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NATIONAL ECONOMIC AND
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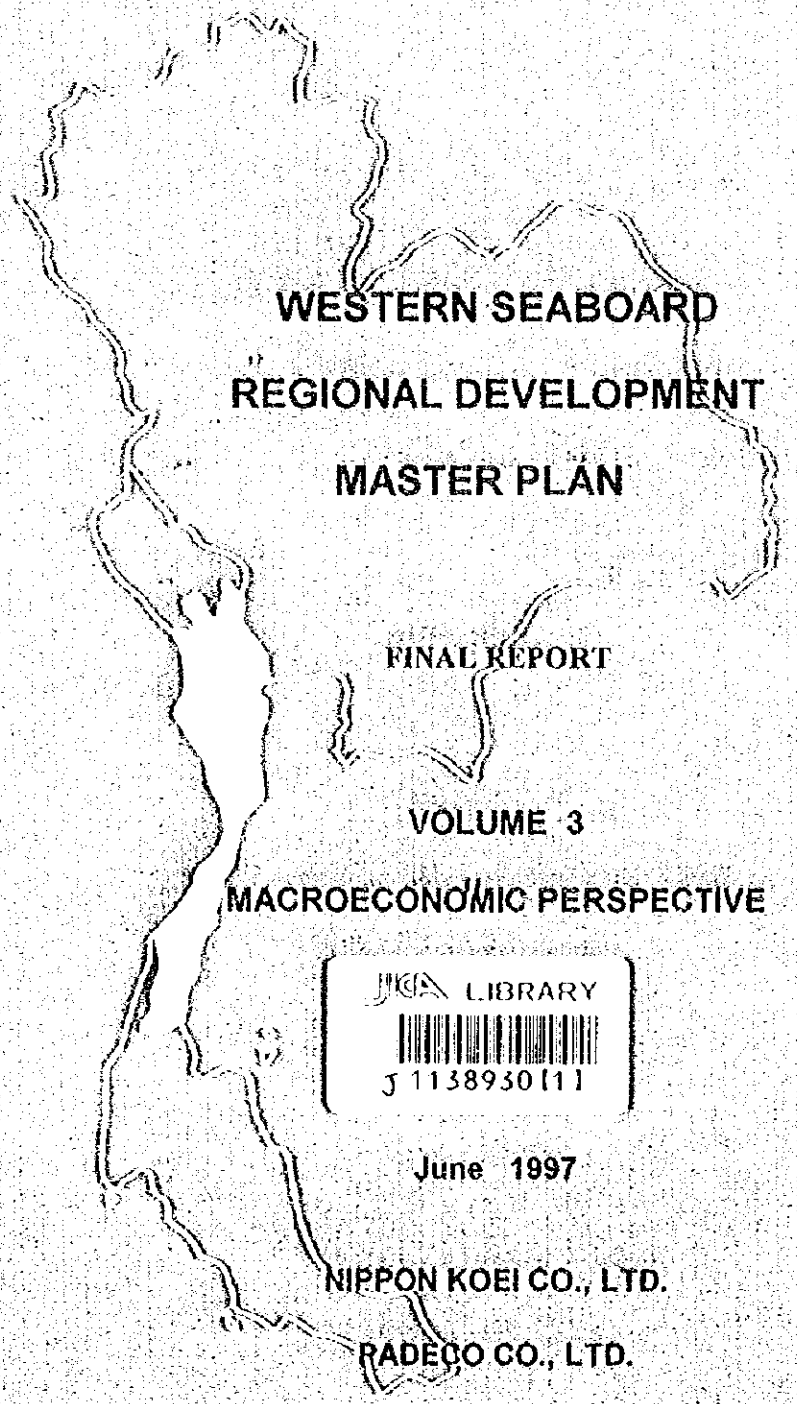

WESTERN SEABOARD REGIONAL DEVELOPMENT MASTER PLAN

FINAL REPORT

VOLUME 3

MACROECONOMIC PERSPECTIVE

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LIST OF REPORTS

(This Volume is indicated by [redacted])

Executive Summary

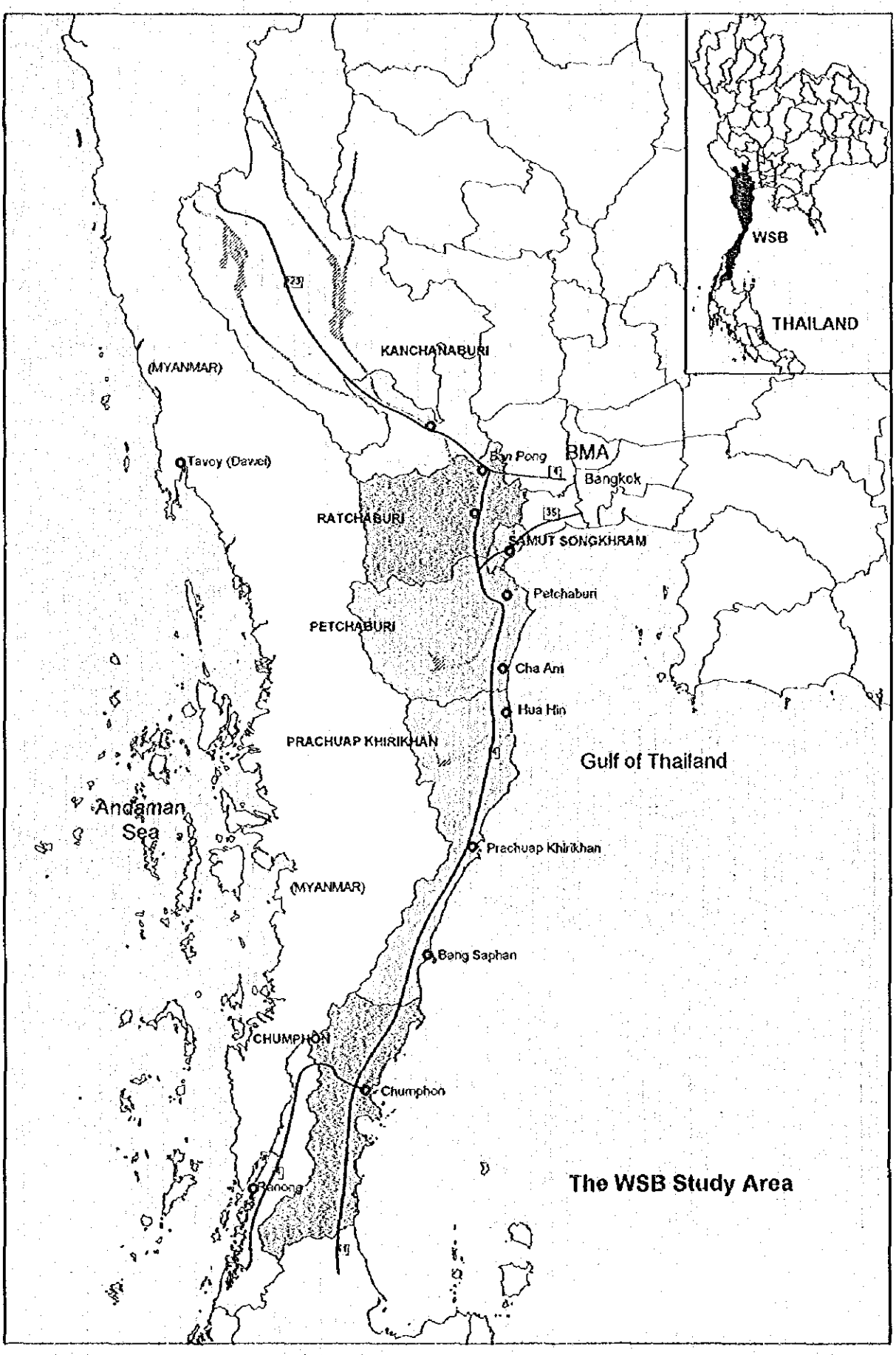
Volume 1	Main Report
Volume 2	Social Environment
Volume 3	Macroeconomic Perspective
Volume 4	Spatial Development and Land Use
Volume 5	Rural and Urban Development
Volume 6	Agricultural Development
Volume 7	Industrial Development
Volume 8	Tourism Development
Volume 9	Infrastructure Development
Volume 10	Institutional Development

Currency Equivalents

US$ 1 = 25 Baht

1 Baht = US$ 0.04

(As of Mid 1996)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KANCHANABURI
(MYANMAR)
Tavoy (Dawei)
Ban Pong
BMA
Bangkok
RATCHABURI
SAMUT SONGKHRAM
Petchaburi
PETCHABURI
Cha Am
Hua Hin
PRACHUAP KHIRIKHAN
Gulf of Thailand
Andaman Sea
Prachuap Khirikhan
(MYANMAR)
Bang Saphan
CHUMPHON
Chumphon
Ranong
The WSB Study Area

VOLUME 3 MACROECONOMIC PERSPECTIVE

Table of Contents

CHAPTER 1 OVERVIEW OF ECONOMIC DEVELOPMENT 1-1

1.1 DEVELOPMENTS IN THE NATIONAL ECONOMY 1-1

1.2 DEVELOPMENTS IN THE WSB ECONOMY 1-3

1.2.1 Overview 1-3

1.2.2 The WSB Provinces 1-5

1.2.3 Sources of WSB Growth 1-6

1.2.4 Employment and Output per Worker 1-7

CHAPTER 2 ECONOMIC ISSUES AND POLICIES AFFECTING NATIONAL AND REGIONAL DEVELOPMENT 2-1

2.1 REGIONAL ECONOMIC DECENTRALIZATION POLICIES 2-1

2.2 EXTERNAL POLICIES 2-4

2.3 FINANCIAL SECTOR POLICIES 2-7

2.4 INVESTMENT AND SAVING 2-10

2.5 LOCAL GOVERNMENT FINANCE 2-13

2.6 PRODUCTIVITY AND GROWTH 2-17

CHAPTER 3 ECONOMIC OUTLOOK 3-1

3.1 THE EIGHTH NATIONAL DEVELOPMENT PLAN 3-1

3.2 MACROECONOMIC DEVELOPMENT SCENARIOS FOR THE WSB REGION 3-4

3.3 RECOMMENDED PROJECTS/PROGRAMS AND THE ECONOMIC GROWTH SCENARIO 3-10

List of Tables

Table 3.1.1	Key Economic and Financial Indicators, 1985-1995
Table 3.1.2	Sectoral Origin of GDP, Population, and Area for the Regions, WSB Study Area, and the Kingdom
Table 3.1.3	Provincial and WSB Region Structure of GDP in 1994 with Population and Area
Table 3.1.4	Gross Provincial Product by Province and WSB Study Area, 1981-1994
Table 3.1.5	Industrial Origin of Output (GDP) in the WSB Study Area, 1981-1994
Table 3.1.6	WSB Manufacturing Value Added by Industrial Sector, 1981-1994
Table 3.1.7	WSB Structure of Output, Employment and Output per Worker in 1980, 1990, and 1994
Table 3.1.8	Labor Productivity Index by Industries for the Kingdom, 1984-1994
Table 3.2.1	Summary of Investment Promotion Activities of the Board of Investment, 1990-1995
Table 3.2.2	Schedule for Implementing the AFTA Common Effective Preferential Tariff (CEPT)
Table 3.2.3	Major Financial Institutions in Thailand at end 1995
Table 3.2.4	Deposits and Credit Outstanding in the WSB Region by Principal Financial Institution at end 1995
Table 3.2.5	Indicators of Commercial Banking Activity by Province as of May 1995
Table 3.2.6	Summary of Local Government Operations, 1989/90-1995/96
Table 3.2.7	Tax Revenue of Local Government in FY 1994
Table 3.3.1	Key Indicators of the NESDB Development Plans
Table 3.3.2	WSB Illustrative Economic Growth Scenarios to 2011 (Eighth, Ninth, and Tenth Plans)
Table 3.3.3	Projects/Programs Recommended for Implementation

List of Figures

Figure 3.1.1	Macroeconomic Indicators
Figure 3.1.2	Sectoral shares in GDP and Per Capita GDP in 1994 by Region
Figure 3.1.3	Growth in GDP by Sector and Province
Figure 3.3.1	Real GDP Growth Projections

Chapter 1 OVERVIEW OF ECONOMIC DEVELOPMENT

1.1 Developments in the National Economy

Over the past three decades, Thailand's economic growth has averaged about 7 ¾ per cent a year, which has resulted in a five-fold increase in real per capita incomes, while inflation averaged below 5 per cent during the period. This is an extraordinary record and a testimony to the enterprise of the Thai people and the quality of the authorities' economic management. This rapid economic expansion has transformed the economy from one largely depending on a narrow agricultural base to one with significant modern manufacturing and service sectors. For example in 1965, agriculture accounted for 35 per cent of GDP, while industry and services contributed 24 per cent and 41 per cent respectively. By 1995, agriculture's share of output dropped to 11 per cent, while the shares of industry and services had increased to 40 per cent and 49 per cent respectively.

Thailand's most difficult period for macroeconomic management occurred during 1980-86 when the economy was adjusting to severe external shocks--the second oil price shock, the surge in US interest rates and the appreciation of the dollar, and depressed commodity prices. The major problems were deterioration in the balance of payments, falling external reserves and rising foreign debt. Stabilization measures included restrictive monetary and fiscal policies, tax system restructuring, and devaluation of the baht in 1981 and 1984 and the pegging of the baht to a currency basket. The measures put in place proved to be instrumental to the resumption of rapid economic growth as the external environment improved after 1986. The following records average annual economic growth over recent Plan periods:

GDP Growth by Plan Period

Period		Real Average GDP Growth
5th Plan	1982-86	5.2%
6th Plan	1987-91	11.3%
7th Plan	1992-1996	8.1% estimate
8th Plan	1997-2001	8.0% target

Since 1986, Thailand has experienced an extraordinary economic boom owing to a rapid expansion of exports and investment expenditure (see Table 3.1.1 and Figure 3.1.1). Economic growth reached a peak of 13.3 per cent in 1988 and since 1991 has been relatively stable in the range of 8-8.7 per cent. Over the 10-year period through 1995,

growth has averaged 9.4 per cent a year, high both in absolute terms and in comparison with other countries. The driving force propelling the 23 per cent annual expansion in exports was a surge in manufactured exports, which accounted for 80 per cent of the total exports by 1995. The expansion in investment largely reflected private sector investment, particularly in the export-oriented manufacturing sector. Particularly after 1988, Thailand benefited from a surge in foreign direct investment, much of which reflected industrial relocation from Japan and the Asian newly industrial countries (NICs) in response to economic restructuring in these countries. Reflecting this surge and the growing general attractiveness of Thailand as an investment destination, non-monetary capital net inflows, almost entirely private capital flows, increased from US$700 million in 1986 to US$22 billion in 1995.

The sustainability of Thailand's economic boom has been enhanced by its strong actions in the area of macroeconomic and structural policies. Among the policies of importance were: (i) achieving and maintaining an overall surplus in the central government budget by strict control over current expenditure while also providing for somewhat higher rates of infrastructure investment after 1990/91; (ii) a reformed tax system and rate structure that is incentive-oriented and broadly comparable with that of competitive regional countries; (iii) efficient and profitable operation of the public sector enterprises (largely confined to provision of public utility services) that underpinned the maintenance of an overall public sector surplus; (iv) deregulation of interest rate and exchange controls; (v) liberalization and institutional strengthening measures in the banking and capital markets; (vi) the establishment and rapid development of the Bangkok International Banking Facility (BIBF); (vii) a reformed and lowered structure of tariff rates and liberalization of capital account transactions and certain trade restrictions; and (viii) the revision of the BOI investment incentive framework.

Thailand will face challenges to sustaining its ongoing rapid economic expansion while not overheating the economy and at the same time dealing with the remaining structural constraints to growth. Managing financial policies to achieve rapid economic growth with relative price and exchange rate stability, avoiding destabilizing short-term capital flows, and raising the domestic saving rate to lessen the present reliance on large current account deficits are among the main tasks in the macroeconomic area. Structural issues largely relate to overcoming implementation delays and building up the economic and social infrastructure, dealing with environmental problems, and upgrading the educational accomplishments of the population to facilitate the transition from low-wage, labor-intensive manufacturing to the higher-technology, skill-intensive industries. Moreover, measures to address the deterioration in the distribution of income and the

uneven pattern of regional income levels and economic growth rates will be crucial to ensuring the sustainability of the development effort over the longer term.

As background to the Western Seaboard Regional Development Master Plan, the balance of this volume describes recent economic developments in the WSB region, examines some general issues relating to national and regional development, and provides economic growth scenarios based on the findings of the overall Study.

1.2 Developments in the WSB Economy

The purpose of this section is to describe and assess recent economic trends in the Western Seaboard (WSB)[1] economy. For many good reasons, regional economic data are less complete and timely than are national economic data. In this regard the most comprehensive economic indicators are the provincial national income accounts estimates that are generated in the context of the Kingdom-wide estimates. These are summarized in the text table below and presented in more detail in the other tables referred to in the following discussion. Estimates of GDP are made by sector of industrial origin by the NESDB for each of the 76 provinces (changwats) and these are grouped into seven regional areas.[2] As it is not possible to make estimates of the expenditure or income side of the accounts at the provincial level, the lack of information on investment expenditure and other components of aggregate demand necessarily limits the full understanding of evolving economic developments and trends in growth at the provincial and regional level of the Thai economy.

1.2.1 Overview

The structure of the WSB is broadly similar to the other non-Bangkok provincial regions as a group as indicated in the table below. The agricultural sector accounts for about 20 per cent of GDP and industry between 30-35 per cent. The economic size of the region is small relative to the Thai economy and the other provincial regions as it accounts for only about 4 per cent of national GDP, 5 per cent of population, and about 8.5 per cent of land area. Per capita GDP in the WSB, however, has traditionally been relatively high and it remains about 40 per cent above the average of the other provincial regions but is

[1] The WSB comprises the provinces of Kanchanaburi, Ratchaburi, Petchaburi, Samut Songkhram, Prachuap Khirikhan, and Chumphon. The formal Study Area excludes six sparsely populated districts in the northern part of Kanchanaburi, however, no adjustment to the GDP and other data in this section on this account was possible. The provincial composition of the WSB is almost equivalent to that of the Western region, however it excludes the Western province of Suphan Buri and includes the Southern province of Chumphon.

[2] Bangkok and Vicinity (abbreviated here as BMR), Central, Eastern, Western, Southern, Northern, and Northeastern.

about ¼ the level in the Bangkok Metropolitan Region (BMR). WSB real economic growth has been a full percentage point less than the average of other provincial regions in recent years. This result, however, has been significantly influenced by the strong performance of the Eastern region

Summary Regional Economic Indicators

	WSB Study Area	Other Provincial Regions	Bangkok Region (BMR)	Kingdom
Agriculture	19.3	18.8	2.2	10.2
Industry 1/	34.8	32.6	45.4	39.3
(Manufacturing)	23.3	19.7	35.9	28.2
Services	45.9	48.6	52.4	50.4
Total	100.0	100.0	100.0	100.0
GDP (mn. Baht)	B140.8	B1,604.2	B1,855.9	B3,600.9
Share in total GDP	3.9%	44.6%	51.5%	100%
Per capita GDP	B 48,610	B 34,993	B 186,167	B 61,335
Growth in real GDP, 1981-94 (p.a.)	6.3%	7.3%	9.1%	8.2%
Growth in population, 1981-94 (p.a.)	1.2%	1.4%	2.6%	1.6%

1/ Includes mining and quarrying, construction, electricity and water, and manufacturing.

Table 3.1.2 compares the economic structure of the WSB region with each of the other provincial regions and includes data on area, population, per capita income, and growth in real GDP in the 1981-94 period (the longest, most recent period for which comparable data are available). Regarding size, the table indicates that while the GDP of the WSB is slightly smaller than that of the Central region, it is about only 1/3 to 1/2 the size of the other (non-BMR) provincial regions. The agricultural sector in the WSB area (19 per cent of GDP) is relatively comparable in size to that in the Northern and Northeastern regions, while the Southern region is larger (36 per cent of GDP) and the Central and Eastern regions are smaller (about 10 per cent of GDP). Notably, fisheries are relatively important in the Southern region (12 per cent of GDP, raising the size of the agricultural sector) followed at some distance by the WSB (4 per cent of GDP) and Eastern (3 per cent of GDP) regions. The manufacturing sector in the Eastern and Central regions accounts for about 40 per cent of GDP, compared with about 25 per cent of GDP in the WSB area, and only 5 per cent of GDP in the Southern and 10-13 per cent of GDP in the Northeast and Northern regions. The service sector generally accounts for about 50 per of GDP in the provincial regions, except for the Eastern and Central regions, where it accounts for 38 per cent. Variations in GDP per capita across regions are extreme and largely reflect the relative importance of manufacturing and certain service industries where output per worker is much higher than in the other sectors. As detailed in Table 3.1.2 and Figure 3.1.2, per capita GDP in 1994 varied from a low of B20,000 in the

Northeastern region to a (non BMR) high of B100,000 in the Eastern region, while the BMR level was B186,000.

Growth in real GDP has been marked by appreciable regional differences in the 1981-94 period. Three regions exceeded the Kingdom average growth rate of 8.2 per cent per annum—Eastern (10.4 per cent), BMR (9.1 per cent), and Central (8.3 per cent). The high growth in the Eastern region, of course, reflects the build up in infrastructure under the ESB Development Project and the spillover of investment from the BMR in an era of significantly increased private investment expenditure—both foreign and domestic. Growth in the other regions was about 6 per cent per annum, except in the Southern region which recorded a 7 per cent rate. This trend of disparate economic growth and the extreme variations in income levels across the regions prompted the adoption of new regional policies in 1993 that included a revision of BOI incentives to emphasize a regional zone approach and the introduction of other supporting measures fostering faster regional economic development. Moreover, the Eighth Plan (1997-2001) places renewed emphasis on policies to promote regional and human development. The effects of these policies, will of course, only be apparent in the provincial GDP data in the years ahead.

1.2.2 The WSB Provinces

Ratchaburi and Kanchanaburi dominate the economy of the WSB region, accounting for somewhat more than ½ of the WSB GDP (see Table 3.1.3). Traditionally, Kanchanaburi was economically the larger of the two provinces; however, recent economic growth in Kanchanaburi province has been the lowest in WSB region economy while Ratchaburi's growth has been the highest resulting in the relative positions changing in 1990. A second tier of three provinces—Prachuap Khirikhan, Petchaburi, and Chumphon—are of roughly equal size, each accounting for about 15 per cent of the region's GDP; while lastly, Samut Songkhram provides 5 per cent of WSB output. The region's population generally accords with these economic proportions or shares. The three second-tier provinces each account for nearly 15 per cent of the WSB land area and have equivalent population densities, which are essentially equal to the WSB average of about 70 persons per square kilometer. Kanchanaburi accounts for 45 per cent of the land area and has the lowest population density (34 persons per square kilometer). Ratchaburi and Samut Songkhram respectively account for 12 and 1 per cent of the WSB land area and have high population densities (respectively, 148 and 477 persons per square kilometer). Per capita GDP data range from a low of 58 per cent of the Kingdom average in Samut Songkhram to a high of 89 per cent in Ratchaburi.

The industrial structure of GDP by province is varied. Agriculture's share ranges from a high of 41 per cent in Chumphon to a low of 12 per cent in Ratchaburi. The share of manufacturing in total output ranges from a low of 8 per cent in Chumphon to a high of 42 per cent in Ratchaburi. Value added in the services sector ranged more narrowly between provinces and remained within 10 percentage points around the WSB average of 45 per cent of GDP, with a relatively large wholesale and retail trade sector in Kanchanaburi, Petchaburi, and Samut Songkhram explaining much of the variation in provincial service sector shares. Estimates of tourism expenditure by foreign visitors and Thais made by the Study Team indicate that it is equivalent respectively to about 15 per cent of service sector value added and 6-7 per cent of GDP in the WSB region.[1]

1.2.3 Sources of WSB Growth

Over the 1981-94 period, economic growth in the WSB region averaged 6.3 per cent per annum. Growth varied markedly over the individual provinces (see Table 3.1.4 and Figure 3.1.3), but the variation appeared not to be associated in a direct way with the province's initial industrial structure—whether it was more or less agriculturally oriented—but depended on the ability to introduce new industrial activity in the province. Above average output growth was recorded by Ratchaburi (7.9 per cent), Chumphon (7.5 per cent), and Prachuap Khirikhan (7.3 per cent) while below average performance was experienced by Samut Songkhram (5.7 per cent), Petchaburi (5.5 per cent), and Kanchanaburi (4.1 per cent).

