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Report No. 4366-TH

Thailand

Managing Public Resources for Structural Adjustment

(In Two Volumes) Volume I

Part I	Recent Economic Developments and Medium Term Outlook
Part II.	Public Resource Management and Planning
Part III.	Sectoral Adjustment: Policy Issues and Investment Programs

August 31, 1983

Country Programs Department
East Asia and Pacific Regional Office

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CURRENCY EQUIVALENTS

As of July 15, 1981

1 Baht = US\$0.043

23 Baht = US\$1.00

FISCAL YEAR

October 1 to September 30

WEIGHTS AND MEASURES

bpd = Barrels per day
MMSCFD = Million standard cubic feet per day
tcf = Trillion cubic feet
mt = Metric ton
bbl = Barrels (approx. 6.6 barrels per ton fuel oil)
Btu = British Thermal Unit (equal to 0.25 kcals)
TOE = Tons oil equivalent
= 10.2×10^6 kcals
= 40.5×10^6 Btus
= 4.0×10^3 kwh of primary electricity at thermal replacement value
= 40.92×10^3 cubic feet natural gas
= 4.03 tons of lignite
1 rai = 0.40 acres
1 acre = 0.41 hectares (ha)

FOREWORD

This Report was prepared by a Mission that visited Thailand in June 1982. The Mission consisted of Johannes Linn (Mission Chief), Betty Florendo (Foreign Public Debt), Dani Kaufmann (Public Expenditures), Dhananjaya Kumar (Energy and Transport), Dusan Vujovic (Macroeconomics), Eric Daffern (Energy), Enrique Rueda-Sabater (Agriculture), Homi Kharas (Foreign Public Debt), Helena Ribe (Energy), Ken Sigrist (Agricultural Public Expenditures), Jeanette Murphy (Health and Education), and Shakil Faruqi (Industry). Roy Bahl (Consultant, Fiscal Planning), Michael Wasylenko (Consultant, Fiscal Planning) and Dick Sandler (Consultant, Agriculture) also joined the Mission. Wil Bussink (Senior Economist) supported the Mission while leading a SAL 2 identification mission which overlapped with the economic mission both in terms of timing and staffing.

Khun Phayarb Payomyont and Dr. Piyaswasti Amranand of NESDB were closely associated with the Mission's work. Khun Phayarb Payomyont visited Washington in October 1982 to assist in the writing of the Report. The Mission was furthermore greatly assisted in their analysis and data gathering by the staffs of the Bank of Thailand, Bureau of the Budget, Ministry of Finance, NESDB in particular, and many other officials of the Royal Thai Government.

A draft version of Report was discussed with the Royal Thai Government in May 1983 by a mission led by Parvez Hasan (Chief Economist, East Asia and Pacific Region) and including Messrs. Linn, Kharas, Vujovic, and Steer. These discussions were also assisted by Messrs. Davar, Temple, Chaudhri and Burns of the Bank's Regional Mission in Bangkok.

ABSTRACT

This Economic Report reviews Thailand's economic adjustment to the international economic changes which occurred during the 1970s and early 1980s, both from a retrospective vantage point and looking towards the remainder of the 1980s, with particular emphasis on the last three years of the Fifth Plan period (1984-86) and on the role of the public sector and the management of its resources. Part I reviews the country's overall economic performance and outlook. It concludes that Thailand, like most other developing countries, suffered in recent years from the effects of two successive oil price shocks, international recession, high interest rates, and deterioration of terms of trade, but nevertheless continued to show an above average economic performance. For the future, with continued implementation of the Government's structural adjustment policies, Thailand is expected to be able to regain a sustainable balance of payments, while maintaining continued rapid economic growth, albeit at rates somewhat below the exceptionally high rates experienced during the last two decades. Part II provides an assessment of aggregate public resource management in Thailand in terms of revenue mobilization, expenditure allocation and foreign borrowing. In recent years, rapid growth of public expenditures, especially among the state enterprises, was not matched by a commensurate increase in public resource mobilization, thus contributing to the external and domestic financial imbalances experienced by Thailand during these years. In the light of this experience, and given the increased role which the public sector has come to play in the Thai economy, the Report recommends that increased attention needs to be given to the planning of public resource mobilization and use. An indicative fiscal plan is therefore laid out in the Report for the remainder of the Fifth Plan period. This plan incorporates revenue and expenditure projections consistent with the Government's macro-economic and sectoral objectives. It indicates that substantial efforts need to be made to increase public resource mobilization, while scaling back public expenditure programs, particularly in the energy, transport and communications sectors. Under its structural adjustment program, the Government has already taken important steps in this direction. Part III reviews the major sectoral policy issues and public investment programs for agriculture, industry, energy, transport and communications, and human resource development (population, health and education). The main findings are that continued implementation of the Government's structural adjustment program in agriculture, industry and energy is essential for the efficient development of these sectors; that major public investment decisions in the transport and communications sectors need to be approached with caution; and that the problems of human resource development need to be assessed and given increased attention in future, particularly in the preparation of the Sixth Plan, to permit an efficient and equitable development in Thailand.

