1.33	1.25	-0.12	-0.98	0.05	-0.04	0.52	0.24	0.81	0.50
Major Equipment	0.55	0.35	-0.08	0.76	0.60	1.17	-0.44	0.96	0.35	-0.41	0.07	0.65	0.47	0.65	0.13	0.70
Cleaning Supplies	1.20	0.94	0.98	1.24	0.99	0.54	0.74	1.12	1.17	0.64	1.23	1.36	1.20	1.23	0.97	1.26
Drugs and Medicine	0.46	0.62	0.11	0.50	0.28	0.47	-0.22	0.25	0.18	0.22	-0.12	0.24	0.26	0.19	0.19	0.28
Medical Services	0.85	0.80	0.26	2.56	1.52	1.45	1.15	1.50	0.71	0.81	0.56	0.73	1.07	0.68	1.92	1.01
Personal Care Items	1.20	1.07	1.36	1.18	1.25	0.77	1.13	1.34	1.24	1.15	1.26	1.29	1.16	0.99	1.05	1.24
Vehicle Operation	2.21	1.64	2.29	2.41	2.25	1.34	1.34	2.77	1.54	1.82	1.37	1.58	1.59	2.01	1.31	1.51
Recreation Equipment	1.84	2.75	0.04	2.13	0.32	2.64	0.00	-0.15	2.03	1.60	1.16	2.14	1.68	2.00	2.88	1.17
Musical Instrument	0.98	-0.53	0.54	1.93	2.41	2.70	2.50	1.72	0.92	0.21	-0.59	2.16	1.00	0.27	1.01	1.42
Reading Materials	1.03	0.80	0.63	1.53	0.56	0.65	0.84	0.72	1.43	1.12	1.07	1.75	1.20	1.24	0.58	1.15

Source: Calculated from Socio-Economic Survey 1975/76 and 1986, NSO.

Table 3.4 Industrial Products Purchased by Provincial Households with Posituve Value of Expenditure Elasticity of Demand for ALL Regions and All Areas within the Regions

	North				Northeast				Central				South			
	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil
T-Shirt, Men	1.65	1.28	1.34	1.78	1.74	1.92	1.88	1.68	1.53	1.13	2.48	1.32	2.11	1.88	2.49	2.08
Sneakers, Men	1.47	1.24	1.37	1.51	1.36	1.42	2.40	1.22	1.34	2.13	1.51	1.20	1.40	1.35	1.75	1.34
Slippers, Leather	3.60	4.40	1.95	3.81	3.63	2.64	8.86	3.19	3.22	2.66	3.05	3.42	2.77	1.60	3.66	3.68
Slippers, Rubber	1.40	1.45	0.88	1.44	1.13	0.47	1.70	1.07	0.21	0.28	1.46	0.04	1.96	1.46	0.48	2.09
Slippers, Leather	1.48	1.82	1.31	1.42	1.34	0.18	1.72	1.69	1.84	1.27	1.99	1.95	1.55	0.77	1.95	1.80
Building Materials	4.08	0.70	2.08	4.83	5.97	5.88	6.57	5.71	5.01	6.73	9.05	4.61	3.27	3.13	3.44	3.18
Gas, Cooking	2.93	1.83	4.25	5.30	2.77	1.87	3.31	4.32	3.70	1.85	3.65	5.43	2.19	1.44	2.73	2.94
Matches and Candles	0.84	0.14	0.41	0.97	1.17	0.42	1.07	1.24	1.15	0.18	0.98	1.32	1.47	0.70	0.65	1.63
Towels & Wash Cloth	1.60	0.74	1.78	1.76	1.38	0.96	0.91	1.43	1.74	2.15	0.58	2.12	1.47	1.05	1.28	1.58
Detergent	1.16	0.96	1.03	1.21	1.14	0.64	0.78	1.29	1.35	1.00	1.42	1.41	1.19	1.11	1.02	1.25
Mop, Broom	1.52	0.93	1.58	1.59	1.28	0.94	0.87	1.50	0.88	0.94	0.78	0.93	0.62	0.09	0.65	0.84
Insecticide	1.64	1.90	1.39	1.50	0.74	2.38	0.02	0.31	1.34	1.31	1.13	1.40	2.41	2.68	2.49	2.18
Cleaning Supply, Oth	4.71	4.77		3.67	1.37	3.81		3.92	3.72	3.64	6.78	2.20	4.74	4.30		
Hair Cut	1.10	0.81	1.07	1.16	1.03	0.78	0.99	1.10	1.33	1.31	1.12	1.40	0.61	0.96	0.90	0.48
Hair Perm	0.86	1.27	1.34	0.73	0.68	0.65	0.69	0.75	0.57	0.86	0.85	0.46	1.61	1.02	1.44	1.91
Hair Set	1.35	0.88	1.25	2.75	0.31	0.23	1.52	0.78	1.99	1.88	2.07	1.74	1.69	1.35	1.63	2.28
Baht Soap	0.99	0.73	0.94	1.05	1.29	0.56	1.09	1.41	1.07	0.91	1.04	1.12	1.03	0.87	0.67	1.12
Shampoo	1.76	1.61	2.00	1.77	2.23	1.35	2.09	2.38	2.08	1.91	2.03	2.15	2.09	1.83	2.01	2.16
Face Powder	1.35	1.43	1.79	1.28	1.35	0.73	1.01	1.50	1.35	1.69	1.30	1.32	1.32	1.57	1.24	1.26
Lipstick	1.99	2.75	3.56	1.34	0.60	0.68	0.17	0.91	2.05	2.33	0.16	2.33	1.25	2.10	0.89	0.56
Other Cosmetics	0.58	0.75	0.39	0.53	0.59	1.38	1.89	0.20	0.79	1.64	0.72	0.53	0.56	0.88	1.05	0.19
Brushes	0.74	0.93	0.75	0.70	0.60	1.13	0.45	0.54	0.73	0.83	1.67	0.43	0.69	0.51	0.23	1.29
Razor and Blade	1.32	1.19	1.21	1.38	1.54	1.24	0.54	1.82	1.05	0.61	2.04	0.83	0.56	0.65	0.16	0.62
Toilet Paper/Tissue	2.74	2.41	2.42	3.42	0.75	0.58	1.57	1.51	2.78	1.55	2.68	3.94	3.13	2.65	3.82	4.24
Sanitary Napkins	1.68	0.74	1.60	2.09	1.40	0.74	1.46	1.98	1.61	0.90	1.29	1.87	1.35	0.79	1.36	1.58
Tyres/Batteries	3.82	3.77	3.35	3.96	2.39	3.20	2.54	2.24	3.68	2.64	3.51	4.11	3.03	2.46	2.75	3.26
Children Toy	1.33	1.21	1.68	1.31	0.42	2.29	0.21	0.28	1.42	2.10	0.00	1.89	1.97	1.01	0.92	2.79
Record & Tapes	2.99	4.02	1.94	2.94	5.15	5.00	4.59		3.96	2.73	2.72	6.97	2.37	1.24		
Music Instrument	6.34	4.11		7.72	11.84	11.15	11.42		4.36	6.33	4.64	3.93	3.19		2.00	1.93
Newspaper	1.04	0.76	0.32	1.89	0.28	0.59	0.49	0.30	1.58	1.00	1.10	2.25	1.18	1.26	0.91	1.36
Magazines	1.28	0.88	0.75	2.20	0.92	0.89	1.85	0.87	1.56	1.18	0.88	2.10	0.84	1.07	0.07	0.98
Books	1.87	1.67	2.28	1.95	1.68	0.27	2.05	4.35	2.88	2.13	3.82	2.81	1.32	1.28	2.00	1.25
Tuition	2.02	0.95	1.32	3.14	4.26	1.72	6.14	5.90	2.41	1.05	1.92	3.90	2.27	3.15	2.30	1.68
School Equipment	1.42	0.91	0.06	1.94	1.87	1.03	2.42	1.97	1.90	0.87	1.74	2.30	1.08	0.67	0.69	1.32
Text Book	0.92	0.54	0.62	1.06	1.54	0.85	0.83	1.90	1.32	0.47	1.23	1.58	1.22	0.63	1.05	1.43

Derived from Household Socio-economic Survey Reports, NSO.

For many items, village household expenditure elasticities of demand are greater than those of the municipal households (Table 3.5). One possible interpretation is that with the same percent of incremental income, the village and, often, the sanitary districts households will increase their purchase of those items at a larger percentage than the municipal households on the average.

Table 3.5 Industrial Products Purchased by Provincial Households with Value of Expenditure Elasticity of Rural Household Greater than That of the Municipal Household, by Region (between 1975 and 1986)

	North		Northeast		Central		South	
	Muni	Vil	Muni	Vil	Muni	Vil	Muni	Vil
Uniform, School	0.22	0.70	0.53	0.97	-0.67	-0.08	-0.41	0.17
Accessories	-0.78	1.53	1.74	1.76	-2.02	4.24	-0.44	6.17
Pajama, Women's	2.17	2.43	-0.39	2.79	1.72	3.53	-0.67	0.00
Shoes, Leather, Women	-0.01	1.75	0.04	0.65	0.30	0.74	0.05	0.74
Gas, Cooking	1.83	5.30	1.87	4.32	1.85	5.43	1.44	2.94
Batteries	-0.78	-0.25	-1.13	0.08	-1.48	-0.51	-1.23	0.39
Matches and Candles	0.14	0.97	0.42	1.42	0.18	1.32	0.70	1.63
Light Bulbs	-2.37	4.54	0.25	4.73	0.71	4.46	1.54	5.83
Towels & Wash Cloth	0.74	1.76	0.96	1.43	2.15	2.12	1.05	1.58
Mat	0.48	0.83	3.79	2.16	-2.00	-0.75	-0.59	2.12
Furniture	1.12	1.33	1.81	2.07	-0.04	0.72	0.29	0.86
Refrigerator	-1.56	1.73	-0.02	1.33	0.35	2.69	-0.24	2.30
Iron, Electric	-0.28	1.02	2.84	4.35	-1.33	-0.11	-1.74	0.92
Rice Cooker, Electr	0.89	n.a.	1.30	n.a.	-3.97	2.49	-0.20	1.66
Fan, Electric	-1.92	2.47	2.94	3.22	-1.50	0.61	-1.44	1.41
Detergent	0.96	1.21	0.64	1.29	1.00	1.41	1.11	1.25
Mop, Broom	0.93	1.59	0.94	1.50	0.94	0.93	0.09	0.84
Bath Soap	0.73	1.05	0.56	1.41	0.91	1.12	0.87	1.12
Toothpaste	0.74	1.00	0.55	1.26	0.76	1.22	0.92	1.32
Shampoo	1.61	1.77	1.35	2.38	1.91	2.15	1.83	2.16
Toilet Paper/Tissue	2.41	3.42	0.58	1.51	1.55	3.94	2.65	4.24
Sanitary Napkins	0.74	2.09	0.74	1.98	0.90	1.87	0.79	1.58
Record Player, etc.	-2.63	3.64	-1.31	6.33	-1.50	1.59	-1.75	1.41
Music Instrument	4.11	7.72	11.15	n.a.	6.33	3.93	n.a.	1.93
Joss Stick, etc.	0.67	0.86	-0.01	0.15	-0.33	-0.24	-0.45	0.59
School Fee	0.61	1.45	0.88	1.29	0.30	2.41	0.79	1.74
School Equipment	0.91	1.94	1.03	1.97	0.87	2.30	0.67	1.32
Text Book	0.54	1.06	0.85	1.90	0.47	1.58	0.63	1.43

Source: Derived from NSO Household Socioeconomic Survey Reports.

To the extent that information such as this may have great implications for policy measures with regard to employment and income generation and/or direct promotion of manufacturing in the provincial areas, a distinction between rural and municipal household behavior becomes important for its implications on effective demand for manufactured products. In short, based solely on the values of expenditure elasticity of demand, the values associated with many items, e.g., accessories, cooking gas, light bulbs, towels and wash cloth, electric fans, toilet paper and tissues, and record players, detergents, bath soap, etc., (see fuller list in Table 3.5) seem to point to a stronger potential markets in the non-urban provincial areas than in the provincial urban, i.e., municipal, areas.

The issue of inferiority often comes up as an explanation for the slow development and expansion of industries in rural areas, i.e., that products of provincial industrial enterprises are of inferior nature and command a negative income elasticity of demand. In order to see whether this is true in the case of Thailand, a list of manufactured products associated with negative expenditure elasticity of demand for the majority of regions and areas within the regions has been compiled and presented in Table 3.6. A comparison of this list with information on the number of registered factories in the provinces outside the BMR and those in the whole country clearly indicates that the products whose expenditure elasticities are primarily negative, i.e., those which become inferior goods as household incomes increase, are not being produced in the provincial areas in any major way. In fact, construction materials, with very high expenditure elasticity for all, except one, areas in all regions, is the only category with more than 80 percent of all registered establishments located in the provinces. All other identifiable industrial products purchased by provincial households are apparently being produced by factories registered in the BMR (see Table A3.1). As income increases over time, provincial households not only have increased their purchase of many industrial products, but some items at a more than proportionate ratio to the increase in their income as depicted by the greater-than-unity value of the expenditure elasticity for those items. If expenditure elasticity

Table 3.6 Industrial Products Purchased by Provincial Households with Negative Value of Expenditure Elasticity for the Majority of Regions and Areas within the Regions

	North				Northeast				Central				South			
	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil
Cloth, Others	-0.04	-0.13	-1.00	0.17	-1.57	-0.64	-2.78	-1.31	-3.47	-1.99	-4.71	-3.69	-1.78	-0.55	-1.03	-2.04
Uniform, Others	1.10	0.05	-0.13	1.89	-0.46	-1.37	3.79	-1.12	-2.67	-0.81	0.50	-6.70	-0.27	0.19	0.03	-0.75
Shoes, Leather, Men	-0.67	-0.36	-0.15	-0.81	-1.69	-0.64	0.74	-2.10	-0.84	-1.41	-2.43	-0.56	0.96	0.18	1.70	1.06
Kerosene	-0.89	-1.29	-2.38	-0.80	-0.64	-0.39	-3.32	-0.57	-1.65	-1.50	-2.13	-1.63	-0.43	-2.53	-0.89	-0.35
Batteries	-1.22	-0.78	-5.12	-0.25	-0.01	-1.13	-1.62	0.08	-0.63	-1.48	-1.04	-0.51	0.24	-1.23	-0.31	0.39
Mosquito Net	-0.04	0.50	-0.57	-0.03	0.81	1.00	-0.34	0.85	-0.72	-0.64	-1.45	-0.58	1.41	-0.40	1.01	1.66
Cutleries	-0.05	1.49	1.14	-0.43	-0.06	-0.16	0.49	-0.10	-1.04	-0.96	-0.35	-1.24	1.28	0.90	-0.06	1.42
Mattress	-0.48	0.65	-1.01	-0.61	-0.49	0.55	1.77	-1.35	-0.40	-0.52	-1.46	-0.22	0.24	1.13	-1.05	0.29
Sewing Machine	-3.82		-1.22	-4.61	-3.82	-1.15		-4.37	-3.81	0.00	0.00	-3.37	-2.12	0.18		-3.13
Hair Cream	-0.90	0.25	0.45	-1.45	-1.61	-0.40	-1.38	-1.86	-0.74	-0.45	-0.16	-1.00	-1.62	-0.59	-1.17	-1.94
Bicycle	-2.34	-0.30	-2.29	-2.90	0.40	-0.31	1.05	0.41	-1.66	-2.32	-0.56	-1.66	-0.64	-0.65	0.44	-0.76
Radio	-1.58	-3.27	-3.38	-0.93	-1.35	-3.82	-1.05	-1.20	-2.54	-2.18	-2.33	-2.83	-1.07	-0.86	-0.98	-1.10

Source: Derived from Household Socio-economic Survey Reports, NSO.

Table 3.7 Industrial Products Purchased by Provincial Households with Value of Expenditure Elasticity Greater than Unity for ALL Regions and ALL Areas within the Regions

	North				Northeast				Central				South			
	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil
T-Shirt	1.65	1.28	1.34	1.78	1.74	1.92	1.88	1.68	1.53	1.13	2.48	1.32	2.11	1.88	2.49	2.08
Sneakers, Men	1.47	1.24	1.37	1.51	1.36	1.42	2.40	1.22	1.34	2.13	1.51	1.20	1.40	1.35	1.75	1.34
Slippers, Leather	3.60	4.40	1.95	3.81	3.63	2.64	8.86	3.19	3.22	2.66	3.05	3.42	2.77	1.60	3.66	3.68
Gas, Cooking	2.93	1.83	4.25	5.30	2.77	1.87	3.31	4.32	3.70	1.85	3.65	5.43	2.19	1.44	2.73	2.94
Cleaning Supply, Oth	4.71	4.77		3.67	1.37	3.81		3.92	3.72	3.64	6.78	2.20	4.74	4.30		
Tyres and Batteries	3.82	3.77	3.35	3.96	2.39	3.20	2.54	2.24	3.68	2.64	3.51	4.11	3.03	2.46	2.75	3.26
Shampoo	1.76	1.61	2.00	1.77	2.23	1.35	2.09	2.38	2.08	1.91	2.03	2.15	2.09	1.83	2.01	2.16
Record & Tapes	2.99	4.02	1.94	2.94	5.15	5.00	4.59		3.96	2.73	2.72	6.97	2.37	1.24		
Music Instrument	6.34	4.11		7.72	11.84	11.15	11.42		4.36	6.33	4.64	3.93	3.19		2.00	1.93

Source: Derived from Socio-Economic Survey Reports, NSO.

is the only relevant consideration to infer about market potentiality, the information in Table 3.7 could then be used as an initial guideline for the type of goods with relatively strong demand and their production in the provinces ought to be encouraged.

However, an increase in expenditure on some items, and thus their high expenditure elasticities, may have been a result of more than just a higher level of income. Light bulbs, for example, as well as some other small and not too costly electrical household items, e.g., irons, fans, etc., might have increased significantly during the ten-year period due to the recent electrification of many villages. On the other hand, a decrease in demand as income increases which resulted in negative values for the expenditure elasticity for items such as sewing machines and hair creams is simply a result of cheaper substitutes such as the mass-produced, machine-made clothing and the new fashion of hair style where hair cream is no longer the "in" thing. The small share in total expenditure for, and the durability of, some necessity items such as mosquito nets, blanketd, cutlery, mattresses, etc., may be another factor contributing to a low expenditure elasticity of demand (Table A3.1). Information in Tables 3.4 through 3.7 and Table A3.1 also provide a rough idea as to the type of commodity the provincial households will be purchasing more of as well as those items they will be buying less of as their household income increases.

To the extent that an increase in the value of expenditure elasticity of demand for the same items of product over time indicates a potentially more than proportionate increase in the expenditure as income increases (Johnston and Kilby 1976: 305-307), information such as that presented in Table A3.3, if accurate, could prove to be very useful. However, although calculation of the expenditure elasticities by commodity for the two periods, 1975 to 1981 and 1981 to 1986, shows 30 items with a higher elasticity for the latter period for all regions and 40 items for at least 3 regions, most items are obviously produced in the BMR (Table A3.2), i.e., only two categories, oils and fats, and cooking gas have more than 50 percent of their factories registered in the provinces. As income increased, negative, or lower expenditure elasticity values for the latter period are found to be associated with

quite a few items conventionally consumed by households with lower income, e.g., cotton and other cloth, kerosene, batteries, blankets and mat. Other items experienced a decrease in household purchase, i.e., became "inferior goods" due to the availability of substitutes such as sewing machines, radios, bicycles, and leather shoes for both men and women. Many items in Table A3.3 also indicate a direction of change which is contradictory to general expectation such as medicine and supply, television sets, motorcycles, etc., for no obvious reasons.

The list in Table A3.1 which provides the basis for other tables in this section is far from being exhaustive. It only includes whatever is available in the NSO Socioeconomic Survey Reports but it allows, to some extent, the identification of certain manufactured items which have a stronger demand in general as well as in particular regions and areas. For example, men's pajama are associated with a much higher expenditure elasticity in the Northeast, especially in the villages, than the rest of the country whereas the same statement can be made about blankets and accessories in the Southern rural areas (Table A3.1). At the regional level, the Northeastern households possess the highest value of expenditure elasticities for men's pajamas, shoes, paint, plumbing and wiring materials, vehicle maintenance and repair, motorcycles, records and tapes, and musical instruments. Careful examination of the relative sizes of the expenditure elasticity could result in a set of indicators for regional emphasis on the types of commodity which may have a more promising market than others.

For cross-checking purpose, double-log regression equations were run for all regions between the household income distribution by income decile and the associated value of purchase of commodity by major categories. The coefficients resulted from a double-log regression represent the values of expenditure elasticity of demand by households in various areas in the region. Unfortunately, published data were available only for very broad categories which, although still allow the identification of the general groups of industrial products purchased by provincial households, do not provide enough information in relation to commodity type within the categories. In addition, with the very low degree of freedom resulted from the use of decile income and expenditure

figures, the usefulness of the results from this analysis becomes even more limited for the identification of potentially marketable products for provincial industry. The positive side of this exercise is that the regression coefficients, i.e., the estimates for expenditure elasticities, remain consistent with findings in earlier sections on the characteristics of the expenditure elasticities for provincial households (Table 3.8). For reasons already discussed, only the regression coefficients for rural households are presented.

3.1.3 Marginal Budget Share.

As mentioned above, expenditure elasticity alone does not provide a good indicator for market sustainability, especially if the share in the total expenditure and, more importantly, the marginal budget share of the products are small. T-shirts, personal accessories, light bulbs, mops and brooms, cleaning supplies, local medicines, stationary and office supplies, for example, are among those items with very high expenditure elasticity of demand but also with a very small marginal budget share (Table A3.2). To the extent that the main concern of this paper is the demand for products of provincial industries, attempts have been made to identify the ratio of products manufactured in the provinces to the rest of the country. Since the series on manufacturing value added by industry and by province compiled by NESDB are not available at the time this report is being written, the number of industrial establishments legally registered at the Ministry of Industry as of 1987 is adopted to provide such a ratio (Table A3.2). The author fully recognized that the number of registered industries implies nothing about the size of production and therefore may be a rather poor indicator of the actual participation of provincial industrial enterprises in meeting provincial household demand.

To infer the sustainability of the demand, manufactured products purchased by provincial households are grouped based on their potential substitutability (Table 3.9). For example, cigarettes are obviously a candidate to replace tobacco judging from the former's higher value for both expenditure elasticity and marginal budget share. The same is true

Table 3.8 Regression Coefficients as Estimates for Expenditure Elasticities of Rural Households, 1986, by Region

	North			Northeast			Central			South		
	C	Ed	RSq	C	Ed	RSq	C	Ed	RSq	C	Ed	RSq
Total Consumption	3.88	0.61	0.96	4.38	0.54	0.97	4.55	0.53	0.94	4.60	0.51	0.96
Food and Beverage	4.86	0.34	0.94	4.95	0.34	0.98	5.13	0.33	0.92	5.35	0.29	0.90
Milk, Cheese, Eggs	0.34	0.54	0.96	-0.27	0.59	0.89	1.42	0.43	0.75	-0.28	0.65	0.88
Oils and Fats	1.22	0.35	0.89	-2.72	0.88	0.96	2.62	0.20	0.69	1.74	0.31	0.68
Sugar and Sweets	-0.46	0.56	0.87	-4.51	1.12	0.89	2.05	0.29	0.70	2.57	0.22	0.62
Spice, Coffee, etc.	0.81	0.41	0.90	1.46	0.30	0.93	1.78	0.34	0.78	2.43	0.27	0.70
Beverage, Non-Alcoho	-11.29	2.00	0.81	-	-	-	-8.98	1.78	0.97	1.04	0.25	0.51
Beverage, Alcoholic	-5.19	1.33	0.91	-4.72	1.26	0.81	-3.77	1.14	0.80	-7.39	1.59	0.83
Cigarettes	-9.80	1.95	0.62	-11.23	2.19	0.90	-7.19	1.65	0.94	-1.71	0.86	0.94
Cloth and Clothing	-1.85	1.06	0.90	-1.57	1.09	0.97	-2.97	1.19	0.97	-0.85	0.96	0.94
Footwear	-3.15	1.03	0.84	-2.66	0.98	0.91	-3.13	0.98	0.92	-1.46	0.80	0.85
Housing	1.83	0.71	0.95	2.64	0.57	0.89	3.54	0.47	0.95	2.63	0.57	0.92
Fuel and Light	2.03	0.44	0.92	3.24	0.24	0.72	2.49	0.40	0.77	3.65	0.19	0.61
Household Textile Fu	-3.01	1.42	0.76	-4.37	1.27	0.86	-1.55	0.76	0.72	-4.29	1.18	0.80
Minor Equipment	-3.02	1.14	0.89	-4.38	1.19	0.89	-1.62	0.59	0.46	-4.85	1.14	0.82
Major Equipment	-13.02	2.33	0.94	-	-	-	-8.33	1.66	0.81	-	-	-
Cleaning Supplies	0.11	0.51	0.92	0.67	0.40	0.94	1.20	0.36	0.84	0.83	0.39	0.83
Medical Care	-1.84	0.98	0.97	-0.50	0.81	0.95	-0.95	0.87	0.92	-1.95	0.99	0.92
Drugs and Medicines	-0.68	0.66	0.86	0.92	0.41	0.85	1.28	0.37	0.56	0.11	0.49	0.78
Medical Services	-4.15	1.26	0.98	-2.87	1.11	0.96	-4.00	1.27	0.93	-4.16	1.27	0.88
Personal Care Items	1.04	0.47	0.95	1.36	0.41	0.96	2.58	0.27	0.95	1.94	0.34	0.82
Vehicle Operation	-7.86	1.85	0.94	-5.68	1.47	0.85	-4.63	1.36	0.87	-5.17	1.49	0.97
Vehicle Purchase	-12.25	2.27	0.86	-10.94	2.09	0.72	-13.40	2.42	0.75	-6.91	1.52	0.56
Communication	-10.10	1.63	0.70	-8.61	1.39	0.48	-	-	-	-	-	-
Recreation & Reading	-4.22	1.26	0.91	-3.06	1.10	0.92	-1.53	0.86	0.79	-7.16	1.64	0.94
Sport Equipment	-	-	-	-11.80	2.04	0.97	-	-	-	-12.78	2.00	0.53
Musical Instrument	-11.63	2.11	0.67	-8.78	1.78	0.91	-10.44	1.88	0.50	-	-	-
Reading Materials	-	-	-	-	-	-	-8.70	1.44	0.46	-13.18	2.07	0.90
Education	-1.22	0.69	0.81	-1.00	0.68	0.87	-2.34	0.91	0.80	-0.84	0.69	0.69
Misc.	-14.61	2.79	0.95	-13.57	2.78	0.96	-	-	-	-4.35	1.06	0.47

Source: Derived from Household Socio-Economic Survey Reports, NSO.