The manufacturing sector was the main source of growth in the WSB region during the 1981-94 period, providing 38 per cent of the increase in WSB GDP, and growing by about 12 per cent per annum (see Table 3.1.5). The construction and the electricity and water supply sectors also grew rapidly (each by 11 per cent p.a.) and provided 12 per cent of the increase in WSB GDP, while value added in mining and quarrying was practically unchanged over the period. Taken together the services sectors provided about 40 per cent of the increase in WSB GDP, with the largest subsector, wholesale and retail trade, growing at the same rate as overall GDP and providing 16 per cent of the increase in WSB GDP over the period. Other service sector industries grew by only 3-4 per cent annually except banking and insurance, which recorded a striking 15 per cent per annum gain. Finally, the agricultural sector, which currently accounts for about one-half of WSB employment, provided only 10 per cent of the increase in WSB GDP over the period. The crop sector accounted for about two thirds and the fisheries sector one third of the increase in total agricultural value added over the period, as recorded

[1] Expenditures by tourists are not separately identified in the national accounts estimates

agricultural growth amounted to 2-2.5 per cent per annum. Fisheries was the most rapidly growing subsector in agriculture, recording a 5 per cent annual gain; however, this performance mainly reflected a sharp jump in output in 1991 with only small subsequent gains. In any event, resource constraints indicate that this rate of fisheries expansion cannot be sustained. Forestry output has varied sharply from year to year but has been on a declining trend due to resource constraints. A 40 per cent drop in forestry output in 1994 was especially severe; the sector now accounts for a mere ½ per cent of WSB GDP, compared to over 3 per cent of WSB GDP in 1981. An increase in on-farm processing value added worked to offset the decline in forestry.

While growth in manufacturing output over the 1981-94 period averaged about 12 per cent per annum, it varied sharply from year to year (Table 3.1.6). The 50 per cent expansion of manufacturing output in 1992 was especially notable and reflected very large increases in the output of textiles, paper, cement, and rubber products. More than 80 per cent of the increase in manufacturing output over the 1981-94 period was accounted for by five industries—food processing, beverages, textiles, paper, and non metallic mineral products. The traditionally large food processing industry grew by about 7 per cent over the period or only slightly faster than overall GDP. As a result of rapid growth in the other manufacturing sectors, the share of food processing in total manufacturing value added fell from nearly 65 per cent in 1981 to 35 per cent in 1994. A rapid expansion was recorded in textile manufacturing (28 per cent p.a.), reflecting recent large expansions in Ratchaburi and Prachuap Khirikhan output, while the increase in paper (15 per cent p.a.) was accounted for by recent increases in Kanchanaburi.

1.2.4 Employment and Output per Worker

Data on employment for the WSB area are only available from the 1980 and 1990 NSO Census and the 1994 Labor Force Survey. These data are combined with data on WSB GDP in Table 3.1.7 in an attempt to glean trends in employment and output per worker by economic sector in the WSB study area. As a reference, the same data sources were used in calculations for the Kingdom as a whole. The overall productivity calculations for the Kingdom generally accorded with the results of a Ministry of Labor and Welfare study on national productivity that are reproduced in Table 3.1.8. Moreover, while WSB output per worker varies considerably by sector, the pattern of variation by sector is broadly in accord with reported national data. Nevertheless, problems of definition and consistency over the period suggest that the WSB results obtained in Table 3.1.7 be viewed as tentative.

For the agricultural sector, the data suggest that over the 1980s, employment increased significantly (by 2.7 per cent per annum) and gains in output per worker were low (0.3 per cent per annum). Employment fell rapidly in the early 1990s and implicit increases in output per worker were high (7.7 per cent per annum). For the full period (1980-94), WSB output per worker is estimated to have increased by 2.2 per cent per annum, compared to a 4.5 per cent national increase estimated in Table 3.1.7 and a 4.3 per cent increase that was estimated by Ministry of Labor for the 1984-1994 period (Table 3.1.8). Agricultural employment apparently peaked by 1990 and agriculture's share in total WSB employment has declined from 65 per cent in 1980 to 51 per cent in 1994 when employment was reported to be about 820,000 persons. It is interesting to note that WSB agricultural output per worker has consistently been above the Kingdom average (for agriculture) but that this "premium" fell from about 75 per cent in 1980 to about 50 per cent in 1990 and then to about 25 per cent in 1994 (Table 3.1.7). While the existence of a "premium" suggests a relatively more efficient WSB agricultural sector, the declining trend in the "premium" could be interpreted to mean that other provincial regions are making faster progress than the WSB in adopting techniques (including reducing under-employment) to raise output and incomes for the sector's producers.

In the manufacturing sector, employment appears to have increased rapidly after 1990 (at about 15 per cent per annum) and the sector's employment share in total WSB employment increased from 7 to 15 per cent between 1980 and 1994 when reported employment was about 235,000 workers. The estimated increase in WSB labor productivity in manufacturing was 3.8 per cent per annum and was relatively stable throughout the sub-periods. The national economy estimates for manufacturing by the Labor Department was reported at 4.2 per cent annually (during 1984-1994). It is notable that WSB output per worker was about only 45 per cent of the national figure in 1980 and 1990 but rose to just over 60 per cent by 1994 (Table 3.1.7). This would be consistent with the apparent arrival in the recent period of larger-scale investments in some industries, such as paper and textiles. Unexplainable large declines in output per worker in construction and mining and quarrying in the 1990-1994 period, perhaps due to unreliable employment data or classification, make the estimates for these sectors and the "industry" grouping look to be suspect.

For the service sectors, the lack of consistency in definition for the various sectors between observations made a grouped approach to the sector a necessity. For the full 1980-94 period, employment has grown by about 3 per cent per annum while output per worker expanded by 2.6 per cent. The national economy estimate indicates markedly higher productivity at 4.5 to 5 per cent per annum (1984-94), except for the public

administration and defense sector, which was estimated to be 1 per cent per annum. WSB output per worker has been relatively stable at 70-75 per cent of the national level at the three observation points. Service sector employment (433,000 workers in 1994) has been fairly stable at about 25 per cent of the labor force while service sector output was maintained at 40-45 per cent of WSB GDP.

For the WSB economy as a whole, output per worker increased by nearly 4 per cent per annum over the 1980-94 period, while employment rose by 2.3 per cent per annum. In relation to the national economy, WSB output per worker estimated in Table 3.1.7 declined from about 98 per cent of the national average in 1980 to 75 per cent in 1994. The relatively slower growth in productivity in the WSB area is reflected in the published data on GDP per capita. WSB regional GDP per capita in 1981 was B16,383 or 102.8 per cent of the national average and in 1994 amounted to B48,610 or 79.3 per cent of national average per capita GDP. The Northern, Northeastern, and Southern regions experienced similar though somewhat smaller declines in the relationship of their levels of per capita GDP to the national average.

Chapter 2 ECONOMIC ISSUES AND POLICIES AFFECTING NATIONAL AND REGIONAL DEVELOPMENT

2.1 Regional Economic Decentralization Policies

In March 1993, the Government substantially upgraded its policies in support of promoting regional economic development. Regional promotion policies were first introduced in the Third Economic and Social Development Plan (1972-76) and were later expanded by various initiatives; however, the policies were not sufficient to prevent the concentration of economic activity around the Bangkok area. The main elements of support for regional development, apart from budgetary support for infrastructure, have been investment promotion activities by the Board of Investment (BOI), infrastructure development through the Industrial Estate Authority of Thailand (IEAT), and financial support provided by the Industrial Finance Corporation of Thailand (IFCT) and the Small Industry Finance Corporation of Thailand (SIFCT). The establishment of the Eastern Seaboard Development Program in the early 1980s (Fifth Plan, 1982-86) was particularly successful. A revision of the BOI incentive structure from providing uniform benefits to all areas to providing higher incentives for location in outlying regional areas to develop new economic zones was first adopted in September 1987 for the Sixth Plan (1987-91). The concept of Regional Urban Growth Centers was introduced in the Fourth Plan (1977-81) and emphasized in the Sixth Plan when 24 regional growth centers were targeted. During the Seventh Plan, in an attempt to make regional policies more effective, nine provinces[1] were targeted for development as industrial centers to serve as a catalyst for development in their regional area.

The major element of the Government's 1993 initiative to revitalize its regional development policy was a substantial revision in the BOI incentives for investment promotion so that regional development became the major objective of BOI policy in place of export promotion. Other elements of the 1993 policy package included a special fund for regional infrastructure expenditure, new measures providing financial support for regional business, provisions for developing Provincial Investment Plans and a regional data bank, and emphasis on coordination among the government agencies on regional development issues.

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[1] Chiang Mai, Phitsanulok, and Nakhon Sawan in the Northern region; Nakhon Ratchasima and Khon Kaen in the Northeast; Saraburi in the Upper Central region; Ratchaburi in the Western region; and Surat Thani and Songkhla in the Southern region.

To better carry out regional policies, new administrative arrangements were put in place. The National Rural Development and Decentralization Committee (NRDDC), chaired by the Prime Minister, created a Decentralization Sub-Committee within the Prime Minister's Office to oversee day-to-day activities. This sub-committee administers a special fund created to speed completion of eligible regional infrastructure to facilitate private investment projects and local employment; this fund initially set at B700 million for 1993 has subsequently been increased and was proposed to be B1.2 billion in the 1996/97 budget.

The financial measures adopted included: an easier listing procedure on the Stock Exchange of Thailand for regional companies, a new Joint Venture Fund for regional firms operated by IFCT, and a low-interest loan fund (at 11.25 per cent per annum) for small-to-medium scale entrepreneurs awarded BOI privileges in Zone 3 that was supported by the Bank of Thailand. Relatively little use was made of the low-interest lending facility, which is scheduled to expire at the end of 1996; this appears to reflect the general ability of Thai financial institutions and markets to meet investor needs.

The 1993 revamped incentive structure that significantly favors investment in the 60 provinces in Zone 3 outside the economically developed Bangkok core area is the main incentive feature of Thailand's regional policy. The 1993 changes also broadened the scope for BOI promotion by increasing the number of promoted activities to 160 categories (from 148) classified in seven broad industrial areas and by reducing the minimum required project capital to B1 million (excluding land and working capital), which had previously varied up to B4 million.

The main incentives for promoted investment in Zone 3 include: the exemption of import duty for project machinery and equipment; the exemption from corporate income tax for eight years; exemption of duty on raw materials for export production for five years (if at least 30 per cent of sales); and a 75 per cent reduction for five years in duties on imported raw materials used in production for domestic sales (provided no local availability)[1]. Since estimated revenue losses from BOI exemptions and reductions of import tariffs on imported machinery and raw materials alone (not including those related to income taxes) were reported to be B59 billion in 1994 (equivalent to about 10 per cent of total

[1] Special additional benefits include reduction of corporate tax by 50 per cent after the initial exemption period; double deduction from taxable income of water, transport, and electricity costs for ten years from start of business operations; and deduction from net profit of 25 per cent of the costs of a project's infrastructure facilities.

central government tax revenue), the revamping of the BOI incentive structure was clearly a major action to promote regional development.

Relatively little time has past since the introduction of the enhanced regional investment incentives and a full, formal evaluation of their impact is not available. A survey conducted by the BOI in January 1996 reported that one-half of the respondents indicated that the investment incentive policy had a significant impact on their investment location decisions and 33 per cent reported being moderately influenced; only 17 per cent said that the incentive policy had only slight or no impact on their decisions.

Data on BOI promotional activities are provided in Table 3.2.1. These data indicate that investor activity continues to be intense with the value of approved investment in 1995 at B580 billion (equivalent to 40 per cent of private fixed investment), double the 1992 amount. The data reveal that Zone 3 investment applications have increased their share to account for 67 per cent of total applications in 1995, compared to 42 per cent in 1992. Approved investment capital for Zone 3 in 1995 amounted to B450 billion or 78 percent of approved investment during the year, compared to 41 per cent in 1993. Most Zone 3 projects, however, are located in the relatively more developed provincial areas; indeed, 80 per cent of the value of approved investment in 1995 went to the Eastern region. This underscores the view that incentives alone are not decisive and that to be fully effective the policies to promote regional development will require the authorities to mount a concerted effort to provide other provincial areas with the minimal infrastructure and amenity facilities that are required to attract private investor activity.

Statistics on project investment approvals in Zone 3 in 1994 and 1995 presented in the table below indicate that the basic industries groups of minerals, metals, and ceramics and chemical products, paper and plastics recorded the largest share of investment. In 1995, these two industrial groups accounted for 75 per cent of approved investment, compared to about 50 per cent in 1994. These basic industries recorded only 25 percent of expected employment generation in 1995 and required a much larger investment per employee (B6.6-9.5 million) than the other more labor intensive light industrial sectors (B0.5-B1.0 million). Indeed, investment in basic industries and utilities raised the average planned investment per employee to B2.6 million in Zone 3 approval data, compared to the B1-1.5 million level recorded in recent years for BOI projects starting operations (see Table 3.2.1). These developments appear to confirm that Thailand's desired transition from labor-intensive to more advanced-technology industries as a source of growth is ongoing and has not been hampered by BOI's regional policy emphasis.

Approved Investment in Zone 3 by Sector

	1994				1995			
	No. of Projects	Investment (In billions of baht)	No. of Employees	Investment/ Employee (Baht mn.)	No. of Projects	Investment (In billions of baht)	No. of Employees	Investment/ Employee (Baht mn.)
Agriculture and agric. products	163	20.9	33,281	0.6	148	14.2	27,048	0.5
Minerals, metals, and cermanics	86	44.2	11,456	3.9	95	113.0	17,239	6.6
Light industries	115	7.0	39,280	0.2	79	8.8	32,518	0.3
Metal products, machinery and transport equipment	96	17.3	18,305	0.9	96	23.3	19,893	1.2
Electronics and electrical product	58	14.1	24,143	0.6	64	17.1	33,646	0.5
Chemical products, paper, plastic	129	45.9	18,140	2.5	170	218.7	23,107	9.5
Services and public utilities	153	35.1	22,860	1.5	100	47.6	17,184	2.8
Total	800	184.5	167,465	1.1	752	442.7	170,635	2.6

2.2 External Policies

Thailand has traditionally maintained an open trade and exchange rate system, which coupled with cautious financial policies, has contributed to its striking economic success. Although Thailand embarked in the early 1960s on industrial development through an import substitution strategy, tariff rates ranging from 15 to 30 per cent remained relatively low in comparison with those of most developing countries. Tariff rates were increased in the 1970s even as development strategy swung to export promotion and remained at a higher level throughout the 1980s despite efforts at reversal. The adverse impact of the anti-export bias inherent in the tariff system, however, was offset by various export promotion schemes. Since 1990, substantial tariff reform has been put in place as part of a general strategy of economic liberalization. Initial steps at liberalization were a 1990 cut in tariffs on capital goods used in manufacturing from 20 to 5 per cent, large reductions in tariffs on automobiles[1] and computers in 1991, and reduced duties on chemicals, textiles, iron, aluminum and glass in 1992.

Trade policy is a central part of the Thailand's development strategy as the Government sees a more liberal trading regime as a means of increasing efficiency and growth. The policy of liberalizing tariffs and reducing other barriers to trade to expose domestic industry to competition rests in a fundamental confidence that Thai productivity in most

[1] A key action that fostered development of the present large automobile assembly and parts industries.

sectors of agriculture, manufacturing, and service industries is intrinsically high. Accordingly, aggressive pursuit of liberalization policies in trade and other economic policy areas is viewed as a means of maintaining rapid economic growth in a region that is expected to continue to be the world's leading economic growth area. In line with its development strategy, Thailand has been fully committed to the global and regional trade initiatives within the Uruguay Round of the GATT and WTO, the ASEAN Asian Free Trade Area (AFTA), and the Asia-Pacific Economic Cooperation (APEC) group.

In 1995 Thailand unilaterally restructured its customs tariff on 20 product categories covering 6,898 tariff lines or 91 per cent of all tariff lines. According to the restructuring, which is being phased over two years, the average tariff rate will be reduced from 30.24 per cent to 17.01 per cent by January 1, 1997. Under the new tariff structure, the number of tariff rates will be reduced from 39 to 6 rates as follows:

- 0 per cent for products under tariff exemption, such as medical equipment and fertilizer;
- 1 per cent for raw materials, electronic components, and vehicles for international transportation;
- 5 per cent for primary products and capital goods;
- 10 per cent for intermediate products, such as synthetic filament yarn;
- 20 per cent for finished products, such as paper and woven fabrics; and
- 30 per cent for products requiring special protection, such as garments.

Under the Uruguay Round (UR), Thailand was committed to reducing import duties on 3,891 tariff lines by 2004;[1] as a result of the 1995 restructuring, tariffs on 2,163 lines are lower than those committed thus completing 68 per cent of the UR obligation. Regarding agriculture, Thailand agreed to tariffication for 23 quota items, including rice, sugar, and milk products. The final simple average tariff applied to Thailand's agricultural imports (including tariffication) under the UR will be about 35 per cent by 2004. Moreover, domestic support to agricultural producers will need to be limited to B19,028 million by 2004, which implies a decrease in value terms of about 13 per cent from present levels. Under the UR, Thailand is committed to eliminating all local content requirements applied to domestic production by 1999; since 1993 these have been applied to new BOI projects for production of motor vehicles (cars, trucks, buses, and motorcycles), which is scheduled to end in 1998, and milk. Further under the UR, the

[1] An average reduction of 24 per cent in 10 years for 738 tariff lines of agricultural products and an average reduction of 28 per cent in 5 years for 3,153 tariff lines of industrial and fisheries products (10 years for textiles).

remaining BOI export-related incentives are to be phased out by year 2002. The impact of this commitment will almost entirely fall on BOI incentives for Zone 1.

The ASEAN Free Trade Area (AFTA) came into effect in 1993, and represented an important step in ASEAN economic integration. By lowering tariff barriers, AFTA aims to encourage complementary use of resources and promote foreign direct investment in the ASEAN region. Since Thailand has relatively attractive features for being a regional center for ASEAN operations (e.g., location, a large domestic market, broad manufacturing base for raw materials), AFTA appears to offer Thailand significant development potential. The mechanism for lowering tariffs is the Common Effective Preferential Tariff (CEPT) scheme advanced by each member and endorsed by the AFTA Council. At least 40 per cent of a product's value must originate within ASEAN for the item to be eligible for CEPT treatment. The current, revised AFTA scheme seeks to reduce tariff rates to 5 per cent or less on all included trade by the year 2003 according to various timetables (see Table 3.2.2. for schedule details). For fast-track manufactured items tariff adjustments are to be completed by year 2000; the timetable for tariff adjustment on raw agricultural products, agreed at a later date, follows the normal-track schedule and is to be completed by 2003. Thailand's tariff reductions under AFTA cover over 8,000 items that account for over 95 per cent of its ASEAN trade. Thailand's trade with ASEAN has increased rapidly in recent years: exports to ASEAN countries advanced from 12 per cent of total exports in 1991 to 19 per cent in 1995. The bulk of the increase, however, was accounted for by Singapore (advancing from 8 to 14 per cent of total exports), which already maintains tariff rates of less than 5 per cent. Thailand's imports from ASEAN countries grew more modestly, advancing from 12 per cent of total imports in 1991 to 13 per cent in 1995.

APEC was created in 1989 to promote cooperation among its 18 member countries in the Pacific rim. The 1994 Bogor Declaration committed APEC to achieve free and open trade and investment in the region by no later than the year 2020, with industrialized economies to achieve this goal by 2010 and developing economies by no later than 2020. Currently member countries are preparing "Action Plans" to implement the Bogor commitments in trade liberalization, trade facilitation, and economic and technical cooperation for presentation at a November 1996 Summit Meeting. As APEC countries account for over one-half of the world's GDP, APEC naturally would be Thailand's largest trading region, representing some 70 per cent of total trade. Since APEC members' trade comprises the dominant share of world trade, the modalities for achieving APEC goals as a free trade area and their relation to WTO efforts are not evident or decided. While actual agreements appear to be years away, the APEC process

is well suited to Thailand's agenda for a development strategy based on an open economy.

Thailand encourages inward foreign direct investment (FDI), mainly through BOI policies providing financial incentives (to both foreign and domestic investors) for approved investments in designated promoted activities. Since 1992, FDI by Thai residents has been facilitated by capital account liberalization that freed amounts of FDI not exceeding US$10 million from prior exchange authorization approval. Recent net flows of foreign and Thai FDI are as follows:

Foreign Direct Investment

	1988	1989	1990	1991	1992	1993	1994	1995
(In billions of baht)								
Foreign direct investment (net)	22.2	36.1	58.9	47.1	50.3	36.7	22.7	29.6
Foreign	22.8	37.4	62.5	51.4	53.8	43.8	33.2	49.7
Thai	-0.6	-1.3	-3.6	-4.3	-3.5	-7.1	-10.6	-20.1

Inflows of FDI appear to have peaked in 1990 at B62.5 billion (equivalent to about 9 per cent of private fixed investment) and have varied around B50 billion (about 5 per cent of private fixed investment) in subsequent years. Thai FDI has markedly increased in recent years and in 1995 was B20 billion, equivalent to 40 per cent of FDI net inflows. Thai FDI has gone mainly to regional country destinations—in 1995, ASEAN accounted for 24 per cent, Indochina for 9 per cent, the People's Republic of China for 10 per cent, and Hong Kong for 8 per cent. Most of Thai FDI was directed to industry and service sector investments (about 50 per cent) with the balance about equally accounted for by real estate and securities investments. Thai FDI has in general been facilitated by Government promotional activity as part of the effort to develop Thailand as a regional center and as a means to relocate some labor-intensive manufacturing activities that are no longer viable domestically. Thailand's ability to attract large capital inflows has allowed Thai FDI to be readily financed without impinging on domestic investment and yet maintaining a surplus in the overall balance of payments.

2.3 Financial Sector Policies

Thailand has a wide array of financial institutions, most of which are privately-owned; however, commercial banks substantially dominate the Thai financial market, both in terms of assets and nationwide coverage of branch offices (see Table 3.2.3). As part of its competitive, open market economic development strategy, the authorities have implemented many measures to develop and improve the efficiency of Thailand's

financial markets. These measures have included: deregulation of interest rates and portfolio constraints; broadening the scope of activities of financial institutions; development of new financial instruments and markets; improving the payments system and prudential control; establishing a Securities and Exchange Commission (SEC), credit rating agency, and bond dealers club; and introducing the offshore banking business with the establishment of the Bangkok International Banking Facility (BIBF) in 1993. Reflecting the success of these efforts, growth in real value added in the financial sector has expanded at an annual average rate of nearly 20 per cent over the past ten years, compared to the 9.4 per cent annual growth in the economy as a whole (GDP). The financial sector in 1995 accounted for about 8 per cent of GDP, compared to 3.2 per cent in 1985.

Further development of Thailand's financial system is to be guided by the Financial System Master Plan 1995-2000, which was approved by the Cabinet in February 1995. Measures in the Plan relate to seven major areas: (i) expanding the scope of financial institutions' operations, (ii) improving the financial structure, (iii) enhancing competitiveness and financial market liberalization, (iv) supporting regional and provincial development, (v) improving supervision, (vi) fostering human resource development in the sector, and (vii) developing Thailand into a regional financial center. The goal of developing Thailand into a regional financial center in all areas--finance, trade, international corporate operations, and business services—is a major element in the strategy to sustain rapid economic growth.

In the Financial System Master Plan, financial institutions (both public and private) are envisioned to support the Government's rural and provincial development policy to diversify production, improve the income distribution, and raise the standard of living. In this regard, Government-specialized institutions will be encouraged to provide new types of services such as project financing in rural areas, particularly for infrastructure and educational projects, and credit for agricultural-related supplemental business occupations, basic consumption needs such as housing, education, and medical expense, and financing for rural self-help groups. In terms of specific institutions it is envisioned that: (i) the Government Saving Bank (GSB) will be re-oriented to that of a provincial/regional development bank to provide medium-term credit to small and medium sized non-agricultural customers, to finance loans for education, and to engage in loan syndication for regional infrastructure projects; (ii) the Bank for Agriculture and Agricultural Cooperatives (BAAC) will expand its coverage to include nonagricultural credit to farmers (up to 20 per cent of lending); and (iii) the Government Housing Bank (GHB) will expand its operations by developing a secondary market for housing loans.