THAILAND

MANAGING PUBLIC RESOURCES FOR STRUCTURAL ADJUSTMENT

VOLUME I

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COUNTRY DATA

Country Data

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	REFERENCE GROUPS (WEIGHTED AVERAGES) /a				
	1960/b	1970/b	MOST RECENT ESTIMATE /b	MIDDLE INCOME ASIA & PACIFIC	MIDDLE INCOME LAT. AMERICA & CARIB
AREA (THOUSAND SQ. KM)	514.0	514.0	514.0	.	.
TOTAL	514.0	514.0	514.0	.	.
AGRICULTURAL	129.5	141.2	182.8	.	.
GDP PER CAPITA (US\$)	110.0	250.0	770.0	1028.6	2088.2
ENERGY CONSUMPTION PER CAPITA (KILOGRAMS OF COAL EQUIVALENT)	63.0	216.0	370.0	792.8	1407.6
POPULATION AND VITAL STATISTICS					
POPULATION, MID-YEAR (THOUSANDS)	27039.0	36431.0	47966.0	.	.
URBAN POPULATION (% OF TOTAL)	12.5	13.2	14.6	32.9	65.9
POPULATION PROJECTIONS					
POPULATION IN YEAR 2000 (MILL)			68.9	.	.
STATIONARY POPULATION (MILL)			108.8	.	.
YEAR STATIONARY POP. REACHED			2105	.	.
POPULATION DENSITY					
PER SQ. KM.	52.6	70.9	91.3	260.7	35.6
PER SQ. KM. AGRI. LAND	208.8	258.1	256.9	1696.5	93.2
POPULATION AGE STRUCTURE (%)					
0-14 YRS	44.7	46.2	41.2	39.4	40.1
15-64 YRS	52.6	50.8	55.7	57.2	55.8
65 AND ABOVE	2.7	3.0	3.1	3.3	4.1
POPULATION GROWTH RATE (%)					
TOTAL	2.7	3.0	2.5	2.3	2.3
URBAN	4.5	3.5	3.4	3.9	3.7
CRUDE BIRTH RATE (PER THOUS)	43.6	39.7	29.5	31.3	31.5
CRUDE DEATH RATE (PER THOUS)	14.9	10.8	7.6	9.6	8.1
GROSS REPRODUCTION RATE	3.1	2.8	1.9	2.0	2.0
FAMILY PLANNING					
ACCEPTORS, ANNUAL (THOUS)	..	202.9/c	1063.3	.	..
USERS (% OF MARRIED WOMEN)	..	7.6	39.0	46.6	..
FOOD AND NUTRITION					
INDEX OF FOOD PROD. PER CAPITA (1969-71=100)	92.0	100.0	137.0	125.2	113.0
PER CAPITA SUPPLY OF					
CALORIES (% OF REQUIREMENTS)	99.0	101.0	104.0	114.2	111.3
PROTEINS (GRAMS PER DAY)	45.0	49.0	47.0	57.9	67.9
OF WHICH ANIMAL AND PULSE	11.0	14.0	15.0/d	14.1	34.1
CHILD (AGES 1-4) DEATH RATE	13.3	7.9	4.3	7.6	5.3
HEALTH					
LIFE EXPECT. AT BIRTH (YEARS)	52.3	57.9	63.1	60.2	64.6
INFANT MORT. RATE (PER THOUS)	103.0	74.6	53.1	68.1	62.6
ACCESS TO SAFE WATER (%POP)					
TOTAL	..	17.0	22.0/e	37.1	64.8
URBAN	..	60.0	49.0/f	54.8	77.8
RURAL	..	10.0	12.0/g	26.4	44.3
ACCESS TO EXCRETA DISPOSAL (% OF POPULATION)					
TOTAL	..	17.0	40.0/h	41.4	54.6
URBAN	..	63.0	38.0/i	47.3	69.8
RURAL	..	8.0	36.0/j	33.4	29.8
POPULATION PER PHYSICIAN	7950.0	8450.0	7180.0	7771.9	1776.0
POP. PER NURSING PERSON	4860.0/k	7050.0	2420.0	2462.6	1012.2
POP. PER HOSPITAL BED					
TOTAL	1380.0	900.0	820.0/l	1047.2	477.0
URBAN	270.0/m	180.0	530.0/n	651.1	667.5
RURAL	2130.0/o	1380.0	1280.0/p	2391.9	1921.6
ADMISSIONS PER HOSPITAL BED	..	31.0	44.0/q	27.0	27.2
HOUSING					
AVERAGE SIZE OF HOUSEHOLD					
TOTAL	5.3/r	5.8	5.3/s	..	..
URBAN	5.3/t	5.8	5.3/u	..	..
RURAL	5.6/v	5.8	5.3/w	..	..
AVERAGE NO. OF PERSONS/ROOM					
TOTAL	..	..	2.4/x	..	..
URBAN	..	..	2.2/y	..	..
RURAL	..	..	2.4/z	..	..
ACCESS TO ELECT. (% OF DWELLINGS)					
TOTAL	..	18.9	..	..	..
URBAN	..	86.1	..	..	..
RURAL	..	9.0	..	..	..