Table 3.9 Household Expenditure Elasticity and Marginal Budget Share for Possible Substitute Products, by Region, 1975-1986

	North		Northeast		Central		South	
	Elast	MBS	Elast	MBS	Elast	MBS	Elast	MBS
Cigarette	0.68	0.69	0.25	0.18	1.02	1.43	0.87	1.55
Tobacco	-0.94	-0.21	-0.42	-0.23	0.71	0.13	0.16	0.07
Cloth, Cotton	0.27	0.00	-0.72	0.01	0.85	0.01	0.89	0.01
Cloth, Others	-0.04	0.00	-1.57	-0.05	-3.47	-0.09	-1.78	-0.07
Uniform, School	0.53	0.15	0.83	0.31	0.01	0.00	0.10	0.03
Uniform, Others	1.10	0.06	-0.46	-0.03	-2.67	-0.09	-0.27	-0.01
Shirt, Dress	0.36	0.19	-0.38	-0.17	-0.67	-0.27	1.82	0.95
Shirt, Others	2.03	0.24	1.43	0.19	0.97	0.06	0.80	0.10
T-Shirt	1.65	0.26	1.74	0.42	1.53	0.27	2.11	0.67
Slack,Women	1.37	0.77	1.04	0.44	-0.15	0.05	0.06	0.02
Sarong, Panung	-0.44	-0.14	-0.21	-0.12	-1.37	-0.35	6.99	5.72
Pajama, Women's	2.57	0.08	1.88	0.03	2.75	0.12	-0.25	-0.01
Sewing Machine	-3.82	-0.32	-3.82	-0.03	-3.81	-0.06	-2.12	-0.04
Footwear, Men & Boys	1.11	1.33	0.85	0.99	0.69	0.57	1.23	1.50
Shoes, Leather	-0.67	-0.07	-1.69	-0.16	-0.84	-0.08	0.96	0.18
Shoes, Others	1.60	0.02	3.51	0.15	2.55	0.07	1.36	0.08
Sneakers	1.47	0.42	1.36	0.36	1.34	0.26	1.40	0.39
Slippers,Leather	3.60	0.25	3.63	0.09	3.22	0.23	2.77	0.19
Slippers,Rubber	1.40	0.26	1.13	0.26	0.21	0.02	1.96	0.32
Footwear, Women	1.41	0.73	1.35	0.67	0.84	0.27	0.92	0.40
Shoe,Leather	1.14	0.13	0.44	0.03	0.68	0.05	0.56	0.06
Shoe,Others	1.09	0.03	0.82	0.02	-1.08	-0.01	0.15	0.00
Sneakers	2.33	0.18	0.62	0.02	1.34	0.04	1.40	0.07
Slippers,Leather	1.48	0.15	1.34	0.06	1.84	0.13	1.55	0.19
Slippers,Rubbers	1.35	0.26	1.31	0.33	0.82	0.10	-1.52	-0.15
Charcoal	0.69	0.78	1.52	1.80	0.49	0.48	1.38	1.56
Wood, Fuel	1.24	0.94	1.53	1.50	1.03	0.49	0.16	0.10
Gas, Cooking	2.93	0.63	2.77	0.27	3.70	2.01	2.19	0.81
Kerosene	-0.89	-0.18	-0.64	-0.21	-1.65	-0.26	-0.43	-0.13
Matches, Candles	0.84	0.09	1.17	0.14	1.15	0.12	1.47	0.26
Light Bulbs	0.41	0.04	2.88	0.27	3.32	0.33	2.41	0.18
Singlets	-5.28	-0.02	-5.22	-0.03	-5.36	-0.02	-2.72	-0.02
Towels,Wash Cloth	1.60	0.12	1.38	0.16	1.74	0.08	1.47	0.13
Bedspread/Drapery	1.71	0.03	1.61	0.02	2.49	0.02	0.82	0.01
Pots and Pans	0.37	0.01	1.76	0.04	0.79	0.02	-0.71	-0.01
Rice Cooker, Elect	4.24	0.14	3.01	0.05	0.35	0.01	0.88	0.02
Thermos	0.85	0.02	2.65	0.08	0.71	0.02	0.96	0.02
Refrigerator	0.33	0.03	-0.82	-0.06	1.58	0.36	1.01	0.21
Soap & Flakes	-0.16	0.00	0.87	0.01	0.49	0.01	1.32	0.03
Detergent	1.16	1.07	1.14	0.95	1.35	1.17	1.19	0.93
Medical Care	0.74	2.75	1.00	3.83	0.51	1.81	0.44	1.50
Local Medicine	2.78	0.25	1.57	0.12	1.25	0.15	0.82	0.12
Motorcycle	0.28	0.18	2.32	1.97	-0.56	-0.19	1.04	1.32
Bicycle	-2.34	-0.09	0.40	-0.03	-1.66	-0.04	-0.64	-0.02
Radio	-1.58	-0.04	-1.35	-0.04	-2.54	-0.05	-1.07	-0.04
Television Set	0.91	0.38	2.58	0.86	1.32	0.46	1.35	0.43

Source: Derived from NSO Socioeconomic Survey Reports.

for the comparison between cloth, both cotton and other, and ready-made clothing such as uniforms, T-shirts, pajamas, etc. Other clear cases of potential substitution are between women's slacks on the one hand and sarongs and panungs and sewing machines on the other, between fuelwood and cooking gas, between kerosene, matches and candles and light bulbs, between singlets (pha khao ma) and towels and wash cloth, etc. In villages, as well as in the municipal areas, there is a clear trend that detergent is quickly replacing soap flakes in household cleaning activities. Modern medical care which is a service is included here to contrast with local medicines because medical care in Thailand, especially in private clinics, usually includes the sale of medicine unlike many other countries where medicine is purchased separately and only upon presentation of prescriptions.

The marginal budget share indicates the relative importance a household places on a particular item as its income increases over time (Table A3.4). All types of household, except for the municipal households in the Central Region, have a relatively high expenditure elasticity of demand for construction materials, but the marginal budget share is much higher for village households than municipal households. Thus, as village household income increases, a larger percentage share of the total incremental income has been devoted to home construction and improvement. There may be further implications to be derived from this type of observation, e.g., with an increase in construction material purchase, expenditure on other furnishing and fixtures may be also expected to increase.

On the other hand, the magnitude and potential of demand for certain products may not be well reflected through periodical household expenditure survey data, especially the demand for durable consumption (i.e., household investment) goods such as refrigerators, television sets, electrical appliances, mattresses, bicycles, and motorcycles, etc. In addition, many items are purchased for personal consumption use as well as for income-earning purposes. For example, motorcycles provide an important means of transportation between villages and towns, or between the bus stops on major highway and the villages, at a fee. This mode of transportation services is especially important where buses

leave only once or twice a day (or do not run at all). The bicycle wheel pushcart when towed by a motorcycle provides a convenient and inexpensive means of transporting agricultural products in areas where the natural terrain does not allow the task to be performed by other vehicles. A pickup truck owned by one household in the village provides the necessary means of transportation for many other households in their acquisition of many necessities such as drinking water and fuel wood in the dry season when long distances often have to be covered. A group is usually organized for this purpose and everyone shares the cost, mainly for the gasoline, but also any "fine" incurred during the trip, e.g., in the case of fuel wood acquisition or charcoal transportation.

The demand for many manufactured products by provincial household source is increasing but much of it is still being met by production in the BMR (see, again, Table A3.2). With much of the demand for industrial products by rural households currently being met by products from the BMR, implied by the large percentage of manufacturing value added originated from the BMR, the provincial industries appear to have captured only a small share of the total markets, despite the fact that more than 60 percent of all the provincial industries interviewed in the Rural Industries and Employment Project survey, regardless of size, are currently selling over 80 percent of their product in the province where the factories are located (Tables 3.10 and 3.11). It is also important to note, however, that 50 out of this 60 percent who rely heavily on local markets (i.e., over 80 percent of this group) are relatively small sized enterprises employing less than 20 persons.

When all provincial industries covered by the Project survey are re-grouped by the size of capital investment, the picture remains quite consistent in that the majority of the provincial industrial enterprises selling most of their products in their own provinces are of small size. In this case about 42 out of the 60 percent (i.e., 70 percent of the group selling almost all products within the province where the factories are located) have an invested capital of less than one million baht (Tables 3.12 and 3.13). When industrial establishments with invested capital beyond 1 million baht but still below 3 million baht

Table 3.10 Number of Provincial Firm Selling in Own Province, by Employment Size and Percent of Sale

Firm Size (Employees)	Percent of Sale 1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	Unknown	Total
0 - 5	8	5	3	5	8	5	13	13	21	165	12	258
6 - 9	5	6	7	3	4	3	5	13	14	94	3	157
10 - 19	4	3	5	6	11	5	13	13	14	66	6	146
20 - 49	11	8	3	2	7	3	7	7	7	45	0	100
50 - 99	7	2	3	2	3	1	4	4	2	9	1	38
100 -199	5	4	3	0	1	0	0	1	2	5	2	23
200 -499	1	3	0	2	1	0	0	0	0	7	2	16
500 -999	2	0	0	0	0	0	0	1	0	1	1	5
1,000 +	2	1	0	0	0	0	0	0	0	0	1	4
Unknown	1	1	0	0	0	0	0	0	0	1	2	5
Total	46	33	24	20	35	17	42	52	60	393	30	752

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

Table 3.11 Percent of Provincial Firm Selling in Own Province, by Employment Size and Percent of Sale

Firm Size (Employees)	Percent of Sale 1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	Unknown	Total
0 - 5	1.06	0.66	0.40	0.66	1.06	0.66	1.73	1.73	2.79	21.94	1.60	34.31
6 - 9	0.66	0.80	0.93	0.40	0.53	0.40	0.66	1.73	1.86	12.50	0.40	20.88
10 - 19	0.53	0.40	0.66	0.80	1.46	0.66	1.73	1.73	1.86	8.78	0.80	19.41
20 - 49	1.46	1.06	0.40	0.27	0.93	0.40	0.93	0.93	0.93	5.98	0.00	13.30
50 - 99	0.93	0.27	0.40	0.27	0.40	0.13	0.53	0.53	0.27	1.20	0.13	5.05
100 -199	0.66	0.53	0.40	0.00	0.13	0.00	0.00	0.13	0.27	0.66	0.27	3.06
200 -499	0.13	0.40	0.00	0.27	0.13	0.00	0.00	0.00	0.00	0.93	0.27	2.13
500 -999	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.13	0.66
1,000 +	0.27	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.53
Unknown	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.27	0.66
Total	6.12	4.39	3.19	2.66	4.65	2.26	5.59	6.91	7.98	52.26	3.99	100.00

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

Table 3.12 Number of Provincial Firm Selling in Own Province, by Capital Investment Size and Percent of Sale

Firm size ('000 Baht)	Percent of Sale 1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	Unknown	Total
Less than 500	13	8	5	10	18	10	20	21	31	221	15	372
500 - 999	7	1	1	1	5	1	6	13	9	38	2	84
1,000 - 2,999	16	8	6	1	5	1	7	5	6	50	3	108
3,000 - 4,999	0	2	3	3	0	1	1	2	1	12	2	27
5,000 - 9,999	1	3	2	0	1	1	1	3	3	11	1	27
10,000 -14,999	1	1	2	1	1	0	0	0	0	3	1	10
15,000 -19,999	0	1	1	0	0	0	1	0	0	2	0	5
20,000 -29,999	0	0	0	0	0	0	0	0	0	0	2	2
30,000 -49,999	0	1	0	1	1	0	0	0	0	0	1	4
50,000 -99,999	2	1	0	0	0	0	0	0	0	0	0	3
More than 100,000	2	2	0	0	1	1	1	1	0	4	1	14
No Answer	3	2	2	2	2	2	2	3	6	22	0	46
Total	45	30	22	19	34	17	39	48	56	363	28	715

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

Table 3.13 Percent of Provincial Firm Selling in Own Province, by Capital Investment Size and Percent of Sale

Firm size ('000 Baht)	Percent of Sale 1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	Unknown	Total
Less than 500	1.82	1.12	0.70	1.40	2.52	1.40	2.80	2.94	4.34	30.91	2.10	52.03
500 - 999	0.98	0.14	0.14	0.14	0.70	0.14	0.84	1.82	1.26	5.31	0.28	11.75
1,000 - 2,999	2.24	1.12	0.84	0.14	0.70	0.14	0.98	0.70	0.84	6.99	0.42	15.10
3,000 - 4,999	0.00	0.28	0.42	0.42	0.00	0.14	0.14	0.28	0.14	1.68	0.28	3.78
5,000 - 9,999	0.14	0.42	0.28	0.00	0.14	0.14	0.14	0.42	0.42	1.54	0.14	3.78
10,000 -14,999	0.14	0.14	0.28	0.14	0.14	0.00	0.00	0.00	0.00	0.42	0.14	1.40
15,000 -19,999	0.00	0.14	0.14	0.00	0.00	0.00	0.14	0.00	0.00	0.28	0.00	0.70
20,000 -29,999	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28
30,000 -49,999	0.00	0.14	0.00	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.14	0.56
50,000 -99,999	0.28	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
More than 100,000	0.28	0.28	0.00	0.00	0.14	0.14	0.14	0.14	0.00	0.56	0.14	1.96
No Answer	0.42	0.28	0.28	0.28	0.28	0.28	0.28	0.42	0.84	3.08	0.00	6.43
Total	6.29	4.20	3.08	2.66	4.76	2.38	5.45	6.71	7.83	50.77	3.92	100.00

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

are included, the percentage of those selling more than 80 percent of their products in their provinces rises to 50 percent.

Three important implications result from the above analysis of: (1) the provincial households expenditure elasticity of demand, (2) the relatively large share of the BMR-originated manufactured products in the provincial household purchasing basket, and, (3) the importance of local markets to small provincial-based industries who now only command a small share of the market. Firstly, the patterns and trends in provincial household expenditure elasticities of demand for industrial products are an indicator of strong potential demand for many industrial products, i.e., with an increase in income, there will be an increase in the purchase of many industrial products, many of them currently produced in the BMR. The present low level of purchasing in the provinces is mainly due to the generally low level of income in the provincial rural areas. Secondly, the large share of BMR-based products implies the possibility of relocation, if the cost conditions, e.g., transportation, labor, etc., are different from the present one. Relocation, however, must be voluntary or overall efficiency may suffer. Finally, the small share in total demand currently met by the provincial industry sector suggests that there is potential room for this sector to expand, both through relocation of BMR-based industries and through the establishment of new industries. With an expansion of the provincial industry sector, local employment and income generation is expected to take place through the close linkages, between local industries and the local economy (Tambunlertchai 1990), under which the latter has been the main source for inputs such as labor, and raw materials as well as the main source of demand for the former's products.

3.2 DOMESTIC PRODUCERS AS SOURCES OF DEMAND

Producers require inputs other than labor, in addition to raw materials, and thus provide three main sources of intermediate demand for provincial industry products. These producers include: (1) the agricultural producers, (2) other industrial producers, and (3) the producers of various forms of services. It is apparent that demand from

each source is subject to different constraints implying different limitations and opportunities for those in the manufacturing sector interested in meeting such demand. However, unless the products purchased by the service sector constitute part of a "package" resold to the final consumers, e.g., in the case of wholesalers and retailers in the strictest sense of definition, when products are resold in their original form without any alteration, the demand for these products would have already been accounted for by the households' demand. When the products purchased are used only as a tool or an instrument with which a different kind of service is rendered such as musical instruments, restaurant equipment and utensils, equipment in medical clinics, and barbershops, an increase in the demand for the services associated with these products will imply a smaller increase in the demand for the products themselves. Other servicing enterprises such as hotels and restaurants often provide products along with their services such as soap, shampoo, facial and toilet paper, stationery, and disposable eating utensils. In this case, an increasing trend in the value added for such service sectors may be an indicator for a potentially more proportionate increase in the demand for industrial products used in businesses.

3.2.1 The Agricultural Producers

To the extent that most households in the Thai villages are engaged in agricultural production, they thus do not only represent the largest potential source of demand for consumption goods but also production inputs. Although there is only a one-step forward linkage between the farm input industries and agricultural households through the latter's demand for inputs, as compared to the possibly numerous industry to industry backward linkages, but the agricultural sector is the largest production sector and will remain so for a long time to come, especially in terms of the number of the population involved.

Agricultural households need three major types of input from the nonagricultural sector in their process of production, i.e., chemical fertilizers, farm equipment and materials used in the construction of

irrigation works, farm buildings and other agricultural activity-related structures. "...Although quantitatively less important than chemical fertilizers, farm tools and machinery represent a potentially sizable backward linkage to the manufacturing sector... and agricultural implements constitute a large segment of output of the metal working industry in a developing country," (Johnston and Kilby 1975: 352). Many factors affect the type and amount of farm equipment demanded: the state of production technology, the rate at which new technologies are being adopted, and the structural transformation of the economy, i.e., the change in relative importance between the agricultural and manufacturing sectors and the cash receipts of farm households (Johnston and Kilby 1975:353).

The total number of agricultural households in Thailand in 1986 was estimated at 5.6 million (based on a compound rate of increase from 3.8 million in 1970 to 4.7 million in 1980). Given the increase in the percentage of agricultural households using farm machinery and equipment between 1978 and 1983, when the last agricultural census and the most recent intercensal agricultural survey took place, the existing and potential markets for farm inputs appears to be rather promising (see Table 3.14). Among the 23 categories of farm input, 15 categories were reportedly used by a larger percentage of agricultural households in 1983 as compared with 1978. Unfortunately, most of the farm machinery and equipment, with few exceptions, are apparently produced by large scale industries in the BMR. Those produced locally include the body of the pushcarts, farm trucks, and non-powered boats which are being increasingly replaced by the motor-powered "long-tail" boats.

Many factors, other than income level, may influence the level of demand for agricultural inputs. For example, the largest percentages of farm households using many agricultural inputs are found in the Central Region (Table 3.14) which is the "agricultural heartland" of the country. In this region, a relatively larger percentage of land is served by the large-scale irrigation system making possible mono-crop intensification, especially through double cropping of rice.

Table 3.14 Percent of Household Using Farm Machine and Other Inputs by Region

	Central		Northeast		North		South		Whole Country	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Tractor										
4 wheel	39	43	12	17	36	39	15	16	24	27
2 wheel	20	34	2	7	8	35	19	42	9	24
Water Pump										
Engine	35	44	6	7	16	20	3	5	14	17
Manual	1	1	2	2	2	1	1	*	2	1
Wind powered	*	*	*	*	*	*	*	*	*	*
Seeders										
Engine	*	*	*	*	*	*	*	*	*	*
Manual	5	4	3	2	7	4	2	1	4	3
Fertilizer applicator	*	*	*	*	*	*	*	*	*	*
Insecticide Sprayer										
Engine	7	12	1	1	3	2	1	1	2	3
Manual	31	52	7	17	28	46	4	14	17	30
Harvester	*	*	*	*	1	*	*	*	*	*
Tresher	14	36	1	1	10	22	*	4	5	13
Grain cleaner	33	35	1	3	20	27	2	4	12	15
Car/truck	35	47	32	63	23	36	13	36	28	49
Motorcycle	10	12	2	2	5	4	14	28	6	8
Engine boat	5	6	*	*	*	*	1	1	1	1
Non-engine boat	11	8	1	*	1	1	2	1	3	2
Pushcart	19	32	38	35	48	47	12	21	33	36
Farm truck	ni	6	ni	7	ni	11	ni	*	ni	7
Fertilizer										
Chemical	40	51	19	18	17	28	33	53	25	31
Organic	7	4	14	12	12	9	10	3	12	9
Both	11	12	32	43	10	13	16	13	20	26
Pesticide	49	65	19	32	37	50	12	19	28	41

Note: * less than 0.5%
Source: 1978 Agricultural Census of Thailand and 1983 Intercensal Survey of Agriculture, NSO.

Under the intensification practice, inputs such as mechanical threshers, chemical fertilizers, insecticides, insecticide sprayers, etc., are needed due to both time limitation between crop seasons and the higher susceptibility to pests and diseases of the high-yield, non-photo period sensitive varieties of rice. The majority of agricultural land in the Northeastern region, on the other hand, is not only rain fed, but also has very high infiltration rates, i.e., a low water retaining capability, due to the highly porous soil. Chemical fertilizers, in most cases, if used, must be mixed with manure fertilizers to prevent fast leaching. This explains why the percentage of farm households using organic fertilizers, as well as those using both chemical and organic fertilizers, remain the highest over time in this region (Table 3.14) despite an overall decrease in the absolute number and percentage of households using organic fertilizers for the country as a whole (Tables 3.15 and 3.16). The poor soil quality may also partly explain the slow process of mechanization in rice production. Buffaloes and cattle are necessary to obtain the manure fertilizer. Buffaloes, in particular, provide draught power for land preparation, thereby reducing the demand for small powered tillers. Rice straws, on the other hand, are used as supplemental feeds for both buffaloes and cattle during the dry season when natural grass is scarce. The use of powered threshers which chop up rice straw in the process make it inappropriate as feed, thus remains low (Grisanaputi et al 1986). The basic issue of soil quality in the Northeast, in addition to raising the income level of agricultural households, may be the key to increasing the demand for small, powered tillers and threshers.

It is noteworthy that while the percentage of farm households using the various farm inputs has increased for almost all categories of farm inputs in all regions, the absolute number of households using many inputs such as hand pumps, seeders, fertilizer applicators, harvesters and organic fertilizers, actually decreased between 1978 and 1983 (Tables 3.15 and 3.16). The question immediately arises, in so far as demand for farm inputs is concerned, of whether the markets for farm inputs have become smaller over time. This, of course, could also be a result of a reduction in the number of total agricultural households. A comparison of the number of farm machines in working condition owned by

Table 3.15 Percent Change in Number of Household Using Farm Machine, Equipment and Other Inputs, 1978/83, by type, by Region

	C	NE	N	S	WK
4 wheel tractor	+16	+53	+24	+14	+26
2 wheel tractor	+74	+408	+409	+148	+188
Engine pump	+29	+39	+54	+71	+39
Wind powered pump	+127	+87	+308	+292	+151
Hand pump	-15	-2	-64	-76	-29
Engine seeder	-54	-6	-45	-39	-41
Manual seeder	-23	-28	-43	-67	-36
Fertilizer applicator	-27	-32	-48	-24	-38
Engine sprayer	+77	+4	-13	30	+42
Manual sprayer	+77	+178	+84	+251	+104
Harvester	+12	+4	-54	-23	-20
Tresher	+178	+109	+157	+1,673	+175
Grain cleaner	+10	+454	+50	+119	+38
Chemical fertilizer	+28	+39	+80	+80	+42
Organic fertilizer	-4	+38	-16	-64	-18
Both chemical and org.	+14	+57	+48	-6	+44
Pesticide	+38	+87	+53	+81	+59
% change in cultivated area receiving chemical fertilizer	+19	+6	+30	+108	+21

Source: Derived from 1978 Agricultural Census of Thailand and 1983 Intercensal Survey of Agriculture, NSO.

agricultural households, however, indicates that, except for 4-wheel tractors, all other categories showed a larger number of machines owned in 1983 than in 1978, i.e., the number of additional purchases of all but one category of farm machinery/equipment and inputs during the 5-year period was larger than the number being replaced. On the average, thus, the number of user-households per machine has decreased for 13 categories of farm inputs.

Given that the markets for farm machinery have not been shrinking over time, identifying the factors accounting for the difference between the number of households using farm machine and equipment and the number of machines in working condition which are owned could provide an important basis to increase the demand. The non-owner users and the current non-users may represent potential buyers of these products. If

Table 3.16 Number of Households Using Farm Machinery and Other Inputs, Number of Machines in Working Condition, User/machine Ratio

	Number of User			Number Working Machine			User/Machine		
	1978	1983	Change	1978	1983	%	1978	1983	%
Tractor									
4 wheel	955,694	1,208,945	26	95,386	77,324	-19	10.0	15.6	56
2 wheel	370,139	1,066,507	188	118,854	474,685	299	3.1	2.2	-29
Water Pump									
Engine	544,103	758,664	39	235,920	592,990	151	2.3	1.3	-43
Manual	62,143	43,956	-29	10,046	24,112	140	6.2	1.8	-78
Wind power	2,863	7,184	151	1,376	1,916	39	2.1	3.7	76
Seeders									
Engine	7,377	4,322	-41	2,473	3,452	40	3.0	1.2	-60
Manual	182,217	117,484	-36	23,076	53,512	132	7.9	2.2	-72
Fertilizer									
Applicator	7,370	4,576	-38	1,490	2,512	68	4.9	1.8	-63
Insecticide Sprayer									
Engine	99,650	141,978	42	39,225	102,401	161	2.5	1.4	-44
Manual	665,950	1,356,716	104	253,143	1,037,587	310	2.6	1.3	-50
Harvester	13,345	10,640	-20	2,812	8,113	188	4.7	1.3	-72
Tresher	216,310	594,371	175	28,229	35,643	26	7.7	16.7	117
Grain cleaner	483,475	666,258	38	141,387	175,883	24	3.4	3.8	12
Automobile/ truck	1,106,696	2,203,602	99	127,810	142,789	12	8.6	15.4	79
Motorcycle	242,190	354,513	46	101,479	289,508	185	2.4	1.2	-50
Boat									
Powered	56,149	60,996	9	24,200	38,059	57	2.3	1.6	-30
Non-powered	134,635	81,227	-40	96,656	102,216	6	1.4	0.8	-43
Pushcart	1,339,050	1,589,032	19	452,735	1,060,556	134	3.0	1.5	-50
Farm Truck	n.i.	313,954		n.i.	75,600		n.a.	4.1	n.a.
Fertilizers Used									
Chemical	989,557	1,404,131	42						
Organic	469,715	386,474	-18						
Both	798,275	1,149,201	44						
Pesticide	1,144,046	1,816,794	59						

Note: n.i. = no information
Source: 1978 Agricultural Census of Thailand and 1983 Intercensal Survey of Agriculture, NSO.

such potential demand exists one could begin to think of ways for such demand to be met. If it becomes a policy decision that production of farm machinery and equipment should be promoted in the provinces, special incentive schemes, working on both supply and demand factors, will be needed for present and/or new producers to establish their production plants in the region.