Moreover, a Municipal Credit Guarantee Corporation will be established to guarantee borrowings for infrastructure projects by units of local government. The scope for operations by this institution, however, would in good part depend on a substantial strengthening of local government's tax revenue base. Private financial institutions—commercial banks, finance companies, securities, and mutual fund management companies—will be encouraged to open branches, sub-branches, and offices in the provinces and rural areas. In this regard, it is expected that a commercial bank branch will be established in every district and official policy will be directed to achieving this goal. To speed provincial financial development, all new locally-incorporated commercial banks are required to set up their headquarters in a regional area. Since private financial institutions will seek to maintain their current high rates of income growth, it may be expected that the natural evolution of the industry will increasingly focus on business opportunities in provincial areas (as activities in the BMR reach "maturity") in conjunction with the continuation of the process of introducing new products and services.

The WSB region already has relatively good access to and has utilized the facilities of most of the principal financial institutions operating in the country. Moreover, most of the region is relatively close to Bangkok and has ready access to its financial institutions. As indicated in Table 3.2.4, there are a total of 254 offices of financial institutions in the WSB region (of which 181 are commercial bank branches); all of the main financial institutions appear to have provided either deposit or credit services in the area. The WSB region includes somewhat more than 6 per cent of both total country bank branches and financial institution offices, as compared to about a 5 per cent share in total population and a 4 per cent share in GDP. Commercial banks provide the bulk of the WSB residents' total deposit (88 per cent) and credit (83 per cent) services. The GSB and the BAAC provide the balance of deposit services at 8.5 and 3.8 per cent of area residents' total holdings. In addition to commercial banks, loans have been acquired from the BAAC (10.2 per cent of total borrowing), IFCT (3.3 per cent), GHB (2.8 per cent) as well as the GSB and the SIFC (about 1 per cent).

Indicators of commercial bank activity by province are provided in Table 3.2.5. The WSB region has about 16,800 persons per banking office, which shows relatively favorable coverage, as it is the second lowest provincial density (excluding the Bangkok region), being broadly comparable to the more economically developed Eastern and Central regions (which have densities respectively of 13,500 and 18,700 persons) and much lower than that of the Northeast's 50,800 persons per banking office.

The WSB holding of B30,300 of per capita bank deposits in mid-1995 ranks second in size to the B42,407 per capita holding of the Eastern region (for provincial areas outside of the Bangkok region), suggesting a relatively strong financial position of WSB area residents. Per capita bank deposit holdings in the Northeast and North were only B8,475 and B17,360, respectively. The WSB loan-to-deposit ratio at commercial banks of 85 per cent indicates that the region is a net saver in terms of financial assets, in contrast to the Northeast, Northern, and Southern regions (with loan deposit ratios respectively of 116, 107, and 110 per cent). Taking into account all financial institutions, the WSB ratio of loans to deposits is about 90 per cent; the more comprehensive measure confirming banking system data that the WSB is an area where saving exceeds investment.

2.4 Investment and Saving

The Eighth Plan has stated the reduction of the current account deficit (reduced reliance on foreign saving) to 3.4 per cent of GDP by the year 2001 to be a major goal. Since total investment envisaged in Plan forecasts is expected to fall only slightly in relation to GDP, a substantial increase in domestic savings would be required. The Plan's strategy relies on adopting measures to raise private saving and introducing policies, mainly BOI incentives, that would encourage domestic production of intermediate goods and boost earnings from tourism and shipping services.

At nearly 35 per cent of GDP in recent years, Thailand has one of the highest savings rates in the world. Since 1986, the growth in the current account deficit has reflected financing of an extraordinary investment performance that has overwhelmed a substantial rise in national savings. This has been the development pattern of other rapidly growing NICs. As "maturity" approaches and per capita income comes to approximate that in developed countries, investment moderates and the current account deficit is much reduced or possibly moves into surplus. For example, after years of very large current account deficits, Singapore eliminated its deficit in 1986 when per capita GDP was equivalent to about US$10,000 at 1995 prices.

It may be noted that the Seventh Plan set a target of reducing the current account deficit to less than 2.5 per cent of GDP by 1996—a target that will be clearly missed (as a 8.2 per cent deficit is now estimated for 1996). Given Thailand's income level at the time, the saving goal may have been overly idealistic, but it is worthwhile to recall since it reflects both the authorities long-standing concern to reduce dependency on foreign savings and the practical difficulty of finding a mix of policies that are acceptable to the public and yet achieve such a high standard of discipline in respect of national

consumption expenditure. Reviews of economic indicators of Thailand's current account sustainability indicate that economic fundamentals are strong. For example, the current account deficit is due to high investment rather than excessive consumption, the public sector maintains an overall budgetary surplus, domestic saving and exports have been strong, the exchange rate is not considered overvalued, and there are few price or structural distortions in the economy. On the other hand, the increase in recent years of short-term capital inflows and the present level of short-term debt are higher than past Thai and current regional standards (however, for the most part this is due to the BIBF's great success as a financial intermediary) and the sharp slowdown in export growth in the first half of 1966 have raised concerns. Accordingly, the authorities' determination to reduce the current account deficit should be signaled by early strong measures to assure continued investor confidence.

While not often explicitly recognized, it is arguable that of all policy objectives of the Eighth Plan the goal of increasing domestic saving is more important to the development of regional and rural areas (such as the WSB) than any of the specific policies immediately directed to this objective. As a corollary, it can be argued that resolving issues that have delayed implementation of major infrastructure projects (largely oriented to Bangkok), especially those that are privately financed, is second in importance to success in expanding domestic saving. This ordering of policy importance recognizes that because provincial and rural areas have weak infrastructure and higher production costs they are more vulnerable than developed areas of the country to the sharp decline in investment resources that would result from a loss of investor confidence.

The national saving ratio has remained relatively stable in recent years varying between 33 and 35 per cent of GDP as indicated in the following table. However, there has been substantial change in the composition of national saving as the household saving ratio has fallen steadily over time from 14.4 per cent of GDP in 1989 to 7.2 per cent in 1995. This decline of about 7 per cent of GDP was offset by roughly equal increases (of 3.5 percent of GDP each) in the private corporate and public sector savings rates.

Investment and Saving

(In per cent of GDP)	1989	1990	1991	1992	1993	1994	1995
Gross domestic investment	35.1	41.3	42.7	40.0	40.4	41.2	43.1
Private, including stocks	30.1	35.2	35.5	31.9	32.5	32.8	34.5
Public	5.0	6.1	7.2	8.1	7.9	8.4	8.6
Gross national savings	34.1	33.2	34.0	33.9	33.4	34.5	34.4
Private	25.4	22.0	21.8	22.9	22.4	22.3	21.7
Households	14.4	10.0	9.7	9.6	8.0	7.3	7.2
Corporations	11.0	12.0	12.1	13.3	14.4	15.0	14.5
Public	8.7	11.2	12.2	11.0	11.0	12.2	12.7
Statistical discrepancy	2.5	0.4	-0.4	-0.5	-1.1	-1.1	-0.6
Foreign savings	3.5	8.5	8.3	5.6	5.9	5.6	8.1

An analysis by the Bank of Thailand[1] indicates that a decline in disposable household income from 70 per cent of GDP in 1989 to 63 per cent in 1994 accounted for two-thirds of the drop in the household saving ratio. The decline in household income in relation to GDP resulted from an expansion in the importance of the corporate sector in national income and increased depreciation allowances and net factor income payments to abroad in relation to GDP. The other important factors in the decline in household savings were a reduction in the average tax on consumption that resulted from the introduction of the VAT at a lower rate than the replaced sales tax and structural liberalization measures introduced in the period (e.g., which facilitated easier access to consumer credit). On the other hand, a changing population structure and larger labor force worked to raise the saving ratio and mitigated the net decline.

The Eighth Plan set a goal of increasing the household saving ratio to at least 10 per cent of GDP by the end of the period (2001), and this increase apparently would provide essentially all the expected increase in the national savings ratio. The household savings target is to be achieved by various promotion measures including further expansion of private provident funds (PPFs), the implementation of a contributory pension scheme for employees in the public sector, the implementation by 1998 of a pension element in the Social Security system, and promotion of new saving instruments to be issued by financial institutions.

[1] Private Saving in Thailand, Bank of Thailand Economic Focus, April-June 1996.

The coverage of PPFs is quite small, accounting for about 1 per cent of companies with provident fund membership at about 1.6 per cent of the labor force; PPF assets in 1995 amounted to B58 billion, equivalent to only 1.5 per cent of GDP. Present fiscal incentives for household saving are limited and relate to: (i) exemption from tax of interest income of up to B20,000 per year on savings type accounts; (ii) reduction of income tax rate from 15 to 10 per cent on interest earned on certain saving deposits of five-year maturity; and (iii) a deduction from income subject to tax for both employee and employer PPF contributions of up to 15 per cent of annual salary or B300,000, whichever is less.

The Eighth Plan objective of strengthening national saving is appropriate since the continuation of the large current account deficits of recent years will increasingly expose Thailand to the risk that an adverse shock to the economy could set off a process of capital flight and force a sharp economic contraction as occurred in Mexico in December 1994. The Plan's near exclusive focus on household saving, however, is not likely to achieve the national saving objective and in any event would not provide an adjustment in the near term as would be desirable. This is so because of a number of factors that include: the measures to increase household saving will take considerable time to put in place, the magnitude of the public's response is uncertain, and household income will continue its decline in relation to GDP making the marginal effort even larger. Given the circumstances, the Government should consider direct action to increase the VAT rate early in the Plan period. By impounding the tax revenue increase, public saving would be raised while at the same time there would be an immediate and significant positive impact on household saving as indicated by the BOT research (mentioned above). Moreover, since tax reform designed to improve investment and production incentives has been under consideration, the increase in the VAT rate could be combined in a revenue-positive way with the reform's reductions in personal and corporate income tax rates. This packaging of measures would be attractive in seeking public support and would provide a desirable immediate increase in national saving while providing additional incentives for economic growth.

2.5 Local Government Finance

Local government, defined as government entities that have statutory budgetary authority to raise revenue and make expenditure to carry out their assigned functions, is of relatively small size in Thailand. There are altogether six types of local governmental units with fiscal authority: changwat administrative organizations (CAOs); municipalities based on population size—the nakhon, muang, and tambon municipalities; sanitary

districts; the recently created tambon administrative organizations; and two special forms of local government—the Bangkok Metropolitan Authority (BMA) and the Pattaya City Administration (PAT). The Eighth Plan envisioned a larger role for local government in advancing local social welfare and economic development, especially by the provision of needed local infrastructure. This section discusses issues related to reforms to strengthen local governments' finances that will be required if local governments are to expand their developmental activities.

Table 3.2.6 provides a summary of local government budget operations over recent years. The small size of local government is readily apparent in that total expenditure in recent years has amounted to the equivalent of only 1.2 to 1.5 per cent of GDP, whereas total central government expenditure has amounted to 15-17 per cent of GDP (with state enterprise investment included, public sector expenditure is about 20 per cent of GDP). Moreover, the ratios of local government expenditure to GDP of other relevant ASEAN countries tabulated in the table indicates a relatively smaller scope for local government in Thailand, as the ratios are 4-6 per cent of GDP in Malaysia, 2.5 per cent in Indonesia, and 1-2 per cent in the Philippines. The fiscal weakness of local government is especially apparent in their limited and fragile revenue structure. Local government tax and nontax revenue amounts to only about 1 per cent of GDP, and it finances only about 60-70 per cent of total expenditure with transfers from the central government largely providing for the balance. Table 3.2.7 details the sources of local tax revenue by type of local government, and this data further highlights the limited nature of local government fiscal authority in that only 16 per cent of tax revenue comes from locally collected taxes with the balance provided by surcharged and shared taxes collected by the national government administration. Indeed, since local tax sources and tax rates are determined at the national level and are uniform throughout the country, there is no real discretionary power at the local level to affect the local budgetary revenue and expenditure outcome.

Local government tax revenue consists of four locally collected taxes, surcharged taxes, and shared taxes. The locally collected taxes comprise: (i) a house and building tax, (ii) a land (development) tax, (iii) a signboard tax, and (iv) an animal slaughter tax. In countries where local government is well developed, property taxes generally constitute a major share of local government tax revenue; however, they account for about only 14 per cent of tax revenue in Thailand's cities, municipalities, and sanitary districts. The main reason for this lower share is a narrow definition of the tax base (excessive exemptions) and to a lesser degree weakness in tax administration. The house and building tax is levied only on structures for commercial use—all owner-occupied

buildings are exempted from tax—and there are rate concessions given for certain taxable holdings such as factories.[1] The land tax also has numerous exemptions including owner-occupied land and small holdings of agricultural land. Surcharged taxes are "additions" of local tax rates to central government rates with the full tax collected by the national government and local share remitted to local government entities less a collection fee. Surcharge taxes are the main source of local revenue, accounting for nearly two-thirds of tax revenue. The surcharge taxes relate to the VAT (where the local share is 10 per cent of the 7 per cent VAT rate—0.7 per cent less a collection fee) and to certain specified excise taxes[2] with 10 per cent of the excise tax collected by the national government in the local government's area deemed to be the local government surcharge. Shared taxes, providing about 20 per cent of local government tax revenue, have consisted in recent years of only the division of motor vehicle tax, collected by the Department of Land Transportation, among the various local government units. Local government also collects nontax revenue (from fees and fines, property income, utility and services charges, and miscellaneous revenues) equivalent to roughly 15 per cent of local government tax revenue.

A package of revenue reforms adopted in 1994 that is to be phased in over a number of years is expected to double the local government tax revenue base. Specific reforms include the following:

- Establishing the (national) real estate transfer tax as a shared tax. This tax, generally 2 per cent of assessed property value at the time of transfer, would be shared to provide 1.8 per cent to local government and 0.2 per cent to the national government; the tax yield would depend on tax assessments in a local government's territory.
- Reducing the VAT collection fee from 5 to 3 per cent and replacing the allocation formula fixed in 1960 (and favorable to Bangkok) to one based on actual VAT transactions in the local government's territory.
- Including the tobacco excise tax as part of the excise taxes subject to a local 10 per cent surcharge.
- Transferring a part of taxes on certain natural resources to local government.
- Increasing motor vehicle taxes to generate a larger tax yield subject to sharing.

[1] Tax assessment is based on annual rent with the rate charged being uniform at 12.5 per cent.
[2] There are seven specified excises: alcoholic and non-alcoholic beverages, petrol, electrical appliances, crystal, automobiles, yachts, and horse racing courses.

- Combining the land development and the building and rent tax into a single property tax, with market value assessment and generally improved administration.

It appears that the revenue reforms underway, while an important forward step, will have a relatively limited impact. An eventual doubling of the tax revenue base as has been estimated for the full implementation of the measures would raise total local government resources from about 1.5 to 2.5 per cent of GDP if the present level of current and capital transfers of 0.5 per cent of GDP from the central government were to be maintained. Accordingly, the scope of local government would remain relatively modest and any significant reduction in transfers could offset up to one-half of fully implemented revenue measures. Capital expenditures of local government in recent years have amounted to only about 0.7 per cent of GDP. Even if most of the new tax revenue resources were devoted to investment expenditure, local government capital expenditure available for infrastructure construction would remain relatively minor in comparison to public sector investment that amounts to about 8-9 per cent of GDP.

Apart from the uncertainty related to the continuation of central government transfer support, implementation of the full scope of the envisioned revenue measures is limited by the stated complexity of amending existing laws and procedures that is evidenced by the long phase-in period for the reforms. Property tax reforms are likely to present special difficulties. Expanding the property tax base to include owner-occupied dwellings and state enterprise property along with eliminating the present rate concessions on taxable property will undoubtedly unite a formidable array of public opposition in the actual event. Moreover, establishing a database of taxable property assessed at market value is a complex technical task in the best of circumstances and would be especially difficult given the limited availability of expertise at the local government level.

Nevertheless, the basic premise of expanding and strengthening the role for local government in the public sector is compelling as this level of government is uniquely able to be effective and efficient in public resource management in support of provincial and local economic and social development. Apart from institutional measures to strengthen the administrative capacity and responsibilities of local government, the authorities will need to consider substantial further revenue reform if local government is to take on a meaningfully larger role in the years immediately ahead. While reform of the local property tax and some latitude in setting local rates are fundamental to a strengthening of local finances, the authorities will need to substantially expand the use of

surcharged/shared taxes if the Eighth Plan's objectives for local government are to be achieved. This is especially true if the proposed Municipal Credit Guarantee Corporation is to play a true commercial role in facilitating local government borrowing for infrastructure.

2.6 Productivity and Growth

Thailand has experienced rapid economic growth since 1960 when it launched its First Social and Economic Development Plan and since 1986 has moved to the top levels of the world standings for rapid economic growth. However, it is recognized that the country is now in a transitional period from one in which economic growth was driven in large part by development of labor-intensive industries to one in which labor shortage and relatively high wage costs in the country will require growth to originate in higher-skill, more capital- and technology-intensive industries and in the modern business service sector. An important uncertainty to be faced in making a successful transition is the fact that while Thailand's adult literacy rate is among the highest in the region, educational attainment at the secondary and tertiary levels is relatively lower than levels attained in other regional countries. This section briefly reports on recent research work by Mr. Michael Sarel[1], at the International Monetary Fund (IMF), that may be interpreted as encouraging with regard to sustaining Thai economic growth in the transitional period.

The approach taken in the research was growth accounting—decomposing output growth into contributions from the factors of production, capital and labor, and in the process obtaining an unexplained residual, regarded as total factor productivity (TFP). Growth in TFP reflects the more efficient use of resources and would generally reflect the adoption of new production technology and the greater productivity of labor.

To make meaningful cross country comparisons, Mr. Sarel's study developed a special database to ensure as uniform a representation of the countries as possible to facilitate the estimation process. Data on flows of output and investment (from which capital stock series were derived) came from the Penn World Tables (PWT) that provide purchasing power parity adjusted data at 1985 prices. The labor input came from effective labor supply data developed by the author for an article in IMF Staff Papers

[1] On Growth and Productivity in ASEAN Countries, a paper presented at the Conference on Macroeconomic Issues Facing ASEAN Countries (on November 7-8 in Jakarta). A volume of conference papers is to be published.

(June 1995). No adjustment in the labor input was made to account for educational levels since educational attainment was seen as more than an investment good and because TFP is properly viewed to reflect level of knowledge, proficiency, skill, and other similar concepts. Finally, the estimates of factor shares were developed by the author's procedure of estimating technological factor shares for a selected sample of countries for nine main sectors of economic activity based in the national accounts as a function of the level of development and capital stock. These estimated coefficients were applied to data on activity levels and development level for each country (on a yearly basis) in the study to find an aggregate (economy-wide) technological factor share for capital.

Summary results[1] of the study are as follows:

Growth Accounting: Contributions to Growth
Growth rates in per cent per annum and contribution in (as % of total)

	Output per person		Capital per person		Effective labor per person		TFP	
				1978-96 average				
Indonesia	4.74	(100)	8.97	(62)	0.93	(13)	1.16	(25)
Malaysia	4.54	(100)	6.86	(47)	0.58	(9)	2.00	(44)
Philippines	0.19	(100)	1.80		0.62		-0.78	
Singapore	5.09	(100)	6.45	(42)	1.06	(14)	2.23	(44)
Thailand	5.24	(100)	7.32	(41)	1.51	(21)	2.03	(39)
United States	1.07	(100)	1.63	(44)	0.43	(28)	0.29	(27)
				1991-96 average				
Indonesia	5.11	(100)	6.98	(44)	0.96	(13)	2.20	(43)
Malaysia	5.35	(100)	8.25	(50)	0.97	(12)	2.00	(37)
Philippines	1.63	(100)	1.15	(21)	0.87	(38)	0.67	(41)
Singapore	4.91	(100)	5.60	(40)	0.77	(10)	2.46	(50)
Thailand	6.51	(100)	11.13	(50)	1.37	(15)	2.25	(35)
United States	1.26	(100)	1.19	(27)	0.43	(25)	0.61	(49)

Source: Growth in Productivity in ASEAN Economies by Michael Sarel (Dec. 1996).

The results of the study indicate that Thailand recorded strong growth in TFP in the 1979-96 sample period; the estimated TFP growth rate for Thailand of about 2 per cent a year compares favorably with estimates for other ASEAN countries, being similar to the rate in Malaysia, higher than the rates in Indonesia and the Philippines, and only exceeded by Singapore. Using only the more recent 1992-1996 sample years suggests a somewhat faster growth in TFP in all countries in the region and a continued strong

[1]The United States was included in the study since Professor Krugman's widely discussed article, "The Myth of Asia's Miracle", was as a point of reference.

outcome for Thailand as compared to the other countries. Growth in Thai investment has been especially notable; however, its contribution to output growth (at 50 per cent) was not greater than in Malaysia.[1] These results would suggest that Thailand has been effectively coping with the problem of lagging formal educational attainment of the labor force in expanding production while at the same time it puts new educational policies into place. Moreover, improvement in educational attainment of the population that is the objective of the Eighth Plan would appear to augur well for continued high levels of TFP growth in the years ahead. For the WSB in particular, the prospect of faster investment growth stemming from the WSB Master Plan as a part of the Eighth Plan's focus on regional development planning is of importance.

[1] For the ASEAN countries the estimates of capital shares varied in a fairly narrow range from .29 to .35, with Thailand at the lower end and Singapore at the higher.

Chapter 3 ECONOMIC OUTLOOK

3.1 The Eighth National Development Plan

Unbalanced economic development, social problems, and threats to sustainable growth led to the emphasis on quality-of-life concerns rather than raw economic growth in framing the Eighth National Development Plan (1997-2001). To fulfill the vision of a desirable society, the new people-oriented national development plan will focus on education and training, improvement in the quality of life, economic and political decentralization, and income redistribution. The five main objectives of the Plan are as follows:

(i) To foster and develop the potentials of all Thais, in terms of health, physical well-being, intellect, vocational skills, and ability to adapt to changing social and economic conditions.

(ii) To develop a stable society, strengthen family and community, support human development, improve the quality of life, and promote increasing community participation in national development.

(iii) To promote stable and sustainable economic growth, and to empower the people to play a greater role in the development process and receive a fair share of the benefits of growth.

(iv) To utilize, preserve, and rehabilitate the environment and natural resources in such a way that they can play a major role in economic and social development and contribute to better quality of life for the Thai people.

(v) To reform the system of public administration so as to allow greater participation of non-governmental organizations, the private sector, communities, and the general public in the process of national development.

Selected economic targets among the twelve main developmental targets of the Eighth Plan are: to maintain 8 per cent annual economic growth while controlling inflation and reducing the current account deficit to 3.4 per cent of GDP by 2001; mobilize household savings to reach 10 per cent of GDP by 2001; and push the poverty ratio to less than 10 per cent of the population by 2001. The main targets on education and skills development, so that Thailand is better prepared to participate in a more competitive world, include: upgrading skills and knowledge of factory workers, especially in the 25-45 age group; providing nine years of education of increased quality to every child;

increasing the quality of all-round preparation for children in the age group up to 5 years; and ensuring that less-advantaged individuals have opportunities for self-development and access to good social infrastructure. For rural areas the main targets include: creating opportunities and alternative occupations in the agricultural sector and increasing the quantity and quality of basic infrastructure services in rural areas. Finally, a main developmental target relates to the reduction of work-related and other accidents; another target seeks to expand forest and mangrove areas; and a general target is set to improve environmental quality for the population as a whole.