THAILAND	- SOCIAL INDICATORS DATA SHEET				
	REFERENCE GROUPS (WEIGHTED AVERAGES) /a				
	1960/b	1970/b	MOST RECENT ESTIMATE/b	MIDDLE INCOME ASIA & PACIFIC	MIDDLE INCOME LAT. AMERICA & CARIB
EDUCATION					
ADJUSTED ENROLLMENT RATIOS					
PRIMARY: TOTAL	83.0	83.0	96.0	101.2	105.0
MALE	88.0	86.0	..	106.0	106.3
FEMALE	79.0	79.0	..	97.5	103.6
SECONDARY: TOTAL	13.0	17.0	29.0	44.9	40.0
MALE	16.0	20.0	..	50.0	38.6
FEMALE	10.0	15.0	..	44.6	41.2
VOCATIONAL (% OF SECONDARY)	19.1	22.3	15.5	18.5	34.0
PUPIL-TEACHER RATIO					
PRIMARY	36.0	35.0	24.0	32.7	30.7
SECONDARY	20.0	16.0	23.0/d	23.4	16.7
ADULT LITERACY RATE (%)					
	67.7	78.6	86.0	72.9	79.5
CONSUMPTION					
PASSENGER CARS/THOUSAND POP	1.8	5.1	6.3/e	9.7	45.6
RADIO RECEIVERS/THOUSAND POP	6.0	76.2	125.9	113.7	228.2
TV RECEIVERS/THOUSAND POP	2.2	6.6	17.3	50.1	108.3
NEWSPAPER ("DAILY GENERAL INTEREST") CIRCULATION PER THOUSAND POPULATION	10.6	20.5	42.3	54.0	64.1
CINEMA ANNUAL ATTENDANCE/CAPITA	..	1.8/h	..	3.4	2.9
LABOR FORCE					
TOTAL LABOR FORCE (THOUS)	13860.0	16987.0	23037.0	..	..
FEMALE (PERCENT)	48.4	46.8	45.9	33.6	24.8
AGRICULTURE (PERCENT)	84.0	80.0	76.0	50.9	31.3
INDUSTRY (PERCENT)	4.0	6.0	9.0	19.2	23.9
PARTICIPATION RATE (PERCENT)					
TOTAL	51.3	46.6	48.0	38.6	31.3
MALE	52.7	49.3	51.7	50.7	49.8
FEMALE	49.8	43.9	44.3	26.6	14.8
ECONOMIC DEPENDENCY RATIO					
	0.9	1.1	0.9	1.1	1.4
INCOME DISTRIBUTION					
PERCENT OF PRIVATE INCOME RECEIVED BY					
HIGHEST 5% OF HOUSEHOLDS	21.8/g	23.8/i	23.0/e	22.2	..
HIGHEST 20% OF HOUSEHOLDS	50.9/g	49.7/i	49.8/e	48.0	..
LOWEST 20% OF HOUSEHOLDS	6.2/g	6.1/i	5.6/e	6.4	..
LOWEST 40% OF HOUSEHOLDS	14.9/g	15.9/i	15.2/e	15.5	..
POVERTY TARGET GROUPS					
ESTIMATED ABSOLUTE POVERTY INCOME LEVEL (US\$ PER CAPITA)					
URBAN	..	..	159.0/i	194.5	289.8
RURAL	..	..	106.0/i	155.0	184.5
ESTIMATED RELATIVE POVERTY INCOME LEVEL (US\$ PER CAPITA)					
URBAN	..	..	115.0/i	178.0	519.8
RURAL	..	..	110.0/i	164.8	372.1
ESTIMATED POP. BELOW ABSOLUTE POVERTY INCOME LEVEL (%)					
URBAN	..	..	15.0/i	24.4	..
RURAL	..	..	34.0/i	41.1	..