Many factors may contribute to the difference between the number of users and the number of machines in working condition (i.e., a proxy for the number of owners of farm machinery):

(1) One farm machine can often be used by more than one farm household, depending on the size and location of the land. Even at an overall higher level of average income for agricultural households, one would not expect the number of households using farm machinery and the number of households owning farm machines to be the same. It may remain cheaper for all users if the machine owners lease out the machine to other farmers after their own tasks are finished.

(2) The difference between the number of users and owners could also be the result of the high prices of most farm machines. This can be substantiated by the higher user/machine ratio associated with machines which are apparently more expensive, e.g., 4-wheel and large tractor, thresher, and truck (Table 3.16). This is consistent with the high rate of increase for relatively cheaper machines owned by farm households such as the two-wheel tractor and the manual insecticide sprayer. For households with a low cash income, renting a machine from a neighbor is still a cheaper option than buying one.

(3) The location of agricultural land may prevent some farmers from using the machine they would like to. The site may be a long distance away from the machine owners' resident or inaccessible, i.e., may involve travelling over other people's land. There is evidence that farmers whose land does not have direct access to the road, i.e., it is blocked by other land, have been forced to either grow the same crop or a crop with lighter weight than that grown by the farmers whose land he has to travel across (from interviews in the Sakaerat District, 1983).

The planting of the same crop implies a similar work schedule, from land preparation to harvest and trucking the product from the land. Quite often, lighter weight crops, such as corn, are grown on land with no road access because farmers whose land must be traversed refuse to let trucks carrying heavy products such as cassava cross their land.

These are only a few factors that may have kept both the level of demand for farm machinery in general and the quantity demanded low. It is likely that if prices of farm machinery drop significantly enough, many farmers who currently are either not using or are using but not owning farm machines may start buying their own. However, attempts to regulate prices may become a disincentive for investors and inevitably defeat the purpose of provincial industrialization. Raising the income of rural households as a means to increase and sustain demand for farm input, on the other hand, is a time-consuming process which is not to say that it should not be a priority policy. As an immediate and short term measure to generate demand for farm inputs, special credits for farm inputs purchase allowing farmers to pay in small allotments, tied in with the seasonal nature of their income, may be a viable answer. A review of existing farm assistance programs through organizations such as co-operatives of various kinds, the fertilizers purchasing group, etc. may prove useful both in understanding their mechanisms and in deciding whether a new organization is needed.

Information on regional distribution of farm machinery and equipment owned by agricultural household, as summarized in Table 3.17, could serve as a first approximation of the size of markets in each region. As expected, the Central Region represents the largest current market. Either the Southern or the Northeastern Region could also conceivably provide potentially sizable markets for these farm inputs, i.e., existing machinery and equipment owned by agricultural households in the South currently accounts for the smallest percentage of the total whereas the Northeast is known to have the largest percentage of the country's total population with only up to one third of all farm households currently using, and even fewer owning, any farm machinery (except trucks).

Table 3.17 Distribution of Farm Machine and Equipment Owned by Agricultural Household, by Region

	1978					1983				
	C	NE	N	S	WK	C	NE	N	S	WK
4 wheel tractor	42	19	35	4	100	56	11	31	2	100
2 wheel tractor	61	5	21	13	100	38	9	39	14	100
Engine pump	60	13	24	3	100	53	15	28	5	100
Hand pump	15	61	22	2	100	14	65	19	2	100
Wind powered pump	67	16	14	3	100	67	23	8	2	100
Engine seeder	54	17	26	3	100	32	43	21	4	100
Manual seeder	33	30	33	4	100	12	35	49	4	100
Fertilizer applicator	38	19	41	2	100	58	25	12	5	100
Engine sprayer	64	10	24	2	100	75	6	18	1	100
Manual sprayer	42	13	42	3	100	33	19	42	6	100
Harvester	17	46	34	3	100	26	47	24	3	100
Tresher	71	4	24	1	100	56	7	28	9	100
Grain cleaner	59	1	39	1	100	54	1	44	1	100
Automobile/truck	37	39	19	5	100	35	28	28	9	100
Motorcycle	40	12	25	23	100	34	12	15	39	100
Powered boat	84	4	5	7	100	84	1	4	11	100
Non-powered boat	78	7	9	6	100	73	10	9	8	100
Pushcart	19	46	31	4	100	17	47	26	20	100
Farm truck	ni	ni	ni	ni	ni	28	24	47	1	100

Sources: Derived from 1978 Agricultural Census of Thailand and 1983 Intercensal Survey of Agriculture, NSO.

The agricultural sector thus provides important backward linkages with the industrial sector through its demand for farm inputs. Its products represent forward, but non-industrial goods, linkages with the industrial sector in its provision of many raw materials, such as sugar cane for sugar factories, rice for rice mills, cassava for cassava mills, etc. These agricultural-product-based industries, often referred to as, agro-industries, include those producing for consumption and for other industrial production processes.

3.2.2 Industries as Intermediate Buyers

Discussion in the previous section dealt with backward linkages from the agricultural sector to the industrial sector where the latter's products are used as inputs in the former. They can also be viewed as

forward linkages from the manufacturing sector to the agricultural production sector. Many industrial producers obtain their inputs from, and sell their outputs to, other industrial producers in addition to obtaining unprocessed raw materials from the agricultural sector and selling their outputs to the consumers. In the process of industrial development, whether the number of these intermediate steps of transactions or linkages will increase or decrease depends in part on the stage of technological development and its complexity. When the final demand for a product facing an industry is adequately high and its production process can be divided into clear steps with easily enforced quality requirements, there is a tendency for some producers to become increasingly specialized in some steps, such as the final assembly, while subcontracting the production of other steps or parts to other industries. This is also more likely to take place if there is clearly economy of scale in the production of these steps or parts, i.e., one subcontractor can produce the same or similar parts for more than one factory or even more than one type of industry. Development can also take place in the opposite direction when an industry, previously could not afford to invest in all steps of the production due, for example, to the scale requirement, becomes stronger and could actually invest the undistributed profits in the expansion. In this case, production of parts used to be provided by subcontractors will be incorporated into the process if, of course, additional administrative costs are less than the reduction in the costs of previously required inventory.

The significance of provincial industries themselves as a source of demand for products by provincial industries can be inferred from the study by Chintayarangsan (1990). For example, the study reveals a much higher percentage of imported machinery used by the industries in the BMR (with the percentage tending to increase as the firm size increases) as compared to those located in the provinces. At the same time, a high demand for BMR originated machinery (produced in the BMR as well as imported from abroad by BMR firms) is also confirmed by a strong linkage from provincial industries to machinery suppliers in the BMR whereas situation does not occur vice versa. Only 23 percent of the total value of machinery used in the provincial industries has been produced outside the BMR (Chintayarangsan 1990: Table 2.1.4). On the other hand,

although both Bangkok-based and province-based "up-stream-resource-based-industries" (DURBI in Chintayarangsan's report) have a relatively high share of regional inputs in their total value of inputs (67 and 86 percent), the most important findings in terms of inter-mediate demand for products by the provincial industry sector is the relatively more significant role of provincial industries as the sources of intermediate demand for provincial industries. Essentially, his Table 2.1.2 shows that the "down-stream-resource-based industries" (DRBI) in Bangkok obtain only 17 percent of the value of their input from the provinces whereas the percentage share of regional input for the provincial DRBI is as high as 77 percent. (Chintayarangsan 1990: Tables 2.1.2 and 2.1.4). Caution must be exercised, however, in the interpretation of the figures on the share of regional inputs in the total value of inputs used by Bangkok DRBI's due to the extremely small sample size in this category although the same information for the regional DRBI can be used with relatively more confidence, due to the much larger sample size.

3.2.3 On Subcontracting.

Interviews with industrial establishments in the Northeast reveals certain degrees of subcontracting-like activities and the existence of intermediate demand for industrial products. Backward linkages between the provincial industries to the industries in the BMR, whereby the products of the BMR industries are used as inputs by the former, are the more prevalent form of relationships. For example, although most steel and plastic furniture is imported from major factories located in the BMR as semi-finished products requiring only relatively simple assembling methods or finishing, e.g., the standard steel file cabinets, work desks and chairs, almost all wooden furniture are made locally with materials, such as plywood, steel and iron bars, paint, etc., imported from the BMR. Similar patterns, under which materials are imported from the BMR are also found in the printing and clothing business as well as in the household textile furnishing production of items such as cushions, mosquito nets, mattresses and fishing nets. This very high degree of dependency on BMR-originated inputs can become a serious problem for provincial industries as will be discussed later.

Another form of production linkage that is found to be quite common in the Northeastern region is the direct subcontract between town-based enterprises and households in rural villages. Examples include the straw-filled cushions, popular as gift items among Thai and foreign tourists and local Northeastern buyers. The cushions come in many styles and are invariably covered with bright red, blue and green fabric with traditional Northeastern design trimmings or decorative patches. Also very popular are shoulder bags, hand bags, cotton shirts, dresses, cushion covers, etc., also decorated with traditional Northeastern design trimmings. Business enterprises in major towns such as Khon Kaen quite often engage village households in the production of these goods through arrangements under which all materials needed are delivered to the village and finished products picked up at regular schedule. The usual pattern is that practically a whole village, or a group of nearby villages, make the same item thus reducing the transaction costs for the town business and making it worth their while to be involved in setting up the arrangement. It is not uncommon that an area may be known for its specialization in particular types of subcontracting work. For example, some Yasothon villages have been quoted as possessing the best skills in making the straw-filled cushions while some other villages are known for their silk weaving. It is also possible that different groups of households within the same village or area produce the same type of goods for different business enterprises in town. Some of these village household groups actually have their own representatives to negotiate and bring in contracts from outside, sometimes from as far as the Middle East.

The two main categories of subcontracting arrangements are thus the arrangements between (a) industry and households, and (b) industry and industry. The Rural Industries and Employment Project survey results (see Table 3.18) show 64 sample firms engage in hiring households through subcontracting, 48 firms giving subcontract assignments to other industrial firms and 63 industrial firms accepting assignments through subcontracts from other industrial firms.

Table 3.18 Selected Indicators for Provincial Industries Involved in Subcontracting Arrangements

	Number	
	Non-BMR	Total
Industry-Household		
Firms Subcontracting Households	62	64
Industry-Industry		
Firms Subcontracting Other Firms	40	48
Firms Subcontracted by Other Firms	52	63
Firms Subcontracting Sample Firms	76	88
Firms Subcontracted by Sample Firms	186	260
Total Contact Points	416	523
Percent of Value of Subcontracts in 1987 Total Production		
Firms Subcontracting Households	18	
Firms Subcontracting Other Firms	60	
Firms Subcontracted by Other Firms	49	
Percent of Firms in Agriculture-based Industries in Total Subcontract Firms		
Firms Subcontracting Households	42	
Firms Subcontracting Other Firms	35	
Firms Subcontracted by Other Firms	26	

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

Additional information from the survey reveals that the 48 subcontracting firms among the 1,000 survey samples gave subcontracting work to 88 firms while the 63 subcontracted firms receive their assignments from a total of 260 firms. Any one firm could conceivably be, at the same time, both in the contracting and contracted positions. The significance of these number thus lies in its interpretation rather than the absolute number of firms involved. Essentially, there is a total of 523 subcontract points among the 1,000 samples surveyed. Of this total, 107 subcontract points reportedly involve BMR-based firms and the remaining 416 subcontract points are in provincial areas (also in Table 3.18).

The importance of subcontracting in terms of intermediate demand generation is quite clearly supported by its proportion in the total value of production in provincial industry. The firms were asked questions on the value of their production in 1987 and the value, or percentage, of subcontracted products in their total production, but not all of them responded to all questions. In examining the significance of the value of subcontracted production for the firms, only the firms which have provided both the value of their production and the value, or percentage, of the value of subcontracted production are included in the calculation of the percentage in Table 3.18. Fortunately, the majority (60-80 percent) of the firms responded to the questions on subcontract have provided the necessary data for the calculation.

It is noteworthy that although the value of production through household subcontracts only accounted for 18 percent of the contracting firms' total value of production in 1987, those hiring other industrial firms contracted out as much as 60 percent of the value of their total production during the same year. There is enough evidence to believe that most of the subcontracts were given to other provincial industries. The survey sample firms accepted subcontracts from other industries, on the other hand, have earned almost half (49%) of their 1987 total production value through subcontracts (Table 3.18), some of which are quite likely to have come from the BMR. What is still missing in this analysis, due to the lack of information, is the extent to which these industrial firms in the provinces received their subcontracts from the BMR-based industries.

The spread of the type of product involved in subcontracting, both for industry-household and industry-industry arrangements can provide useful information in planning provincial industrialization strategies. For example, a larger percentage of subcontracting points in the industry-household subcontract (42%) than that in the industry-industry ones (35% and 26%) are involved in agricultural-based products (Table 3.19). Information such as this reflects the availability of both resources and specialization, and when it is disaggregated by region, it may provide additional basis for a decision toward regional focus.

Table 3.19 Industry Category and Number of Provincial Firms Involved in Subcontracting Arrangements

Category of Product	Number of Firms		
	Subcontracting Households	Subcontracting Other Firms	Subcontracted by Other Firms
Tea/Tobacco Curing	4	0	0
Non-Food Grain Processing	4	1	3
Slaughter House	0	2	0
Dairy Products	0	1	0
Fruit/Vegetable Preservation	2	1	0
Fauna Preservation	0	0	1
Animal/Vegetable Oil	1	1	0
Food Grain Processing	2	2	0
Food from Flour	1	1	1
Sugar/Sweets	1	0	0
Coffee/Tea Roasting	0	1	1
Animal Feeds	0	1	0
Soft Drinks	1	0	0
Natural Fibers	3	2	3
Non-Clothing Textile Products	2	0	1
Knitting	0	1	0
Rope, Twine, Nets	0	1	0
Clothing	2	1	1
Wood Products, Furniture	9	2	6
Printing	1	1	1
Medicine Related	1	0	0
Fragrant Products	1	0	0
Tyres	0	0	1
Rubber Sheets	1	0	0
Plastic Accessory, Furniture	0	1	0
Ceramics, Pottery	2	1	1
Bricks	3	0	2
Cement Products, Plaster	9	1	2
Basic Metals	0	0	2
Metal Containers	2	0	0
Agri Machine & Repair	7	8	10
Machine Tool Shop	0	1	0
Other Machines	0	2	2
Electrical Tool/Machine Repair	0	0	2
Construction Fixture	0	0	1
Vehicle Parts	1	5	7
Vehicle Repair	1	1	1
Toys	0	1	0
Packaging	0	0	2
Gas, Nonnatural	0	0	1
% of Agro-based in Total Firms	42	35	26

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

The chains of subcontract activity tend to be longer, with more linkages, under the industry-industry arrangement than those under the industry-household arrangement. The latter usually involves a one-link relationship where households are contracted to make either finished or partially finished products from some town-based business/industry. Since one of the main objectives of this research is to identify means to increase the demand for provincial industrial products, including intermediate products, the information in Table 3.19 is thus useful in that it provides another interesting interpretation. For example, given the same 1,000 industrial firms surveyed by the Project, there are 61 subcontract points under the industry-household arrangement while the number of subcontract points under the industry-industry arrangement is recorded at 92. One important implication here is that policy measures leading to an increase in the number of subcontract points or the size of transaction at the existing subcontract points among the provincial industries are expected to raise the intermediate demand for products of provincial industries.

3.2.4 Other Related Factors.

Available information and existing literature all confirm the nature of most provincial industries to be rather predominantly dependent on local agriculture products as inputs. This may partly explain the limited development and growth of the provincial industry sector. In addition, there are other factors which further contribute to the difficulties facing provincial industries in trying to capture a larger share of the market, or even just to survive. A few examples related to the issue of demand are discussed here:

(1) Conditions under the current business tax legislations tend to discourage industry-industry subcontracting arrangements. In principle, products made under the "rab jang tham khong (specific hiring contracts) arrangements are subject to a lower business tax rate than products sold to the final users and should have generated more subcontracting among the industries. Also in principle, taxes already paid in the purchase of intermediate products to be used as inputs by the final product

manufacturers, such as parts for machinery and engine production, are allowed to be deducted as part of their production costs. In practice, however, interviews with industrial operators reveal that, under the current tax recording and reporting systems, it is impossible to substantiate, to the tax officials' satisfaction, the portion of intermediate inputs and costs that went into the final products. In fact, "they (tax officials) don't even bother to listen to you let alone look at your evidence," said one key informant. Consequently, any industries using intermediate products as their inputs are generally penalized by having to pay multiple sales tax, i.e., tax upon tax.

(2) Brand Familiarity and Local Competition. Nowadays, residents in the BMR no longer have to take distant trips to be able to taste the many well-known and well-liked foods traditionally made only in particular regions of the country, such as the famous sour pork-sausages (naem) from the North and the Northeast. However, this has not been a result of an expansion in the sales agent activities (one possible source of intermediate demand). Industries in the BMR have been producing many of these highly popular items using workers from those regions, and marketing them but their acceptance and popularity have not matched that for items originating from the regions. In principle, this locational preference by customers should have opened up opportunities for provincial producers to fill the market niche if the costs in delivering the products to wholesalers/distributors in markets outside their own region do not exceed the benefits. In practice, some provincial industries end up having to set up their own agent, i.e., primarily sales offices, in Bangkok to handle distribution in the BMR, and, in some cases, export. To carry out this mode of meeting the demand in the BMR and abroad, not only must the volume of sales be significant but also the original producers in the provinces must have the financial means to set it up - a relatively expensive investment considering the costs, especially of land, in Bangkok. Products of provincial industries such as preserved food and other handicraft items are sometimes sold in nearby provinces but only in main cities (i.e., the Muang district) where Bangkok-based buses travel through. However, they then face competition from local products, of similar quality, within those provinces. The similarity of the products thus often

prevents sales in any significant volume. Sales in more distant provinces as well as in other regions other than Bangkok are only through periodic and specific arrangements at festival or fair grounds.

(3) Transportation Costs. One of the major costs cited by provincial industries as a limiting factor in their expansion is the cost of transportation. Most of the time, because the market for their products has not been well-established, orders are thus periodic and deliveries cannot be by pre-set schedules but are only carried out upon receipt of order. Most of the public transportation systems runs on fixed schedules, more frequently between Bangkok and the provinces than between the provinces outside Bangkok, and do not provide a door-to-door pickup and delivery service. Therefore, various forms of private transportation services, both formally and informally recognized by law, must be used. Usually, the more informal the systems, the cheaper the charges but also the less assurance. Private business doing regular one-way delivery to, or pick-up from, the provinces will invariably accept cargo, and sometimes passengers, at a very low charge rather than travelling one of the ways with an empty truck. These truckers thus have effectively provided an unofficial link between some products in the provinces and their buyers in the BMR. Interviews with both industrial and trade enterprises in the provinces also reveal that these private, informal transportation systems, although much more popular than the public systems among those who know of the service, are quite scattered and obtainable mostly through personal contacts.

Transportation can become a serious obstacle for industries in the provinces relying on raw materials and inputs from distant sources such as Bangkok. The issue is especially critical when the input is small in quantity but essential in the production process because it may not be appropriate to be mailed through the postal system but it is too expensive to hire a vehicle just for that delivery. Private (often unlicensed) trucking services must be used. Quite often, producers in the province are left with no other choice except to wait their turn or wait for a truck to fill up. It is also common practice for regular customers to receive priority to the point that the smaller and/or newer customers' load is taken off a truck to make room for the "regulars."

Moreover, these informal delivery services cannot be held responsible to compensate for damages. In fact, key informants claim that even the damage compensations promised by the public transportation systems, except when whole ETO trucks are hired, do not bear any relationship to the value of the commodities being transferred, i.e., only a relatively small, fixed amounts subject to sufficient prood of responsibility can normally be claimed.

(4) Lack of Related Industries. The lack of related industries can also prevent a particular industry from developing in the provinces. An example in the Northeast is the leather tanning industry (mentioned in Section 2.3.1) which was perceived as a promising enterprise in Thailand's current export market in leather goods. It is not uncommon now to find leather shoes from Thailand in the stores in London or Honolulu. Interviews with Khon Kaen industrialists reveal strong interest by local investors in setting up a tanning factory but they could not carry out the idea. The main reason was the lack of modern standard slaughterhouses where cattle are slaughtered and skinned without damage to the hides. The application for setting up modern standard slaughterhouses in the Northeast was rejected by the government about 4-6 years prior to this study. Hides from existing methods of slaughtering from the region must be treated in salt and exported to tanning factories in Bangkok. They reportedly receive very low prices (about 30 baht per kilogram) as compared to those from the South (about 50-60 baht per kilogram) because those from the Northeast are "bruised" from the "old-fashioned" slaughtering and skinning methods and they are quite often torn in places in addition to not being properly preserved.

It is difficult to assess the potential for inter-industry demand for provincial industry products without intensive study specifically designed to address the issue. Chintayarangsan (1990), in recognition of such a difficulty, has chosen to put more focus on the issue of spatial linkages between BMR-based and regional industries, rather than on inter-industry linkages. To the extent that the backward linkages between the BMR industrial enterprises, mostly large-scale, and their provincial counterparts do provide a source of intermediate demand for the latter's products, spatial analysis of the origins of inputs can be

used to inferr about demand. Unfortunately, Chintayarangsan's study (1990) seems to indicate that the magnitude of such demand by BMR-based industries has not been significant.

3.3 THE ROLE FOR DOMESTIC GOVERNMENT PURCHASE IN THE PROCESS OF PROVINCIAL INDUSTRIALIZATION

In order to evaluate the potential role of government demand in the process of provincial industrialization, the type and magnitude of direct government purchase must be taken into account in addition to the purchasing procedures, on paper and in practice, which have been reviewed in the previous chapter. This section summarizes the detailed budget allocations, for the FY 1989, for supplies and equipment for central and provincial offices by type and by items of purchase. The treatment of supplies and equipment in this section follows the same scope defined in Section 2.3.2., i.e., the exclusion of allocations for land purchase, and construction, etc.

Due to time constraints, the detailed budget allocation for only one fiscal year (FY 1989) was reviewed. The limitation of an analysis of a one-year budget allocation quite obviously lies in that the allocations for any agency within a ministry for any one year are not representative of what it may receive in the following years or what it has received in the previous years. This is because not all offices receive a budget on all items they have requested, nor do they normally put in the same requests every year. Thus the allocation to any agency for the fiscal year reviewed must not be treated as being representative of its average annual allocation, i.e., it could be unusually high or low. From the overall budget analysis point of view, however, the relative shares of the allocation for major categories across the board such as office equipment, stationary, vehicles, furniture, etc., for all ministries together, are not expected to differ greatly from year to year. Thus, information on the annual allocation by major categories for FY 1984 to FY 1989, for example, shows a share of 29-30 percent for the category on salaries, wages and wages for the temporary employed, 10-12 percent for the category on supplies, remuneration and services

other than personal, and 12-14 percent for the category on equipment, land and construction (see Bureau of Budget 1984-1989). The relevant sub-categories of budget expenditure are those on (a) supplies, and (b) equipment. In order to obtain information on the types of products purchased by the government, every item under the "Supplies" and "Equipment" categories in the Budget Document in Details was reviewed and then categorized to arrive at the information in Table 3.20. (See details by category of supplies and equipment, by location and by ministry in Tables A3.5, A3.6)

Table 3.20 Distribution of Budget Allocation for Supplies and Equipment for Central and Provincial Offices, FY 1989

	Supplies	Equipment	Total
Value (Million baht)			
Central	1,286	1,050	2,226
Provincial	8,048	3,043	11,091
Total	9,334	4,093	13,427
Component Share (%)			
Central	72.56	27.44	100.00
Provincial	55.04	44.96	100.00
Total	69.51	30.49	100.00
Regional Share (%)			
Central	13.77	25.66	17.40
Provincial	86.23	74.34	82.60
Total	100.00	100.00	100.00

Source: Budget Allocation in Details, FY 1989, Bureau of the Budget, Office of the Prime Minister.

Although total annual allocations differ greatly among ministries, it is also expected that their relative shares which are tied to their functions do not. It is further assumed that the relative shares within any one ministry's budget allocations among the categories and between its central (usually located in Bangkok) and regional offices also tend to follow this pattern, i.e., they are rather constant over time. It is

under this latter set of assumptions that the following discussion will have useful meaning.

3.3.1 Working Definition for the Budget Analysis

For practical purposes which allow policy implications to be drawn, a set of working definitions and necessary analytical framework have been adopted in the analysis of the budget allocation, namely:

1. Details on budget allocation rather than actual expenditure are used in the analysis because the former is public knowledge available in published form, in a format that came closest to serving the purpose of the study. Information on actual detailed budget expenditure by item of purchase would give a more accurate picture but it may, on the other hand, be impossible to track down the sources where the industrial products were manufactured given the purchasing methods under which the products are usually purchased through retailers and/or sale representatives.

2. A budget allocation for any one item is classified for regional or central offices based on where it is expected to be used instead of where it is purchased from. There are two main reasons for this: (a) it is the magnitude of potential demand for supplies and equipment by government offices in the provinces outside the BMR that is of interest, and (b) a difference between where the item is actually purchased, as compared with the budget allocation in (a), will provide more accurate information on the potential demand, i.e., the additional demand to the amount currently being spent in the provinces. However, such information is not available, mentioned above, in a form which can be readily used in this analysis.

3. To obtain a picture of the range and breadth of the types of product purchased by the government, which in itself may be of interest to potential investors to start production in the provinces, items of purchase under the official categories often have to be reclassified to more accurately reflect the type of product based on the nature of those

products rather than on the stated purpose of the items. For example, a powered pump or a farm tractor for an agricultural college in Nakhon Rachasima listed under "education equipment" in the budget document is reclassified as "agricultural equipment" and video-cameras for a technical college are reclassified as "audio-visual equipment" instead of "education equipment" as listed in the budget documents.