Table 3.3.1 compares the key economic indicators of the Eighth Plan with those of the Sixth and Seventh Plans. The Plan sets a somewhat lower target for average annual GDP growth of 8 per cent, compared to 8.1 per cent estimated over the Seventh Plan. The slower growth mostly reflects a slowing of private consumption expenditure and exports. The projected fall in the current account deficit to 3.4 per cent of GDP is based on the assumption that economic policies will raise the personal savings ratio to 10 per cent of GDP by the end of the Plan period. The economic growth projections of the Eighth Plan appear to have been broadly consistent with the expectations of the international financial institutions. The World Bank in its 1996 Global Economic Prospects and the Developing Countries projects economic growth in East Asian countries to be 7.9 per cent annually in the period 1996-2005, somewhat lower than the 8.5 per cent rate achieved in the 1986-1995 period. Growth in export volume is expected to fall to 10.1 per cent annually in the next decade, compared to 13.4 per cent in the 1985-95 period. High investment and savings ratios and growing intraregional investment and trade in the context of relatively favorable economic conditions in the developed countries are cited as favorable factors in the IBRD forecast. The IMF in its 1996 annual review of the Thai economy projects that the Eighth Plan targets would be broadly achieved with economic growth for the Plan period estimated at 7.6 per cent, while the current account deficit is projected to decline to 4.9 per cent of GDP or near the target of 3.4 per cent for 2001. The current account target, however, was considered achievable if substantial new saving measures were undertaken.

The economy, however, took an unexpected downturn in 1996, the last year of the Seventh Plan, after the Eighth Plan framework was largely formulated. While data are not complete, it is estimated that GDP growth slowed to 6.7 per cent during the year, compared to an expected 8.2 per cent gain. A sharp slowdown in export growth initiated the downturn and that was followed by a slowing in investment and consumption expenditure. Both world cyclical demand and domestic structural elements appear to have played a role in the slowdown Notably, a number of other fast-growing countries in

the region experienced similar slowdowns. The consensus outlook as seen in early 1997 is that there likely would be 2-3 years of economic growth in the range of 7-7.5 per cent as policy adjustments took place (somewhat lower than the Plan rate of 8 per cent) and that export demand over the Eighth Plan period would likely be somewhat less robust than envisaged earlier.

The Eighth Plan defined guidelines for the economic and structural policies to achieve stable growth, increased efficiency, and a more balanced distribution of income. In the area of macroeconomic policy emphasis is placed on maintaining price stability by an appropriate mix of fiscal and monetary policies, especially tax and expenditure policies; raising the domestic savings rate by a combination of fiscal and monetary measures and institutional reforms; and reducing the current account deficit by supporting development of Thai intermediate and capital goods industries to reduce imports and increasing the capacity to earn service account incomes in the balance of payments.

Guidelines relating to public expenditure call for the NESDB to extend strategic planning from the national to the regional and provincial levels, achieve better coordination among public agencies and private groups (including NGOs) in the planning process, and insure greater consistency between the Plan and specific action and financial planning exercises. Moreover, the Bureau of the Budget is to increase use of an area-task and people-participation framework and seek further decentralization of budget management. Guidelines pertaining to Public Enterprise Policy aim to expand privatization by further promoting private sector participation in the operation and financing of state enterprise activity with a new permanent agency to oversee the process. Since about 25 per cent of major ongoing infrastructure project investments are privately financed, success in this area offers potential support for the regional development effort as it would free public resources to support greater infrastructure investment expenditure in less developed areas of the country and thus may be seen as crucial step to achieving more rapid development in these areas.

Guidelines on Income Distribution aim at efforts to improve income-earning opportunities in the regions focus on four broad areas of effort: (i) re-orienting agricultural production toward sustainable growth, (ii) developing household, rural, and community industry, (iii) distributing industry and supporting enterprises to regional areas, and (iv) expanding financial services in regional areas. In carrying out the guidelines, emphasis is to be placed on developing farmers own capacity to plan production and adjust to changing circumstances while the role of government is to change from the main promotion agency to a coordinator in providing support. Support

for farmers will continue to be provided in areas such as water supply, research, production inputs, and subsidized loans. Support for development of various types of rural industry is planned to come from provision of tax and investment incentives and technical support. Creation of a network for subcontracting between large industry and small ventures is to be encouraged and promoted, including establishment of an insurance fund to cover losses owing to damages caused by contract failures. Expanding the relocation of industry to regional areas from Bangkok is to be mainly supported by increasing infrastructure investments in such items as transportation, telecommunications, and community amenities so as to keep costs related to infrastructure services at least as favorable as in Bangkok. Support is to be provided in setting up provincial industry in medium and small industrial estates and by greater support for public-private industrial estates, industrial zones, or industrial parks. Various financial incentives are to be provided through the BOI Zone Incentive and IEAT frameworks and other support schemes, including any necessary adaptations. New investment opportunities at the sub-regional level are also to be created by setting up border zones and tax-free zones in order to stimulate investment and trade with neighboring countries. Finally, expanding financial services in regional areas is to be continued and expanded by measures as part of the broad effort contained in the ongoing Financial System Master Plan.

3.2 Macroeconomic Development Scenarios for the WSB Region

The purpose of this section is to outline possible alternative scenarios for the growth of GDP and employment in the WSB region until the end of the 10th National Economic and Social Development Plan in 2011, based on existing circumstances in the region, present national development polices, and the developmental possibilities that have been analyzed and recommended for implementation in this Study.

For projection purposes, the economy of the WSB, as measured by the GDP accounts, has been divided into three sectors: agriculture, industry (including manufacturing, construction, mining and quarrying, and electricity generation and water supply), and an aggregated service sector. As background to the development scenarios that follow, the expectation is that the overall Thai economy will grow by 8 per cent annually during the 8th Plan period (1997-2001) and by 7.5 per cent and 7 per cent annually during the 9th and 10th Plan periods (2002-2006 and 2007-2011). While there are no officially endorsed GDP growth expectations beyond the 8th Plan, the later growth assumptions are broadly consistent with those presented in the *Thailand Vision 2020* outlook prepared by the Thailand Development Research Institute. The 1994 estimates for GDP in current prices

for the region were used as the base for the scenarios. Three economic scenarios are presented in Table 3.3.2 and Figure 3.3.1—a base-line case that extrapolates the trend and two cases that illustrate the policy directions outlined in this Study.

The base-line or trend-scenario (Case 1) extrapolates the trend annual growth rates for each of the three sectors estimated by linear regression of the logarithms of GDP for the period 1981-1994. The estimated growth rates were 2.0 per cent for agriculture, 8.8 per cent for industry, and 5.6 per cent for the service sector.[1] This scenario indicates that the WSB economy would grow by 6.2-6.7 per cent annually over the three plan periods, averaging 6.4 per cent during the 1995-2011 period (Table 3.3.2). Given the relative growth rates, the industrial sector records a continued increase in its share of GDP from about 35 per cent in 1994 to just over 50 per cent in 2011. In this period, agriculture's share in total output will fall from 19 to 9 per cent of GDP while the service sector's share will decline to 40 per cent from 45 per cent. Under this scenario, WSB per capita GDP would continue to fall relative to the Kingdom average: from 79 per cent of the national figure in 1994 to about 66 per cent in 2011. This decline is due to the continued relatively lower growth rate over the period in GDP of the WSB region of 6.4 per cent versus the 7.6 per cent annual growth in output for the Kingdom. Population growth in the WSB is expected to be the same as for the country at large during the period to 2011 (0.8 per cent per annum).

The projected growth and structure of employment is based on estimates of output per worker in the three sectors. Given the limited availability of data, these estimates are necessarily approximate and judgmental. The overall growth in output per worker in this scenario is about 5 per cent annually; this seems a reasonable balance between the figures for output per worker of 4 per cent estimated between 1980 and 1994 and 7.2 per cent estimated for the more recent 1990 to 1994 period. Trend output growth per worker was estimated to be about 2 per cent per annum in agriculture; an assumed rate of 4.5 per cent was used in the two other sectors, as the separate trend estimates did not appear to be reliable. Accordingly, for the period to 2011, employment is estimated to grow by 1.3 per cent annually or about 400,000 workers over the period. This growth in employment is broadly consistent with labor force growth as implied by the NESDB population estimates for the WSB region and a steady labor force participation rate of about 76 per cent. In this scenario, agricultural employment falls by about 3 per cent or 27,000 workers. Agriculture's share in total employment, however, is projected to decline from about 51 per cent in 1994 to 39 per cent in 2011 and industry's share to increase

[1] The national industry GDP deflator was used to deflate nominal WSB industry GDP. This resulted in a slightly lower trend rate of growth for industry that appears to be more representative of developments.

correspondingly to about 35 per cent from 22 per cent, as the service sector share remains constant at about 26 per cent of employment.

The second scenario (Case 2) incorporates and substantially implements most of the developmental ideas discussed in this Study and sets the region on a higher economic growth path than that of the Kingdom as a whole so as to reduce the present regional income disparity. This case represents the Study's recommended objectives and all sector growth rates are expected to be above their trend rates based on the recommended sectoral strategies. Accordingly, for the period through 2011, the WSB economy is expected to grow at 9.2 per cent annually, compared to the 7.6 per cent growth expectation for the country as a whole. As indicated in Table 3.3.2, the sector growth rates are expected to vary substantially over the three development plan periods, although the overall growth in GDP is nearly stable at 9 per cent annually. In this scenario the WSB per capita GDP would increase steadily and move from 79 per cent to about 100 per cent of the level of GDP per capita for the country as a whole by 2011.

Agricultural GDP is expected to grow at 2.0, 2.5, and 3.0 per cent annually over the 8th through 10th Plan periods, which is above its apparent 2 per cent annual historical trend but below the national trend of 3.5-4 per cent. The phased increase in the agricultural growth rate reflects the time lag inherent in implementing the policies recommended in the Study. Further, it is important to recognize that the growth in agriculture for the region as a whole is constrained by limits on the availability of both land and water. The growth in agriculture is expected to result from improvements in efficiency and yields, shifts in the cropping pattern toward the production of high-value crops, the strengthening of the production of meat and dairy products, and innovations in agro-processing and marketing. These elements will vary by province or area within the region as discussed in Volumes 4 and 6. Although growing 20 per cent faster than in the trend scenario, the share of agriculture in total GDP falls to about 7 per cent as compared to 9 per cent in 2011, owing to the more rapid expansion in the non-agricultural sectors. In this scenario, it is expected that output per worker in agriculture will increase by about 6 per cent annually over the period through 2011. This rate is above the national trend for agricultural productivity of about 4.5 per cent[1] and the region's estimated 2-2.5 per cent rate. The assumed increase in productivity performance reflects both the expected success in adopting better farming systems and a reduction in the number of under-employed family members due to improved educational standards and the attraction of rapidly growing non-farm employment opportunities. Accordingly, farm employment in

[1] Estimated for the ten-year period 1984-94 based on an index prepared in a paper on National Labor Productivity by the Department of Labor Protection and Welfare.

2011 is expected to be about 335,000 workers less under this scenario than under the trend or base-line scenario and 360,000 workers less than in 1994.

The industrial sector (as defined) is expected to grow at about 11 per cent annually over the period to 2011 and to account for about one half of the increase in the WSB region's GDP. The sector is expected to grow at 14.0, 10.0, and 8.5 per cent annually over the 8th through 10th Plan periods. The fast growth in the 8th Plan period partly reflects two large projects—the Sahaviriya Steel Industries' (SSI) new steel mill, which began production in Bang Saphan in 1994, and the 5,300 MW Ratchaburi power project (including a gas pipeline from the Myanmar border)—that will be constructed and come into operation during the 1997-2001 period. Moreover, it is highly likely that 4,100 MW of generation capacity will be built respectively by EGAT and independent power producers (IPPs). Industrial growth is also expected to be augmented by the development of industrial estates, including a technopolis or science city, and the introduction of higher-level technology industries, especially metal industries (for details see Volume 7); these factors are especially important for sustaining growth in the sector in the latter periods.

To illustrate its large size, the value added by SSI is estimated to be about 6-7 per cent of WSB GDP in 2001. For the Ratchaburi power plant, it may be noted that its total investment cost of about B137 billion is roughly equivalent to about 60 per cent of average annual WSB GDP during the construction period (1997-2001). The EGAT and IPP investments would in total amount to about B182 billion and most of this expenditure is planned to occur before 2001. Although the bulk of the investment expenditure for electricity generation plants will be accounted for by "imports" of machinery, material, and labor, expenditures on these large investment projects in the region will have a marked effect on GDP growth during the construction period.

Value added in the electricity sector is estimated to increase very rapidly over the 8th Plan as WSB generation is projected by EGAT to increase from about 3 per cent of total national generation in 1994 to 23 per cent of national generation in 2001 as a result of the Ratchaburi and other investments. Subsequently, generation in the WSB area increases much more slowly (by about 6.8 and 8.4 per cent annually during the following two five-year periods). The rapid increase in generation is taken into account in the projections to 2001; any delay in the projects and the schedule for power generation would imply a transfer of estimated industrial growth into the following period but would not affect the overall growth rate estimated for the 1995-2011 period.

It may be noted that only the direct labor cost element of value added in electricity generation is allocated to the area where the generation plant is located; the balance of EGAT value added is allocated by the ratio of provincial to national electricity consumption in the methodology used by NESDB for estimating the provincial GDP accounts. While this practice affects the level of GDP in the generating provinces, such as the WSB region, the practice would appear to make provincial or regional per capita GDP a more representative index of income.

The share of industry in total WSB GDP is expected to increase from about 35 per cent to 48 per cent over the 1994-2011 period given the 11 per cent annual expected growth rate. In this scenario it is assumed that output per worker will increase by 6 per cent annually over the period. This assumed rapid increase in productivity is due to the higher capital- and technology-intensive industry that is to be induced into the WSB region. In 1994 output per worker in WSB industry was B137,500 or 63 per cent of the comparable national figure of B220,000. The assumed selective inducement of industry investment would tend to narrow the present substantial differential in output per worker over time. If output per worker at the national level were to increase by 4 per cent annually, WSB industrial output per worker would be about 86 per cent of the national level by 2011. Accordingly, under Case 2 assumptions, industrial employment would grow at about 5 per cent per annum to the year 2011 when its share in the labor force would be about 37 per cent, compared to 22 per cent in 1994. If the scenario productivity assumptions are not fully realized, industrial employment growth would need to be larger.

The service sector is estimated to grow steadily by rates of between 8 and 10 per cent annually to 2011 (averaging 9.2 per cent for the period). This growth represents a marked increase over the recent trend of 5.6 per cent annually. The expected pickup in growth reflects a number of factors including the accommodation of accelerated growth in the agricultural and industrial sectors, the expected increase in the growth of tourism, and the rapid rise in educational and knowledge-based service industries. The share of the service sector in GDP is projected to vary slightly around 45 per cent of GDP between 1994 and 2011. Output per worker is expected to increase by 4.5 per cent annually over the period to 2011 implying a growth in service sector employment of 4.5 per cent over the same period. The share of the services sector in total employment is expected to increase to 42 per cent in 2011, compared to 27 per cent in 1994.

Total employment would increase by 1.8 per cent annually or about 560,000 workers over the period. About 478,000 workers are expected to be added in the services sector

and 446,000 workers in the industry sector over the period to 2011, while employment in the agriculture sector would decline by about 361,00 workers. In this scenario, the expected increase in the labor force participation rate from 76 per cent in 1994 to 80 per cent in 2011 and the assumed greater labor productivity due to the various development policies means that most of the demand for labor could be met by residents of the region. Population growth in the WSB, adjusted for moderate net in-migration, is estimated to be about 1 per cent annually over the period, compared to an 0.8 per cent annual increase projected in the Population Projections for Thailand 1990-2020 (NESDB).

Data limitations have precluded the authorities from making estimates of the expenditure side of the national income account estimates for the provinces. At the macro level, capital requirement estimates for the WSB development scenarios have relied on the use of an incremental capital/output ratio (ICOR) of about 4, which appears to be reasonable in light of a review of national experience. This methodology indicates that total capital requirements (in 1994 prices) would amount to about B385 billion during the 8th Plan period (excluding the Ratchaburi and other power projects), B585 billion during the 9th Plan period, and B855 billion during the 10th Plan period. For the 15-year period as a whole, capital requirements would amount to B1,825 billion, an annual average of B122 billion. The estimated capital requirements imply an average investment to GDP ratio of 33.5 per cent during the period. While the investment ratio estimate is about 85 per cent of recent national experience, the need for relatively complicated and costly infrastructure, such as in the BMR, which substantially affects the national investment ratio, appears to be relatively less in the WSB region, which is in line with the assumption.

The high growth scenario (Case 3) is essentially an extension of the recommended policy growth Case 2 in that it envisages the possibility of maintaining higher rates of growth in the industrial sector after 2001, based on the development of downstream natural gas industries, or alternatively, a greater inducement of high-level manufacturing industries than seemed readily feasible in Case 2. Under this scenario (see Table 3.3.3), industrial growth in the period 2002-2006 is forecast to be 15 per cent annually and 12 per cent annually during the 2007-2011 period. These rates are 3.5 to 5 percentage points above those assumed in the moderate/policy case (Case 2) and would raise the overall GDP annual growth rate of the WSB for the period to 2011 by 1.5 percentage points to 10.7 per cent. Apart from the ambitious effort at inducing investment, there would also be substantial efforts required to meet necessary employment levels. Under this scenario, even assuming the relatively high productivity assumptions of Case 2, employment levels would need to increase by 3 per cent annually over the period to 2011 or well above the

1.8 per cent level of the more moderate scenario. This scenario implies a doubling in population growth (to nearly 2 per cent annually) and a larger in-migration of workers to the region. Moreover, investment requirements, though impossible to fix with precision, are estimated to be about 35 per cent above those for Case 2. For these reasons, the high growth scenario presently appears to be an upper limit case that would likely involve excessive economic and social strain.

3.3 *Recommended Projects/Programs and the Economic Growth Scenario*

The sector volumes of this Study identified nearly one hundred projects/programs that were recommended for implementation as a main element of the Study's proposed development strategy for the WSB region. These programs/projects in total have been initially estimated to involve investment costs of $12.5 billion (about B312.5 billion) over the 15-year period covered by the Master Plan (1997-2011). The recommended development projects/programs were put forward as the basis for the WSB region to attain accelerated but sustainable economic growth, the Case 2 economic scenario, described above. The purpose of this section is to discuss the overall cost of the programs/projects recommended in the project/program list in relation to the envisioned economic scenario and various macroeconomic indicators.

It may be noted that as in Thai development plans, the economic scenarios and project/program investment plans in this Study are indicative rather than specific, complete and detailed in nature. This of course reflects the nature of the market-oriented economic structure of the economy and the reliance on the private sector to provide the initiative and the financing for most investment projects in the productive sectors. The project/program list thus is intended as a strategic means to induce and/or sponsor a core group of activities that fosters economic and social development along the lines envisaged.

The list of projects/programs is given in Table 3.3.3, as reproduced from Table 8.06 of the Main Report, Volume 1, with project costs and investment phasing over the 15-year period. The projects are grouped by sector topic in which they were developed and presented in the various volumes of the Study (detailed project profiles are presented as appendices to the sector volumes). As is evident from Table 3.3.3, about 50 per cent of the estimated total cost of projects listed ($6.2 billion of $12.5 billion) relate to the transportation sector. This feature of the project/program list reflects the comprehensive coverage of all activity under consideration in this sector in the Study report and the

importance of the sector as it relates to the envisaged "crossroads function" in integrating the WSB economy into economic activity in the other regions of the country and into international trade so as to enhance WSB developmental prospects. In this regard, it may be noted that a "multiple access model" was applied for regional development planning to comprehensively account for linkages as described in Volume 4, Spatial Development and Land Use.

Social and human development issues were of special concern in carrying out the Study as described in Volume 2, Social Environment. During Phase I, (1997-2001), social and human development projects/programs, including rural amenity and rural road projects, and environmental projects amount to about $610 million. Including agricultural projects that benefit small-holder farmers and some elements of the Science City project, social and human development oriented projects/programs amount to over 20 per cent of the $3.5 billion of Phase I expenditures. As experience with some of these initial social/human development projects evolves, it is expected that new elements would naturally evolve, and it would be possible to augment the exiting programmed amounts in Phases II and III.

A number of the recommended projects have been grouped into seven development initiatives as a focus for implementing the overall developmental strategy of the Study. These development initiatives are summarized in the table below. The seven development initiatives, which span the area of the WSB region and reflect the analysis for the pattern of spatial development, amount in total to $4.0 billion and represent the bulk (nearly 70 per cent) of the non-transportation projects/programs that have been proposed. Private sector participation in the financing the seven initiatives is estimated at about $3 billion or nearly three-quarters of the total cost.

Estimated Cost of Seven Development Initiatives
(In millions of US dollars; amounts in ( ) are estimated private sector participation)

Initiative	Phase I 1997-01		Phase II 2002-06		Phase III 2007-11		Total 1997-2011	
Kanchanaburi Tourism Promotion	14	-8	19	-8	10	-8	43	-24
Kanchanaburi Agricultural Intensification	15	-5					15	-5
Ban Pong Industrial/Distribution	1		268	-190			269	-190
Samut Songkhram FTA	600	-450	200	-150			800	-600
Petchaburi Science City	640	-430	1,064	-760	540	-450	2,244	-1,640
Bang Saphan FTA	155	-115	130	-100	180	-112	465	-327
Chumphon Tropical Fruit	75	-62	119	-112			194	-174
Total	1,500	-1,070	1,800	-1,320	730	-570	4,030	-2,960

Source: Study Team

The relation of the project/program schedule of investment costs and its phasing with the economic growth scenario is summarized in the table below. For the full planning period (1997-2011), project/program costs were estimated at $12.5 billion or B312.5 billion. For the economic scenario, estimated fixed investments (excluding the Ratchaburi electric power plant and other generation investment) were estimated to be B1,825 billion for the full period. Accordingly, total project/program costs would amount to 17.1 per cent of expected investment requirements. As transportation projects/programs account for about one-half of the total, they are equivalent to 8.6 per cent of total scenario investment. The seven development initiatives amount to B100 billion ($4 billion) and are equivalent to 5.5 per cent of expected scenario investment. The seven development initiatives account for about two-thirds of the non-transportation projects/programs and are expected to exert a significant catalytic effect on private sector economic activity.

Project/Programs in Relation to the Economic Scenario
(In billions of Baht at constant 1994 prices)

	Phase I 1997-01	Phase II 2002-06	Phase III 2007-11	Total 1997-2011
Estimated total investment requirement for recommended economic growth scenario (Case2)	385.0	585.0	855.0	1,825.0
Recommended project/programs estimated cost	87.5	125.0	100.0	312.5
Transportation sector projects	33.9	52.9	69.3	156.1
Non-transportation projects	53.6	72.1	30.7	156.4
Seven Development Initiatives	*37.5*	*45.0*	*18.3*	*100.8*
Other non-transport projects	*16.1*	*27.1*	*12.5*	*55.7*
Estimated private sector participation	32.0	42.2	18.9	93.0
Seven development Initiatives	26.8	33.0	14.3	74.0
Other non-transport projects/programs	5.2	9.2	4.6	19.0

Source: Study Team

In terms of expenditure phasing, 28 per cent of project/program investments are expected to be disbursed in Phase I (1997-2001), increasing to 40 per cent in Phase 2, with the balance of 32 per cent expected in last period. For non-transportation projects, the period phasing would be about 34, 46, and 20 per cent respectively. Non-transportation projects/programs would amount to about 12-14 per cent of expected scenario investment in the period 1997-2006 and decline to about 3-4 per cent of total investment in the final (third) phase. This pattern largely reflects the intention to use the seven development initiatives, especially the large Science City, the two FTA, and the

Industrial/Distribution Center projects, as leading innovations and a stimulus to private sector economic activity.

As indicated in the table above, estimates suggest that the private sector would account for financing of about B93 billion of the total project/program budgeted costs with the bulk of this (B74 billion) related to the seven initiatives as detailed by project in the table on the initiatives above. Accordingly, about 30 per cent of the recommended total project/program cost and nearly 60 per cent of the non-transportation component investment would be due to private sector. In part this financing would be facilitated by government efforts to create special credit programs at both private and government-owned financial institutions. The availability of foreign project financing, especially for the seven initiatives, would facilitate both private and government financing of the recommended projects/programs.

If the private sector estimates for participation are broadly correct, the implied public sector investment component would amount to about B220 billion, about B15 billion annually. This implies an average public sector investment ratio equal to about 4 per cent of projected WSB GDP over the full period. It may be noted that in recent years the public sector has generated savings of about 10 per cent of GDP, readily financing investments that have averaged about 8.5 per cent of GDP at the nationwide level (data on investment on a provincial basis are not available). Thus it would appear that the Study's project/program investments when coupled with a reasonable provision for other required public capital expenditure in the region would not likely be excessively large in relation to the WSB's proportionate share of national public sector resources that would likely become available in the years ahead. In relation to the estimated total investment requirement for the economic growth scenario adopted, the implied public sector investment would average about 12 per cent of projected WSB investment over the full period (about only 3.5 per cent if transportation projects are excluded in calculating the ratio). From this perspective as well it would appear that the Study's recommended programs/projects for the WSB could be readily accommodated in framing successive NESDB national development plans, since public sector investment in recent years have amounted to about 20 per cent of fixed investment at the national level.