4. When an item is clearly allocated to a particular provincial office, e.g., a set of living room furniture for the Pattani Marine Research Center, a drinking water cooler for the Khon Kaen Rice Research Station, etc., it is reported as such. However, when information on where items are to be used is not provided in the budget document, especially on allocation for office supplies, assumptions have to be made to obtain a ratio to divide up the budget allocated for that item between the central and regional offices. One of the bases used is the ratio between the number of central and regional offices listed for equipment purchase. Many items purchased by the Ministry of Education have also been classified based on the regional distribution of students. It has been suggested that the ratio between the number of government employees in Bangkok and those in the provinces be used because it will provide a more accurate picture of the relative weight and share of government activities. Information on the number of government employees by actual location of work is not only unavailable but is probably impossible to obtain considering how many of them at any one time may be "borrowed" or "on special or temporary assignment" without being officially transferred from their commanding offices.

5. The total value of allocations for supplies and equipment as appears in Tables 3.20, A3.5 and A3.6 and 3.25, is less than the actual sum of budget allocations to all the ministries for two reasons: (a) When a government agency is involved in activities such as hospitals, and various welfare activities which require the purchase of food, i.e., listed as "Food Supplies" in the budget documents, this whole item is excluded from the analysis under the assumption that almost all of the food is being purchased in or near the province where the agency is located and no longer represents the potential demand for that item, and, (b) budget allocations for certain ministries, such as the Foreign

Ministry whose whole budget is likely to be spent in Bangkok and abroad, are also excluded.

3.3.2 Findings and Implications

Information on budget allocation has been compiled for both central and regional/provincial government offices to obtain a relative picture. The value of supplies and equipment allocated for the offices in the provinces outside the BMR is, however, the main concern of this section. For FY 1989, budget allocations for supplies and equipment for the ministries reviewed accounted for about 13,427 million baht in absolute value or over 7 percent of the country's total allocation. Of this 13,427 million baht, 30 percent was allocated for equipment and the rest for supplies. Within the supplies category, the share allocated to the offices in provinces outside the BMR amounted to 86 percent at 8,048 million baht. The regional share in the equipment category accounted for 74 percent (or 3,043 million baht) in the total allocation (Table 3.20). Thus, for FY 1989, a total of 11,091 million baht worth of supplies and equipment purchased to be used in government offices outside the BMR around the country was approved. This information could have significant implications for investment considerations.

Details of allocations for provincial government offices by ministry and by major category of supplies and equipment are summarized in Table A3.5. For readers who may be interested in making comparisons, the same type of information for the Central offices in Bangkok is presented in Table A3.6. Among the 39 identifiable categories of supplies allocated for the government offices in the provinces, educational supplies for the Ministry of Education and pharmaceutical supplies for the Ministry of Public Health are the two largest allocations, accounting for about 37 percent of the value of total supplies for all the provincial offices (Table A3.5). These are also the Ministries which, by mandate, have offices in all provinces down to the district, and sometimes to the subdistrict, level, e.g., the tambon health stations under the Ministry of Public Health. Examples of other major categories of purchase by the government for all provincial

offices include construction supplies (1,931 million baht), fuel and lubricating oils (476 million), science and medical supplies (422 million), office supplies (385 million), agricultural supplies (318 million), and clothing and uniforms (254 million).

The total budget allocation for equipment purchase for provincial offices, although less than the budget allocation for supplies, i.e., 3,043 million baht as compared to 8,048 million baht, still represents a significant amount especially when distribution among categories of purchase is taken into account (Table A3.5). In FY 1989, approved purchases of the office equipment category included, for example, copying machines (77 million), typewriters (50 million), small desk calculators (3.4 million), and other office equipment (285 million). The furniture category was worth 156 million baht while the allocations for electrical equipment totalled 180 million in FY 1989. Audio-visual equipment which includes overhead projectors, slide projectors, cassette and video tape recorders, etc., added up to 34 million baht. Although information in Table A3.5, is far from being complete due to shortcoming in the methodology, it is enough to indicate the magnitude of demand for industrial products by government in the provinces. Without information as to the actual current proportion of purchase from provincial sources, it will not be possible to predict the additional demand by the government sector. Interviews conducted with purchasing personnel in government offices and industrial producers in the provinces seem to indicate that actual purchase from "local" sources for all items except food has been rather insignificant because, "the standard specifications for many items, can be better complied with by big producers in Bangkok," and, "just like buyers in general, government officers prefer goods imported from Bangkok, and if the goods are from abroad, they like them even better."

For strategic planning purpose, the information in Table 3.20 is broken down into allocations and the relative share by category for all central and provincial offices and presented in Table 3.21. This exercise should be carried out to cover more than one fiscal year in order to obtain the pattern of the relative share. This can be used as an indicator of what may be potentially viable products, in terms of

Table 3.21 Budget Allocations for Supplies and Equipment, by Type and Locations of Government Offices, FY 1989

	(Value) Thousand Baht			Share (%)	
	Central	Province	Total	Central	Prov
SUPPLIES					
Airport		16,195.0	16,195.0	0.0	100.0
Agriculture	13,479.0	318,120.6	331,599.6	4.1	95.9
Audio-Visual	14,361.8	2,224.8	16,586.6	86.6	13.4
Chemical	4,531.5	198,972.6	203,504.1	2.2	97.4
Communication	13,479.0	36,094.8	49,573.8	27.2	72.8
Computer	17,211.4	4,835.7	22,047.1	78.1	21.9
Construction	11,156.9	1,931,140.9	1,942,297.8	0.6	99.4
Dissemination	19,678.7	32,850.5	52,529.2	37.5	62.5
Drawing/Map/Photo	10,982.5	11,374.0	22,356.5	49.1	50.9
Education	92,639.0	1,312,759.3	1,405,398.3	6.6	93.4
Radio/Electrical	17,667.2	46,996.2	64,663.4	27.3	72.7
Evaluation	25,613.9	389.4	26,003.3	98.5	1.5
Extension/Exhibit	4,706.6	8,441.5	13,148.1	35.8	64.2
Forms/Reports	102,740.8	75,011.9	117,752.7	57.8	42.2
Fuel/Lubric Oil	44,108.8	476,180.1	520,288.9	8.5	91.5
Hospital Room	-	21,495.7	21,495.7	0.0	100.0
House Keeping	30,722.1	52,395.1	83,117.2	37.0	63.0
Laboratory	982.5	4,993.9	5,976.4	16.4	83.6
Library	15,399.4	3,062.5	18,461.9	83.4	16.6
Machinery	2,539.0	20,223.4	22,762.4	11.2	88.8
Signs/Labels	193.0	8,368.1	8,561.1	2.3	97.7
Nursery	0.0	19,263.7	19,263.7	0.0	100.0
Office	192,289.1	385,715.6	578,004.7	33.3	66.7
Packaging	3,121.6	630.0	3,751.6	83.2	16.8
Pharmaceutical	202,365.0	1,785,253.4	1,987,618.4	10.2	89.8
Printing	17,502.8	6,853.8	24,356.6	71.9	28.1
Research	6,581.1	4,001.6	10,582.7	62.2	37.8
Sample/Breeders	1,963.9	40,900.0	42,863.9	4.6	95.4
Safety/Firearms	9,383.7	95,531.9	104,915.6	8.9	91.1
Satellite	1,466.5	-	1,466.5	100.0	0.0
Student Exercise Book	5,144.7	16,669.6	21,814.3	23.6	76.4
Science/Medical	257,351.2	421,968.6	679,319.8	37.9	62.1
Tools, Parts	10,229.0	67,625.0	77,854.0	13.1	86.9
Sport/Music	8.0	2,153.3	2,161.3	0.4	99.6
Survey/Field	951.3	76,902.5	77,853.8	1.2	98.8
Training	51,397.4	60,998.5	112,395.9	45.7	54.3
Uniform/Clothing	49,738.4	253,799.8	303,538.2	16.4	83.6
Vehicle	31,943.9	226,600.1	258,544.0	12.4	87.6
Workshop	2,830.3	892.9	3,723.2	76.0	24.0
Total Supplies	1,285,614.6	8,047,886.1	9,333,500.7	13.8	86.2

Table 3.21 (Continued)

	(Value) Thousand Baht			Share (%)	
	Central	Province	Total	Central	Prov
EQUIPMENT					
Air Crafts	-	700.0	700.0	0.0	100.0
Air Conditioner	5,223.0	2,895.0	8,118.0	64.3	35.7
Agriculture	1,503.3	124,324.7	125,828.0	1.2	98.8
Audio-Visual	36,933.8	34,003.1	70,936.9	52.1	47.9
Boat, Small	85.0	2,353.0	2,438.0	3.5	96.5
Boat, Large	-	50,215.5	50,215.5	0.0	100.0
Car/Truck	95,098.0	355,425.6	450,523.6	21.1	78.9
Calculator, Desk	2,489.1	3,458.1	5,947.2	41.9	58.1
Cash Register	29.0	952.0	981.0	3.0	97.0
Radio/Communication	52,474.1	171,452.9	223,927.0	23.4	76.6
Computer	217,968.2	21,431.3	239,399.5	91.0	9.0
Construction	8,620.7	29,935.9	38,556.6	22.4	77.6
Cooler, Water	461.1	715.9	1,777.0	39.2	60.8
Copying Machine	24,503.5	77,094.7	101,598.2	24.1	75.9
Dissemination	110.0	2,518.0	2,628.0	4.2	95.8
Dummy	720.6	817.3	1,537.9	46.9	53.1
Education	11,785.9	163,598.4	175,384.3	6.7	93.3
Electrical	23,377.1	180,054.1	203,431.2	11.5	88.5
Fan, Electric	3,458.8	3,141.9	6,600.7	52.4	47.6
Firearms	-	2,272.0	2,272.0	0.0	100.0
Fixture	634.7	782.1	1,416.8	44.8	55.2
Floor Cleaning	247.0	1,364.0	1,611.0	15.3	84.7
Furniture	62,762.6	155,821.3	218,583.9	28.7	71.3
House Keeping	5,691.1	28,177.4	33,868.5	16.8	83.2
Lawn Mower	861.1	9,669.0	10,530.1	8.2	91.8
Library	18,400.3	701.1	19,101.4	96.3	3.7
Machinery	3,767.7	25,265.3	29,033.0	13.0	87.0
Measuring	5,472.5	19,361.7	24,834.2	22.0	78.0
Medical	147,126.4	493,886.4	641,012.8	23.0	77.0
Motorcycle	3,863.0	68,169.6	72,032.6	5.4	94.6
Office, Other	9,644.4	284,577.4	294,221.8	3.3	96.7
Oven/Burner	298.2	1,530.2	1,828.4	16.3	83.7
Refrigerator	2,051.4	13,097.5	15,148.9	13.5	86.5
Safety	6,254.4	8,716.1	14,970.5	41.5	58.2
Science	211,640.8	231,766.9	443,407.7	47.7	52.3
Sewing/Weaving	2,020.6	15,696.8	17,717.4	11.4	88.6
Small Equip, Parts	1,828.6	20,855.6	22,684.2	8.1	91.9
Sport/Music	5,561.9	43,086.8	48,648.7	11.4	88.6
Survey/Field	12,426.0	42,110.7	54,536.7	22.8	77.2
Textile Furnishing	94.5	1,527.5	1,622.0	5.8	94.2
Truck, Fire/Crane	-	11,950.0	11,950.0	0.0	100.0
Typewriter	18,735.2	49,646.0	68,381.2	27.4	72.6
Vacuum Cleaner	84.5	529.5	614.0	13.8	86.2
Vehicle, Special	-	132,590.0	132,590.0	0.0	100.0
Wheelbarrow	11.9	70.5	82.4	14.4	85.6
Workshop	45,994.0	156,600.8	202,594.8	22.7	77.3
Total Equipment	1,050,314.0	3,043,909.4	4,094,223.4	25.7	74.3

Source: Derived from Tables A3.5 and A3.6.

government demand, for provincial industries, should the government decide to use its purchasing as a tool to start the process of provincial industrialization. When more than 90 percent of the budget of a category of products is allocated and thus expected to be used in the provincial offices and they are not those which obviously need to be imported such as aircraft and some medical and science equipment, it could indicate such potential demand by the government. For example, potential categories for supplies include agricultural supplies, chemical supplies, the supplies for hospital rooms, education, construction, fuel and lubricating oils, labels and signs, nurseries, samples and breeders, supplies for sport and music, surveying and fieldwork, safety and firearms, etc. For equipment, the categories include agriculture, small boats, cash register machines, education, dissemination, lawn mowers, motorcycles, other office equipment, small equipment and spare parts, and textile furnishings (see Table 3.21 for further details).

Therefore, the size of government purchases of supplies and equipment for provincial offices and the small portion it currently acquires from the sources seems to imply a rather sizable demand which can be shifted to provincial markets. Even with the cumbersome and lengthy procedures local producers have to put up with, results from intensive interviews confirm that there is an expressed desire to do business with government offices because "they are slow but sure," i.e., "they may take a long time to pay but unlike individual buyers, government offices don't go bankrupt and they don't run away." Selling to government offices in the provincial areas is only possible, however, "if you have enough financial resources to wait for the payments."

In principle, the idea of using government purchase as a means to begin the process of provincial industrialization thus does not seem overly far-fetched. The success in meeting the objectives of employment and income generation in the provincial areas, however, relies not only on a change in legislation but also very much on how "provincial industrial products" are defined. If this is successfully carried out, the initial growth rate in provincial industries can be expected to be rather high but will quickly level off. Government purchase cannot, and

must not be expected to sustain the initial growth in the provincial industry sector especially since government purchases will still be limited to many non-personal items. Other policies which will increase the real income of the population must be implemented immediately in order to raise the effective demand for provincial products. It must also be recognized from the start that the initial growth in the provincial industry sector, through the shift in the sources from which government purchases are made, will be achieved at the expense of industries in other locations until the aggregate demand begins to rise. Should the decision be to take this path, the tradeoff between equity and efficiency in this context must be explicitly recognized and accepted so that the process will not be stopped as soon as production efficiency seems to suffer.

3.4 FOREIGN MARKETS

Literature on the sources of growth for industrial outputs confirms that domestic demand has contributed the largest percentage towards the overall growth of the sector between 1966 to 1978. (World Bank 1982 as summarized in Akrasanee 1987: Table 3). Export demand has taken first place in more recent period (1977-80) after having been the second most important source of growth until then. The contribution of import substitution, on the other hand, has gone from a significant one at 29 percent to a negative rate of -15 percent over the same period. Though export demand as a source of growth for the overall manufacturing sector has become the dominant factor, accounting for 70 percent of the overall growth, the implications for provincial industries are different. The export production ratios by industry for 1975 and 1980 (Akrasanee 1987: Table 4) reveal that industries associated with high values ratio are mostly located in the BMR.

Evidence from existing research on the subject of demand for rural industry products in other countries and information from the Rural Industries and Employment Project survey has also consistently confirmed that direct international markets for products of provincial industries in general are currently quite limited. In Chintayarangsan's (1990)

report, his calculation showed the exported portion of provincial industry product, based on the Project survey, to be around 5 percent of total production of sample firms in the provinces. The average export/production ratio for the 530 small to medium firms (employing no more than 49 persons) is less than 1 percent. Only five provincial industries (0.8 percent) of the survey samples (all very large scale firms employing more than 1,000 persons) export over half of their total production (Chintayarangsan 1990: Table 3.1). It is quite obvious that if the weighted sum of the percent of export in total production is used, the percentage of the portion exported by all the provincial industries together will be even smaller than 5 percent of their output. An initial implication here is, however, that there may be much room for development in the foreign market area and any success in increasing the portion of export by the provincial industries will result in a satisfactory and high rate of growth, given the small existing base.

Given the present situation, however, when the establishment and operation of industries in the provinces are still subject to many biases, as pointed out in other reports under the Rural Industries and Employment Project, e.g., Loha-unchit (1990), Charsombut (1990), Na Ranong (1990), and the fact that the majority of them are producing for domestic buyers, an immediate "full-scale," across the board export promotion of products by provincial industries would be premature. Moving from import substitution to export promotion is a long-term consideration and measures will be needed to work on both the supply and demand factors of the markets. The importance of foreign markets for a number of industrial products from the provinces is recognized but that is not enough to make export promotion an immediate priority in the early stage of the provincial industrialization process. Specific product identification and market development may be the more appropriate approach to generate demand in foreign markets for provincial industrial products. At the very least, on a general level, past foreign exchange policies which resulted in the overvaluation of the Thai currency, should be avoided in order not to reduce whatever natural tendency for export demand there may be.

By treating the overall provincial industry sector as an economy which is trying to grow, the provincial industrialization process may be viewed as one that will more or less follow the path that the national industrialization has followed earlier, i.e., begin the process by responding to the domestic demand from provincial and urban sources and graduate into a position where provincial industries can contribute more to the export of the country. However, the high economic growth rates indicate, and recent evidence that the relative importance of domestic demand as a source of growth for the overall manufacturing expansion has been surpassed by export demand confirms, that ground work to prepare provincial industries to participate in the export markets should be looked into and encouraged, without delay, in addition to making it possible for them to respond to domestic demand.

The idea of legally opening up or re-activating, more regional clearance ports for export, such as in the North and the Northeast, to facilitate direct export by medium to large scale provincial industries is worth studying and implementing. Interviews with local industrial producers in Khon Kaen and Nong Khai, for example, reveal that many of them were originally drawn from Bangkok to their present locations by the accessibility to markets in Laos where they had been doing business. Therefore, when the "border" was closed, they were so hard-hit that many went out of business. For example, the total sales of a clothing company interviewed reportedly dropped from about 10 million baht a year and growing, to less than one million baht a year. It took this particular company many years to slowly rebuild its sales up to its current levels which average about one to one and one half million baht a year. This company also had more than 30 employees on its regular payroll at any one time during the "good old days" of exporting to Laos. Less than 20 persons, with their own sewing machines, currently work there and are paid on a piece-rate basis. "If it was expensive before to produce in Bangkok and export them to the Northeastern provinces and Laos before I moved here, it is now even more expensive, if not impossible, to produce here with materials from Bangkok and then try to sell them in Bangkok," the owner said.

Table A3.1 Household Expenditure Elasticity for Selected Industrial Product Items, for the Periods 1975-1986, by Region and Areas

	North				Northeast				Central				South			
	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil
Cloth, Cotton	0.27	0.78	-2.49	0.44	-0.72	0.01	-4.83	-0.59	0.85	0.34	1.78	0.86	0.89	1.19	1.64	0.66
Cloth, Others	-0.04	-0.13	-1.00	0.17	-1.57	-0.64	-2.78	-1.31	-3.47	-1.99	-4.71	-3.69	-1.78	-0.55	-1.03	-2.04
Uniform, School	0.53	0.22	-0.26	0.70	0.83	0.53	-0.05	0.97	0.01	-0.67	0.72	-0.08	0.10	-0.41	0.02	0.17
Uniform, Others	1.10	0.05	-0.13	1.89	-0.46	-1.37	3.79	-1.12	-2.67	-0.81	0.50	-6.70	-0.27	0.19	0.03	-0.75
Suits and Sweaters	0.60	1.14	0.91	0.46	0.37	-0.29	1.14	0.36	-1.16	-1.26	0.45	-1.87	0.31	0.57	4.13	-0.18
T-Shirt	1.65	1.28	1.34	1.78	1.74	1.92	1.88	1.68	1.53	1.13	2.48	1.32	2.11	1.88	2.49	2.08
Pajama, Men's	1.94	2.02	0.00	1.02	4.04	0.61	3.51	6.34	0.57	-0.36	2.88	0.20	-1.20	-0.84	-0.55	0.00
Socks	1.32	1.37	1.26	1.33	0.02	0.89	-1.80	0.61	0.66	0.50	1.92	0.28	0.54	-0.18	0.82	0.69
Accessories	1.34	-0.78	-0.04	1.53	1.98	1.74	3.76	1.76	3.69	-2.02	0.96	4.24	3.34	-0.44	1.20	6.17
Pajama, Women's	2.57	2.17	4.32	2.43	1.88	-0.39	0.50	2.79	2.75	1.72	2.04	3.53	-0.25	-0.67	-2.37	0.00
Footwear, Men & Boys																
Shoes, Leather	-0.67	-0.36	-0.15	-0.81	-1.69	-0.64	0.74	-2.10	-0.84	-1.41	-2.43	-0.56	0.96	0.18	1.70	1.06
Shoes, Others	1.60	2.47	3.96	0.54	3.51	1.88	3.48	3.82	2.55	2.61	1.02	3.10	1.36	0.36	-0.98	2.29
Sneakers	1.47	1.24	1.37	1.51	1.36	1.42	2.40	1.22	1.34	2.13	1.51	1.20	1.40	1.35	1.75	1.34
Slippers, Leather	3.60	4.40	1.95	3.81	3.63	2.64	8.86	3.19	3.22	2.66	3.05	3.42	2.77	1.60	3.66	3.68
Slippers, Rubber	1.40	1.45	0.88	1.44	1.13	0.47	1.70	1.07	0.21	0.28	1.46	0.04	1.96	1.46	0.48	2.09
Footwear, Women & Girls																
Shoes, Leather	1.14	-0.01	0.71	1.75	0.44	0.04	1.13	0.65	0.68	0.30	0.79	0.74	0.56	0.05	0.51	0.74
Shoes, Others	1.09	0.36	0.16	1.70	0.82	-0.31	2.18	1.48	-1.08	1.24	-1.21	-2.08	0.15	-0.14	-0.74	0.77
Sneakers	2.33	2.36	1.75	2.45	0.62	1.42	3.29	-0.09	1.34	0.55	2.24	1.22	1.40	0.01	2.76	1.45
Slippers, Leather	1.48	1.82	1.31	1.42	1.34	0.18	1.72	1.69	1.84	1.27	1.99	1.95	1.55	0.77	1.95	1.80
Slippers, Rubbers	1.35	1.69	1.27	1.34	1.31	0.92	1.72	1.26	0.82	0.32	0.72	0.90	-1.25	0.20	1.22	-1.50
Building Materials	4.08	0.70	2.08	4.83	5.97	5.88	6.57	5.71	5.01	6.73	9.05	4.61	3.27	3.13	3.44	3.18
Paint, Wiring, Plumb	4.18	0.65	2.14	7.85	6.17	4.22	4.71	6.73	5.65	3.62	0.00	0.00	5.38	-2.06	0.00	0.00
Gas, Cooking	2.93	1.83	4.25	5.30	2.77	1.87	3.31	4.32	3.70	1.85	3.65	5.43	2.19	1.44	2.73	2.94
Kerosene	-0.89	-1.29	-2.38	-0.80	-0.64	-0.39	-3.32	-0.57	-1.65	-1.50	-2.13	-1.63	-0.43	-2.53	-0.89	-0.35
Batteries	-1.22	-0.78	-5.12	-0.25	-0.01	-1.13	-1.62	0.08	-0.63	-1.48	-1.04	-0.51	0.24	-1.23	-0.31	0.39
Matches and Candles	0.84	0.14	0.41	0.97	1.17	0.42	1.07	1.24	1.15	0.18	0.98	1.32	1.47	0.70	0.65	1.63
Light Bulbs	0.41	-2.37	0.97	4.54	2.88	0.25	2.17	4.73	3.32	0.71	0.82	4.46	2.41	1.54	0.38	5.83
Mosquito Net	-0.04	0.50	-0.57	-0.03	0.81	1.00	-0.34	0.85	-0.72	-0.64	-1.45	-0.58	1.41	-0.40	1.01	1.66
Sheet & Pillow Case	0.60	0.56	0.03	0.68	0.26	-0.79	-0.68	0.66	-0.16	-0.03	-0.39	-0.12	1.03	0.96	1.69	0.95
Blankets	-0.19	0.03	0.28	-0.27	0.15	-0.39	0.34	0.16	0.32	-1.06	-0.20	0.52	0.88	-1.06	1.13	6.00

Table A3.1 (Continued)

	North				Northeast				Central				South			
	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil
Towels & Wash Cloth	1.60	0.74	1.78	1.76	1.38	0.96	0.91	1.43	1.74	2.15	0.58	2.12	1.47	1.05	1.28	1.58
Mat	0.95	0.48	2.73	0.83	2.15	3.79	0.54	2.16	-1.02	-2.00	-2.46	-0.75	2.16	-0.59	4.30	2.12
Bedspread/Drapery	1.71	1.78	1.65	0.00	1.61	0.55	4.69	2.10	2.49	3.03	-1.01	0.00	0.82	-1.80	0.69	2.71
Glassware	0.86	-0.08	-0.08	1.12	-0.51	-0.10	-0.60	-0.47	-0.42	-0.19	-1.22	-0.11	1.67	1.22	2.19	1.74
Dish & Pottery	1.02	0.83	2.21	0.91	1.23	-0.35	1.36	1.23	-0.37	-0.12	0.29	-0.57	0.64	-0.46	0.84	0.73
Cutleries	-0.05	1.49	1.14	-0.43	-0.06	-0.16	0.49	-0.10	-1.04	-0.96	-0.35	-1.24	1.28	0.90	-0.06	1.42
Pots and Pans	0.37	-0.17	1.30	0.24	1.76	-0.12	4.86	1.53	0.79	-1.44	2.93	0.73	-0.71	0.89	-1.46	-1.17
Basin, Bucket, etc.	0.12	1.89	0.29	-0.15	0.24	2.17	0.64	0.15	-0.79	-2.87	-1.20	-0.37	-1.32	-1.23	-1.19	-1.13
Thermos	0.85	2.71	2.76	0.32	2.65	-2.88	3.25	3.33	0.71	1.28	-0.35	1.13	0.96	2.87	3.90	-0.17
Small Utensils	0.13	-2.22	1.74	0.38	2.57	-1.78	3.94	3.22	0.14	-2.00	-1.67	0.99	0.00	1.57	1.49	-0.39
Furniture	1.11	1.12	0.06	1.33	1.85	1.81	1.69	2.07	0.81	-0.04	1.69	0.72	0.47	0.29	-0.19	0.86
Mattress	-0.48	0.65	-1.01	-0.61	-0.49	0.55	1.77	-1.35	-0.40	-0.52	-1.46	-0.22	0.24	1.13	-1.05	0.29
Cooking Stove	4.19	1.34	5.12	0.00	2.47	2.72	4.88	1.24	0.48	-1.15	-1.40	2.29	0.08	1.88	-0.27	-0.26
Refrigerator	0.33	-1.56	0.36	1.73	-0.82	-0.02	-2.44	1.33	1.58	0.35	0.12	2.69	1.01	-0.24	0.51	2.30
Iron, Electric	0.22	-0.28	-2.15	1.02	1.26	2.84	-2.50	4.35	-0.51	-1.33	-0.54	-0.11	-0.28	-1.74	-0.87	0.92
Rice cooker, electri	4.24	0.89	3.66		3.01	1.30	0.40		0.35	-3.97	0.44	2.49	0.88	-0.20	-0.50	1.66
Fan, Electric	1.23	-1.92	-0.93	2.47	1.90	2.94	-0.80	3.22	-0.09	-1.50	-0.13	0.61	0.31	-1.44	-0.92	1.41
Sewing Machine	-3.82		-1.22	-4.61	-3.82	-1.15		-4.37	-3.81	0.00	0.00	-3.37	-2.12	0.18		-3.13
Soap & Flakes	-0.16	0.57	-1.36	-0.11	0.87	2.24	1.58	0.51	0.49	-0.63	-0.93	1.18	1.32	0.53	2.22	1.63
Detergent	1.16	0.96	1.03	1.21	1.14	0.64	0.78	1.29	1.35	1.00	1.42	1.41	1.19	1.11	1.02	1.25
Mop, Broom	1.52	0.93	1.58	1.59	1.28	0.94	0.87	1.50	0.88	0.94	0.78	0.93	0.62	0.09	0.65	0.84
Insecticide	1.64	1.90	1.39	1.50	0.74	2.38	0.02	0.31	1.34	1.31	1.13	1.40	2.41	2.68	2.49	2.18
Cleaning Supply, Oth	4.71	4.77		3.67	1.37	3.81		3.92	3.72	3.64	6.78	2.20	4.74	4.30		
Medicine & Supplies	0.49	0.62	0.12	0.52	0.26	0.50	-0.18	0.29	0.16	0.24	-0.13	0.23	0.23	0.17	0.20	0.25
Local Medicine	2.78	2.00	0.02	3.29	1.57	3.57	5.64	1.24	1.25	3.55	-0.62	1.89	0.82	0.94	1.37	0.72
Hair Cut	1.10	0.81	1.07	1.16	1.03	0.78	0.99	1.10	1.33	1.31	1.12	1.40	0.61	0.96	0.90	0.48
Hair Perm	0.86	1.27	1.34	0.73	0.68	0.65	0.69	0.75	0.57	0.86	0.85	0.46	1.61	1.02	1.44	1.91
Hair Set	1.35	0.88	1.25	2.75	0.31	0.23	1.52	0.78	1.99	1.88	2.07	1.74	1.69	1.35	1.63	2.28
Baht Soap	0.99	0.73	0.94	1.05	1.29	0.56	1.09	1.41	1.07	0.91	1.04	1.12	1.03	0.87	0.67	1.12
Toothpaste	-0.21	0.74	-3.11	1.00	1.12	0.55	0.94	1.26	1.14	0.76	1.14	1.22	1.20	0.92	0.96	1.32
Shampoo	1.76	1.61	2.00	1.77	2.23	1.35	2.09	2.38	2.08	1.91	2.03	2.15	2.09	1.83	2.01	2.16
Hair Cream	-0.90	0.25	0.45	-1.45	-1.61	-0.40	-1.38	-1.86	-0.74	-0.45	-0.16	-1.00	-1.62	-0.59	-1.17	-1.94
Lotions	1.28	2.19	2.13	0.23	-0.31	0.27	-0.44	-0.29	2.29	1.22	1.67	3.05	0.12	-0.63	0.78	0.27
Face Powder	1.35	1.43	1.79	1.28	1.35	0.73	1.01	1.50	1.35	1.69	1.30	1.32	1.32	1.57	1.24	1.26

Table A3.1 (Continued)

	North				Northeast				Central				South			
	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil	Region	Mun	SanD	Vil
Lipstick	1.99	2.75	3.56	1.34	0.60	0.68	-0.17	0.91	2.05	2.33	0.16	2.33	1.25	2.10	0.89	0.56
Other Cosmetics	0.58	0.75	0.39	0.53	0.59	1.38	1.89	0.20	0.79	1.64	0.72	0.53	0.56	0.88	1.05	0.19
Brushes	0.74	0.93	0.75	0.70	0.60	1.13	0.45	0.54	0.73	0.83	1.67	0.43	0.69	-0.51	0.23	1.29
Razor and Blade	1.32	1.19	1.21	1.38	1.54	1.24	0.54	1.82	1.05	0.61	2.04	0.83	0.56	0.65	0.16	0.62
Toilet Paper/Tissue	2.74	2.41	2.42	3.42	0.75	0.58	1.57	1.51	2.78	1.55	2.68	3.94	3.13	2.65	3.82	4.24
Sanitary Napkins	1.68	0.74	1.60	2.09	1.40	0.74	1.46	1.98	1.61	0.90	1.29	1.87	1.35	0.79	1.36	1.58
Vehicle Operation																
Oil & Lubricants	1.92	1.97	1.81	1.90	1.55	1.12	0.79	2.16	1.81	1.14	1.75	1.98	-4.93	1.73	0.49	-5.44
Maintenance/Repair	2.16	1.18	1.68	2.32	3.67	1.71	-0.61	6.39	0.51	1.41	0.18	0.45	0.73	2.17	0.72	0.45
Tyres/Batteries	3.82	3.77	3.35	3.96	2.39	3.20	2.54	2.24	3.68	2.64	3.51	4.11	3.03	2.46	2.75	3.26
Vehicle Purchase																
Automobile	2.46	-1.10	7.46	3.95	2.01	1.21	1.86	2.95	0.26	-0.15	-1.66	0.82	-0.83	-0.12	1.67	-1.00
Motorcycle	0.28	0.87	0.96	0.00	2.32	1.66	1.75	2.68	-0.56	-1.73	0.92	-0.88	1.04	0.15	1.13	1.20
Bicycle	-2.34	-0.30	-2.29	-2.90	0.40	-0.31	1.05	0.41	-1.66	-2.32	-0.56	-1.66	-0.64	-0.65	0.44	-0.76
Others	1.24	0.76	1.59	1.22	1.28	2.59	3.03	1.16	2.47	1.60	1.35	4.45	-4.09	-1.89	-2.04	-4.85
Stationeries/Supplie	1.55	0.45	2.70	1.85	1.96	1.80	1.98	2.09	0.17	1.55	2.69	-1.08	1.27	0.87	0.53	1.52
Children Toy	1.33	1.21	1.68	1.31	0.42	2.29	0.21	0.28	1.42	2.10	-0.07	1.89	1.97	1.01	0.92	2.79
Sport Equipment	4.76				1.43	-0.99			-0.16	-2.57	0.24	0.61	2.43	2.82	0.00	1.82
Record & Tapes	2.99	4.02	1.94	2.94	5.15	5.00	4.59		3.96	2.73	2.72	6.97	2.37	1.24		
Garden/Pet supplies	1.18	3.27	-1.72	1.31	-0.42	2.67	-1.24	-1.27	2.38	1.24	3.61	2.53	1.26	3.38	3.48	-0.35
Radio	-1.58	-3.27	-3.38	-0.93	-1.35	-3.82	-1.05	-1.20	-2.54	-2.18	-2.33	-2.83	-1.07	-0.86	-0.98	-1.10
Television Set	0.91	-0.69	0.30	1.85	2.58	3.83	2.63	2.52	1.32	0.23	-0.74	3.70	1.35	-0.02	1.78	2.00
Record Player, etc.	1.04	-2.63	-0.95	3.64	2.80	-1.31	1.51	6.33	0.15	-1.50	-0.69	1.59	-0.80	-1.75	-3.92	1.41
Music Instrument	6.34	4.11		7.72	11.84	11.15	11.42		4.36	6.33	4.64	3.93	3.19		2.00	1.93
Newspaper	1.04	0.76	0.32	1.89	0.28	0.59	0.49	0.30	1.58	1.00	1.10	2.25	1.18	1.26	0.91	1.36
Magazines	1.28	0.88	0.75	2.20	0.92	0.89	1.85	0.87	1.56	1.18	0.88	2.10	0.84	1.07	-0.07	0.98
Books	1.87	1.67	2.28	1.95	1.68	0.27	2.05	4.35	2.88	2.13	3.82	2.81	1.32	1.28	2.00	1.25
Joss Stick, etc.	0.84	0.67	0.94	0.86	0.02	-0.01	-0.71	0.15	-0.05	-0.33	1.20	-0.24	0.17	-0.45	0.55	0.59
School Fee	1.08	0.61	0.65	1.45	0.88	0.88	0.43	1.29	1.13	0.30	-0.20	2.41	1.22	0.79	0.88	1.74
Tuition	2.02	0.95	1.32	3.14	4.26	1.72	6.14	5.90	2.41	1.05	1.92	3.90	2.27	3.15	2.30	1.68
School Equipment	1.42	0.91	0.06	1.94	1.87	1.03	2.42	1.97	1.90	0.87	1.74	2.30	1.08	0.67	0.69	1.32
Text Book	0.92	0.54	0.62	1.06	1.54	0.85	0.83	1.90	1.32	0.47	1.23	1.58	1.22	0.63	1.05	1.43

Source: Calculated from Household Socio-Economic Surveys, 1975/76, and 1986, NSO.

Table A3.2 Household Expenditure Elasticity and Marginal Budget Share for Selected Industrial Commodities by Region, 1975-86

	North		Northeast		Central		South		Number of	Factor
	Elast	MBS	Elast	MBS	Elast	MBS	Elast	MBS	Province	Total
Milk, Cheese, Eggs	1.28	2.22	1.37	1.76	1.42	2.79	1.24	2.21	13	23
Oils, Fats	0.82	0.87	0.91	0.53	0.60	0.73	0.75	0.84	104	183
Spices, Coffee	1.01	1.27	0.73	0.82	1.26	1.90	0.84	1.53	35	420
Beverage, Non-Alcoholic	0.37	0.09	-0.60	-0.09	0.51	0.38	0.45	0.21	94	172
Beverage, Alcoholic	0.37	1.12	-0.60	1.11	0.51	1.94	0.45	1.15	0	45
Cigarettes	0.68	0.69	0.25	0.18	1.02	1.43	0.87	1.55		
Tobacco	-0.94	-0.21	-0.42	-0.23	0.71	0.13	0.16	0.07	14	23
Cloth, Cotton	0.27	0.00	-0.72	-0.01	0.85	0.01	0.89	0.01		
Cloth, Others	-0.04	0.00	-1.57	-0.05	-3.47	-0.09	-1.78	-0.07	41	764
Uniform, School	0.53	0.15	0.83	0.31	0.01	0.00	0.10	0.03		
Uniform, Others	1.10	0.06	-0.46	-0.03	-2.67	-0.09	-0.27	-0.01		
Suits and Sweaters	0.60	0.16	0.37	0.14	-1.16	-0.07	0.31	0.01		
T-Shirt	1.65	0.26	1.74	0.42	1.53	0.27	2.11	0.67		
Pajama, Men's	1.94	0.01	4.04	0.06	0.57	0.01	-1.20	0.00	19	1,342
Socks	1.32	0.05	0.02	0.00	0.66	0.02	0.54	0.02		
Accessories	1.34	0.12	1.98	0.15	3.69	0.71	3.34	0.33		
Slack, Women	1.37	0.77	1.04	0.44	-0.15	-0.05	0.06	0.02		
Sarong, Panung	-0.44	-0.18	-0.21	-0.12	-1.37	-0.35	6.99	5.72		
Pajama, Women's	2.57	0.08	1.88	0.03	2.75	0.12	-0.25	-0.01		
Footwear, Men & Boys	1.11	1.33	0.85	0.99	0.69	0.57	1.23	1.50	22	548
Shoes, Leather	-0.67	-0.07	-1.69	-0.16	-0.84	-0.08	0.96	0.18		
Shoes, Other	1.60	0.02	3.51	0.15	2.55	0.07	1.36	0.08		
Sneakers	1.47	0.42	1.36	0.36	1.34	0.26	1.40	0.39		
Slippers, Leather	3.60	0.25	3.63	0.09	3.22	0.23	2.77	0.19		
Slippers, Rubber	1.40	0.26	1.13	0.26	0.21	0.02	1.96	0.32	21	200
Footwear, Women & Girls	1.41	0.73	1.35	0.67	0.84	0.27	0.92	0.40		
Shoes, Leather	1.14	0.13	0.44	0.03	0.68	0.05	0.56	0.06		
Shoes, Others	1.09	0.03	0.82	0.02	-1.08	-0.01	0.15	0.00		
Sneakers	2.33	0.18	0.62	0.02	1.34	0.04	1.40	0.07		
Slippers, Leather	1.48	0.15	1.34	0.06	1.84	0.13	1.55	0.19		
Slippers, Rubbers	1.35	0.26	1.31	0.33	0.82	0.10	-1.25	-0.15		
Building Materials	4.08	9.87	5.97	23.69	5.01	9.91	3.27	5.31	1,474	1,758
Paint, Wiring, Plumb	4.18	2.79	6.17	3.38	5.65	0.28	5.38	1.07	10	125
Charcoal	0.69	0.78	1.52	1.80	0.49	0.48	1.38	1.56		
Wood, Fuel	1.24	0.94	1.53	1.50	1.03	0.49	0.16	0.10		

(Table A3.2 Continued)

	North		Northeast		Central		South		Number of	Factor
	Elast	MBS	Elast	MBS	Elast	MBS	Elast	MBS	Province	Total
Gas, Cooking	2.93	0.63	2.77	0.27	3.70	2.01	2.19	0.81	20	59
Kerosene	-0.89	-0.18	-0.64	-0.21	-1.65	-0.26	-0.43	-0.13		
Batteries	-1.22	-0.19	-0.01	0.00	-0.63	-0.08	0.24	0.03	22	55
Matches and Candles	0.84	0.09	1.17	0.14	1.15	0.12	1.47	0.26	9	41
Light Bulbs	0.41	0.04	2.88	0.27	3.32	0.33	2.41	0.18	0	25
Mosquito Net	-0.04	-0.01	0.81	0.36	-0.72	-0.16	1.41	0.36		
Sheet & Pillow Case	0.60	0.09	0.26	0.03	-0.16	-0.01	1.03	0.18	11	72
Blankets	-0.19	-0.07	0.15	0.04	0.32	0.05	0.88	0.20		
Towels & Wash Cloth	1.60	0.12	1.38	0.16	1.74	0.08	1.47	0.13		
Mat	0.95	0.10	2.15	0.43	-1.02	-0.05	2.16	0.23		
Mattress	-0.48	-0.02	-0.49	-0.01	-0.40	-0.01	0.24	0.01		
Bedspread/Drapery	1.71	0.03	1.61	0.02	2.49	0.02	0.82	0.01		
Glassware	0.86	0.03	-0.51	-0.01	-0.42	0.00	1.67	0.08	1	45
Dish & Pottery	1.02	0.23	1.23	0.45	-0.37	-0.04	0.64	0.17	199	263
Cutleries	-0.05	0.00	-0.06	0.00	-1.04	-0.02	1.28	0.05	24	85
Pots and Pans	0.37	0.01	1.76	0.04	0.79	0.02	-0.71	-0.01	53	1,082
Basin, Bucket, etc.	0.12	0.01	0.24	0.02	-0.79	-0.02	-1.32	-0.02	44	688
Thermos	0.85	0.02	2.65	0.08	0.71	0.02	0.96	0.02		
Small Utensils	0.13	0.01	2.57	0.21	0.14	0.00	0.00	0.00	53	1,082
Furniture	1.11	0.15	1.85	0.37	0.81	0.16	0.47	0.08	557	1,842
Cooking Stove	4.19	0.23	2.47	0.02	0.48	0.01	0.08	0.00		
Refrigerator	0.33	0.03	-0.82	-0.06	1.58	0.36	1.01	0.21	106	647
Iron, Electric	0.22	0.00	1.26	0.01	-0.51	0.00	-0.28	0.00		
Rice cooker, electric	4.24	0.14	3.01	0.05	0.35	0.01	0.88	0.02	0	35
Fan, Electric	1.23	0.03	1.90	0.05	-0.09	0.00	0.31	0.01		
Sewing Machine	-3.82	-0.03	-3.82	-0.03	-3.81	-0.06	-2.12	-0.04		
Soap & Flakes	-0.16	0.00	0.87	0.01	0.49	0.01	1.32	0.03		
Detergent	1.16	1.07	1.14	0.95	1.35	1.17	1.19	0.93	2	52
Mop, Broom	1.52	0.04	1.28	0.04	0.88	0.02	0.62	0.02		
Insecticide	1.64	0.05	0.74	0.02	1.34	0.09	2.41	0.11	1	7
Cleaning Supply, Others	4.71	0.06	1.37	0.01	3.72	0.04	4.74	0.03		
Medicine $ Supplies	0.49	0.53	0.26	0.30	0.16	0.17	0.23	0.19	46	332
Medical Care	0.74	2.75	1.00	3.83	0.51	1.81	0.44	1.50		
Local Medicine	2.78	0.25	1.57	0.12	1.25	0.15	0.82	0.12		
Hair Cut	1.10	0.37	1.03	0.27	1.33	0.52	0.61	0.22		
Hair Perm	0.86	0.10	0.68	0.05	0.57	0.07	1.61	0.14		
Hair Set	1.35	0.10	0.31	0.01	1.99	0.16	1.69	0.11		

(Table A3.2 Continued)

	North		Northeast		Central		South		Number of	Factor
	Elast	MBS	Elast	MBS	Elast	MBS	Elast	MBS	Province	Total
Bath Soap	0.99	0.45	1.29	0.71	1.07	0.48	1.03	0.49		
Toothpaste	-0.21	-0.10	1.12	0.51	1.14	0.54	1.20	0.50	0	11
Shampoo	1.76	0.73	2.23	0.83	2.08	0.81	2.09	0.74		
Hair Cream	-0.90	-0.03	-1.61	-0.05	-0.74	-0.04	-1.62	-0.03		
Lotions	1.28	0.02	-0.31	0.00	2.29	0.05	0.12	0.00		
Face Powder	1.35	0.41	1.35	0.39	1.35	0.42	1.32	0.46	4	74
Lipstick	1.99	0.06	0.60	0.01	2.05	0.05	1.25	0.02		
Other Cosmetics	0.58	0.03	0.59	0.05	0.79	0.04	0.56	0.03		
Brushes	0.74	0.02	0.60	0.02	0.73	0.02	0.69	0.02		
Razor and Blade	1.32	0.03	1.54	0.03	1.05	0.03	0.56	0.02		
Toilet Paper & Tissue	2.74	0.13	0.75	0.02	2.78	0.18	3.13	0.13		
Sanitary Napkins	1.68	0.30	1.40	0.11	1.61	0.33	1.35	0.27	5	33
Vehicle Operation	2.22	8.33	2.20	5.70	1.66	5.40	1.65	5.90		
Oil & Lubricants	1.92	0.44	1.55	0.22	1.81	0.34	-4.93	-0.93		
Maintenance & Repair	2.16	2.44	3.67	3.86	0.51	0.36	0.73	0.71		
Tyres/Batteries	3.82	0.89	2.39	0.34	3.68	0.76	3.08	0.52		
Vehicle Purchase	1.10	2.71	1.95	5.88	0.06	0.10	0.00	-0.01		
Automobile	2.46	3.07	2.01	3.71	0.26	0.33	-0.83	-0.62	661	1,533
Motorcycle	0.28	0.18	2.32	1.97	-0.56	-0.19	1.04	1.32		
Bicycle	-2.34	-0.09	0.40	-0.03	-1.66	-0.04	-0.64	-0.02	224	443
Others	1.24	0.67	1.28	0.30	2.47	0.15	-4.09	-0.03		
Stationeries/Supplies	1.55	0.02	1.96	0.03	0.17	0.00	0.02			
Children Toy	1.33	0.08	0.42	0.03	1.42	0.19	1.97	0.20		
Sport Equipment	4.76	0.04	1.43	0.01	-0.16	0.00	2.43	0.03	0	37
Record & Tapes	2.99	0.22	5.15	0.16	3.96	0.22	2.37	0.12		
Garden/Pet supplies	1.18	0.09	-0.42	-0.03	2.38	0.25	1.26	0.21		
Radio	-1.58	-0.04	-1.35	-0.04	-2.54	-0.05	-1.07	-0.04		
Television Set	0.91	0.38	2.58	0.86	1.32	0.46	1.35	0.43	5	65
Record Player, etc.	1.04	0.08	2.80	0.20	0.15	0.01	-0.80	-0.02		
Music Instrument	6.34	1.03	11.84	1.18	4.36	0.50	3.19	0.23		
Newspaper	1.04	0.14	0.28	0.03	1.58	0.23	1.18	0.18		
Magazines	1.28	0.06	0.92	0.04	1.56	0.08	0.84	0.05	79	1,426
Books	1.87	0.02	1.68	0.02	2.88	0.04	1.32	0.03		
Joss Stick, etc.	0.84	0.07	0.02	0.00	-0.05	-0.01	0.17	0.01		
School Fee	1.08	0.60	0.88	0.34	1.13	0.76	1.22	0.81		
Tuition	2.02	0.29	4.26	0.48	2.41	0.30	2.27	0.24		
School Equipment	1.42	0.27	1.87	0.50	1.90	0.42	1.08	0.24		
Text Book	0.92	0.28	1.54	0.55	1.32	0.42	1.22	0.41		

Source: Derived from Household Socio-Economic Survey Reports, NSO.

Table A3.3 Comparison of Expenditure Elasticity of Selected Industrial Products Purchased by Provincial Households, for the Periods 1975-81 and 1981-86, by Region

	North		Northeast		Central		South	
	75-81	81-86	75-81	81-86	75-81	81-86	75-81	81-86
Milk, Cheese, Eggs	0.80	3.72	0.75	4.89	1.17	2.89	1.11	2.03
Oils, Fats	0.63	1.80	-0.23	7.37	0.52	1.03	0.50	2.29
Spices, Coffee	0.54	3.43	0.10	4.33	0.89	3.45	0.74	1.40
Beverage, Non-Alcoholic	0.52	-0.39	-0.40	-1.73	0.49	0.60	0.94	-2.52
Beverage, Alcoholic	1.09	0.51	1.82	-2.15	1.11	3.40	1.52	-0.40
Cigarettes	1.10	-1.49	0.75	-2.56	1.20	-0.05	0.84	1.09
Cloth, Cotton	1.24	-4.75	0.32	-6.65	2.40	-8.13	2.63	-9.68
Cloth, Others	-1.11	5.45	-0.50	-7.66	-4.11	0.29	-1.99	-0.48
Uniform, School	0.21	2.17	0.93	0.24	-0.03	0.25	0.04	0.50
Uniform, Others	0.55	3.97	-0.07	-2.70	-1.34	-10.42	-0.91	3.58
Suits and Sweaters	0.33	1.97	-1.08	8.60	-1.21	-0.89	-0.76	6.77
T-Shirt	2.28	-1.63	1.26	4.52	1.34	2.62	2.00	2.79
Pajama, Men's	3.88	-8.10	2.89	10.52	1.84	-6.81	1.71	-18.83
Socks	0.82	3.87	-0.28	1.71	0.24	3.07	0.18	2.76
Accessories	2.11	-2.65	3.38	-5.97	2.15	12.68	4.54	-3.92
Pajama, Women's	2.57	2.52	0.34	-0.07	0.51	15.88	-1.54	7.60
Footwear, Men & Boys	0.89	2.25	0.42	3.26	0.54	1.55	1.23	1.29
Shoes, Leather	0.03	-4.25	-0.60	-7.90	-0.22	-4.47	1.27	-0.94
Shoes, Other	1.57	1.80	2.21	10.90	0.76	12.97	0.07	9.13
Sneakers	1.07	3.53	0.48	6.40	0.73	4.91	1.35	1.73
Slippers, Leather	2.80	7.74	1.66	14.87	2.11	9.67	1.54	10.23
Slippers, Rubber	1.28	2.00	1.03	1.69	-0.04	1.64	1.51	4.74
Footwear, Women & Girls	1.04	3.30	0.68	5.16	1.00	-0.05	1.20	-0.77
Shoes, Leather	0.88	2.49	0.62	-0.58	1.55	-4.42	1.23	-3.47
Shoes, Others	0.84	2.39	0.82	0.82	-0.79	-2.81	1.55	-8.29
Sneakers	1.77	5.21	0.59	0.78	2.22	3.78	1.64	0.06
Slippers, Leather	0.71	5.48	-0.78	13.40	1.51	3.77	0.87	5.64
Slippers, Rubbers	1.17	2.29	0.92	3.52	0.34	3.62	-1.41	-0.28
Building Materials	4.62	1.31	5.93	6.22	5.82	0.27	3.89	-0.48
Paint, Wiring, Plumb	5.56	-2.90	6.06	6.78	12.72	-35.57	7.13	-5.22
Gas, Cooking	2.05	7.44	2.43	4.71	2.81	8.92	1.22	8.09
Kerosene	0.24	-6.73	0.76	-8.59	-0.32	-9.40	0.86	-8.26
Batteries	-0.86	-3.12	0.83	-4.81	0.47	-7.00	1.26	-5.91

(Table A3.3 Continued)