Table 3.1.1 Key Economic and Financial Indicators, 1985-1995

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Growth and inflation (% change)											
Real GDP	4.6	5.5	9.5	13.3	12.2	11.2	8.5	8.1	8.3	8.8	8.7
Real fixed investment	-3.7	-0.7	18.4	21.9	22.5	29.6	12.7	6.8	10.6	12.4	12.6
CPI *(annual average change)*	2.5	1.8	2.5	3.8	5.4	5.9	5.7	4.1	3.3	5.1	5.8
Investment and savings (% of GDP)											
Gross domestic investment	28.2	25.9	27.9	32.6	35.1	41.3	42.7	40.0	40.4	41.2	43.1
Gross national savings	23.1	24.4	27.5	32.0	34.1	33.2	34.0	33.9	33.5	34.5	34.4
Statistical descrepancy	-1.3	-2.0	0.2	2.0	2.5	0.4	-0.4	-0.5	-1.1	-1.1	-0.6
Foreign savings	3.8	-0.6	0.5	2.6	3.5	8.5	8.3	5.6	5.9	5.6	8.1
Unemployment rate (%)		5.6	5.9	4.3	3.6	3.9	3.1	3.0	2.6	2.6	2.6
Terms of trade (% change)	-5.6	10.7	-1.0	-1.8	-4.9	-2.8	-1.1	0.7	0.0	1.4	-3.5
Central government budget											
(% of GDP, fiscal year basis)											
Revenue and grants	15.8	15.4	15.9	17.0	17.9	19.2	19.4	18.3	18.3	18.9	19.0
Expenditure and net lending	21.0	20.0	18.1	16.3	14.7	14.6	14.7	15.5	16.2	17.1	16.4
Overall surplus/deficit	-5.2	-4.6	-2.2	0.7	3.2	4.6	4.7	2.7	2.1	1.7	2.6
Public sector overall balance											
(% of GDP, fiscal year basis)	-6.0	-4.8	-1.6	1.3	4.1	4.7	4.0	1.6	0.9	1.6	2.5
Balance of payments (US$ billions)											
Exports (f.o.b.)	7.1	8.8	11.6	15.9	19.9	22.9	28.3	32.2	35.6	44.6	56.0
Imports (c.i.f)	-9.3	-9.3	-13.2	-19.8	-25.3	-32.7	-37.8	-40.1	-45.1	-53.4	-70.9
Current account	-1.5	0.3	-0.3	-1.5	-2.4	-7.1	-7.4	-6.1	-6.1	-7.8	-13.1
(% of GDP)	*-4.0*	*0.7*	*-0.7*	*-2.6*	*-3.5*	*-8.8*	*-7.5*	*-5.5*	*-5.4*	*-5.6*	*-8.1*
Nonmonetary capital	1.5	0.7	0.8	2.8	5.9	8.1	11.3	9.7	10.5	12.2	22.0
Medium and long-term capital	1.3	0.3	0.6	1.2	4.3	3.4	4.7	4.3	7.4	4.6	9.4
Private sector	0.4	0.1	0.5	1.5	4.5	4.8	4.1	4.0	6.6	4.6	8.4
Direct investment (equity)	0.2	0.2	0.2	0.9	1.4	1.5	1.2	1.5	1.2	0.8	1.1
Public sector	1.0	0.2	0.2	-0.3	-0.2	-1.3	0.6	0.3	0.7	0.0	1.0
Short-term capital	0.1	0.4	0.2	1.6	1.7	4.7	6.6	5.4	3.1	7.6	12.6
Overall balance	0.5	1.3	0.7	1.6	4.3	2.2	4.2	3.0	3.9	4.2	7.2
Official reserves and external debt											
(In US dollars billions)											
Gross official reserves	3.0	3.8	5.2	7.1	10.5	14.3	18.4	21.2	25.4	30.3	37.0
External debt (short and long term)	17.4	18.2	19.9	20.9	22.7	29.2	37.9	43.6	52.1	64.9	82.6
(% of GDP)	*43.9*	*42.0*	*38.4*	*33.8*	*31.4*	*33.8*	*38.2*	*39.4*	*42.1*	*45.3*	*50.0*
Debt sevice ratio (%)	27.5	24.8	19.8	14.6	12.7	10.5	10.6	11.3	11.2	11.7	11.4
Exchange rate (Baht/US dollar)											
End year	26.65	26.13	25.07	25.24	25.69	25.29	25.28	25.52	25.54	25.09	25.19
Year average	27.16	26.30	25.72	25.29	25.70	25.59	25.52	25.40	25.32	25.15	24.92

Source: Bank of Thailand and IMF IFS.

Table 3.1.2 Sectoral Origin of GDP, Population, and Area for the Regions, WSB Study Area and the Kingdom in 1994

(In 1994 Current Market Prices; in 1,000 Baht)

	Northern	Northeastern	Eastern	Central	Southern	Western	WSB Study Area	Kingdom less BMR and WSB	Bangkok and Vicinities(BMR)	Kingdom
Agriculture	62,042,780	77,286,746	37,597,098	14,425,197	110,939,844	25,860,885	27,211,659	300,940,801	40,900,556	369,053,016
Crops	45,399,334	54,490,615	17,323,421	9,360,845	52,531,950	16,609,746	15,179,214	180,536,707	7,551,092	203,267,013
Livestock	7,431,412	9,969,792	6,315,931	2,861,517	4,457,960	2,670,507	2,467,479	31,239,640	3,475,872	37,182,991
Fisheries	1,098,452	1,053,986	10,457,489	316,561	36,032,672	2,933,600	5,556,096	46,336,664	8,884,241	60,777,001
Forestry	103,509	39,655	49,559	58	3,727,181	689,018	689,349	3,919,631	24	4,609,004
Agricultural services	3,199,197	5,474,332	860,500	853,338	418,858	730,479	489,109	11,057,595	244,293	11,790,997
Simple agri processing products	4,810,876	6,258,366	2,590,108	1,022,878	13,771,213	2,227,535	2,830,412	27,850,564	20,745,034	51,426,010
Mining and quarrying	12,764,093	3,071,699	18,108,760	8,093,284	2,588,450	3,566,561	2,233,918	45,958,929	406,160	48,599,007
Manufacturing	47,117,874	41,303,115	141,802,510	64,276,361	15,773,095	37,866,203	32,741,050	315,398,108	666,812,318	1,014,951,476
Construction	32,535,680	40,500,460	17,749,142	8,790,066	22,443,817	11,513,854	10,662,559	122,870,460	134,465,975	267,998,994
Electricity and water supply	6,417,051	6,415,161	13,208,850	6,692,023	6,020,625	3,471,333	3,347,840	38,907,203	41,667,959	83,923,002
Transportation and communication	17,401,883	18,714,282	14,009,319	7,025,250	17,031,582	9,146,967	8,748,519	74,580,764	184,603,728	267,933,011
Wholesale and retail trade	57,006,020	86,652,912	34,267,356	21,871,881	45,890,284	26,729,834	23,232,600	249,185,687	319,597,713	592,016,000
Banking, insurance and real estate	17,900,367	19,815,968	12,082,627	6,092,259	15,547,681	7,526,426	7,142,732	71,822,596	207,034,666	285,999,994
Ownership of dwellings	15,870,360	17,484,241	7,170,209	4,598,262	10,252,409	5,494,686	4,956,688	55,913,479	27,924,833	88,795,000
Public administration and defense	21,299,306	29,745,000	8,859,965	7,506,568	15,730,543	7,389,294	7,200,515	83,290,161	36,945,323	127,435,999
Services	53,092,302	64,969,959	67,336,162	13,484,252	45,866,283	13,917,054	13,295,379	245,370,663	195,534,958	454,201,000
GRP/GDP	343,477,716	405,959,573	372,191,908	162,855,403	308,084,613	152,443,097	140,773,459	1,604,238,851	1,855,894,189	3,600,906,499
As a % of Kingdom GDP	9.5	11.3	10.3	4.5	8.6	4.2	3.9	44.6	51.5	100.0
Area (sq km)	169,644	168,854	36,503	16,593	70,715	43,047	43,698	461,658	7,758	513,115
% of total area	33.1	32.9	7.1	3.2	13.8	8.4	8.5	90.0	1.5	100.0
Population density (persons/sq km)	65	119	102	172	109	77	66	99	1,285	114
Population (1,000 persons)	11,057	20,062	3,710	2,856	7,743	3,312	2,896	45,844	9,969	58,709
Population as % of Kingdom	18.8	34.2	6.3	4.9	13.2	5.6	4.9	78.1	17.0	100.0
Population growth 1981-94 (% p.a.)	1.1	1.4	2.0	1.0	1.9	1.1	1.2	1.4	2.6	1.6
Per capita GDP (Baht)	31,064	20,235	100,321	57,022	39,789	46,028	48,610	34,993	186,167	61,335
Per capita GDP as % of Prov P/C	86.8	56.5	280.2	159.3	111.1	128.6	135.8	97.7	520.0	171.3
Per capita GDP as % of BMR P/C	16.7	10.9	53.9	30.6	21.4	24.7	26.1	18.8	100.0	32.9
Per capita GDP as % of Kingdom P/C	50.6	33.0	163.6	93.0	64.9	75.0	79.3	57.1	303.5	100.0
In per cent of total										
Agriculture	18.1	19.0	10.1	8.9	36.0	17.0	19.3	18.8	2.2	10.2
Crops	13.2	13.4	4.7	5.7	17.1	10.9	10.8	11.3	0.4	5.6
Livestock	2.2	2.5	1.7	1.8	1.4	1.8	1.8	1.9	0.2	1.0
Fisheries	0.3	0.3	2.8	0.2	11.7	1.9	3.9	2.9	0.5	1.7
Forestry	0.0	0.0	0.0	0.0	1.2	0.5	0.5	0.2	0.0	0.1
Agricultural services	0.9	1.3	0.2	0.5	0.1	0.5	0.3	0.7	0.0	0.3
Simple agri processing products	1.4	1.5	0.7	0.6	4.5	1.5	2.0	1.7	1.1	1.4
Mining and quarrying	3.7	0.8	4.9	5.0	0.8	2.3	1.6	2.9	0.0	1.3
Manufacturing	13.7	10.2	38.1	39.5	5.1	24.8	23.3	19.7	35.9	28.2
Construction	9.5	10.0	4.8	5.4	7.3	7.6	7.6	7.7	7.2	7.4
Electricity and water supply	1.9	1.6	3.5	4.1	2.0	2.3	2.4	2.4	2.2	2.3
Transportation and communication	5.1	4.6	3.8	4.3	5.5	6.0	6.2	4.6	9.9	7.4
Wholesale and retail trade	16.6	21.3	9.2	13.4	14.9	17.5	16.5	15.5	17.2	16.4
Banking, insurance and real estate	5.2	4.9	3.2	3.7	5.0	4.9	5.1	4.5	11.2	7.9
Ownership of dwellings	4.6	4.3	1.9	2.8	3.3	3.6	3.5	3.5	1.5	2.5
Public administration and defense	6.2	7.3	2.4	4.6	5.1	4.8	5.1	5.2	2.0	3.5
Services	15.5	16.0	18.1	8.3	14.9	9.1	9.4	15.3	10.5	12.6
GDP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Summary Structure										
Agriculture	18.1	19.0	10.1	8.9	36.0	17.0	19.3	18.8	2.2	10.2
Industry 1/	28.8	22.5	51.3	53.9	15.2	37.0	34.8	32.6	45.4	39.3
(Manufacturing)	13.7	10.2	38.1	39.5	5.1	24.8	23.3	19.7	35.9	28.2
Services	53.2	58.5	38.6	37.2	48.8	46.0	45.9	48.6	52.4	50.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Real GDP growth 1981-1994 (% p.a.)	6.0	6.4	10.4	8.3	7.0	6.1	6.3	7.3	9.1	8.2

Source: NESDB National Accounts and Study Team calculations.

1/ Includes mining and quarrying, manufacturing, construction, and electricity and water.

Table 3.1.3 Provincial and WSB Region Structure of GDP in 1994 with Population and Area

(At current prices; in 1,000 Baht)

	Kanchanaburi	Ratchaburi	Phetchaburi	Samut Songkhram	Prachuap Khiri Khan	Chumphon	Western Seaboard
Agriculture	5,788,134	5,183,010	2,555,544	1,141,010	5,192,083	7,351,878	27,211,659
Crops	4,137,414	3,216,833	1,659,599	172,815	2,621,765	3,370,788	15,179,214
Livestock	424,233	1,043,464	250,661	91,004	377,493	280,624	2,467,479
Fisheries	56,559	54,545	411,459	558,654	1,643,394	2,831,485	5,556,096
Forestry	669,739	--	--	17,831	1,311	468	689,349
Agric services	219,895	145,039	62,403	538	22,107	39,127	489,109
Simple agric processing	280,294	723,129	171,422	300,168	526,013	829,386	2,830,412
Mining and quarrying	858,934	685,149	292,252	22,792	250,911	123,880	2,233,918
Manufacturing	5,306,130	17,455,271	2,463,184	952,193	5,160,062	1,404,210	32,741,050
Construction	2,761,619	1,661,182	2,702,375	430,618	2,087,523	1,019,242	10,662,559
Electricity and water	842,996	1,115,261	423,073	149,704	519,463	297,343	3,347,840
Transportation & communication	3,738,630	1,346,613	1,991,630	558,241	569,821	543,584	8,748,519
Wholesale and retail trade	6,609,087	5,565,242	3,744,810	1,564,380	3,352,768	2,396,313	23,232,600
Banking, insurance and real estate	1,066,686	1,872,314	1,014,089	570,763	1,427,544	1,191,336	7,142,732
Ownership of dwellings	1,235,943	1,181,428	758,717	296,888	792,440	691,272	4,956,688
Public administration & defense	1,831,361	1,717,158	1,451,552	377,516	860,951	961,977	7,200,515
Services	2,518,753	3,841,657	2,031,004	965,541	2,018,607	1,919,817	13,295,379
GDP	32,558,273	41,624,285	19,428,230	7,029,646	22,232,173	17,900,852	140,773,459
(As a percent of WSB total)	23.1	29.6	13.8	5.0	15.8	12.7	100.0
Percapita GDP	48,740	54,269	46,368	35,325	51,944	43,135	48,610
(As a percent of regional average)	100.3	111.6	95.4	72.7	106.9	88.7	100.0
(As a percent of Kingdom average)	79.5	88.5	75.6	57.6	84.7	70.3	79.3
(As a percent of BMR)	26.2	29.2	24.9	19.0	27.9	23.2	26.1
Population (1,000 persons)	668	767	419	199	428	415	2,896
(As a percent of regional population)	23.1	26.5	14.5	6.9	14.8	14.3	100.0
(As a percent of Kingdom's population)	1.1	1.3	0.7	0.3	0.7	0.7	4.9
Population growth 1981-1994 (% p.a.)	1.7	1.2	0.9	0.0	0.9	1.5	1.2
Area (sq km)	19,483	5,196	6,225	417	6,368	6,009	43,698
% of WSB area	44.6	11.9	14.2	1.0	14.6	13.8	100.0
Population density (persons/ sq. km)	34	148	67	477	67	69	66
Share in total GDP (%)							
Agriculture	17.8	12.5	13.2	16.2	23.4	41.1	19.3
Crops	12.7	7.7	8.5	2.5	11.8	18.8	10.8
Livestock	1.3	2.5	1.3	1.3	1.7	1.6	1.8
Fisheries	0.2	0.1	2.1	7.9	7.4	15.8	3.9
Forestry	2.1	--	--	0.3	0.0	0.0	0.5
Agric services	0.7	0.3	0.3	0.0	0.1	0.2	0.3
Simple agric processing	0.9	1.7	0.9	4.3	2.4	4.6	2.0
Mining and quarrying	2.6	1.6	1.5	0.3	1.1	0.7	1.6
Manufacturing	16.3	41.9	12.7	13.5	23.2	7.8	23.3
Construction	8.5	4.0	13.9	6.1	9.4	5.7	7.6
Electricity and water	2.6	2.7	2.2	2.1	2.3	1.7	2.4
Transportation & communication	11.5	3.2	10.3	7.9	2.6	3.0	6.2
Wholesale and retail trade	20.3	13.4	19.3	22.3	15.1	13.4	16.5
Banking, insurance and real estate	3.3	4.5	5.2	8.1	6.4	6.7	5.1
Ownership of dwellings	3.8	2.8	3.9	4.2	3.6	3.9	3.5
Public administration & defense	5.6	4.1	7.5	5.4	3.9	5.4	5.1
Services	7.7	9.2	10.5	13.7	9.1	10.7	9.4
GDP	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Summary structure (%)							
Agriculture	17.8	12.5	13.2	16.2	23.4	41.1	19.3
Industry 1/	30.0	50.3	30.3	22.1	36.1	15.9	34.8
(Manufacturing)	16.3	41.9	12.7	13.5	23.2	7.8	23.3
Services	52.2	37.3	56.6	61.6	40.6	43.0	45.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Real GDP growth 1981-1994 (% p.a.)	4.1	7.9	5.5	5.7	7.3	7.5	6.3

Source: NESDB National Accounts and Study Team calculations.

1/ Includes mining and quarrying, manufacturing, construction, and electricity and water.

Table 3.1.4 Gross Provincial Product by Province and WSB Study Area, 1981-1994

(In 1988 constant prices; in 1,000 baht)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Share in GDP 1981	Share in GDP 1994	Annual Growth 1981-1994 Point to Point	Annual Growth 1981-1994 Regression
RATCHABURI																		
Agriculture	2,923,099	3,168,954	2,792,826	3,074,154	3,081,472	2,835,905	2,873,420	3,488,559	3,444,249	3,576,967	3,663,183	3,799,853	3,997,334	4,054,465	25.0	12.9	2.5	2.7
Industry 1/	3,492,780	3,851,366	4,077,027	4,479,880	4,360,895	4,834,425	5,280,634	5,533,943	6,390,861	7,042,368	9,596,410	13,592,167	14,023,053	16,520,035	29.9	52.7	12.7	11.8
(Manufacturing)	2,479,883	2,656,675	2,980,766	3,306,497	3,218,571	3,635,322	4,011,366	4,170,364	4,934,008	5,401,709	7,736,223	11,595,099	11,888,685	14,130,726	21.2	45.0	14.3	13.4
Services	5,257,014	5,575,055	5,481,130	5,524,115	5,808,588	6,507,184	7,444,843	7,403,904	8,283,664	8,645,751	9,489,997	9,635,746	9,897,306	10,795,829	45.0	34.4	5.7	6.0
PGDP	11,672,893	12,595,375	12,350,983	13,078,149	13,250,955	14,177,514	15,598,897	16,426,406	18,118,774	19,265,086	22,749,590	27,027,766	27,917,693	31,370,329	100.0	100.0	7.9	7.7
KANCHANABURI																		
Agriculture	4,274,108	5,192,377	4,581,259	5,147,421	5,973,258	6,468,972	6,009,088	6,082,490	6,145,206	5,082,519	5,561,013	6,165,049	5,067,616	4,754,849	29.7	19.6	0.8	0.7
Industry	3,355,400	5,053,707	4,022,358	5,145,271	5,378,113	5,345,574	5,179,329	5,902,180	7,051,395	6,893,462	6,918,140	7,057,164	7,020,993	7,490,023	23.3	30.9	6.4	5.1
(Manufacturing)	1,909,451	3,177,917	2,175,664	2,705,956	2,732,270	3,269,675	3,174,318	3,477,560	4,808,660	4,491,388	4,205,013	4,725,762	4,319,122	4,556,097	13.3	18.8	6.9	6.3
Services	6,771,142	7,407,410	7,598,506	6,925,361	8,236,743	8,650,992	9,376,927	9,589,363	10,809,472	10,284,759	10,767,931	10,756,736	11,018,737	11,956,317	47.0	49.4	4.5	4.3
PGDP	14,400,650	17,653,494	16,202,123	17,218,053	19,588,114	20,465,538	20,565,344	21,574,033	24,006,073	22,260,740	23,247,084	23,978,949	23,107,346	24,201,189	100.0	100.0	4.1	3.6
PRACHUAP KHIRI KHAN																		
Agriculture	3,221,204	4,515,857	4,244,074	4,394,294	4,137,251	4,280,496	4,880,049	5,083,295	3,539,223	3,507,593	3,701,929	3,947,486	3,683,773	3,842,728	44.7	21.2	1.4	-0.7
Industry	1,310,818	1,528,408	1,444,648	1,518,714	1,688,673	1,943,129	2,228,312	2,723,672	3,584,028	3,605,907	3,680,189	6,359,418	6,907,930	7,756,128	18.2	42.9	14.7	14.3
(Manufacturing)	904,657	1,111,332	928,229	975,932	1,089,106	1,160,133	1,510,458	1,965,025	2,449,731	2,255,931	2,098,583	4,782,832	5,412,403	5,833,235	12.6	32.3	15.4	14.9
Services	2,673,874	2,575,286	2,788,082	2,962,238	3,090,869	3,390,690	3,691,107	4,071,217	4,470,248	5,036,980	5,163,029	5,371,648	5,655,289	6,486,993	37.1	35.9	7.1	7.3
PGDP	7,205,896	8,619,551	8,476,804	8,875,246	8,916,793	9,614,315	10,799,468	11,880,184	11,593,499	12,148,480	12,545,147	15,678,552	16,246,992	18,085,849	100.0	100.0	7.3	6.4
PHETCHABURI																		
Agriculture	1,854,847	2,013,521	2,046,407	1,950,618	2,468,520	2,140,690	2,092,517	1,869,001	2,073,321	1,812,874	1,808,683	1,998,560	2,046,026	1,971,826	26.3	13.9	0.5	-0.3
Industry	1,199,494	1,309,085	1,479,957	1,513,147	1,382,808	1,674,969	1,513,640	1,764,591	2,753,453	3,250,268	3,634,879	4,401,809	4,968,500	4,542,872	17.0	32.0	10.8	11.8
(Manufacturing)	753,162	781,925	815,609	816,926	689,841	877,787	777,658	947,589	1,109,458	1,228,245	1,371,233	1,941,176	2,174,215	2,274,906	10.7	16.0	8.9	9.0
Services	3,987,324	4,444,806	4,525,199	4,071,839	4,251,463	4,581,199	4,802,409	5,549,379	6,197,195	6,291,302	6,776,760	6,885,347	7,092,366	7,664,238	56.6	54.1	5.2	5.3
PGDP	7,041,665	7,767,412	8,051,563	7,535,604	8,102,791	8,396,858	8,408,566	9,182,971	11,023,969	11,354,444	12,220,322	13,285,716	14,106,892	14,180,936	100.0	100.0	5.5	5.7
CHUMPHON																		
Agriculture	2,501,948	2,966,570	2,901,829	3,119,541	3,547,447	3,882,902	3,862,083	4,308,226	4,529,476	5,026,053	5,364,871	5,783,940	5,580,103	5,812,893	48.5	44.2	6.7	6.6
Industry	438,129	499,451	567,547	628,130	611,998	923,111	787,735	780,868	780,259	997,816	1,166,841	1,664,525	1,752,861	2,078,022	8.5	15.8	12.7	11.0
(Manufacturing)	201,350	209,290	256,308	307,088	233,634	265,988	292,816	297,133	306,700	367,583	391,575	836,826	971,077	1,102,703	3.9	8.4	14.0	11.9
Services	2,213,301	2,375,647	2,348,257	2,478,431	2,722,341	3,152,301	3,293,300	3,467,083	3,673,757	3,907,194	4,180,396	4,394,537	4,536,046	5,254,524	42.9	40.0	6.9	6.6
PGDP	5,153,378	5,841,668	5,817,633	6,226,102	6,881,786	7,958,314	7,943,118	8,556,177	8,983,492	9,931,063	10,712,108	11,843,002	11,869,010	13,145,439	100.0	100.0	7.5	7.1
SAMUT SONGKHRAM																		
Agriculture	712,372	670,387	670,574	670,307	742,884	644,833	424,061	597,953	761,851	760,962	650,281	913,236	830,059	829,808	28.9	16.5	1.2	1.7
Industry	326,462	420,131	436,927	426,565	388,264	420,360	481,660	522,258	581,798	709,861	787,246	826,727	974,798	1,211,088	13.3	24.0	10.6	8.8
(Manufacturing)	226,691	308,019	324,947	257,487	218,899	226,176	257,200	261,922	340,027	421,306	496,340	549,858	633,431	765,843	9.6	15.2	9.5	12.2
Services	1,424,234	1,497,070	1,469,370	1,610,012	1,755,602	2,035,232	2,144,534	2,161,350	2,465,097	2,494,856	2,653,632	2,671,648	2,714,694	3,000,888	57.8	59.5	5.9	6.0
PGDP	2,463,068	2,587,588	2,596,871	2,706,884	2,886,750	3,100,425	3,050,255	3,281,561	3,808,746	3,965,379	4,091,159	4,411,611	4,519,551	5,041,784	100.0	100.0	5.7	5.6
WSB STUDY AREA																		
Agriculture	15,487,578	18,527,666	17,236,969	18,356,335	19,950,832	20,253,798	20,141,218	21,429,524	20,493,326	19,766,668	20,749,960	22,608,124	21,204,911	21,266,569	32.3	20.1	2.5	2.0
Industry	10,123,083	12,662,148	12,048,464	13,711,707	13,810,751	15,141,568	15,371,310	17,229,512	21,141,794	22,497,682	25,783,705	33,901,810	35,648,135	39,598,168	21.1	37.3	11.1	10.2
(Manufacturing)	6,485,194	8,245,158	7,481,523	8,369,886	8,182,321	9,435,081	10,023,816	11,119,593	13,948,584	14,166,162	16,298,967	24,431,553	25,398,933	28,663,510	13.5	27.0	12.1	11.2
Services	22,326,889	23,875,274	24,210,544	23,571,996	25,865,606	28,317,598	30,753,120	32,247,296	35,899,433	36,660,842	39,031,745	39,715,662	40,914,438	45,160,789	46.6	42.6	5.6	5.6
GDP	47,937,550	55,065,088	53,495,977	55,640,038	59,627,189	63,712,964	66,465,648	70,901,332	77,534,553	78,925,192	85,565,410	96,225,596	97,767,484	106,025,526	100.0	100.0	6.3	5.9

Source: NESDB National Accounts and Study Team calculations.