	North		Northeast		Central		South	
	75-81	81-86	75-81	81-86	75-81	81-86	75-81	81-86
Matches and Candles	0.79	1.09	0.73	3.66	1.14	1.18	1.07	3.92
Light Bulbs	-0.74	6.36	3.64	-1.40	4.16	-8.41	2.89	-0.54
Mosquito Net	0.57	-3.19	0.71	1.41	0.12	-5.66	1.21	2.58
Sheet & Pillow Case	0.73	-0.06	1.62	-7.50	0.62	-4.69	1.08	0.73
Blankets	0.79	-5.25	0.45	-1.56	0.89	-3.03	1.69	-4.03
Towels & Wash Cloth	1.72	0.93	0.42	6.82	1.79	1.42	1.27	2.67
Mat	2.78	-8.49	3.62	-6.27	2.53	-21.68	3.55	-6.25
Bedspread/Drapery	2.79	-3.89	0.81	6.17	4.98	-11.99	2.43	-8.91
Glassware	1.11	-0.41	0.14	-4.21	2.81	-19.26	1.50	2.73
Dish & Pottery	1.28	-0.35	0.86	3.31	1.95	-13.88	1.59	-5.16
Cutleries	0.25	-1.62	0.35	-2.38	1.37	-15.10	2.11	-3.71
Pots and Pans	2.18	-8.98	1.64	2.44	2.05	-6.55	2.03	-17.28
Basin, Bucket, etc.	1.87	-8.89	0.79	-2.91	-0.13	-4.64	0.52	-12.41
Thermos	1.90	-4.62	1.91	6.85	1.93	-6.38	1.31	-1.20
Small Utensils	1.36	-6.25	2.27	4.29	4.78	-26.90	2.07	-12.56
Furniture	1.16	0.84	1.39	4.48	1.50	-3.23	1.10	-3.39
Mattress	-0.40	-0.90	0.07	-3.68	0.23	-4.08	-0.42	4.28
Cooking Stove	3.68	6.84	2.19	4.05	1.39	-4.84	1.29	-7.26
Refrigerator	1.45	-5.43	0.45	-8.04	0.99	4.98	1.37	-1.18
Iron, Electric	1.59	-6.84	-0.70	12.38	0.43	-5.99	-0.67	2.08
Rice cooker, electric	4.74	1.64	3.73	-1.05	2.88	-14.38	0.97	0.32
Fan, Electric	2.12	-3.39	2.14	0.54	1.85	-11.39	-1.49	11.22
Sewing Machine	-1.58	-15.40	0.64	-29.24	-3.05	-8.25	0.76	-19.53
Soap & Flakes	0.39	-3.01	-0.78	10.26	1.33	-4.39	-0.48	12.26
Detergent	0.60	4.05	0.59	4.29	0.77	4.71	0.67	4.37
Mop, Broom	1.60	1.10	1.49	0.12	0.48	3.20	0.79	-0.44
Insecticide	2.20	-1.27	1.03	-0.89	0.98	3.46	1.75	6.40
Cleaning Supply, Others	4.83	4.09	2.45	-4.80	4.25	0.64	5.56	-0.17
Medicine & Supplies	0.39	1.01	0.56	-1.43	0.26	-0.42	0.54	-1.62
Local Medicine	3.11	1.12	1.75	0.54	1.29	1.04	0.52	2.62
Hair Cut	0.72	3.05	0.80	2.31	0.84	4.17	0.21	2.99
Hair Perm	0.41	3.19	-0.59	7.92	-0.30	5.65	1.28	3.59
Hair Set	1.39	1.11	0.86	-2.82	1.51	4.78	1.29	4.15
Bath Soap	0.77	2.14	0.94	3.31	0.64	3.61	0.79	2.50
Toothpaste	-1.04	4.06	0.49	4.74	0.42	5.33	0.61	4.76
Shampoo	1.30	4.14	1.76	4.96	1.37	6.23	1.56	5.29

(Table A3.3 Continued)

	North		Northeast		Central		South	
	75-81	81-86	75-81	81-86	75-81	81-86	75-81	81-86
Lotions	2.31	-4.06	-0.16	-1.16	2.42	1.54	0.59	-2.72
Face Powder	0.86	3.85	0.60	5.62	0.65	5.44	0.97	3.42
Lipstick	1.61	3.98	-0.50	6.91	1.58	4.82	1.80	-2.08
Other Cosmetics	1.52	-4.25	0.47	1.30	0.54	2.26	0.04	3.68
Brushes	0.15	3.79	-0.06	4.36	0.43	2.47	0.03	4.67
Razor and Blade	1.56	0.10	1.05	4.36	0.98	1.47	0.52	0.85
Toilet Paper & Tissue	1.90	7.10	0.73	0.83	2.86	2.31	2.55	6.59
Sanitary Napkins	1.16	4.34	0.74	5.16	0.94	5.49	0.69	5.30
Vehicle Operation	1.46	6.15	1.34	7.15	0.96	5.79	1.39	3.23
Oil & Lubricants	0.74	8.01	0.40	8.11	0.64	8.60	-6.51	4.64
Maintenance & Repair	0.46	10.97	2.11	12.54	-0.54	6.62	0.29	3.42
Tyres/Batteries	1.28	16.97	0.67	12.16	0.09	24.59	1.97	9.41
Vehicle Purchase	1.76	-2.29	1.26	5.85	-0.87	5.49	-0.18	1.09
Automobile	3.48	-2.85	-0.20	14.60	-3.16	20.19	-1.41	2.68
Motorcycle	1.30	-4.98	3.26	-3.05	0.41	-6.22	0.48	4.40
Bicycle	-0.74	-10.52	1.31	-4.97	1.34	-19.31	3.27	-24.30
Others	0.08	7.25	-0.37	10.71	4.91	-11.72	1.32	-36.84
Stationeries/Supplies	1.33	2.69	0.54	10.00	0.42	-1.25	-0.78	13.67
Children Toy	1.73	-0.73	0.57	-0.42	0.12	8.99	1.53	4.61
Sport Equipment	4.74	4.84	3.19	-8.64	0.54	-4.20	1.65	7.13
Record & Tapes	2.43	5.89	3.78	12.93	3.47	6.86	2.29	2.87
Garden/Pet supplies	-1.20	13.50	-1.01	2.97	2.19	3.49	-0.36	11.07
Radio	0.06	-10.06	-0.01	-9.00	-0.88	-12.26	0.43	-10.12
Television Set	1.69	-3.11	3.93	-5.13	2.98	-8.32	1.63	-0.36
Record Player, etc.	0.58	3.39	1.62	9.52	0.79	-3.57	0.93	-11.26
Music Instrument	5.75	9.42	12.96	5.48	5.83	-4.21	1.88	11.17
Newspaper	1.08	0.82	0.06	1.54	1.84	0.06	1.21	1.01
Magazines	1.29	1.21	0.46	3.58	1.88	-0.31	0.63	2.10
Books	3.38	-5.98	1.05	5.26	2.46	5.34	-0.66	13.32
Joss Stick, etc.	0.75	1.31	-0.40	2.40	-0.69	3.72	-0.17	2.23
School Fee	0.46	4.27	0.07	5.50	0.05	7.44	0.84	3.51
Tuition	1.11	6.74	2.93	11.85	1.95	5.07	1.19	8.80
School Equipment	1.02	3.47	1.70	2.85	1.39	4.87	0.36	5.42
Text Book	0.72	1.92	1.12	3.89	1.21	1.95	1.43	-0.11

Source: Derived from Household Socio-Economic Surveys, NSO

Table A3.4 Comparison of Expenditure Elasticity and Marginal Budget Share for Selected Industrial Products by Municipal and Village Households Outside the GBA for the Periods 1975-1986, by Region and Areas

	North				Northeast				Central				South			
	Elasticity		MBS		Elasticity		MBS		Elasticity		MBS		Elasticity		MBS	
	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil
Meat & Poultry	0.46	0.88	2.61	6.93	0.24	1.13	1.28	7.89	0.36	1.32	1.63	8.57	0.48	1.24	1.98	6.50
Milk, Cheese, Eggs	1.23	1.25	2.64	2.08	0.80	1.59	1.44	1.85	1.15	1.56	2.23	3.08	1.11	1.32	2.24	2.22
Oils and Fats	0.42	0.84	0.30	0.96	0.49	1.07	0.30	0.62	0.30	0.65	0.22	0.87	0.24	0.88	0.16	1.11
Spice, Coffee, etc.	1.55	0.88	2.52	1.03	1.35	0.66	1.74	0.72	1.42	1.18	1.76	1.84	0.84	0.82	0.98	1.63
Beverage, Alcoholic	0.94	0.96	1.00	1.11	1.35	1.21	1.61	1.04	1.67	1.33	2.11	1.88	2.10	0.97	2.43	0.79
Cigarettes	0.59	0.78	0.86	0.66	0.26	0.78	0.38	0.43	0.67	1.12	1.12	1.43	0.51	1.11	1.09	1.85
Cloth, Cotton	0.78	0.44	0.78	0.44	0.01	-0.59	0.01	-0.59	0.34	0.86	0.34	0.86	1.19	0.66	1.19	0.66
Cloth, Other	-0.13	0.17	-0.13	0.17	-0.64	-1.31	-0.64	-1.31	-1.99	-3.69	-1.99	-3.69	-0.55	-2.04	-0.55	-1.03
Uniform, School	0.22	0.70	0.22	0.70	0.53	0.97	0.53	0.97	-0.67	-0.08	-0.67	-0.08	-0.41	0.17	-0.41	0.17
Uniform, Other	0.05	1.89	0.05	1.89	-1.37	-1.12	-1.37	-1.12	-0.81	-6.70	-0.81	-6.70	0.19	-0.75	0.19	-0.75
Shirt, Dress	0.20	0.36	0.06	0.21	0.18	-0.47	0.05	-0.23	-0.37	-0.49	-0.12	-0.22	0.29	2.70	0.08	1.60
Shirt, Other	1.15	2.33	0.10	0.32	2.28	1.18	0.48	0.16	1.88	1.91	0.12	0.11	0.49	0.94	0.05	0.13
T-Shirt	1.28	1.78	0.23	0.29	1.92	1.68	0.58	0.38	1.13	1.32	0.28	0.19	1.88	2.08	0.48	0.69
Pajama, Men's	2.02	1.02	0.04	0.00	0.61	6.34	0.00	0.09	-0.36	0.20	0.00	0.00	-0.84	0.00	-0.01	0.00
Socks	1.37	1.33	0.07	0.04	0.89	0.61	0.04	0.01	0.50	0.28	0.02	0.07	-0.18	0.69	-0.01	0.03
Accessories	-0.78	1.53	-0.01	0.17	1.74	1.76	0.10	0.13	-2.02	4.24	-0.01	1.17	-0.44	6.17	-0.01	0.05
Slacks, Women	0.78	1.56	0.24	1.00	0.69	1.21	0.20	0.56	-0.44	-0.16	-0.14	-0.06	0.27	0.05	0.05	0.02
Blouse	1.30	0.60	0.50	0.42	0.69	0.40	0.27	0.27	0.22	0.25	0.09	0.15	1.31	2.12	0.43	1.51
Dress, Skirts	2.10	0.10	0.87	0.01	1.02	-0.66	0.47	-0.03	0.22	2.68	0.06	0.22	0.39	-2.22	0.12	-0.20
Pajama, Women's	2.17	2.43	0.15	0.05	-0.39	2.79	0.00	0.05	1.72	3.53	0.12	0.14	-0.67	0.00	-0.03	0.00
Footwear, Men & Boys	0.70	0.94	0.77	1.50	0.71	0.38	1.61	0.69	0.53	0.53	0.44	0.59	0.83	1.54	0.52	1.82
Shoes, Leather	-0.36	-0.81	-0.06	-0.08	-0.64	-2.10	-0.06	-0.16	-1.41	-0.56	-0.13	-0.07	0.18	1.06	0.03	0.22
Shoes, Others	2.47	0.54	0.08	0.00	1.88	3.82	0.08	0.17	2.61	3.10	0.10	0.08	0.36	2.29	0.02	0.15
Sneakers	1.24	1.51	0.17	0.48	1.42	1.22	0.35	0.32	2.13	1.20	0.40	0.24	1.35	1.34	0.26	0.40
Slippers, Leather	4.40	3.81	0.40	0.27	2.64	3.19	0.19	0.05	2.66	3.42	0.21	0.23	1.60	3.68	0.19	0.23
Slippers, Rubber	1.45	1.44	0.09	0.32	0.47	1.07	0.02	0.28	0.28	0.04	0.01	0.01	1.46	2.09	0.08	0.43
Footwear, Women & Gi	0.92	1.58	0.43	0.84	1.57	1.09	1.35	0.45	0.62	0.86	0.19	0.27	0.26	1.08	0.08	0.49
Shoes, Leather	-0.01	1.75	0.00	0.20	0.04	0.65	0.01	0.03	0.30	0.74	0.04	0.05	0.05	0.74	0.00	0.09
Shoes, Others	0.36	1.70	0.02	0.05	-0.31	1.48	-0.01	0.02	1.24	-2.08	0.04	-0.02	-0.14	0.77	-0.01	0.02

(Table A3.4 Continued)

	North				Northeast				Central				South			
	Elasticity		MBS		Elasticity		MBS		Elasticity		MBS		Elasticity		MBS	
	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil
Sneakers	2.36	2.45	0.18	0.19	1.42	-0.09	0.07	0.00	0.55	1.22	0.01	0.04	0.01	1.45	0.00	0.08
Slippers, Leather	1.82	1.42	0.24	0.13	0.18	1.69	0.01	0.07	1.27	1.95	0.11	0.14	0.77	1.80	0.09	0.21
Slippers, Rubbers	1.69	1.34	0.14	0.29	0.92	1.26	0.08	0.35	0.32	0.90	0.02	0.13	0.20	-1.50	0.01	-0.21
Building Macerials	0.70	4.83	0.12	14.57	5.88	5.71	6.70	26.85	6.73	4.61	4.98	9.76	3.13	3.18	2.15	6.12
Paint, Wiring, Plumb	0.65	7.85	0.16	6.24	4.22	6.73	0.82	4.06	3.62	0.00	0.53	0.00	-2.06	0.00	-0.02	0.00
Gas, Cooking	1.83	5.30	1.11	0.69	1.87	4.32	0.68	0.21	1.85	5.43	1.63	2.31	1.44	2.94	0.93	0.81
Charcoal	-0.42	0.76	-0.19	0.97	0.40	1.83	0.32	0.26	-0.15	0.60	-0.08	0.69	-0.25	1.77	-0.13	2.37
Kerosene	-1.29	-0.80	-0.02	-0.21	-0.39	-0.57	-0.01	-0.23	-1.50	-1.63	-0.03	-0.34	-2.53	-0.35	-0.05	-0.14
Batteries	-0.78	-0.25	-0.02	-0.05	-1.13	0.08	-0.02	0.02	-1.48	-0.51	-0.03	-0.09	-1.23	0.39	-0.02	0.06
Matches and Candles	0.14	0.97	0.01	0.12	0.42	1.24	0.02	0.16	0.18	1.32	0.01	0.16	0.70	1.63	0.05	0.35
Light Bulbs	-2.37	4.54	-0.19	0.46	0.25	4.73	0.02	0.43	0.71	4.46	0.07	0.62	1.54	5.83	0.11	0.42
Other Fuels/Light	-0.58	3.80	0.00	1.07	0.94	1.45	0.04	0.28	-1.32	-0.35	-0.01	-0.05	0.94	-0.47	0.04	-0.02
Mosquito Net	0.50	-0.03	0.07	-0.01	1.00	0.85	0.19	0.42	-0.64	-0.58	-0.04	-0.16	-0.40	1.66	-0.03	0.51
Sheet & Pillow Case	0.56	0.68	0.06	0.11	-0.79	0.66	-0.06	0.08	-0.03	-0.12	0.00	-0.01	0.96	0.95	0.17	0.16
Blankets	0.03	-0.27	0.00	-0.11	-0.39	0.16	-0.04	0.05	-1.06	0.52	-0.09	0.25	-1.06	6.00	-0.04	0.27
Towels & Wash Cloth	0.74	1.76	0.05	0.15	0.96	1.43	0.07	0.18	2.15	2.12	0.13	0.10	1.05	1.58	0.13	0.15
Mat	0.48	0.83	0.01	0.10	3.79	2.16	0.19	0.51	-2.00	-0.75	-0.02	-0.05	-0.59	2.12	0.00	0.30
Bedspread/Drapery	1.78	0.00	0.16	0.00	0.55	2.10	0.02	0.01	3.03	0.00	0.10	0.00	-1.80	2.71	-0.01	0.02
Other Textile Furnis	-0.70	1.28	-0.01	0.03	-1.80	1.97	-0.01	0.11	1.46	2.04	0.01	0.07	2.80	0.73	0.12	0.03
Glassware	-0.08	1.12	0.00	0.04	-0.10	-0.47	0.00	-0.01	-0.19	-0.11	0.00	0.00	1.22	1.74	0.06	0.09
Dish & Pottery	0.83	0.91	0.11	0.22	-0.35	1.23	-0.01	0.50	-0.12	-0.57	-0.01	-0.07	-0.46	0.73	-0.04	0.23
Cutleries	1.49	-0.43	0.05	-0.01	-0.16	-0.10	0.00	0.00	-0.96	-1.24	-0.01	-0.02	0.90	1.42	0.02	0.07
Pots and Pans	-0.17	0.24	0.00	0.00	-0.12	1.53	0.00	0.04	-1.44	0.73	-0.01	0.02	0.89	-1.17	0.01	-0.01
Basin, Bucket, etc.	1.89	-0.15	0.10	-0.01	2.17	0.15	0.04	0.01	-2.87	-0.37	-0.03	-0.01	-1.23	-1.13	-0.01	-0.01
Thermos	2.71	0.32	0.13	0.01	-2.88	3.33	-0.01	0.11	1.28	1.13	0.03	0.03	2.87	-0.17	0.12	0.00
Small Utensils	-2.22	0.38	-0.04	0.02	-1.78	3.22	-0.03	0.30	-2.00	0.99	-0.01	0.02	1.57	-0.39	0.05	-0.01
Furniture	1.12	1.33	0.19	0.19	1.81	2.07	0.77	0.32	-0.04	0.72	-0.01	0.12	0.29	0.86	0.05	0.14
Mattress	0.65	-0.61	0.03	-0.02	0.55	-1.35	0.03	-0.02	-0.52	-0.22	-0.02	-0.01	1.13	0.29	0.09	0.01
Cooking Stove	1.34	0.00	0.07	0.00	2.72	1.24	0.05	0.00	-1.15	2.29	-0.03	0.08	1.88	-0.26	0.07	0.00
Refrigerator	-1.56	1.73	-0.13	0.13	-0.02	1.33	0.00	0.05	0.35	2.69	0.09	0.64	-0.24	2.30	-0.05	0.44
Iron, Electric	-0.28	1.02	0.00	0.01	2.84	4.35	0.04	0.04	-1.33	-0.11	-0.01	0.00	-1.74	0.92	-0.01	0.00
Rice cooker, electri	0.89	0.00	0.02	0.00	1.30	0.00	0.03	0.00	-3.97	2.49	-0.03	0.06	-0.20	1.66	0.00	0.04

(Table A3.4 Continued)

	North				Northeast				Central				South			
	Elasticity		MBS		Elasticity		MBS		Elasticity		MBS		Elasticity		MBS	
	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil
Fan, Electric	-1.92	2.47	-0.01	0.07	2.94	3.22	0.09	0.09	-1.50	0.61	-0.04	0.01	-1.44	1.41	-0.01	0.03
Sewing Machine		-4.61	0.00	-0.02	-1.15	-4.37	-0.05	-0.02	0.00	-3.37	0.00	-0.07	0.18	-3.13	0.01	-0.04
Soap & Flakes	0.57	-0.11	0.01	0.00	2.24	0.51	0.03	0.00	-0.63	1.18	-0.01	0.01	0.53	1.63	0.02	0.04
Detergent	0.96	1.21	0.70	1.18	0.64	1.29	0.47	1.08	1.00	1.41	0.77	1.24	1.11	1.25	0.86	0.97
Mop, Broom	0.93	1.59	0.01	0.05	0.94	1.50	0.04	0.05	0.94	0.93	0.02	0.02	0.09	0.84	0.00	0.02
Household Insecticid	1.90	1.50	0.14	0.03	2.38	0.31	0.19	0.00	1.31	1.40	0.13	0.07	2.68	2.18	0.27	0.06
Cleaning Supply, Oth	4.77	3.67	0.26	0.02	3.81	3.92	0.23	0.00	3.64	2.20	0.18	0.01	4.30		0.11	0.00
Medicine & Supplies	0.62	0.52	0.32	0.65	0.50	0.29	0.32	0.35	0.24	0.23	0.14	0.27	0.17	0.25	0.10	0.23
Local Medicine	2.00	3.29	0.07	0.36	3.57	1.24	0.15	0.10	3.55	1.89	0.15	0.24	0.94	0.72	0.04	0.13
Hospital/Clinic	0.84	1.52	1.34	3.95	1.49	1.98	3.39	4.89	0.74	1.00	1.76	2.18	0.65	1.32	0.87	3.22
Hair Cut	0.81	1.16	0.22	0.40	0.78	1.10	0.22	0.28	1.31	1.40	0.45	0.59	0.96	0.90	0.33	0.18
Hair Permanent	1.27	0.73	0.13	0.08	0.65	0.75	0.07	0.05	0.86	0.46	0.08	0.05	1.02	1.91	0.09	0.17
Hair Setting	0.88	2.75	0.22	0.09	0.23	0.78	0.04	0.01	1.88	1.74	0.43	0.08	1.35	2.28	0.22	0.10
Baht Soap	0.73	1.05	0.26	0.50	0.56	1.41	0.22	0.81	0.91	1.12	0.36	0.52	0.87	1.12	0.36	0.56
Toothpaste	0.74	1.00	0.27	0.50	0.55	1.26	0.20	0.58	0.76	1.22	0.30	0.60	0.92	1.32	0.37	0.57
Shampoo	1.61	1.77	0.58	0.74	1.35	2.38	0.42	0.90	1.91	2.15	0.66	0.86	1.83	2.16	0.66	0.76
Hair Cream	0.25	-1.45	0.02	-0.04	-0.40	-1.86	-0.03	-0.04	-0.45	-1.00	-0.02	-0.05	-0.59	-1.94	-0.02	-0.03
Lotions	2.19	0.23	0.07	0.00	0.27	-0.29	0.01	0.00	1.22	3.05	0.03	0.07	-0.63	0.27	-0.01	0.01
Face Powder	1.43	1.28	0.35	0.41	0.73	1.50	0.19	0.44	1.69	1.32	0.47	0.44	1.57	1.26	0.50	0.45
Lipstick	2.75	1.34	0.23	0.03	0.68	0.91	0.04	0.02	2.33	2.33	0.15	0.04	2.10	0.56	0.10	0.00
Other Cosmetics	0.75	0.53	0.07	0.02	1.38	0.20	0.22	0.01	1.64	0.53	0.15	0.02	0.88	0.19	0.14	0.01
Brushes, Comb	0.93	0.70	0.02	0.02	1.13	0.54	0.04	0.02	0.83	0.43	0.02	0.01	-0.51	1.29	-0.01	0.04
Razor and Blade	1.19	1.38	0.03	0.03	1.24	1.82	0.03	0.04	0.61	0.83	0.02	0.02	0.65	0.62	0.03	0.02
Toilet Paper/Tissue	2.41	3.42	0.35	0.09	0.58	1.51	0.06	0.01	1.55	3.94	0.20	0.17	2.65	4.24	0.30	0.09
Sanitary Napkins	0.74	2.09	0.15	0.35	0.74	1.98	0.12	0.11	0.90	1.87	0.19	0.39	0.79	1.58	0.16	0.31
Vehicle Operation	1.64	2.40	7.41	8.75	1.34	3.27	4.64	7.76	1.83	1.70	6.37	5.52	1.97	1.55	7.36	5.45
Oil & Lubricants	1.97	1.90	0.78	0.38	1.12	2.16	0.27	0.26	1.14	1.98	0.19	0.39	1.73	-5.44	0.35	-1.01
Maintenance/Repair	1.18	2.32	0.72	3.08	1.71	6.39	0.94	7.50	1.41	0.45	0.89	0.35	2.17	0.45	2.33	0.43
Tyres/Batteries	3.77	3.96	1.50	0.80	3.20	2.24	0.75	0.27	2.64	4.11	0.51	0.79	2.46	3.26	0.43	0.55

(Table A3.4 Continued)

	North				Northeast				Central				South			
	Elasticity		MBS		Elasticity		MBS		Elasticity		MBS		Elasticity		MBS	
	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil	Mun	Vil
Vehicle Purchase	-0.13	1.27	-0.21	3.43	1.28	2.41	6.80	5.95	-0.45	0.36	-0.65	0.65	0.01	-0.10	0.01	-0.24
Automobile	-1.10	3.95	-0.57	5.57	1.21	2.95	5.12	3.88	-0.15	0.82	-0.19	1.14	-0.12	-1.00	-0.05	-0.89
Motorcycle	0.87	0.00	0.89	0.00	1.66	2.68	1.75	2.12	-1.73	-0.88	-0.22	-0.29	0.15	1.20	0.12	1.74
Bicycle	-0.30	-2.90	-0.02	-0.08	-0.31	0.41	-0.01	0.03	-2.32	-1.66	-0.08	-0.04	-0.65	-0.76	-0.01	-0.02
Others	0.76	1.22	0.00	0.89	2.59	1.16	0.05	0.33	1.60	4.45	0.01	0.25	-1.89	-4.85	-0.02	-0.02
Postage	1.63	2.50	0.09	0.06	1.13	3.37	0.05	0.07	1.43	2.81	0.02	0.02	1.13	2.83	0.05	0.03
Stationeries/Supplie	0.45	1.85	0.01	0.02	1.80	2.09	0.07	0.02	1.55	-1.08	0.01	0.00	0.87	1.52	0.02	0.03
Children Toy	1.21	1.31	0.12	0.06	2.29	0.28	0.22	0.01	2.10	1.89	0.47	0.21	1.01	2.79	0.12	0.28
Record & Tapes	4.02	2.94	0.71	0.15	5.00		0.93	0.00	2.73	6.97	0.19	0.24	1.24		0.14	0.00
Garden/Pet supplies	3.27	1.31	0.85	0.06	2.67	-1.27	0.83	-0.06	1.24	2.53	0.20	0.23	3.38	-0.35	1.24	-0.02
Radio	-3.27	-0.93	-0.05	-0.03	-3.82	-1.20	-0.01	-0.04	-2.18	-2.83	-0.07	-0.05	-0.86	-1.10	-0.04	-0.04
Television Set	-0.69	1.85	-0.22	0.74	3.83	2.52	2.20	0.64	0.23	3.70	0.07	1.32	-0.02	2.00	-0.01	0.76
Record Player, etc.	-2.63	3.64	-0.07	0.33	-1.31	6.33	-0.02	0.44	-1.50	1.59	-0.06	0.06	-1.75	1.41	-0.05	0.03
Other Music Instrume	4.11	7.72	0.91	1.03	11.15		3.80	0.00	6.33	3.93	1.31	0.41		1.93	0.00	0.07
Newspaper	0.76	1.89	0.33	0.13	0.59	0.30	0.26	0.01	1.00	2.25	0.38	0.20	1.26	1.36	0.53	0.10
Magazines	0.88	2.20	0.12	0.06	0.89	0.87	0.14	0.02	1.18	2.10	0.15	0.07	1.07	0.98	0.17	0.04
Books	1.67	1.95	0.06	0.01	0.27	4.35	0.01	0.04	2.13	2.81	0.05	0.03	1.28	1.25	0.05	0.02
Joss Stick, etc.	0.67	0.86	0.04	0.07	-0.01	0.15	0.00	0.01	-0.33	-0.24	-0.03	-0.03	-0.45	0.59	-0.05	0.04
School Fee	0.61	1.45	0.63	0.68	0.88	1.29	0.87	0.35	0.30	2.41	0.34	1.39	0.79	1.74	0.91	0.92
Tuition	0.95	3.14	0.27	0.38	1.72	5.90	0.34	0.57	1.05	3.90	0.18	0.36	3.15	1.68	0.79	0.32
School Equipment	0.91	1.94	0.17	0.37	1.03	1.97	0.29	0.50	0.87	2.30	0.18	0.47	0.67	1.32	0.15	0.30
Text Book	0.54	1.06	0.18	0.33	0.85	1.90	0.38	0.66	0.47	1.58	0.15	0.49	0.63	1.43	0.19	0.50

Source: Derived from Household Socio-Economic Survey Reports, NSO.