Table 3.1.5 Industrial Origin of Output (GDP) in the WSB Study Area, 1981-1994

(In 1988 constant prices; in 1,000 baht)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Contribution to Change in GDP 1981-1994 (%)	Annual Growth Rate 81-94 Point-to-Point	Annual Growth Rate 81-94 Regression
Agriculture	15,487,578	18,527,666	17,236,969	18,356,335	19,950,832	20,253,798	20,141,218	21,429,524	20,493,326	19,766,668	20,749,960	22,608,124	21,204,911	21,266,569	10	2.5	2.0
Crops	8,299,194	11,585,417	10,033,478	11,038,005	11,765,173	11,509,465	11,612,658	12,835,326	12,373,200	12,147,920	11,585,038	13,008,737	11,796,047	12,070,081	6	2.9	1.8
Livestock	1,798,387	1,776,955	1,843,411	1,991,621	2,228,326	1,937,386	2,024,659	1,988,733	1,747,221	2,084,562	2,055,033	2,057,381	2,156,780	2,171,213	1	1.5	1.1
Fisheries	1,913,198	2,350,653	2,469,526	2,538,976	2,203,005	2,477,551	2,472,892	2,698,122	2,563,618	2,284,875	3,744,659	3,773,268	3,736,229	3,806,723	3	5.4	4.6
Forestry	1,869,146	1,199,582	1,295,975	1,138,599	1,938,158	2,483,890	2,083,236	1,771,915	2,024,706	1,410,769	1,413,924	1,596,567	1,369,784	830,712	-2	-6.0	-1.8
Agricultural services	811,623	732,609	753,515	746,450	825,358	799,401	846,855	916,515	435,236	413,816	420,066	416,661	368,327	380,468	-1	-5.7	-7.0
Simple agri.processing prodt	796,030	882,450	841,064	902,684	990,812	1,046,105	1,100,918	1,218,913	1,349,345	1,424,726	1,531,240	1,755,510	1,777,744	2,007,372	2	7.4	7.2
Mining and quarrying	1,223,374	1,449,741	1,409,745	1,511,034	1,429,161	1,381,586	1,184,788	1,248,656	1,603,771	1,362,589	1,506,392	1,279,840	1,438,168	1,467,023	0	1.4	0.4
Manufacturing	6,485,194	8,245,158	7,481,523	8,369,886	8,182,321	9,435,081	10,023,816	11,119,593	13,948,584	14,166,162	16,298,967	24,431,553	25,398,933	28,663,510	38	12.1	11.2
Construction	1,692,931	2,120,986	2,264,349	2,839,039	3,050,794	3,037,311	2,945,107	3,313,321	3,780,197	5,056,738	5,783,099	5,663,660	6,025,512	6,733,766	9	11.2	10.1
Electricity and water supply	721,584	846,263	892,847	991,748	1,148,475	1,287,590	1,417,599	1,547,942	1,809,242	1,912,193	2,195,247	2,526,757	2,785,522	2,733,869	3	10.8	10.8
Transportation and communica	4,367,186	5,250,893	5,488,331	3,832,816	4,780,839	5,760,774	6,235,632	5,451,375	6,319,012	5,315,903	5,483,690	5,742,202	5,805,416	6,531,081	4	3.1	2.2
Wholesale and retail trade	7,838,032	8,115,013	7,237,061	8,125,110	8,560,520	9,044,424	10,101,338	11,514,683	12,790,108	13,249,718	14,253,974	14,735,483	15,955,016	17,234,583	16	6.2	6.9
Banking,insurance and real est	913,947	1,103,802	1,214,464	1,249,295	1,265,541	1,497,647	1,789,440	2,008,948	2,565,292	3,152,077	3,274,070	3,882,735	3,680,264	5,356,729	8	14.6	13.1
Ownership of dwellings	2,374,890	2,268,298	2,591,868	2,707,245	2,806,293	2,889,643	2,933,659	3,108,882	3,296,342	3,448,425	3,604,072	3,779,467	3,945,230	4,180,099	3	4.4	4.5
Public administration and defe	2,339,740	2,461,424	2,816,302	2,651,240	2,829,916	2,899,247	2,968,665	3,172,573	3,235,835	3,446,792	3,643,566	3,678,692	3,802,786	3,936,449	3	4.1	3.9
Services	4,493,094	4,675,844	4,862,518	5,006,290	5,622,497	6,225,863	6,724,386	6,985,835	7,692,844	8,047,927	8,772,373	7,897,083	7,725,726	7,921,848	6	4.5	5.2
GDP	47,937,550	55,065,088	53,495,977	55,640,038	59,627,189	63,712,964	66,465,648	70,901,332	77,534,553	78,925,192	85,565,410	96,225,596	97,767,484	106,025,526	100	6.3	5.9

Sectoral Growth Rates (%)

														Structure of GDP by Sector *at Current Prices (%)* 1981	1994
Agriculture	19.6	-7.0	6.5	8.7	1.5	-0.6	6.4	-4.4	-3.5	5.0	9.0	-6.2	0.3	36.0	19.3
Crops	39.6	-13.4	10.0	6.6	-2.2	0.9	10.5	-3.6	-1.8	-4.6	12.3	-9.3	2.3	22.9	10.8
Livestock	-1.2	3.7	8.0	11.9	-13.1	4.5	-1.8	-12.1	19.3	-1.4	0.1	4.8	0.7	4.2	1.8
Fisheries	22.9	5.1	2.8	-13.2	12.5	-0.2	9.1	-5.0	-10.9	63.9	0.8	-1.0	1.9	2.3	3.9
Forestry	-35.8	8.0	-12.1	70.2	28.2	-16.1	-14.9	14.3	-30.3	0.2	12.9	-14.2	-39.4	3.3	0.5
Agricultural services	-9.7	2.9	-0.9	10.6	-3.1	5.9	8.2	-52.5	-4.9	1.5	-0.8	-11.6	3.3	1.6	0.3
Simple agri.processing products	10.9	-4.7	7.3	9.8	5.6	5.2	10.7	10.7	5.6	7.5	14.6	1.3	12.9	1.7	2.0
Mining and quarrying	18.5	-2.8	7.2	-5.4	-3.3	-14.2	5.4	28.4	-15.0	10.6	-15.0	12.4	2.0	4.3	1.6
Manufacturing	27.1	-9.3	11.9	-2.2	15.3	6.2	10.9	25.4	1.6	15.1	49.9	4.0	12.9	14.6	23.3
Construction	25.3	6.8	25.4	7.5	-0.4	-3.0	12.5	14.1	33.8	14.4	-2.1	6.4	11.8	3.2	7.6
Electricity and water supply	17.3	5.5	11.1	15.8	12.1	10.1	9.2	16.9	5.7	14.8	15.1	10.2	-1.9	1.1	2.4
Transportation and communication	20.2	4.5	-30.2	24.7	20.5	8.2	-12.6	15.9	-15.9	3.2	4.7	1.1	12.5	6.4	6.2
Wholesale and retail trade	3.5	-10.8	12.3	5.4	5.7	11.7	14.0	11.1	3.6	7.6	3.4	8.3	8.0	14.9	16.5
Banking,insurance and real estate	20.8	10.0	2.9	1.3	18.3	19.5	12.3	27.7	22.9	3.9	18.6	-5.2	45.6	1.8	5.1
Ownership of dwellings	-4.5	14.3	4.5	3.7	3.0	1.5	6.0	6.0	4.6	4.5	4.9	4.4	6.0	3.8	3.5
Public administration and defence	5.2	14.4	-5.9	6.7	2.4	2.4	6.9	2.0	6.5	5.7	1.0	3.4	3.5	4.6	5.1
Services	4.1	4.0	3.0	12.3	10.7	8.0	3.9	10.1	4.6	9.0	-10.0	-2.2	2.5	9.1	9.4
GDP	14.9	-2.8	4.0	7.2	6.9	4.3	6.7	9.4	1.8	8.4	12.5	1.6	8.4	100.0	100.0

Source: NESDB National Accounts and Study Team calculations.

Table 3.1.6 WSB Manufacturing Value Added by Industrial Sector, 1981-1994

(In 1988 constant prices; in 1,000 baht)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Average growth 1981-1994	Contribution to growth 1981-1994	Share in total (%) 1981	1994
Food	4,015,876	5,629,283	4,643,755	5,285,077	5,003,851	5,536,358	5,453,724	5,633,805	7,437,879	6,743,793	7,725,809	9,339,158	8,739,486	9,784,547	7.1	26	62.6	34.7
Beverages	375,903	421,724	434,654	478,654	730,042	930,411	1,264,394	1,577,799	1,493,367	1,632,742	1,934,842	2,485,101	2,513,640	2,672,570	16.3	11	5.9	9.5
Tobacco	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Textiles	146,246	154,135	188,072	192,564	343,719	427,401	469,637	784,480	1,161,935	1,106,247	1,162,738	3,387,669	3,308,138	3,597,666	27.9	16	2.3	12.8
Wearing apparel	3,009	3,166	2,725	2,330	2,764	3,325	3,132	3,189	3,134	3,886	4,401	4,509	4,427	4,656	3.4	0	0.0	0.0
Wood, wood prod., furniture	283,497	313,614	238,939	248,241	253,441	248,612	252,226	271,096	368,767	483,019	414,666	431,791	380,581	419,186	3.1	1	4.4	1.5
Leather	12,321	11,071	15,025	16,220	15,540	19,177	28,444	36,738	43,055	53,707	58,975	62,260	70,405	81,432	15.6	0	0.2	0.3
Petroleum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Paper	857,009	845,633	898,245	963,424	724,388	823,013	916,861	949,194	1,173,773	1,442,926	1,684,886	3,829,934	4,581,648	5,409,179	15.2	21	13.4	19.2
Printing and publishing	6,735	9,110	8,198	8,647	9,190	9,265	10,048	11,027	14,000	14,789	16,808	18,963	21,586	23,922	10.2	0	0.1	0.1
Chemicals	41,644	43,345	48,026	47,030	42,798	68,678	73,725	99,160	110,804	123,435	133,469	151,149	59,841	69,650	4.0	0	0.6	0.2
Rubber	39,286	45,944	67,938	67,512	86,537	117,480	134,667	148,629	159,272	190,116	218,718	645,795	760,393	771,920	25.7	3	0.6	2.7
Non metallic metal products	330,068	372,435	398,729	440,526	409,276	475,896	488,429	622,693	803,221	963,804	1,058,829	1,691,577	2,118,712	2,397,534	16.5	9	5.1	8.5
Basic metals	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fabricated metal products	16,538	17,790	23,248	22,547	25,022	34,088	34,995	33,494	39,976	46,957	65,315	81,443	103,438	123,574	16.7	0	0.3	0.4
Machinery	53,120	41,836	70,058	52,059	46,579	50,808	58,738	71,610	82,582	96,428	110,656	128,292	158,143	185,275	10.1	1	0.8	0.7
Other manufacturing	231,535	275,517	371,821	483,617	448,438	595,937	716,716	1,032,389	918,537	1,179,283	1,479,549	1,790,242	2,146,202	2,641,709	20.6	11	3.6	9.4
Total WSB	**6,412,787**	**8,184,603**	**7,409,433**	**8,308,448**	**8,141,585**	**9,340,449**	**9,905,736**	**11,275,303**	**13,810,302**	**14,081,132**	**16,069,661**	**24,047,882**	**24,966,639**	**28,182,820**	**12.1**	**100**	**100.0**	**100.0**
							Annual rate of growth in per cent											
Food		40.2	-17.5	13.8	-5.3	10.6	-1.5	3.3	32.0	-9.3	14.6	20.9	-6.4	12.0				
Beverages		12.2	3.1	10.1	52.5	27.4	35.9	24.8	-5.4	9.3	18.5	28.4	1.1	6.3				
Tobacco																		
Textiles		5.4	22.0	2.4	78.5	24.3	9.9	67.0	48.1	-4.8	5.1	191.4	-2.3	8.8				
Wearing apparel		5.2	-13.9	-14.5	18.6	20.3	-5.8	1.8	-1.7	24.0	13.3	2.5	-1.8	5.2				
Wood, wood prod., furniture		10.6	-23.8	3.9	2.1	-1.9	1.5	7.5	36.0	31.0	-14.2	4.1	-11.9	10.1				
Leather		-10.1	35.7	8.0	-4.2	23.4	48.3	29.2	17.2	24.7	9.8	5.6	13.1	15.7				
Petroleum																		
Paper		-1.3	6.2	7.3	-24.8	13.6	11.4	3.5	23.7	22.9	16.8	127.3	19.6	18.1				
Printing and publishing		35.3	-10.0	5.5	6.3	0.8	8.5	9.7	27.0	5.6	13.7	12.8	13.8	10.8				
Chemicals		4.1	10.8	-2.1	-9.0	60.5	7.3	34.5	11.7	11.4	8.1	13.2	-60.4	16.4				
Rubber		16.9	47.9	-0.6	28.2	35.8	14.6	10.4	7.2	19.4	15.0	195.3	17.7	1.5				
Non metallic metal products		12.8	7.1	10.5	-7.1	16.3	2.6	27.5	29.0	20.0	9.9	59.8	25.3	13.2				
Basic metals																		
Fabricated metal products		7.6	30.7	-3.0	11.0	36.2	2.7	-4.3	19.4	17.5	39.1	24.7	27.0	19.5				
Machinery		-21.2	67.5	-25.7	-10.5	9.1	15.6	21.9	15.3	16.8	14.8	15.9	23.3	17.2				
Other manufacturing		19.0	35.0	30.1	-7.3	32.9	20.3	44.0	-11.0	28.4	25.5	21.0	19.9	23.1				
Total WSB		**27.6**	**-9.5**	**12.1**	**-2.0**	**14.7**	**6.1**	**13.8**	**22.5**	**2.0**	**14.1**	**49.6**	**3.8**	**12.9**				

Source:NESDB National Accounts.

Table 3.1.7 WSB Study Area Structure of Output, Employment, and Output per Worker in 1980, 1990, and 1994

(GDP in 1,000 Baht at 1988 market prices, Employment in number of workers)

	1980			1990			1994			Average annual growth in output per worker			Average annual growth in employment		
	GDP 1/	Employment	Output/Worker	GDP	Employment	Output/Worker	GDP	Employment	Output/Worker	80-90	90-94	80-94	80-90	90-94	80-94
Agriculture	14,635,761	764,770	19,137	19,766,668	1,002,937	19,709	21,266,569	819,884	25,939	0.3	7.1	2.2	2.7	-4.9	0.5
Mining and quarrying	1,156,088	14,521	79,615	1,362,589	8,166	166,861	1,467,023	11,025	133,063	7.7	-5.5	3.7	-5.6	7.8	-1.9
Manufacturing	6,128,508	84,805	72,266	14,166,162	137,907	102,723	28,663,510	234,794	122,079	3.6	4.4	3.8	5.0	14.2	7.5
Construction	1,599,820	19,848	80,604	5,056,728	47,061	107,451	6,733,766	103,132	65,293	2.9	-11.7	-1.5	9.0	21.7	12.5
Electricity and water supply	681,897	2,878	236,934	1,912,193	5,083	376,196	2,733,869	7,281	375,480	4.7	0.0	3.3	5.9	9.4	6.9
Transportation and communication	4,126,991	24,620	167,628	5,315,903	30,967	171,663	6,531,081	41,774	156,343	0.2	-2.3	-0.5	2.3	7.8	3.8
Wholesale and retail trade	7,406,940	98,222	75,410	13,249,718	143,915	92,066	17,234,563	208,932	82,489	2.0	-2.7	0.6	3.9	9.8	5.5
Banking,insurance and real estate	863,680	3,314	260,616	3,152,077	5,996	525,697	5,356,729	n/a	n/a	7.3	n/a	n/a	6.1	n/a	n/a
Public administration and defence	2,211,054	n/a	n/a	3,446,792	64,531	53,413	3,936,449	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Services and other	6,490,245	162,852	39,854	11,496,352	133,316	86,234	12,101,947	182,403	66,347	8.0	-6.3	3.7	-2.0	8.2	0.8
WSB Total	45,300,985	1,175,830	38,527	78,925,192	1,579,879	49,956	106,025,526	1,609,225	65,886	2.6	7.2	3.9	3.0	0.5	2.3
(Share in total, %)															
Agriculture	32.3	65.0		25.0	63.5		20.1	50.9							
Mining and quarrying	2.6	1.2		1.7	0.5		1.4	0.7							
Manufacturing	13.5	7.2		17.9	8.7		27.0	14.6							
Construction	3.5	1.7		6.4	3.0		6.4	6.4							
Electricity and water supply	1.5	0.2		2.4	0.3		2.6	0.5							
Transportation and communication	9.1	2.1		6.7	2.0		6.2	2.6							
Wholesale and retail trade	16.4	8.4		16.8	9.1		16.3	13.0							
Banking,insurance and real estate	1.9	0.3		4.0	0.4		5.1	n/a							
Public administration and defence	4.9	n/a		4.4	4.1		3.7	n/a							
Services and other	14.3	13.8		14.6	8.4		11.4	11.3							
Total	100.0	100.0		100.0	100.0		100.0	100.0							
Summary structure															
Agriculture	14,635,761	764,770	19,137	19,766,668	1,002,937	19,709	21,266,569	819,884	25,939	0.3	7.1	2.2	2.7	-4.9	0.5
Industry 2/	9,566,313	122,052	78,379	22,497,682	198,217	113,500	39,598,168	356,232	111,158	3.8	-0.5	2.5	5.0	15.8	8.0
(Manufacturing)	6,128,508	84,805	72,266	14,166,162	137,907	102,723	28,663,510	234,794	122,079	3.6	4.4	3.8	5.0	14.2	7.5
Services	21,098,910	289,008	73,005	36,660,842	378,725	96,801	45,160,789	433,199	104,271	2.9	1.9	2.6	2.7	3.4	2.9
WSB Total	45,300,985	1,175,830	38,527	78,925,192	1,579,879	49,956	106,025,526	1,609,225	65,886	2.6	7.2	3.9	3.0	0.5	2.3
(In per cent)	Share in total		Ratio of WSB/Kingdom	Share in total		Ratio of WSB/Kingdom	Share in total		Ratio of WSB/Kingdom						
Agriculture	32.3	65.0	173.7	25.0	63.5	157.3	20.1	50.9	127.7						
Industry 2/	21.1	10.4	51.3	28.5	12.5	50.4	37.3	22.1	64.9						
(Manufacturing)	13.5	7.2	45.0	17.9	8.7	44.2	27.0	14.6	62.7						
Services	46.6	24.6	75.4	46.5	24.0	71.3	42.6	26.9	69.9						
WSB Total	100.0	100.0	97.5	100.0	100.0	80.3	100.0	100.0	74.0						
Memorandum item:															
WHOLE KINGDOM															
Agriculture	183,351,761	16,642,693	11,017	263,806,006	21,053,208	12,530	308,320,992	15,180,501	20,310	1.3	12.8	4.5	2.4	-7.9	-0.7
Industry 2/	278,620,008	1,824,314	152,726	735,440,008	3,268,459	225,011	1,100,777,432	6,429,429	171,209	4.0	-6.6	0.8	6.0	18.4	9.4
(Manufacturing)	211,957,821	1,319,639	160,618	540,940,008	2,327,918	232,371	815,857,418	4,190,856	194,676	3.8	-4.3	1.4	5.8	15.8	8.6
Services	452,510,415	4,673,432	96,826	946,945,994	6,975,138	135,760	1,276,878,992	8,554,363	149,266	3.4	2.4	3.1	4.1	5.2	4.4
Kingdom Total	914,482,183	23,140,439	39,519	1,946,192,008	31,296,805	62,185	2,685,977,416	30,164,293	89,045	4.6	9.4	6.0	3.1	-0.9	1.9

Sources: NSO Census 1980 and 1990 and 1994 Labor Force Survey; NESDB National Accounts; Study Team calculations.

1/ Estimate for 1980.

2/ Includes: mining and quarrying, manufacturing, construction, and electricity and water.

Table 3.1.8 Labor Productivity Index by Industries for the Kingdom, 1984-1994

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Avg. Growth 1984-94	Avg. Growth 1990-94
Agriculture					97.7	101.8	97.7	100.4	100.0	112.0	93.0	124.5	126.9	122.2	148.5	4.3	12.4
Mining an Quarrying					29.8	57.9	86.1	98.9	100.0	144.0	136.7	135.3	148.7	166.1	200.9	21.0	10.1
Manufacturing					80.5	76.2	83.0	80.8	100.0	97.6	112.2	103.7	108.2	117.1	121.7	4.2	2.1
Construction					94.7	97.0	96.4	87.7	100.0	109.5	123.3	92.0	85.8	101.4	85.8	-1.0	-8.7
Electricity, gas and water					68.6	84.7	87.1	88.2	100.0	121.5	144.8	142.4	153.7	145.0	130.4	6.6	-2.6
Transport and communication					81.9	85.1	88.9	84.9	100.0	104.8	113.9	104.3	114.5	117.2	126.9	4.5	2.7
Commerce					91.0	86.0	85.8	84.7	100.0	111.1	133.9	118.7	127.8	134.2	146.9	4.9	2.3
Public administration and other					92.0	99.0	100.1	96.0	100.0	104.1	110.0	108.0	105.6	104.1	101.3	1.0	-2.0
Total					85.0	87.4	88.6	93.5	100.0	110.9	112.6	130.5	135.9	143.2	160.5	6.6	9.3
Per cent change																	
Agriculture						4.2	-4.0	2.8	-0.4	12.0	-17.0	33.9	1.9	-3.7	21.5		
Mining an Quarrying						94.3	48.7	14.9	1.1	44.0	-5.1	-1.0	9.9	11.7	21.0		
Manufacturing						-5.3	8.9	-2.7	23.8	-2.4	15.0	-7.6	4.3	8.2	3.9		
Construction						2.4	-0.6	-9.0	14.0	9.5	12.6	-25.4	-6.7	18.2	-15.4		
Electricity, gas and water						23.5	2.8	1.3	13.4	21.5	19.2	-1.7	7.9	-5.7	-10.1		
Transport and communication						3.9	4.5	-4.5	17.8	4.8	8.7	-8.4	9.8	2.4	8.3		
Commerce						-5.5	-0.2	-1.3	18.1	11.1	20.5	-11.4	7.7	5.0	9.5		
Public administration and other						7.6	1.1	-4.1	4.2	4.1	5.7	-1.8	-2.2	-1.4	-2.7		
Total						2.8	1.4	5.5	7.0	10.9	1.5	15.9	4.1	5.4	12.1		
Overall Index (All industries)																	1980-94
GDP Index	58.6	62.0	65.4	69.0	73.0	76.4	80.6	88.3	100.0	112.3	125.3	135.8	146.5	158.5	172.2	9.0	8.0
Labor Index	81.2	75.3	77.9	82.6	85.9	87.4	91.0	94.4	100.0	101.2	111.2	104.1	107.8	110.7	107.3	2.2	2.0
Labor Productivity Index	72.1	82.4	83.9	83.5	85.0	87.4	88.6	93.5	100.0	110.9	112.6	130.5	135.9	143.2	160.5	6.6	5.9

Source: Labour Studies and Planning Division, Department of Labour Protection and Welfare.

Table 3.2.1 Summary of Investment Promotion Activities of the Board of Investment, 1990-1995

(In billions of baht; except where indicated)

	1990	1991	1992	1993	1994	1995
Number of applications received	1,019	631	444	1,255	1,538	1,407
Value of investment	537.5	250.5	213.0	278.8	593.6	901.4
Number of applications approved	932	605	394	854	1,191	1,197
Value of investment capital	476.2	278.4	284.3	177.1	281.5	580.1
Number of promotion certificates issued	728	527	357	477	935	971
Value of investment	192.5	178.6	446.3	176.8	208.2	327.2
Number of firms starting operations	415	433	440	375	311	323
Value of investment	80.9	81.2	96.8	129.2	101.5	133.2
Number of Thai employees	86,436	84,268	86,228	88,751	90,869	94,326
Investment per employee (in million baht)	0.9	1.0	1.1	1.5	1.1	1.4
Value of approved investment by sector						
Agriculture and agri products	24.9	8.3	3.2	11.3	23.5	20.4
Minerals, metals, and ceramics	8.4	2.7	24.4	10.1	50.9	146.9
Light industry	32.8	118.3	6.5	19.5	10.8	10.9
Metal products, machinery, and transport e	43.1	19.7	34.1	12.9	23.7	53.1
Electronics and electrical products	26.1	24.8	9.8	18.9	58.5	44.5
Chemical products, paper, and plastics	48.6	32.4	156.7	14.2	52.1	226.6
Services and public utilities	292.2	72.2	49.7	90.3	62.0	77.7
Total	476.2	278.4	284.3	177.2	281.5	580.1
Ownership of approved investment						
Total	476.2	278.4	284.4	177.3	281.5	580.1
Domestic	113.5	149.8	20.8	68.2	129.6	169.2
Foreign	179.3	19.0	7.8	13.9	19.9	35.2
Joint venture	183.4	109.6	255.8	95.2	132.0	375.7
Approved Applications						
Whole Kingdom, number	929	603	394	854	1,191	1,197
Zone 1	399	197	149	194	202	166
Bangkok			66	73	63	50
Zone 2	250	143	79	136	186	229
Zone 3	280	263	166	524	803	802
North			36	135	125	87
Central			12	35	36	45
Northeast			30	111	164	152
East			66	127	269	296
West			5	18	36	33
South			17	98	138	138
Other			0	0	35	51
Investment capital						
Whole Kingdom, in billion baht			284.2	177.3	281.4	580.1
Zone 1			45.1	74.0	40.9	29.8
Bangkok			34.6	48.1	25.5	10.6
Zone 2			45.5	29.9	56.0	100.4
Zone 3			193.6	73.4	184.5	449.9
North			4.7	12.9	11.7	10.3
Central			3.6	6.7	6.8	12.7
Northeast			11.2	12.4	15.1	31.0
East			162.7	21.3	114.1	362.2
West			0.2	3.4	8.8	17.4
South			2.2	11.9	17.1	12.3
Other			9.0	4.8	10.9	4.0

Source: BOI and Bank of Thailand.

Table 3.2.2 Schedule for Implementing the AFTA Common Effective Preferential Tariff (CEPT) for Manufactures, Processed Agricultural Products, and for Raw Agricultural Products

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Initial tariff rate for product:	(Maximum tariff rate in percent)										
Fast-track product schedule											
More than 30%	*30*	*30*	25	25	20	15	10	5	5	5	5
26-30%			25	25	20	15	10	5	5	5	5
21-25%			20	20	15	10	5	5	5	5	5
16-20%			15	15	10	5	5	5	5	5	5
11-15%			10	10	5	5	5	5	5	5	5
6-10%			5	5	5	5	5	5	5	5	5
5% or less	→										
Normal track product schedule											
More than 30%	*30*	*30*	*30*	25	25	20	20	15	15	10	5
26-30%				25	25	20	20	15	15	10	5
21-25%				20	20	15	15	10	10	5	5
16-20%				15	15	10	10	5	5	5	5
11-15%				10	10	5	5	5	5	5	5
6-10%				5	5	5	5	5	5	5	5
5% or less	→										
Raw agricultural product schedule											
More than 30%				*30*	25	20	20	15	15	10	5
26-30%					25	20	20	15	15	10	5
21-25%					20	15	15	10	10	5	5
16-20%					15	10	10	5	5	5	5
11-15%					10	5	5	5	5	5	5
6-10%					5	5	5	5	5	5	5
5% or less				→							

Notes:

Rule of origin:
At least 40 percent of a product's value must originate within ASEAN to be eligible.

Initial tariff rates:
A member country is automatically eligible for concession if the tariff rate on a product it has included in the CEPT is at or below 30 %. Thailand adjusted all tariff rates exceeding 30% to 30% prior to the implementation dates for schedules.

Manufactured goods and processed agricultural products:
Implementation began in 1995 and is proceeding on either a "fast" or "normal" track schedule depending on the product.

There are 15 "fast" track Thai product groups :
Vegetable oil, cement, chemicals, pharmaceuticals, fertilizers, plastics, rubber products, leather products, pulp, textiles, ceramic and glass products, gems and jewelry, copper cathodes, electronics, and wood and rattan furniture.

Thailand placed a relatively small number of items on the temporary exclusion list; each year a proportion of these are placed on the normal schedule so as to achieve complete coverage at 5% or less by 2003.

Raw agricultural products.
Implementation of adjustment in tariff rates will begin in 1997 and follow the normal track schedule to achieve rates at 5% or less by 2003. An agreed list of temporary exclusions and the modalities for their incorporation into the CEPT are not yet agreed by member countries.

Source: Discussions with Thai authorities.

Table 3.2.3 Major Financial Institutions in Thailand at End 1995

	No.	No. of Branches	Assets (billion baht)
Commercial banks	29	2,971	5,013.7
Finance companies	91	66	1,560.6
Credit foncier companies	13	--	7.9
Government Savings Bank (GSB)	1	540	210.5
Government Housing Bank (GHB)	1	39	154.1
Bank for Agriculture and Agriculture Cooperatives (BAAC)	1	495	160.0
Industrial Finance Corporation of Thailand (IFCT)	1	15	118.1
Small Industries Finance Corporation (SIFC)	1	1	1.6
Export-Import Bank of Thailand	1	1	31.5
Life Insurance companies	13	1,619	126.2

Source: Bank of Thailand

Table 3.2.4 Deposits and Credit Outstanding in the WSB Region by Principal Financial Institutions at end 1995 1/2/

(In millions of Baht)

	DMBs	GSB	GHB	IFCT	SIFC	BAAC	FIN	TOTAL
Kanchanaburi								
Deposits	16,913.0	1,525.5	0	0.0	0.0	567.2	n.a.	19,005.6
Credit	15,821.0	166.1	589.4	866.9	4.7	1,373.2	n.a.	18,821.3
Offices	33	6	1	0	0	4	0	44
Samut Songkhram								
Deposits	8,182.0	1,123.3	0.0	0.0	0.0	114.7	n.a.	9,420.0
Credit	6,249.0	35.5	87.0	41.4	0.0	421.6	n.a.	6,834.5
Offices	13	3	1	0.0	0.0	1	0.0	18
Ratchaburi								
Deposits	31,654.0	2,430.8	46.0	0.0	0.0	775.7	n.a.	34,906.4
Credit	21,080.0	202.8	452.8	1,308.3	8.1	1,556.7	n.a.	24,608.7
Offices	45	7	2	0.0	0.0	5	3	62
Petchaburi								
Deposits	16,303.0	1,739.1	87.8	0.0	0.0	1,107.7	n.a.	19,237.6
Credit	13,067.0	114.3	970.9	77.4	0.0	1,191.7	n.a.	15,421.2
Offices	27	5	1	0.0	0.0	3	3	39
Prachuap Khirikhan								
Deposits	13,527.0	1,327.6	0.0	0.0	0.0	651.7	n.a.	15,506.3
Credit	16,294.0	128.5	489.4	663.1	11.3	1,964.5	n.a.	19,550.8
Offices	36	7	2	0.0	0.0	4	0.0	49
Chumphon								
Deposits	10,973.0	1,281.5	0.0	0.0	0.0	987.4	n.a.	13,241.8
Credit	11,080.0	127.2	216.9	414.7	10.8	3,790.8	n.a.	15,640.3
Offices	27	6	2	0	0	7	0	42
Western Seaboard Study Area								
Deposits	97,552.0	9,427.7	133.8	0.0	0.0	4,204.3	n.a.	111,317.8
Credit	83,591.0	774.3	2,806.4	3,371.8	34.9	10,298.4	n.a.	100,876.7
Offices	181	34	9	0	0	24	6	254
(Share in total,%)								
Deposits	87.6	8.5	0.1	0.0	0.0	3.8	n.a.	100.0
Credit	82.9	0.8	2.8	3.3	0.03	10.2	n.a.	100.0

Source: Bank of Thailand, GSB, SIFC, and BAAC.

DMBs=Commercial banks
GSB=Government Savings Bank
GHB=Government Housing Bank
IFCT=Industrial Finance Corpration of Thailand
SIFC=Small Industry Finance Corporation
BAAC=Bank for Agriculture and Agricultural Cooperatives
FIN=Finance Companies

1/ For GHB and BAAC amounts outstanding are as of March 31,1996.
2/ Regional information is not available on finance and securities companies, credit foncier companies, and the EXIM Bank. These instutions are oriented to the Bangkok regional market, however, EXIM credits are available to promote Kingdom-wide exports. The finance companies in Ratchaburi and Phetchaburi are loan production offices.

Table 3.2.5 Indicators of Commercial Banking Activity by Province as of May 1995

	Deposits	Loans	Loan/Deposit ratio	No. of Offices	Population in 1994	Population per office	Deposits per capita
	(In millions of baht)		(%)		(in 1,000)		
Whole Kingdom 1/	2,665,548	3,413,296	128	2,598	58,709	22,598	45,403
BMR	1,974,162	2,734,276	139	1,069	9,969	9,326	198,030
Bangkok	1,718,146	2,547,866	148	824	6,040	7,330	284,461
Northeast	170,024	197,680	116	395	20,062	50,790	8,475
North	191,950	206,318	107	440	11,057	25,130	17,360
East	157,330	136,173	87	275	3,710	13,491	42,407
Central	76,036	59,227	78	153	2,856	18,667	26,623
Southern	241,849	266,701	110	351	7,743	22,060	31,235
Western	95,971	79,547	83	191	3,312	17,340	28,977
Study Area	87,756	74,417	85	172	2,896	16,837	30,302
Kanchanaburi	15,599	13,682	88	33	668	20,242	23,352
Samut Songkhram	7,331	5,474	75	13	199	15,308	36,839
Ratchaburi	28,374	18,646	66	40	767	19,175	36,993
Petchaburi	14,224	11,860	83	27	419	15,519	33,947
Prachuap Khirikhan	12,109	15,115	125	33	428	12,970	28,292
Chumphon	10,119	9,640	95	26	415	15,962	24,383

Source: Bank of Thailand

1/ Total excludes inter bank accounts.

Table 3.2.6 Summary of Local Government Operations, 1989/90-1995/96

	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	Projected 1995/96
			(In billions of baht)				
Total revenue and grants	28.7	34.7	39.1	47.3	55.0	62.6	77.5
Taxes and other revenue	20.2	25.0	28.3	34.4	39.4	45.0	56.0
of which: tax revenue	*17.3*	*20.7*	*24.6*	*30.2*	*34.7*		
Transfers from central government	8.5	9.7	10.8	12.9	15.6	17.6	21.5
Current	5.4	5.8	6.3	7.5	8.6	9.7	7.5
Capital	3.1	3.9	4.5	5.4	7.0	7.9	14.0
Total expenditure	24.4	32.4	39.2	44.4	52.6	61.5	76.3
Current expenditure	14.9	17.1	20.0	24.4	27.9	33.8	37.7
Capital expenditure	9.5	15.3	19.2	20.0	24.7	27.7	38.6
Overall balance	4.3	2.3	-0.1	2.9	2.4	1.1	1.2
(excluding transfers from government)	-4.2	-7.4	-10.9	-10.0	-13.2	-16.5	-20.3
			(In per cent of GDP)				
Total revenue and grants	1.4	1.4	1.4	1.5	1.6	1.6	1.7
Taxes and other revenue	1.0	1.0	1.0	1.1	1.1	1.1	1.2
of which: tax revenue	*0.8*	*0.9*	*0.9*	*1.0*	*1.0*		
Transfers from central government	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Current	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Capital	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Total expenditure	1.2	1.3	1.4	1.4	1.5	1.5	1.7
Current expenditure	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Capital expenditure	0.5	0.6	0.7	0.6	0.7	0.7	0.8
Overall balance	0.20	0.09	0.00	0.09	0.07	0.03	0.03
(excluding transfers from government)	-0.20	-0.30	-0.40	-0.32	-0.38	-0.41	-0.44
Memorandum item:							
Total local govt. expendirue as % of GDP							
Malaysia	6.4	6.0	4.5	4.1			
Indonesia	2.4	2.5	2.5	2.2			
Philippines	1.3	1.8	1.9	1.1			
Thailand	1.2	1.3	1.4	1.4	1.5	1.5	1.7

Source: Bank of Thailand and IMF GFS.

Table 3.2.7 Tax Revenues of Local Government in FY 1994

	BMA	PAT	MUN	SAN	CAO	TOTAL
			(In millions of baht)			
Local levied taxes	2,907.5	61.6	1,234.9	568.8	872.4	5,645.2
House and rent	2,452.4	50.2	955.3	442.4	350.2	4,250.5
Land development	129.4	2.4	69.7	46.0	461.9	709.4
Signboard	322.7	8.8	184.9	61.8	54.4	632.6
Slaughter	3.0	0.2	25.0	18.6	5.9	52.7
Surcharged taxes	7,894.8	36.5	4,004.8	2,021.1	8,255.6	22,212.8
VAT	6,741.1	25.1	3,110.5	615.3	768.3	11,260.3
Gambling	124.1	0.0	0.0	0.0	0.0	124.1
Excise	801.2	8.9	694.7	1,090.4	5,810.8	8,406.0
Alcohol tax	228.4	2.5	199.6	315.4	1,676.5	2,422.4
Shared taxes	3,014.9	12.7	1,919.6	951.5	963.7	6,862.4
Vehicle tax	3,014.9	12.7	1,919.6	951.5	963.7	6,862.4
Rice export	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	13,817.2	110.8	7,159.3	3,541.4	10,091.7	34,720.4
			(In percent of authority total revenue)			
Local levied taxes	21.0	55.6	17.2	16.1	8.6	16.3
House and rent	17.7	45.3	13.3	12.5	3.5	12.2
Land development	0.9	2.2	1.0	1.3	4.6	2.0
Signboard	2.3	7.9	2.6	1.7	0.5	1.8
Slaughter	0.0	0.2	0.3	0.5	0.1	0.2
Surcharged taxes	57.1	32.9	55.9	57.1	81.8	64.0
VAT	48.8	22.7	43.4	17.4	7.6	32.4
Gambling	0.9	0.0	0.0	0.0	0.0	0.4
Excise	5.8	8.0	9.7	30.8	57.6	24.2
Alcohol tax	1.7	2.3	2.8	8.9	16.6	7.0
Shared taxes	21.8	11.5	26.8	26.9	9.5	19.8
Vehicle tax	21.8	11.5	26.8	26.9	9.5	19.8
Rice export	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
			(In percent of total tax)			
Local levied taxes	51.50	1.09	21.88	10.08	15.45	100.00
House and rent	57.70	1.18	22.48	10.41	8.24	100.00
Land development	18.24	0.34	9.83	6.48	65.11	100.00
Signboard	51.01	1.39	29.23	9.77	8.60	100.00
Slaughter	5.69	0.38	47.44	35.29	11.20	100.00
Surcharged taxes	35.54	0.16	18.03	9.10	37.17	100.00
VAT	59.87	0.22	27.62	5.46	6.82	100.00
Gambling	100.00	0.00	0.00	0.00	0.00	100.00
Excise	9.53	0.11	8.26	12.97	69.13	100.00
Alcohol tax	9.43	0.10	8.24	13.02	69.21	100.00
Shared taxes	43.93	0.19	27.97	13.87	14.04	100.00
Vehicle tax	43.93	0.19	27.97	13.87	14.04	100.00
Rice export						
TOTAL	39.80	0.32	20.62	10.20	29.07	100.00

Source: Bank of Thailand based on Ministry of Interior data.

BMA=Bangkok Metropolitan Area
PAT=Pattaya
MUN=Municipalities
SAN=Sanitary Districts
CAO=Changwat Administration Organizations

Table 3.3.1 Key Economic Indicators of the NESDB Development Plans

(Data are averages over the 5-year plan period)

	6 th Plan (1987-1991) Actual	7 th Plan (1992-1996) Target	7 th Plan (1992-1996) Estimate	8 th Plan (1997-2001) Target
1. Real economic growth (GDP) (%)	10.8	8.2	8.1	8.0
Agriculture	3.4	3.4	3.2	3.0
Manufacturing	13.9	9.5	10.1	10.1
Construction	18.1	8.9	8.7	11.3
Services and other	11.0	8.1	8.0	7.2
2. Real expenditure growth (%)				
Consumption				
Private	9.2	5.7	7.7	6.8
Public	2.0	3.3	6.8	7.3
Investment				
Private	26.0	8.8	7.6	9.9
Public	6.5	8.5	17.0	15.7
3. International trade				
Value (billion baht)				
Exports	497.0	1,062.7	1,124.3	2,551.0
Imports	675.9	1,375.7	1,415.8	2,904.6
Trade balance	-178.9	-313.0	-291.5	-353.6
Trade balance as % of GDP	-8.4	-9.4	-7.8	-5.4
Real growth (%)				
Exports	24.5	14.7	14.3	15.1
Imports	31.9	11.4	13.8	12.6
4. Current account balance				
Value in billions of baht	-91.1	-170.3	-294.4	-313.6
C/A balance as % of GDP	-4.5	-5.2	-6.6	-4.8
(end of period) 1/	-8.3	-2.5	-8.3	-3.4
5. Inflation --CPI (%)	4.7	5.6	4.8	4.5
7. Population (million persons)	56.9	61.0	58.8	61.8
Growth rate (%)	1.4	1.2	1.1	0.95
8. Employment (million persons)	32.0	34.9	32.5	33.4
Unemployment rate (%)	0.6	0.5	1.0	0.4
9. Per capita GDP (baht/year) 1/	41,000	71,000	76,884	134,277

Source: NESDB

1/ Value at the end of the Plan period.

Table 3.3.2 WSB Illustrative Economic Growth Scenarios to 2011 (Eighth, Ninth, and Tenth Plans)

(In 1,000 Baht at 1994 prices)

	1994 Actual	2001 Projection	2006 Projection	2011 Projection	1995-2001	2002-06	2007-11	1995-2011
					Annual Growth Rates			
Case 1								
Trend Growth Case								
Agriculture	27,211,659	31,257,643	34,510,963	38,102,892	2.0	2.0	2.0	2.0
Industry 1/	48,985,367	88,403,332	134,776,170	205,474,337	8.8	8.8	8.8	8.8
Services	64,576,433	94,563,052	124,176,973	163,064,965	5.6	5.6	5.6	5.6
GDP	*140,773,459*	*214,224,026*	*293,464,107*	*406,642,194*	*6.2*	*6.5*	*6.7*	*6.4*
Population (in '000)	2,896	3,056	3,180	3,315	0.8	0.8	0.8	0.8
Per capita GDP	48,610	70,102	92,271	122,656	5.4	5.6	5.9	5.6
Employment								
Agriculture	819,884	808,718	800,836	793,031	-0.2	-0.2	-0.2	-0.2
Industry	356,232	472,412	577,942	707,045	4.1	4.1	4.1	4.1
Services	433,109	466,048	491,099	517,496	1.1	1.1	1.1	1.1
Total	1,609,225	1,747,179	1,869,877	2,017,572	1.2	1.4	1.5	1.3
Case 2								
Moderate Growth/Policy Case								
Agriculture	27,211,659	31,257,643	35,365,154	40,997,906	2.0	2.5	3.0	2.4
Industry 1/	48,985,367	122,574,555	197,407,547	296,833,178	14.0	10.0	8.5	11.2
Services	64,576,433	110,672,658	178,239,423	287,056,372	8.0	10.0	10.0	9.2
GDP	*140,773,459*	*264,504,856*	*411,012,123*	*624,887,456*	*9.4*	*9.2*	*8.7*	*9.2*
Population (in '000)	2,896	3,060	3,234	3,433	0.8	1.1	1.2	1.0
Per capita GDP	48,610	86,453	127,081	182,035	8.6	8.0	7.5	8.1
Employment								
Agriculture	819,884	626,343	529,545	458,732	-3.8	-3.3	-2.8	-3.4
Industry	356,232	592,824	713,444	801,640	7.5	3.8	2.4	4.9
Services	433,109	545,443	704,906	910,990	3.3	5.3	5.3	4.5
Total	1,609,225	1,764,611	1,947,895	2,171,362	1.3	2.0	2.2	1.8
Case 3								
High Growth Case								
Agriculture	27,211,659	31,257,643	35,365,154	40,997,906	2.0	2.5	3.0	2.4
Industry 1/	48,985,367	122,574,555	246,541,212	434,489,855	14.0	15.0	12.0	13.7
Services	64,576,433	110,672,658	178,239,423	314,118,764	8.0	10.0	12.0	9.8
GDP	140,773,459	264,504,856	460,145,789	789,606,525	9.4	11.7	11.4	10.7
Population (in '000)	2,896	3,060	3,413	3,893	0.8	2.2	2.7	1.8
Per capita GDP	48,610	86,453	134,833	202,842	8.6	9.3	8.5	8.8
Employment								
Agriculture	819,884	626,343	529,545	458,732	-3.8	-3.3	-2.8	-3.4
Industry	356,232	592,824	891,016	1,173,401	7.5	8.5	5.7	7.3
Services	433,109	545,443	704,906	996,874	3.3	5.3	7.2	5.0
Total	1,609,225	1,764,611	2,125,467	2,629,007	1.3	3.8	4.3	2.9
KINGDOM								
GDP (in Bn. Baht at 94 prices)	3,601	6,234	8,950	12,553	8.2	7.5	7.0	7.6
Population (in millions)	58.71	62.91	65.47	67.71	1.0	0.8	0.7	0.8
Per capita GDP in 1994 prices	61,331	99,092	136,706	185,389	7.1	6.6	6.3	6.7

Source: Study Team calculations.

1/ Includes: mining and quarrying, manufacturing, construction, and electricity and water supply.