Table A3.5 Budget Allocation for Supplies and Equipment for Provincial Government Offices by Type, by Ministry (Thousand Baht)

	Ministry										
	Agri	Pub Health	Industry	Communica	Commerce	Sci & Tech	Education	Justice	Interior	Uni Affairs	Total
SUPPLIES											
Airport	16,195.0										16,195.0
Agriculture	297,655.6	494.2	1,075.6			949.3	652.9	120.0	12,212.5	4,960.5	318,120.6
Audio-Visual		1,717.2		0.0			66.0		236.6	205.0	2,224.8
Chemical	117,195.3	76,546.0		175.3		106.0	4,950.0				198,972.6
Communication	769.0	7,625.8		200.0					27,500.0		36,094.8
Computer	585.2	1,850.0			96.0	625.0				1,679.5	4,835.7
Construction	1,840,162.8	35,603.5	975.6	9,954.1		1,621.4	4,935.5	2,400.0	26,058.8	9,429.2	1,931,140.9
Dissemination	5,483.4	23,472.3	476.8	27.3	15.0		292.0		2,236.9	846.8	32,850.5
Map/Photo	8,958.2		705.4	260.0			166.2		1,284.2		11,374.0
Education		1,338.0					1,248,977.7		33,717.2	28,726.4	1,312,759.3
Radio/Electric	16,417.5	2,136.5	344.2	2,274.9	79.5	862.3	1,106.6	390.7	18,933.4	4,450.7	46,996.2
Evaluation	21.5								352.4	15.5	389.4
Extension/Exhibi	3,086.5	213.0					3,052.8		2,089.2		8,441.5
Forms/Reports	1,325.9	30,054.2		7,960.7		147.0	10,222.6	2,670.0	22,631.5		75,011.9
Fuel/Lubric Oil	242,711.6	124,528.5	6,827.9	94,838.1	2,018.8	5,255.2					476,180.1
Hospital Room		21,495.7									21,495.7
House Keeping	3,971.3	26,365.0	75.3	2,115.6	121.8		1,800.2	1,628.4	8,405.6	7,912.0	52,395.1
Laboratory	4,920.0					66.4				7.5	4,993.9
Library							1,950.0	1,112.5			3,062.5
Machinery	16,565.9		1,259.6	328.2		1,352.3	517.2		200.3		20,223.4
Signs/Labels	4,757.1			39.0					3,572.0		8,368.1
Nursery	19,263.7										19,263.7
Office	59,153.0	46,255.2	6,575.3	19,521.9	2,124.8	662.1	166,857.1	3,048.0	49,973.7	31,544.5	385,715.6
Packaging	630.0										630.0
Pharmaceutical	11,758.4	1,691,372.2					20,320.5		24,452.4	37,349.9	1,785,253.4
Printing	5,142.1	228.5	361.0						1,112.2	10.0	6,853.8
Research	3,458.9		378.0			164.7					4,001.6
Sample/Breeder	37,337.0	54.0					3,419.0			90.0	40,900.0
Safety/Fire Arms	807.3								94,724.6		95,531.9
Satellite											0.0
School books									16,669.6		16,669.6
Science/Medical	71,026.9	272,744.6	2,668.9	1,946.9	125.0	954.6	300.2	2,400.0	4,771.5	65,030.0	421,968.6
Small Tools/Parts	34,265.1	470.3	1,534.5	3,485.6		248.0			27,621.5		67,625.0

(Table A3.5 Cont.)

	Agri	Pub Health	Industry	Communica	Commerce	Sci & Tech	Education	Justice	Interior	Uni Affairs	Total
Sport/Music								120.0	1,993.0	40.3	2,153.3
Survey/Field	6,447.9		67.3	995.0		360.5			69,031.8		76,902.5
Training	6,971.4	2,252.5	6,065.0				2,568.4	2,400.0	25,508.5	15,232.7	60,998.5
Uniform	1,478.4	19,017.0					108,106.5	888.0	122,836.1	1,473.8	253,799.8
Vehicle	57,998.4	7,496.8	1,238.5	62,339.9	401.7	2,090.3	25,796.0	347.8	65,756.3	3,134.4	226,600.1
Workshop	842.9		50.0	0.0							892.9
TOTAL SUPPLIES	2,897,363.2	2,393,331.0	30,678.8	206,462.5	4,982.6	15,465.0	1,606,057.4	17,525.4	663,881.6	212,138.7	8,047,886.1

	Agri	Pub Health	Industry	Communica	Commerce	Sci & Tech]		Justice	Interior	Uni Affairs	Total
EQUIPMENT											
Air Craft	700.0										700.0
Air Conditioner	241.0		408.0	1,146.0		192.0	74.0		601.0	233.0	2,895.0
Agriculture	45,750.0	7,175.0	17,157.8	330.0		24,540.8	20,962.2	50.5	4,664.4	3,694.0	124,324.7
Audio-Visual	3,090.4	7,140.5	466.5	2,227.7	531.1	66.8	8,207.7	285.5	4,808.7	7,178.2	34,003.1
Boat, Small	1,059.0								1,294.0		2,353.0
Boat, Large	44,310.0		175.0	2,136.5					3,594.0		50,215.5
Car/Truck	70,854.3	28,406.0	14,773.0	4,528.0	4,555.0	8,503.1	19,855.0	790.0	195,678.2	7,483.0	355,425.6
Calculator	470.7	150.8	28.0	336.0	31.5	28.0	1,343.6		838.8	230.7	3,458.1
Cash Register		924.0	28								952.0
Radio/Communic	12,774.3	1,260.0	274.0	143,758.0	65.4	280.0	1,150.0		9,477.0	2,414.2	171,452.9
Computer	1,146.0		280.0		2,882.0		1,462.0		310.0	15,351.3	21,431.3
Construction	749.7		18,000.0	250.0			5,783.5		4,089.4	1,063.3	29,935.9
Cooler, Water	22.4	20.2		6.7	9.6		311.3	22.4	67.8	255.5	715.9
Copying Machine	3,504.0	5,027.0	851.0	1,868.0	2,683.0	104.0	54,205.7	755.0	6,874.0	1,223.0	77,094.7
Dissemination							18.0			2,500.0	2,518.0
Dummy	7.5	794.8	15.0								817.3
Education							161,911.9			1,686.5	163,598.4
Electrical	6,723.8	15,132.0	77.7	4,732.0		9,556.0	51,486.9		87,044.3	5,301.4	180,054.1
Fan, electric	227.8	658.3	134.6	314.8	84.4	36.4	345.6	55.2	521.5	763.3	3,141.9
Firearms	2,272.0										2,272.0
Fixture	63.5	121.0					66.0			531.6	782.1
Floor Cleaning	46.0	960.0	18.0	48.0			94.5		46.0	151.5	1,364.0

(Table A3.5 Cont.)

	Agri	Pub Health	Industry	Communica	Commerce	Sci & Tech	Education	Justice	Interior	Uni Affairs	Total
Furniture	4,382.1	13,429.1	1,511.3	1,715.8	481.4	343.2	112,965.2	127.3	13,748.0	7,117.9	155,821.3
Generator,Hydraul											0.0
House Keeping	3,166.2	11,252.5	329.7	146.0	22.5	27.0	10,272.4	73.1	661.0	2,227.0	28,177.4
Lawn Mower	2,623.7	196.0	53.0	50.9	8.5	48.0	6,012.7	61.0	308.0	307.2	9,669.0
Library							155.0			546.1	701.1
Machinery	4,079.5		723.0	280.0		373.0	12,239.8		7,500.0	70.0	25,265.3
Measuring	4,648.1	6,727.0	272.4	1,678.7	1,772.8	87.0	1,155.5		552.3	1,467.9	19,361.7
Medical	674.0	408,010.0		777.0			619.4	112.4	2,854.0	80,839.6	493,886.4
Motorcycle	8,417.9	20,910.0	308.0	299.0	197.9	2,805.0	9,038.9	59.8	25,680.3	452.8	68,169.6
Office, Others	469.6	16.5	80.1	64.7		91.7	272,046.8	319.1	9,968.6	1,520.3	284,577.4
Oven/Burner	323.0	950.0	68.0	87.2		102.0					1,530.2
Refrigerator	1,055.5	11,034.0				35.0	153.0	11.0	215.0	594.0	13,097.5
Safety	1,213.5	294.0	145.3	3,358.0	2.2	18.1	395.0		3,290.0		8,716.1
Science	76,202.2	19,472.5	7,727.2	1,499.2		39,320.4	7,076.9		5,402.1	75,066.4	231,766.9
Sewing/weaving	70.0	4.5	111.0				14,940.8	89.0	461.0	20.5	15,696.8
Parts/Small Eq	1,684.0	4,180.8	193.5	1,372.0			13,264.3		34.1	126.9	20,855.6
Sport/Music							41,925.1		260.0	901.7	43,086.8
Survey/Field	3,019.3	521.5	514.0	20,541.7		394.6	1,927.5		11,325.3	3,866.8	42,110.7
Textile Furnish	1,012.0						450.0		45.5	20.0	1,527.5
Truck,Special				11,950.0							11,950.0
Typewriter	3,190.2	1,240.0	396.0	598.2	393.7	168.4	34,925.2	16.0	7,143.2	1,575.1	49,646.0
Vacuum Cleaner	29.5	480.0	10.0	10.0							529.5
Vehicle, Special	1,790.0	109,200.0	0.0	21,600.0							132,590.0
Wheel Barrel	58.2						6.0			6.3	70.5
Workshop	9,886.4	71,036.5	4,122.5	3,435.3		385.0	55,447.3	241.7	6,979.1	5,067.0	156,600.8
TOTAL EQUIPMENT	322,007.3	746,724.5	69,251.6	231,145.4	13,721.0	87,505.5	922,294.7	3,069.0	416,336.6	231,853.9	3,043,909.4
GRAND TOTAL	3,219,370.5	3,140,055.5	99,930.4	437,607.9	18,703.6	102,970.5	2,528,352.1	20,594.4	1,080,218.2	443,992.6	11,091,795.5

Table A3.6 Budget Allocation for Supplies and Equipment for Central Government Offices, by Type, by Ministry (Thousand Baht)

	Ministry										
	Agri	Pub Health	Industry	Communic	Commerce	Sci & Tech	Education	Justice	Interior	Uni Affairs	Total
SUPPLIES											
Agriculture	5,562.5	227.5			50.0		297.6		219.3	7,122.1	13,479.0
Audio-Visual	2,200.4	1,097.6		41.0		1,294.8	9,110.8		166.5	450.7	14,361.8
Chemical			629.6		828.0	2,692.9	150.0		231.0		4,531.5
Communication				17.7	15.0				12,500.0	100.0	13,479.0
Computer	1,045.6	634.9	284.8	1,275.2	1,793.5	3,901.2	365.0	84.6	2,503.6	5,323.0	17,211.4
Construction	911.4	1,067.0	462.0	1,244.4	13.0	1,406.6	239.6	20.0	1,015.3	4,777.6	11,156.9
Dissemination	5,404.1	9,051.0	1,183.9	163.0	437.0	188.6	912.7		288.9	2,049.5	19,678.7
Map/Photo	704.5	160.0	400.0	452.8		3,760.3	391.8		5,113.1		10,982.5
Education		580.9					57,475.6		22,247.9	12,334.6	92,639.0
Radio/Electric	882.1	1,606.3	487.3	1,561.4	213.3	807.2	1,150.2	138.5	4,645.8	6,175.1	17,667.2
Evaluation							11,696.8		13,917.1		25,613.9
Extension/Exhibit	361.7	2,226.5	270.0			150.0	1,422.3		276.1		4,706.6
Forms/Reports	4,615.5	2,877.2	603.3	6,169.5	512.9	1,841.4	48,705.5	2,965.0	32,110.5	2,340.0	102,740.8
Fuel/Lubric Oil	14,985.4	9,330.9	8,056.1	7,120.8	2,322.5	2,293.1					44,108.8
House Keeping	619.6	4,383.8	773.9	2,142.6	374.7	203.3	1,381.0	570.4	6,467.2	13,805.6	30,722.1
Laboratory						675.0	300.0			7.5	982.5
Library		30.1	45.0	6.0	213.5	200.5	7,128.0	3,540.3	4,236.0		15,399.4
Machinery	1,054.6		721.2			763.2					2,539.0
Signs/Labels			158.0				5.0		30.0		193.0
Office	16,733.9	13,969.6	7,011.4	15,159.1	5,752.4	4,537.9	20,971.1	3,934.0	53,713.9	50,505.8	192,289.1
Packaging	16.6						3,105.0				3,121.6
Pharmaceutical	217.4	194,864.3		3,254.4		1.5		56.0	3,701.9	269.5	202,365.0
Printing	2,572.0	2,339.5	1,176.9	62.0	850.0	1365.8			8,161.6	975.0	17,502.8
Research	2,094.2	35.0	752.0			1,827.0	1,664.0		78.9	130.0	6,581.1
Sample/Breeder		1,273.9	670.0			20.0					1,963.9
Safety/Fire Arms				45.0					9,338.7		9,383.7
Satellite	936.5					100.0			430.0		1,466.5
School books									5,144.7		5,144.7
Science/Medical	8,798.2	75,427.6	3,956.8	3,743.3	953.0	11,191.0	643.9	402.0	3,238.1	148,997.3	257,351.2
Tools, Parts	1,420.6	198.2	620.0	4,937.3		1,213.2	1,450.0		389.7		10,229.0

(Table A3.6 continued)

	Ministry									
	Agri	Pub Health	Industry	Communic	Commerce	Sci & Tech	Education	Justice	Interior	Uni Affairs	Total
Sport/Music						8.0					8.0
Survey/Field	164.5		209.0	340.0	36.8	61.0			140.0		951.3
Training	165.5	494.5	150.0			430.8	20,937.0	10.0	3,407.0	25,802.6	51,397.4
Uniform	15.7	2,474.7		34.0		15.0	184.0		43,955.0	3,060.0	49,738.4
Vehicle	4,451.0	1,530.2	1,422.1	2,304.5	576.4	419.6	1,430.4	482.1	15,957.0	3,370.6	31,943.9
Workshop	24.2			887.1					1,919.0		2,830.3
TOTAL SUPPLIES	75,957.7	325,881.2	30,043.3	50,961.1	14,942.0	41,368.9	191,117.3	12,202.9	255,543.8	287,596.5	1,286,461.0

	Ministry									
	Agri	Pub Health	Industry	Communic	Commerce	Sci & Tech	Education	Justice	Interior	Uni Affairs	Total
EQUIPMENT											
Air Conditioner	335.0	110.0	195.0	220.0	104.0	580.0	257.0		437.0	2,985.0	5,223.0
Agriculture	456.1	77.0	10.0	140.4	42.0		184.1		42.0	551.7	1,503.3
Audio-Visual	832.5	911.8	330.0	751.9	516.5	202.9	22,126.7	226.5	2,626.8	8,408.2	36,933.8
Boat				85.0							85.0
Car/Truck	4,585.0	3,140.0	9,057.0	4,173.0	6,005.0	1,690.0	8,960.0	1,800.0	45,503.0	10,185.0	95,098.0
Calculator	114.0	28.0	28.8	34.4	106.2	10.5	130.7		1,938.0	98.5	2,489.1
Cash Register		29.0									29.0
Radio/Communi	355.0	800.0	58.0	39,070.6	0.0	1,400.5	0.0		2,558.5	8,231.5	52,474.1
Computer	42,031.3	25.0	660.5	20,664.0	6,972.0	9,224.4	518.0	13.7	102,165.2	35,694.1	217,968.2
Construction				1,200.0			97.6		713.7	6,609.4	8,620.7
Cooler, Water		3.2		26.5			23.8		229.6	178.0	461.1
Copying Machine	962.0	1,498.0	760.0	917.0	212.0	940.0	10,364.5	296.0	6,521.0	2,033.0	24,503.5
Dissemination							110.0				110.0
Dummy		720.6									720.6
Education							11,659.5			126.4	11,785.9
Electrical	163.8	225.0		635.4		1,472.0	1,165.1	1,662.0	14,256.8	3,797.0	23,377.1
Fan, electric	45.0	170.4	1,906.0	56.4	3.6	416.2	90.7		96.1	674.4	3,458.8
Fixture	120.0	125.2					90.0			299.5	634.7
Floor Cleaning	16.0			16.0		14.0	49.0		30.0	122.0	247.0
Furniture	688.6	1,143.9	971.5	727.2	1,082.5	620.8	2,343.5	93.2	8,330.9	46,760.5	62,762.6

(Table A3.6 continued)

	Ministry										
	Agri	Pub Health	Industry	Communic	Commerce	Sci & Tech	Education	Justice	Interior	Uni Affairs	Total
House Keeping	70.0	18.0		22.6		6.0	2,584.5	1.4	1,143.1	1,845.5	5,691.1
Lawn Mower	38.5	5.5			4.8		671.0		56.5	84.8	861.1
Library					406.0	568.1	16,226.2		200.0	1,000.0	18,400.3
Machinery	39.7			618.0		3,110.0					3,767.7
Measuring	147.0	60.0	12.0	49.0	3,555.5	559.5	230.5	12.0	88.0	759.0	5,472.5
Medical		56,476.0	169.0	73.0			45.4		12,461.6	77,901.4	147,126.4
Motorcycle					283.9	34.0	29.9		3,254.5	260.7	3,863.0
Office, Others	62.6		91.0	2.5	59.2	26.0	960.9	1,350.1	5,678.3	1,413.9	9,644.4
Oven/Burner	85.0					213.2					298.2
Refrigerator	98.9	1,052.8				267.5	20.0			612.2	2,051.4
Safety	12.0	70.0	24.0	36.5	6.0				6,026.0	79.9	6,254.4
Science	15,453.8	10,431.1	19,857.4	3,788.6	1,363.7	38,866.7	3,669.8		2,568.1	115,641.6	211,640.8
Sewing/weaving			1,100.6				784.0			136.0	2,020.6
Small Equip, Part	9.5	348.5		553.6			897.3		3.0	16.7	1,828.6
Sport/Music							4,670.3		100.0	791.6	5,561.9
Survey/Field	108.4	69.0	2,147.0	2,479.7		14.0			5,569.4	2,038.5	12,426.0
Textile Furnishin	11.4					15.0	27.0			41.1	94.5
Typewriter	308.0	211.0	198.0	232.5	461.2	164.0	13,385.5	65.0	1,975.9	1,734.1	18,735.2
Vacuum Cleaner	23.0	10.0	6.5	20.0	20.0	5.0					84.5
Wheel Barrel	1.2		2.0	0.7		3.5	3.3			1.2	11.9
Workshop	215.3	586.0	2,074.3	4,280.5	5.4	67.0	23,735.2	2.0	4,706.5	10,321.8	45,994.0
TOTAL EQUIPMENT	67,388.6	78,345.0	39,658.6	80,875.0	21,209.5	60,490.8	126,111.0	5,521.9	229,279.5	341,434.1	1,050,314.0
GRAND TOTAL	143,346.3	404,226.2	69,701.9	131,836.1	36,151.5	101,859.7	317,228.3	17,724.8	484,823.3	629,030.6	2,336,775.0

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

The review of existing research and studies consistently reveals domestic demand as the most important source of growth of the industrial sector in Thailand until recently when export became the most important. However, existing data also reveal that more than three quarters of the total industrial production (measured in terms of manufacturing value added) have taken place in the BMR. Clearly, much of the demand for domestic industrial products by the provincial population has been met by products manufactured in the BMR. Over the same period of time, population pressure on agricultural land in provincial rural areas which has reached its limit of expansion has forced many to seek employment in Bangkok and other major cities such as those around the GBM, Chiang Mai, Khon Kaen, Chon Buri, etc. Despite the scope and complexity of economic activities in the various cities, particularly the GBM, they have not been able to generate enough employment for the influx of rural labor. Thailand is still many years from the agricultural labor turning point - when the absolute number of workers in agriculture begins to decrease (Birdsall 1985). If the current trend is allowed to continue, hardship and dissatisfaction in the provincial areas will drive even more labor out of the provincial areas in search for jobs. Widespread unemployment and even social unrest may result.

There is, thus, a growing interest among international development agencies and organizations as well as among the Thai government agencies in encouraging industrial expansion into the provinces, in the hope that this will provide the needed employment for the growing labor force. Most of the efforts in the past, however, has been focused on providing supply incentives which include tax privileges through the operation of many government appointed agencies such as the Board of Investment, product promotion, training through the Regional Centers for Industrial Promotion, etc., to attract industrial enterprises to the provinces. Unfortunately, the response has been evaluated as relatively disappointing. On the other hand, the principle of wealth maximization

holds that no amount of supply incentives will be sufficient for an investor to start his industry in the provinces if the demand for his product is known to be inadequate or uncertain.

By addressing the issue of provincial industrialization from the demand side, this study has been carried out in order to: (1) understand the current and potential situations of effective demand facing the provincial industry products, and (2) identify means to increase and to sustain the existing demand if it is currently limited. Four sources of demand for provincial industry products were analyzed: (1) household consumers and producers, (2) non-household producers, (3) the domestic government, and (4) foreign markets. Throughout the present analysis, the role of domestic demand received more attention than foreign demand since the intended influences through the manipulation of various policy measures by domestic government on the former are expected to be more controllable and thus more effective in beginning the process of provincial industrialization.

4.1 MAJOR FINDINGS

Defining provincial industries as all industrial enterprises located outside Bangkok and its surrounding provinces, the BMR, it was found that although domestic demand has been until recently the main source of growth of the manufacturing sector in Thailand, most of the expansion in response to such demand, in terms of the number of industries, types of products and size of enterprises, has taken place in the BMR. Review of literature and analysis of the present study confirm that the size of market, i.e., the level of demand, for products of provincial industries has indeed been rather limited. The main reason for this limitation, however, is due mainly to the low purchasing power caused by the widespread poverty of the majority of the provincial rural population rather than the (very few cases of) inferiority of the products.

Average income has increased over the last twenty years for household s in all regions and in all areas within each region, but the

differences in the relative sizes of income have also increased. Since income is the most important determinant for the demand for products, the great differences in average household income thus means a smaller portion of any goods produced and sold in the domestic markets is likely to be bought by the group with a lower income even when this group actually accounts for the largest portion of the population. When provincial households were further disaggregated into those in the cities, the sanitary districts and the villages, it became clear that the last group which is the largest in number is also the group with the lowest average household income, i.e., purchasing power.

Many factors contribute to the relatively low level of income of village households. In addition to the different quantity and quality of natural resource endowments inherent in the different regions, the review and analysis of secondary sources reveals that many government policies, e.g., the agricultural product pricing policies, certain aspects of the fiscal policies, the foreign exchange policies and even the formal education systems, were found to have unfavorable effects on the income level of households in rural villages, the primary occupation of which is in agriculture. The low income of the provincial rural households thus has become an important limiting factor on their demand for both consumption and investment goods.

The promising part of the findings is that although current demand for the products of provincial industries is in fact relatively low, significant potential markets appear to exist for many products. The analysis of the household expenditure reveals the values of expenditure elasticity of demand for industrial products to be generally positive, often greater than unity. The analysis of the household marginal budget share further confirms that as the income of provincial household rises, there has been an increase in the purchase of many industrial products. The change in the direction of expenditure elasticities of demand by major commodity categories purchased by provincial household is also consistent with the results of studies on income elasticities of demand carried out in other countries.

Local markets, both for final and intermediate usage, are found to be the most important source of demand for the provincial industries. The survey run by the Rural Industries and Employment Project shows that approximately 50 percent of all provincial industries, primarily small size operations hiring fewer than 20 employees and/or with less than 3 million baht of invested capital, are currently selling 80-100 percent of their outputs within their own provinces. Total sales by this group, however, only represent a small share in the overall market. When the list of products of this group is compared to a list of the Ministry of Industry records on registered industries, arranged by products and by location, the results reveal many of the products with positive and/or larger than unity expenditure elasticities of demand currently as being produced in GBM. The positive and some rather high value of expenditure elasticities for industrial products implies that if these products can be manufactured in the provinces at the same or lower costs, given the potentially strong demand, they would be likely to have no problem finding buyers, especially if the income level of the buyers increases. The small share in total demand commanded by the provincial industries further suggests the possibility for expansion of this sector.

Further review of studies on the relationship between demand and factor intensity of industrial products purchased by households of different income levels indicates that as income of households begins to rise, the very poor households tend to buy more of the items which are relatively more labor intensive, most of them tend to be produced locally. The higher income households, on the other hand, tend to increase their purchase of the more capital and even foreign exchange intensive products as their income rises.

For other sources of demand, the provincial industrial producers, though small in number and size when compared to those in the BMR, have been the main source of demand for intermediate goods in the provinces. Government purchasing and direct export (to foreign markets) of products of provincial industries, on the other hand, have also been limited.

A review of detailed budget allocations for government purchases of supplies and equipment to be used in the provincial offices, and related

regulations, procedures, patterns and magnitude of the purchases, confirms, in principle, the potential role of government purchases in providing the initial boost in demand for provincial industry products. The critical issue here, in addition to the amendment of the regulations and procedures, has to do with the definition of provincial industrial products. At the very least, the process could be started by switching some of the government purchases to provincial sources. Expectation must be realistic, however. Therefore, it must be recognized that: (1) Government purchases from provincial industries are not going to increase the aggregate demand and, in fact, the overall efficiency may suffer unless household demand catches up to sustain the initial growth in the provincial industries. (2) Given its mandate and functions, government purchases of supplies and equipment will not have as large an effect as household purchases do on the production of personal items. (3) The size and structure of government budgets suggest that the process, if adopted, be started small, increased incrementally, and gradually. (4) Effective implementation may be expected to be extremely difficult, given the expected resistance, especially if the products can be claimed to be of inferior quality, and because of other known bureaucratic constraints.

Foreign demand which was second in importance to domestic demand as a source of growth for the industrial sector during the beginning of the country's industrialization process has recently moved up to the first place. Although direct export of products by small provincial industries is still expected to have less of a role in the beginning of the provincial industrialization process, it will have more significant contribution later and steps to prepare the provincial industries must be started. Among them, the provision of information about demand situations abroad and available technology and ways to improve or modify existing products is as essential as the provision of assistance or the simplification of actual exporting procedures. The time-consuming, complicated and inconsistent export procedures have, in fact, been a major complaint from many large-scale, both BMR-based and provincial, exporting industries. Past experience also indicates the need for foreign exchange policies which will not result in an overvaluation of the domestic currency. Given the present trends, foreign demand is

expected to increasingly become the most important source of demand to sustain provincial industries in the long-run.

4.2 CONCLUSIONS

Given the size of the provincial rural population, the size of the potential demand it can provide for the provincial industry products is not insignificant, even when the expenditure elasticity of demand for an item is less than unity, but positive. When a product suddenly becomes "inferior" because of modern, mass-produced and thus cheaper substitutes, it reflects the path of development and could be treated as an indicator for what not to invest in. In this case, assistance in the forms of product development and information about new products and/or new technology is the central issue.

However, if the inferiority is truly in the quality of the products by provincial industry as compared to the same items produced in, and imported from, the BMR, measures to assist the provincial manufacturers in technological improvement ranging from the provision of accurate and timely information to product testing should then be the means to increase, or at least maintain, the demand for these industries. It should be clear that this study is in no way implying that products by provincial industries are inherently inferior. Neither does it intend to disconfirm the inferiority argument by basing on the few large-scale, multi-million baht, modern ventures, with mostly imported technologies, which are located in the provinces and have been producing high quality products, since they are hardly representative of provincial industries in general. In any case, long-term product improvement is crucial, or the increased income in rural households may simply lead to more imports from the BMR.

Supply incentives are generally more appropriate when dealing with import substitutions or exports, the demand for which is already confirmed and cost factors decide the ability to compete in the existing markets. In the initial stage of provincial industrialization when the ability to influence effective demand is critical, however, domestic

demand needs to be created and increased. Raising rural household real income takes more time, but it is the only way to effectively increase and sustain the demand for provincial industry products, especially since "...in most agrarian low and middle income countries, increases in farmers' incomes are the most likely cause of expanding markets for small-scale industries (Elkan 1989)." Supply incentives are also more effective in the promotion of large-scale Thai and international or joint investments, the demand for which is not a problem, i.e., they would have been studied in detail before the investment is carried out.

Provincial industrialization and raising rural household income on the one hand and overall economic efficiency on the other should not be treated as mutually exclusive objectives. Given the drastic economic differences between the BMR, particularly the GBM, and the provinces, a reduction of income disparity simply becomes socially desirable, for long-term stability. The real issue at hand is, therefore, not whether the government should engage in improving income distribution at all but rather one of choosing an optimal "efficiency-equity" tradeoff.

With the tendency for rural households to purchase more labor intensive products as their income level increases, with local buyers being the most important source of demand for products of small-to medium-size industries in the provinces, it should be possible to achieve provincial industrialization without requiring large capital investment per enterprise. These provincial industries also tend to be labor intensive. Therefore, a promotion of small-scale industries in provincial areas will "...maximize employment and by so doing maximizes the dissemination of increased income without the need for fiscal measures of redistribution, and maximize the geographical dissemination of income-earning opportunities" (Elkan 1989:254) thereby reducing the need for labor to migrate into the BMR.

4.3 SUGGESTED POLICY

Taken rural employment and income generation as the ultimate goal for the provincial industrialization process and, at the same time,

recognizing the currently attractive environment for foreign investment in Thailand, a two-track industrialization policy is recommended:

The first track involves the promotion of small-scale industries in the provinces mainly through measures, which will lead to an increase in rural household income and, probably less effectively, through existing and new supply incentive measures. Examples in other countries indicate that an initial increase in rural household income usually results in an increase in demand for durable goods such as simple furniture and agricultural tools made by small, local manufacturers, in addition to an increase in the purchase of non-durable consumption goods. However, the demand for simple, locally made durable goods and agricultural tools will eventually reach market saturation due to the durable nature of the products. The ability to either maintain a service-providing role, by producing service tied-in products, to the customers or to modify their products and/or expand their markets beyond the old ones becomes crucial and assistance will be needed. Maintenance service becomes costly in proportion to geographical distance and it could be an area where local industries have the advantage. It is also natural that, with higher income, there will be a shift in demand towards better quality or more modern products, i.e., replacing products made with traditional tools with machine-made products, etc. To maintain the demand, timely and accurate information on new products, technology and markets is critical for the long-term survival of small provincial industries.

The second track focuses on continuing present promotional schemes to attract large-scale, high technology, Thai and, more importantly, international investments in order to fully exploit the comparative advantages Thailand currently possesses. The necessary measures to achieve this clearly involve supply incentives which lie outside the scope of this research. The relatively high capital intensity, i.e., low employment/capital ratio (although higher wages are paid), especially in recently established large-scale international industrial enterprises (Tambunlertchai 1990: 4-16), make this policy track less viable as a tool for provincial employment and income generation and thus less relevant to the concerns of this study. In any case, in order not to create or even increase competition, i.e., not to reduce the

demand for the existing or potential small industries in the provincial areas which is the main focus of this study, it is recommended that this policy track emphasizes, as it has been doing through the BoI, the promotion of exportable or re-export product, so that its effects will be in line with the promotion of small industries under the first policy track.

A two-track provincial industrialization policy is viable because the success of each track will require different conditions and thus different strategies and measures. Since no one general measure for provincial industrialization will ever work without bias, in one way or the other, towards both large- and small-scale industries, conscious decisions will have to be made and appropriate measures designed and implemented. More importantly, what must be kept in mind is that the objective for provincial industrialization is not, and should never be, industrial growth per se. Provincial industrialization is for the ultimate purpose of generating additional employment opportunities and higher income for the provincial population--a necessary condition for sustained demand and further industrialization and economic development in the long-run.

4.4 STRATEGIES AND MEASURES

Proximity to customers used to be an advantage for local industries before the development of extensive road network and rapid transportation. This particular infrastructure development, in many other countries as well as in Thailand, has driven many small local industries out of business by competition from larger scale and more modern manufacturers from the cities. This is mainly because industrial products belong in the category of "tradable goods" and do not have to be produced near the sources of demand (comments by Dr. Ammar Siamwalla). Nontradable goods which include many forms of services (Siamwalla 1983), on the other hand, must be provided from locations near the customers. Locally made tools and equipment for agricultural activities may be accused of being "old-fashioned" and "out-of-date" but they are quite often made to order and thus require the maintenance

services of local producers. Any policy implementation to achieve "standardization" and/or uniformity of agricultural machinery, tools, and equipment, with cheaper and more uniformed spare parts, will effectively allow them to be produced on a large-scale away from the provincial areas.

For small provincial industries to continue and grow under the first policy track strategies and measures are needed to: (1) maintain the existing demand, and (2) increase the demand for provincial industry products. It is also very important to maintain whatever comparative advantages, i.e., advantageous supply conditions, there are for provincial industries. Nevertheless, since the purpose of this paper is to examine the demand aspect of provincial industrialization, only the comparative advantages of provincial industries affecting the demand will be discussed.

To achieve these objectives, two sets of strategies and measures are recommended. The first set involves indirect but long-lasting demand generation for provincial industries. This requires a review and revision of existing policies and measures in order to raise the income level for the majority of rural households. The second set of measures involves a more direct role by the government in raising the demand facing the provincial industries, i.e., it requires more direct services and intervention by the government. Each set includes both short term and long term measures which are presented below:

4.4.1 Indirect Measures for Demand Generation through Increasing Household Income

This group of measures is intended to raise and maintain the demand for provincial industrial products through the mechanism of household purchasing power, i.e., income. This results directly from the analysis of provincial household marginal budget share and expenditure elasticity of demand for industrial products. Since more local and labor intensive industrial products will be purchased when income increases,

particularly that of poor households, measures leading to a sustained increase in their income level are needed. Suggested measures include:

Intensification and Diversification of Agricultural Household Production Systems

Intensification here does not refer to conventional multiple season, mono-cropping activities such as the dry season rice production in the irrigated, mostly in the central plain, areas. Under this first measure, regional specific opportunities, as constrained by the amount and the characteristics of natural resources, need to be identified and promoted. For reasons related to the level and extent of poverty and the size of out-migration discussed in earlier chapters, the Northeast region seems to qualify as a priority region. For example, the majority of agricultural land in the region is characterized as rain-fed, subject to low fertility, high salinity and high infiltration rates. In addition, many areas only have one in three years of good rain and thus good rice harvest. When rice cropping either fails or is finished, other forms of income activities must be available to lessen the need to migrate to the cities.

Many non-government organizations (NGOs), such as the PDA, have contributed significantly in matching up those who need jobs and those who need work done. Various research groups in regional universities have also been engaged in integrated crop-animal and non-farm activity experimental systems with farm households in the hope to help increasing farmers' income. Within the agricultural context itself, rice fields in the Northeast are much more complex an ecological system than just a rice production "factory" (Grandstaff 1988). They yield, in addition to rice, many natural foods people rely on such as fish, shellfish, insects, snakes, rats and other small game, wild vegetables and edible tree leaves, etc. Promotional programs which will increase the types of, or the product of one or more types of activities, i.e., an increased diversification thus a lowering risks, are needed. Many programs designed to promote a single activity in this region without consideration for the possible loss of other products from the rice paddies have thus "failed" in the past. The Farming Systems Research

and Rural Systems Research Projects in the Faculty of Agriculture, and the Water Resource and Environment Institute in the Faculty of Engineering at Khon Kaen University which have had at least ten years of accumulated knowledge and experience in working rather closely in the field with farmers are in a good position to back-stop action agencies on viable recommendations on specific measures to raise the income level of rural households in the Northeast. Many of their pilot or experimental activities which have been tested and evaluated as being successful such as the "peanut after rice," and the "small-scale water resource development," could be extended into other areas in the region.

Review and Revision of Agricultural Pricing Policies.

This is closely related to the first measure which is intended to increase the diversity of production mix for rural households and thus their income. The agricultural pricing policies reviewed and summarized in the second chapter provided a picture of situations resulting from past policy implementation. Many of those policies have already been amended or even abolished and the impact may not show for quite some time. However, enough evidence has shown many agricultural pricing policies to have negatively affected the income level of the provincial rural households. Sugar cane has been the only crop where the producers have had any degree of success in defending themselves against low product prices. Given the low "supply response" to prices in rice production (Siamwalla et al. 1987:247) and the size of population in this sector, an effective price support program, backed up with adequate financial and human resources, in addition to the elimination of price distortions, e.g., export taxes, which have kept the farm gate prices low for a long time, deserves serious consideration. While this measure is under consideration and being designed, however, an immediate recommendation is not to reactivate policies which obviously have contributed to the worsening of income distribution such as the rice premium and the overvaluation of the local currency.

Minimum Wage Management.

The majority of wage earners in industrial factories apparently come from relatively less well-off households and mainly from the provincial areas. The issue of minimum wages which is a topic on the supply side factors in the Rural Industries and Employment Project, is included here based on the recognition of its role in contributing to provincial household income.

Strategies and measures related to labor must take into account its special nature of being, at the same time, both an input of production and a buyer of products. As an input, the natural position to take is for labor to demand as high a wage rate as possible. However, since wages are one of the main costs of production, and artificially high wage rates have been known to have driven industries towards more capital-intensive, i.e., labor displacing, production technologies. The issue then becomes whether a few workers at high wage rates or a much larger number of workers at lower wage rates are likely to generate more demand for provincial industrial products and thus further demand for labor and other inputs.

This study contends that the lower rate of increase in wage income, but spread among a larger number of people, will generate more demand for products by small, local, labor intensive industrial enterprises than for highly capital intensive or imported products. It may be more practical for the early stage of provincial industrialization for labor in the provincial areas to receive relatively lower monetary rates, but perhaps equal real rates, as compared to wage rates in the BMR, if comparative advantage in labor cost is, in fact, an important factor for the emergence and growth of industries in the provinces.

This position is analogous to Elkan's (1989) argument about the importance of a smaller increase in agricultural household income but spreading over a larger number of population as a means to promote small industries in that a larger number of rural workers hired by provincial industries at a relatively lower wage rate is desirable. The labor comparative advantage could conceivably be achieved through allowing

market adjustment of wage rates (Charsombut 1990, Loha-unchit 1990). If one believes that the country's relatively lower labor costs at the international level is an important factor which has been drawing many international investments to this country, a comparative advantage in labor cost in the provinces should attract investments from the BMR and abroad for the same reason. This is expected to generate an increase in employment. Even when relative real wage in the provinces is lower, the lower cost of living due to cheaper food, living quarters and transportation, not to mention the non-pecuniary factors such as not having to migrate into the cities, will make it worthwhile for many job seeking labor. The income earned by those employed is expected to further generate demand for both durable and non-durable consumption goods. Nothing will guarantee, however, that the whole increase in purchases will be limited to provincial industry products. But, as long as a significant portion of the increased income is spent on products by the provincial industries, further demand, employment and income will be generated.

Human Resource Development.

The strategies and measures mentioned so far are relatively short term ones. For provincial industrialization to sustain, long-term considerations are important. Therefore, while minimum wage rate management and the development of local entrepreneurs as recommended by Tambunlertchai (1990) take care of the immediate human resource compensation and development issues, it is important to plan for longer term improvement of the human resource of the country as a means to raise the income level for the provincial rural population. Besides the periodic, short training courses and even curriculum revisions and development (Charsombut 1990) to meet the demand for labor with specific skills, the quality of and accessibility to formal education need to be greatly improved.

However, to improve the quality of education in provincial areas, more than an assignment of a larger number of highly educated, well-trained teachers to the provinces and realistic compensation for them will be needed. Necessary supportive measures to maintain and improve

the quality of the teaching staff therefore include better coverage of library materials and better linkages with libraries in other areas, especially in the GBM, more equal opportunities than before for research grants and refreshing courses, for themselves and better quality education for their children.

It is precisely because educational programs take a long time to payoff that immediate steps must be taken towards making the necessary changes. Suggested immediate actions include the setting up of exchange programs for staff between provincial and GBM teaching institutions with participation based on qualifications. At the same time, major upgrading of library materials must be carried out without delay through special budget allocations and with direct assistance from certain well qualified library staff in the GBM-based universities. Short, periodic, exchange programs can also be set up between libraries.

Development of Service Industries.

This is also a long-term measure, based on both the expected path of development and an anticipation of a substantial increase in provincial household income level. Services are income elastic (Siamwalla 1983:21) and nontradable and many need to be produced near the buyers. As income increases, the socioeconomic surveys reveal increases in purchases, by provincial households, of many personal items as well as personal services. Higher real income allow the households to increase the service portion in their consumption, e.g., they may eat out more often or spend more on items such as recreation and entertainment (including reading materials and newspapers). Higher real income also lowers the opportunity costs for the children to attend higher level of schooling and thus represents an increase in expenditure on education. Tourism, sales representation, etc., are other commonly known service industries and could be developed in many provincial areas. The less recognized forms of service in the provinces include those associated with agricultural tools and equipment as mentioned earlier.

However, recent records of growth of the service sector of Thailand and existing literature confirm that "...the growth in the nontradable sector [including services] accommodates itself to growth in the tradable sector," and consequently, "no policy needs to be addressed to this sector as such..." (Siamwalla 1983). Thus, given the accommodating characteristic, measures which effectively lead to (1) rapid and sustained increase in provincial household income, and (2) better survival of existing, or creation of new, industries in the provincial areas will eventually increase the demand for services. For example, "...other policies, for example an employment-creation program, will have a great deal of impact on its [the service sector's] size" (Siamwalla 1983:32). Therefore, except for industries such as tourism which is an obvious form of service and lends itself to direct promotion schemes, e.g., increased accessibility through improved transportations, increased safety, availability of accommodation, etc., demand for most services is a natural result of the household income levels. Long term, sustained increase of rural household income at substantial enough rates to catch up with the urban households is thus the best way to encourage the emergence and development of service industries in the provinces.

4.4.2 Direct Measures for Demand Generation

The first group of measures works through the implementation of broader level policies and strategies/measures. The direct measures here involve changes, modification and/or addition of tasks in the day-to-day operation in some government agencies. They include the following:

Government Purchase.

Under this measure, the purchase of certain types and portion, to be determined, of supplies and equipment for government offices is to be shifted to provincial industrial products. Implementation of this measure will not be easy and may have the least chance of success. On the one hand, the size and diversity of government purchases and the fact that regulations can be quite easily amended make this option seem

attractive. The practicality of the strategy, on the other hand, may be highly questionable when dealing with a bureaucracy the size of a national government. But, difficulty should not be taken as being the same as impossibility.

As an immediate measure, there can be an extension of the existing requirements on purchasing regulations: In the purchasing of supplies and equipment, government offices are currently required to give priority consideration to domestic products, as opposed to import. The regulations further stipulate that among in-country industrial producers, priority be given to the Thai industrial establishment, i.e., industries with all or the majority of their shares owned by Thais, (The Regulations of the Office of the Prime Minister on Supplies and Equipment, Part 2, Section 1, Items 9 and 10). This regulation can be amended so that purchase priority be given to industries with a minimum "provincial industrial content," defined by the percentage of value added originated from the provincial sources. The exact, or range of, percentage is highly related to the structure and linkages of the industrial production and the practical purpose. It must, therefore, be carefully looked into and determined by a relatively high level planning agency, or agencies. For practical purposes, success examples in the United States and in India should be carefully reviewed and analyzed before specific implementation measures are drawn up. In any case, implementation should not be across-the-board but must be selective and gradual in order for interested industries to respond. A final word of caution is, of course, that this strategy, even when successfully implemented, will at best maintain, but will not raise the aggregate demand for the country industrial sector.

Increasing Intermediate Demand through Industry-Industry Subcontracting Activities.

Another source of demand, i.e., for intermediate products, could be encouraged to develop and expand. Acquisition of intermediate products needed as inputs by an industry can take the form of direct purchase from, or through subcontracting arrangement with, other industries. The subcontracting arrangements should provide the manufacturers of final

products more assurance of the availability of the inputs when they are needed than the direct purchase method. In addition to the fact that subcontracting usually means inventory management and costs, the current business tax systems are also found to be one of the major discouraging factor for industry-industry subcontracting arrangements. The value added tax systems, by definition, are expected to solve this multiple taxes problem and should have a positive effect in increasing the subcontracting arrangements in general. To increase the intermediate demand for provincial industrial products, direct measures may be needed in addition to the new tax systems. Examples of existing direct measures include the percentage requirement for local parts in the automobile industry. The "provincial industrial content" concept suggested earlier can be used as the basis to qualify for lower income or sales tax rates. Or a "provincial input content" could be required for particular industries. All need to be properly identified. And if the announcement of tax privilege or provincial content requirement is made long enough in advance of its implementation it could become an incentive for production of those inputs in the region. The Center for Industrial Information within the Ministry of Industry may have to focus more on the structure of provincial-urban linkages and to step up its match-making function, through its collection and dissemination of information, on possible type of subcontract products, activities as well as who could be involved and where and how these may take place.

Long-Term Information Services and Assistance.

A significant number of industrial operators have indicated their strong need for information with respect to new products and technology and ways in which their existing products and technology could be modified to meet the changing demand in the markets. This strategy to build up long term information services and assistance is especially important for existing small industries using simple technology in their production. With the tendency for buyers to switch their purchase to more "modern" products as the average level of rural household income increases, the ability to engage in product improvement and modification is crucial to "maintain" the demand for products of small provincial industries. Information acquisition by individual entrepreneurs can

quickly become too costly. On the other hand, existing government and non-government agencies can better afford to collect the badly needed information and disseminate it widely at a much lower cost.

Therefore, if raising rural household income is necessary to increase the demand for industrial products, product improvement is critical to maintain the demand for provincial industrial products. It may be some time before the private sector can expand its existing information service to a commercial scale with prices which are affordable by existing and potential small provincial industries. Meanwhile, current government services within the Regional Industrial Promotion Center could be stepped up, particularly on identifying products that may soon become outdated and possible substitutes, so that existing provincial industries do not lose whatever small share of the market they present have. Simple brochures or even leaflets can be a relatively inexpensive method for disseminating the information. The more costly part of this type of program involves the acquisition of necessary equipment such as computer and hiring the right personnel who can and want to make a difference for the provincial industrialization process. Information services and assistance, at first glance, may seem part of the supply side strategy. To the extent that the main objective here is to help provincial industries maintain the level of existing demand through the provision of information for product improvement, it is quite rightly included as a demand strategy.

Direct Export by Provincial Industries

This measure involves major action by the government in opening up additional ports for export clearance in the region. The expansion of markets into the neighboring countries which only recently opened up, for example, should have effects on industries of all sizes. Additional ports of export clearance in Nong Khai and other provinces along the Mae Khong River such as Ubon Rachthani, or export clearance points in the North, for example, need to be established. They are expected to help reduce the transportation costs for industries currently located in the Northeast and the North. For the local, small to medium industries, the closer access to new market can be one way to help release the pressure

soon to face them due to local market saturation. The proximity to the markets, often also similarity in languages and even culture, will prove to be an advantageous condition for the relatively smaller industries in some provincial areas.

The new markets, in addition to the labor cost comparative advantage in the provincial areas created through the wage rate management measure as suggested earlier, could also become an added factor which makes it attractive for some larger-scale industries. The results on employment and income generation will be even more significant when this happens.

Another necessary condition is needed for the promotion of direct export under this measure to be successful. Regulations and procedures related to export need to be synthesized and simplified. For practical purposes, it is also important that direct assistance, and instruction or direction, to go through export procedures be provided by government officials to industries interested in exporting for the first time so that industries do not become victims of the "informal go-betweens."

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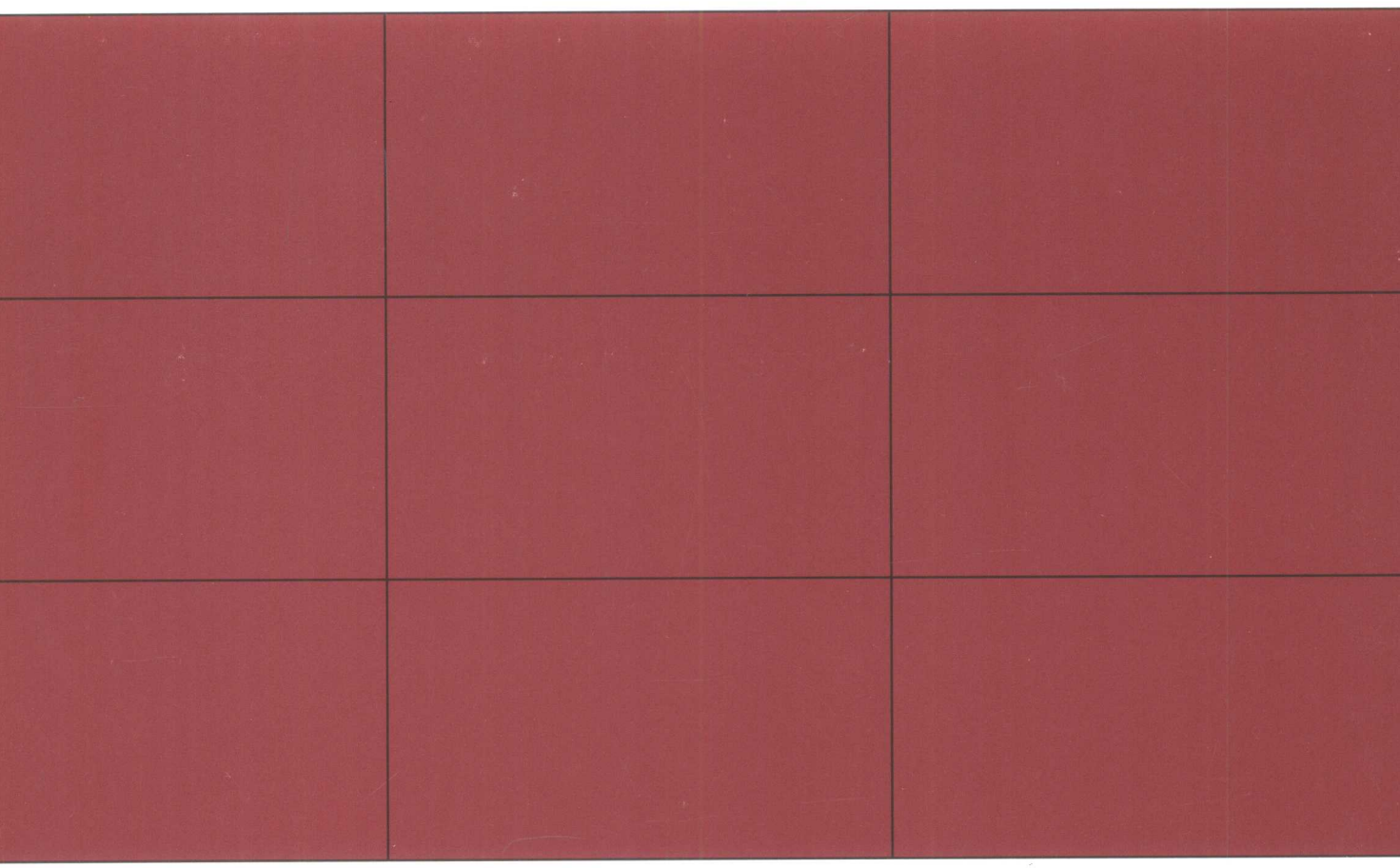

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