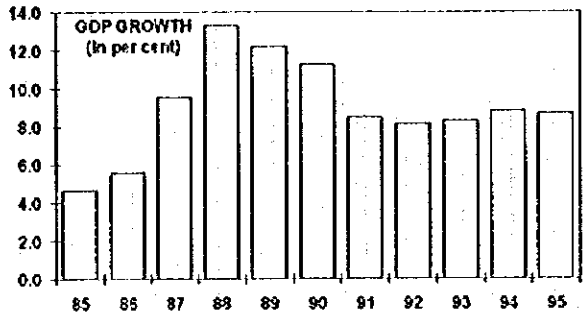
Table 3.3.3 Projects/Programs Recommended for Implementation
(In millions of US dollars)

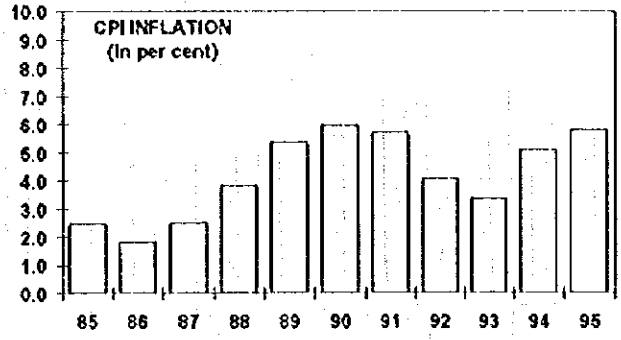
No.	Project/Program	Phase I 1997-01	Phase II 2002-06	Phase III 2007-11	Total 1997-2011
	[Social]	4	2	2	8
SS1	Social Monitoring and Evaluation	1	2	2	5
SS2	Local Governance System Improvement	2			2
SS3	Social Partnership Promotion	1			1
	[Education]	13	25		38
ED1	Experimental Schools and Curriculum Revision	1	10		11
ED2	High-technology Universities	5	10		15
ED3	Industry-based Training Center	5			5
ED4	Computer Availability Expansion	2	5		7
	[Health]	30	7	4	41
PH1	Medical Research Laboratory with Hospital	20			20
PH2	Regional Occupational Health Center	2	4	4	10
PH3	Emergency Medical Service Upgrading	2	3		5
PH4	Integrated HIV/AIDS Control	5			5
PH5	Health Promotion Upgrading	1			1
	[Rural/Urban]	678	1,149	645	2,472
RD1	Rural Development Models	30	80	100	210
UD1	Upper WSB Urban Cluster	5	2		7
UD2	Specific City Plans	640	1,064	540	2,244
UD3	Urban Social Infrastructure	1.5			1.5
UD4	Urban Amenity Improvement	1	3	5	9
UD5	Institutional Strengthening	0.5			0.5
	[Agriculture/Fisheries]	232	266	110	608
AG1	Field Crops Restructuring	20	20	40	80
AG2	High-value Crops for Niche Markets	30			30
AG3	Tropical Fruit Improvement	62	114		176
AG4	Tropical Fruits Center	13	6		19
AG5	Cattle Fattening	5	10	15	30
AG6	Dairy Production Promotion	5	10	10	25
AG7	Slaughterhouse Modernization	10	13		23
AG8	Agro-processing Promotion	10	10	10	30
AG9	Water Application Efficiency Improvement	10	10	15	35
AG10	Coconut-based Livelihood	5	10	10	25
AG11	Agricultural Marketing Information	10	13		23
AG12	Farmers' Lifetime Training	10	10	10	30
AF1	Coastal Fisheries Rehabilitation	10	10		20
AF2	Aquaculture Model	12			12
AF3	Fish Processing Industrial Complex	20	30		50
	[Industry/Trade]	764	662	180	1,606
ID1	Free Trade Areas (FTAs)	753	343	180	1,276
ID2	Strategic Industrial Estates		284		284
ID3	Rural-industrial Community Model	3.5	3.5		7
ID4	Quality/Productivity Enhancement	6.5			6.5
ID5	Industrial R&D Promotion		32		32
ID6	New Investment Promotion	0.5			0.5
	[Tourism]	60	51	40	151
TO1	Zone-wise Development	1	1		2
TO2	Amenity Preservation Program	6.5	3.5		10
TO3	Tourism Related Infrastructure	10	6		16
TO4	Lodging Facility Upgrading	40	40	40	120
TO5	Tourism Information Service Promotion	2			2
	[Resource Management/Environment]	204	317	100	621
EV1	Organic Farming	6	10		16
EV2	Reforestation Program	3	32		35
EV3	Domestic Waste Water Treatment	96	160	100	356
EV4	Solid Waste Management	96	35		131
EV5	Environmental Research Center	3	80		83

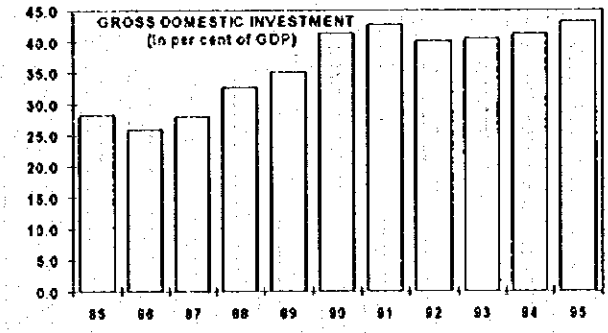
Table 3.3.3 Projects/Programs Recommended for Implementation
(In millions of US dollars)

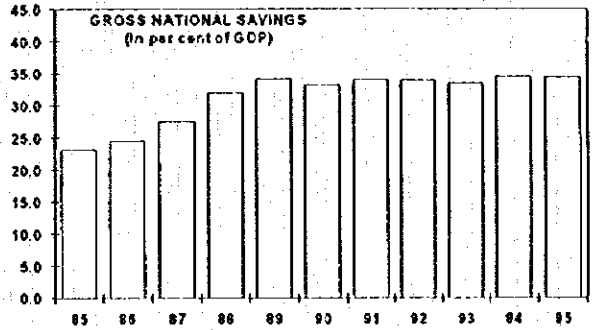
No.	Project/Program	Phase I 1997-01	Phase II 2002-06	Phase III 2007-11	Total 1997-2011
WR1	Irrigated Agriculture Intensification	120	120	120	360
WR2	Improvement of Water Management		1	20	21
WR3	Multipurpose Reservoir Development	2			2
WR4	Salinity Control		1		1
WR5	Drainage System Improvement	1			1
	[Energy/Power/Telecommunications]	37	283	7	327
EP1	Cooking Stove Dissemination	3			3
EP2	Energy Substitution (Ceramic/Lime)	5	5		10
EP3	Demand Side Management	1.5	2	2	5.5
EP4	Partially Insulated Cable Promotion	5	55		60
EP5	Kra Hydropower		200		200
TL1	Telecommunications Expansion	20	20	5	45
TL2	Teleport Promotion	0.5			0.5
TL3	Agricultural Information System	0.5			0.5
TL4	Medical Information System	0.5	1		1.5
TL5	Tourism Information System	0.5			0.5
TL6	Information Highway for Education	0.5			0.5
	[Transport]	1,355	2,116	2,772	6,243
RP1	Industry-Supporting Roads	47	68		115
RP2	Ratchaburi-Provincial Capital Links	1	20	40	61
RP3	Pathiu-Route 4 and Pathiu-Bang Saphan	15	70		85
RP4	Scenic Coastal Road		20	20	40
RP5	Secondary/ Feeder Roads	240	240	240	720
RP6A	Urban Ring/Bypass Roads		25	25	50
RP6B	Urban Roads	10	10	10	30
RP7	Rural Roads	25	25	25	75
RP8	Upgraded Road Maintenance	140	140	140	420
RP9	Outer-Outer Orbital Route	5	300	500	805
RP10	North-South Links	600	700	1,000	2,300
RP11	Chumpon-Ranong Links	1	100	50	151
RP12	Subregional Links with Myanmar	2	140		142
RT1	Intercity and Rural Bus Transport	5	5	5	15
RT2	Truck Terminals		16		16
RT3	Road Safety	5	5	5	15
WT1	Prachuap Deep-sea Port Extension	81	21	21	123
WT2	Chumpon Feeder Port	1	25		26
WT3	Ban Laem/Feeder Port			10	10
WT4	Samut Songkhram Feeder Port		10		10
WT5	Gulf Navigation Promotion	100	90	80	270
WT6	Mae Klong River Navigation		30		30
WT7	Hua Hin/Cha Am Tourist Pier		3		3
WT8	Tavoy/Dawei Deep-sea Port	1			1
WT9	Ranong/Phagnga Port		1		1
RW1	Southern Line Railway Improvement	25	2		27
RW2	Southern Line-Northern Line Link			500	500
RW3	Bangkok-Songkhram-Pak Tho Link				0
RW4	Spur Lines to Industrial Estates			51	51
RW5	Freight Transport Improvement	50	50	50	150
RW6	Tourist Train to Hua Hin/Cha Am				0
RW7	Thai-Myanmar Railway				0
AT1	Marketing of Pathiu Airport	1			1
AT2	Hua Hin Airport Expansion				0
AT4	Subregional Air Linkage				0
TOTAL		3,500	5,000	4,000	12,500

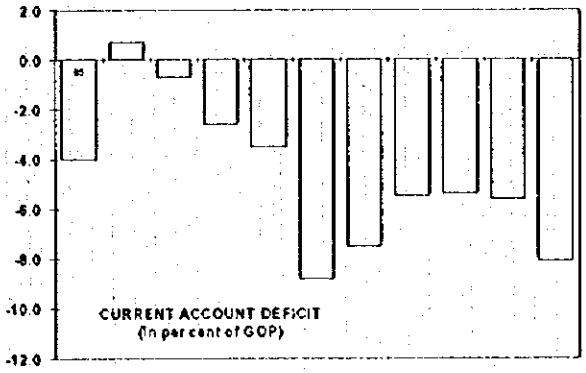
Figure 3.1.1 MACROECONOMIC INDICATORS











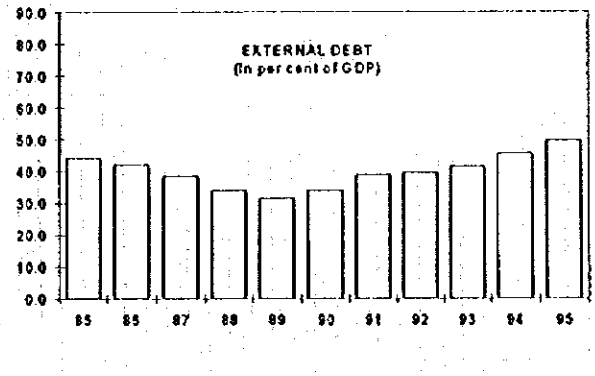


Figure 3.1.2
Sectoral Shares in GDP and Per Capita GDP in 1994 by Region
[In per cent of total (left) and in Baht (right)]

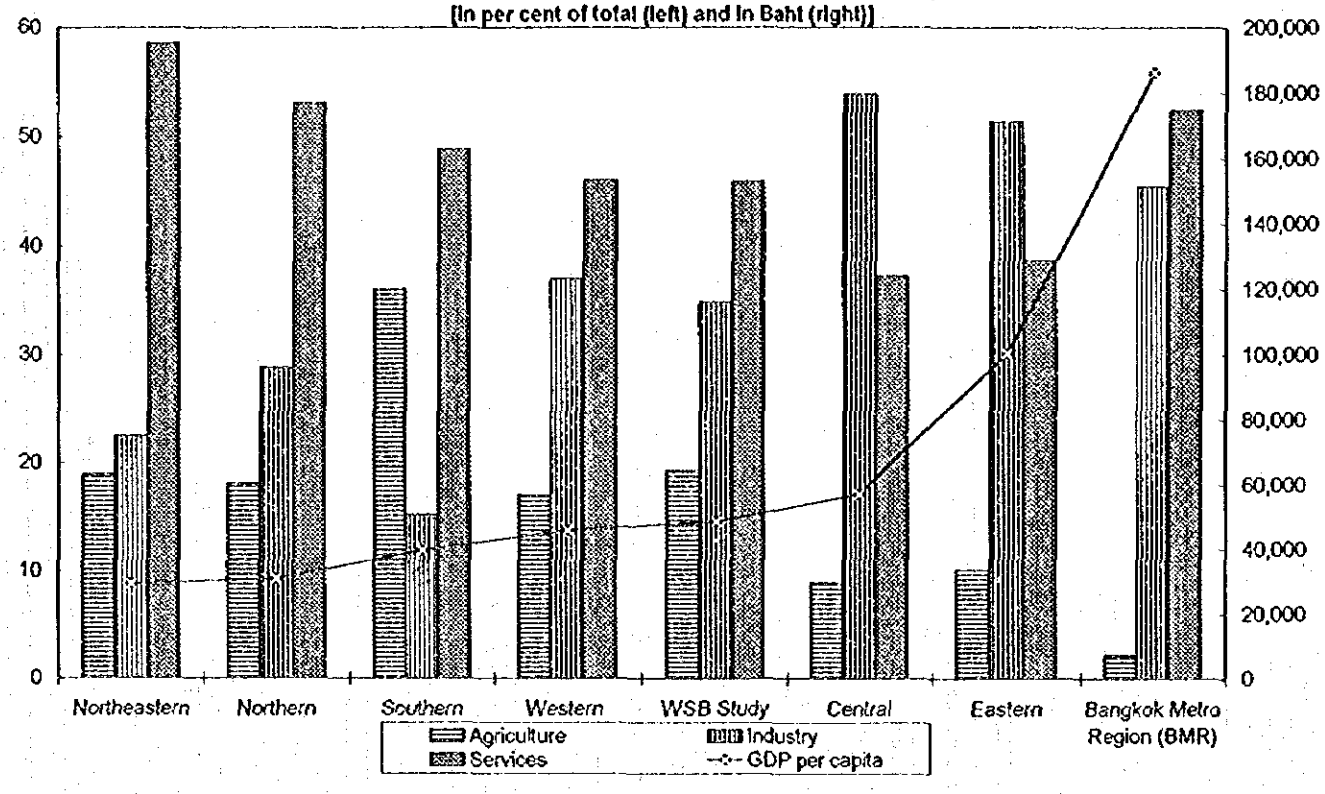
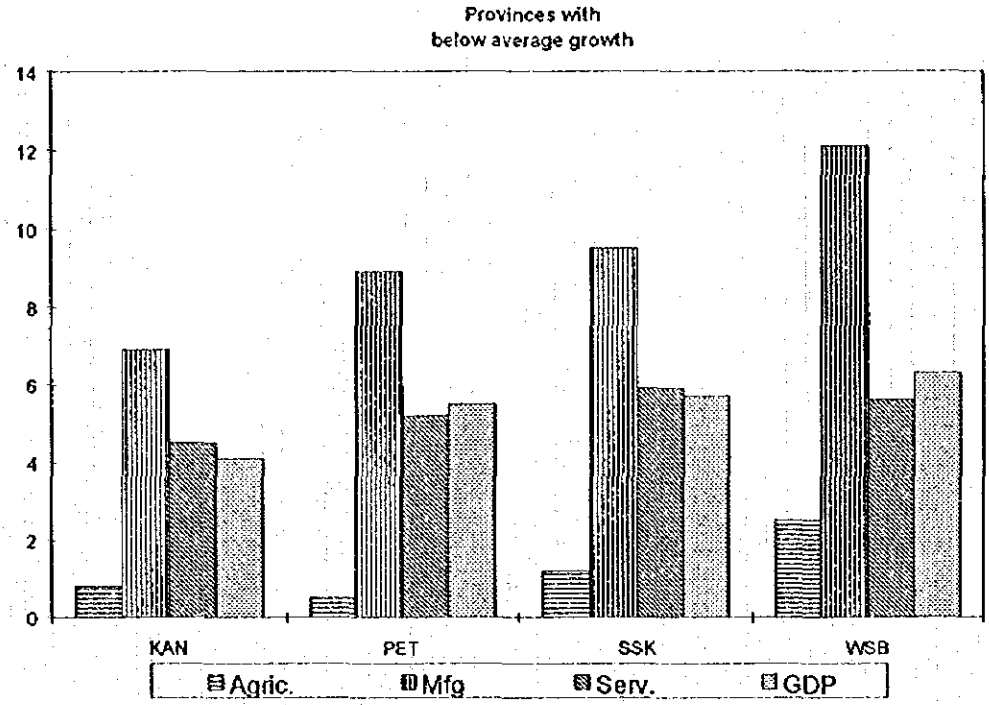


Figure 3.1.3
Growth in GDP by Sector and Province



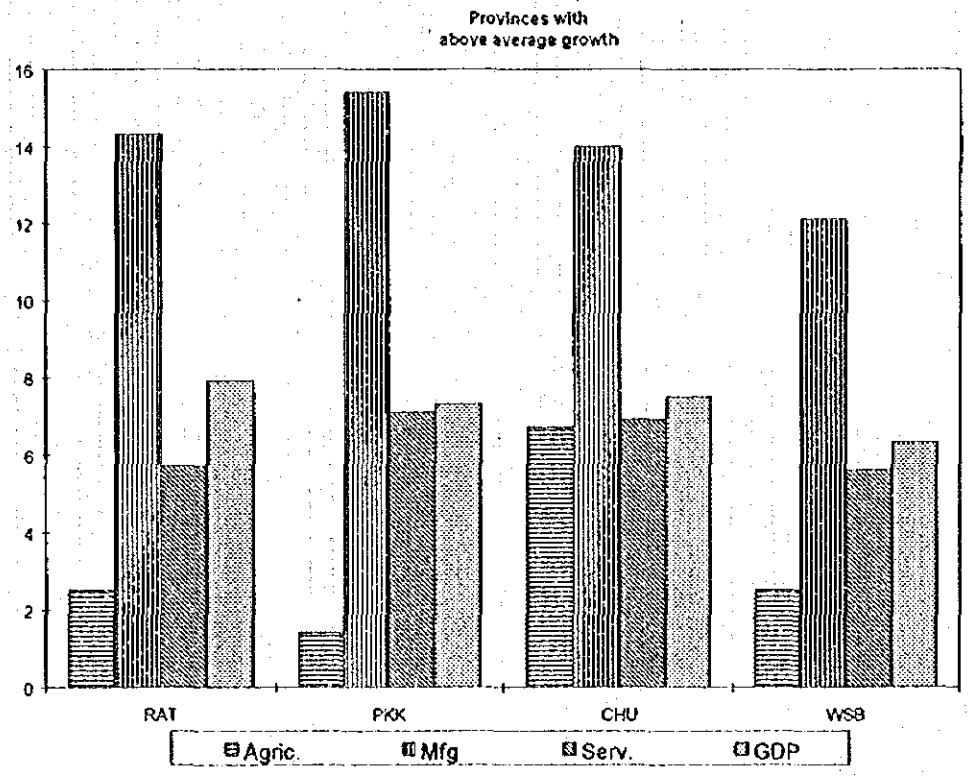
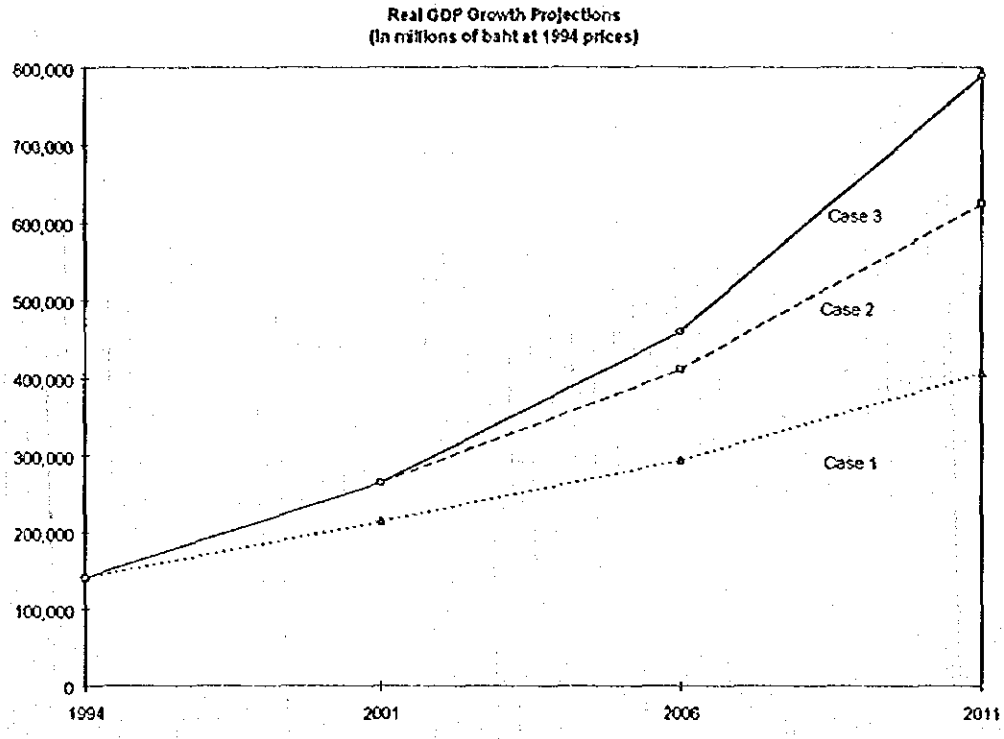
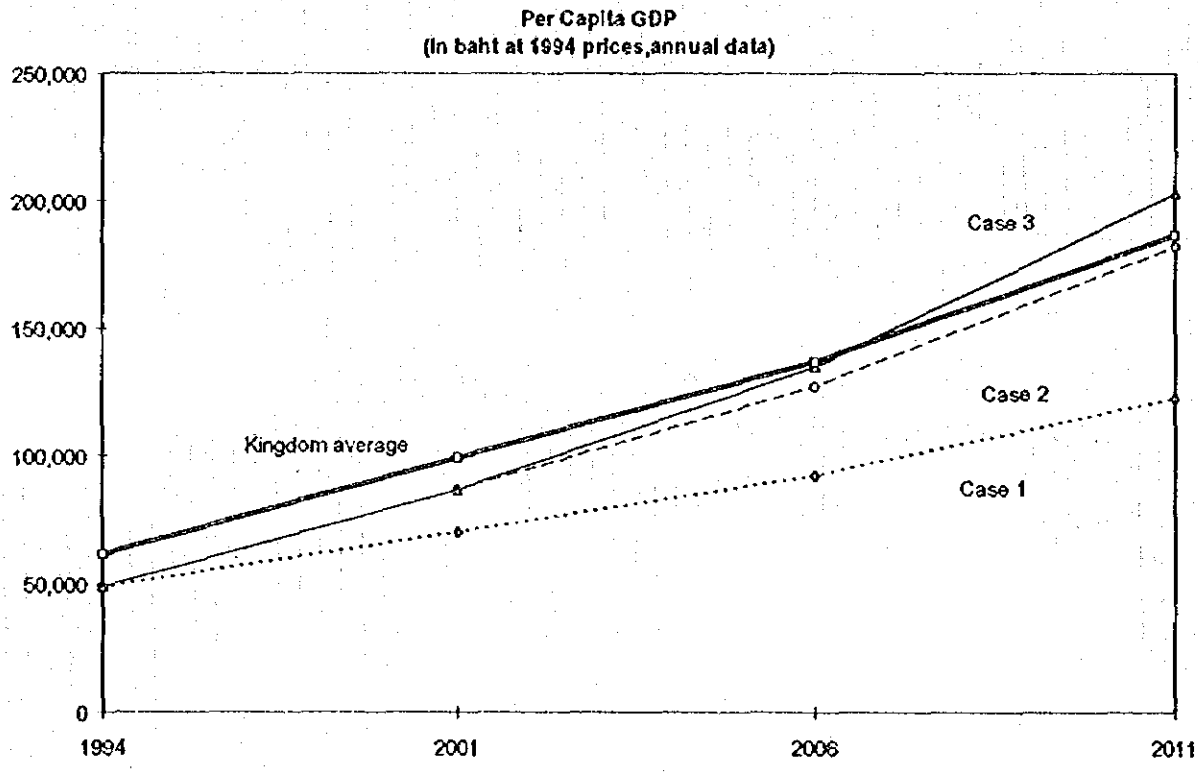


Figure 3.3.1


Real GDP Growth Projections
(In millions of baht at 1994 prices)
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
1994
2001
2006
2011
Case 3
Case 2
Case 1


Per Capita GDP
(In baht at 1994 prices,annual data)
250,000
200,000
150,000
100,000
50,000
0
1994
2001
2006
2011
Case 3
Case 2
Case 1
Kingdom average