.. NOT AVAILABLE
 . NOT APPLICABLE

NOTES

/a The group averages for each indicator are population-weighted arithmetic means. Coverage of countries among the indicators depends on availability of data and is not uniform.

/b Unless otherwise noted, "Data for 1960" refer to any year between 1959 and 1961; "Data for 1970" between 1969 and 1971; and data for "Most Recent Estimate" between 1979 and 1981.

/c Government program only; /d 1977; /e 1976; /f 1975; /g 1962; /h 1973; /i 1968; /j 1978.

DEFINITIONS OF SOCIAL INDICATORS

Notes: Although the data are drawn from sources generally judged the most authoritative and reliable, it should also be noted that they may not be internationally comparable because of the lack of standardized definitions and concepts used by different countries in collecting the data. The data are, nonetheless, useful to describe orders of magnitude, indicate trends, and characterize certain major differences between countries.

The reference groups are (1) the same country group of the subject country and (2) a country group with somewhat higher average income than the country group of the subject country (except for "High Income Oil Exporters" group where "Middle Income North Africa and Middle East" is chosen because of stronger socio-cultural affinities). In the reference group data the averages are population weighted arithmetic means for each indicator and shown only when majority of the countries in a group has data for that indicator. Since the coverage of countries among the indicators depends on the availability of data and is not uniform, caution must be exercised in relating averages of one indicator to another. These averages are only useful in comparing the value of one indicator at a time among the country and reference groups.

AREA (thousand sq.km.)

Total - Total surface area comprising land area and inland waters; 1960, 1970 and 1980 data.
Agricultural - Estimate of agricultural area used temporarily or permanently for crops, pastures, market and kitchen gardens or to lie fallow; 1960, 1970 and 1980 data.

GDP PER CAPITA (US\$) - GDP per capita estimates at current market prices, calculated by same conversion method as World Bank Atlas (1979-81 basis); 1960, 1970, and 1981 data.

ENERGY CONSUMPTION PER CAPITA - Annual apparent consumption of commercial primary energy (coal and lignite, petroleum, natural gas and hydro-, nuclear and geothermal electricity) in kilograms of coal equivalent per capita; 1960, 1970, and 1980 data.

POPULATION AND VITAL STATISTICS

Total Population, Mid-Year (thousands) - As of July 1; 1960, 1970, and 1981 data.
Urban Population (percent of total) - Ratio of urban to total population; different definitions of urban areas may affect comparability of data among countries; 1960, 1970, and 1981 data.

Population Projections

Population in Year 2000 - Current population projections are based on 1960 total population by age and sex and their mortality and fertility rates. Projection parameters for mortality rates comprise of three levels assuming life expectancy at birth increasing with country's per capita income level, and female life expectancy stabilizing at 77.5 years. The parameters for fertility rate also have three levels assuming decline in fertility according to income level and past family planning performance. Each country is then assigned one of these nine combinations of mortality and fertility trends for projection purposes.

Stationary Population - In a stationary population there is no growth since the birth rate is equal to the death rate, and also the age structure remains constant. This is achieved only after fertility rates decline to the replacement level of unit net reproduction rate, when each generation of women replaces itself exactly. The stationary population size was estimated on the basis of the projected characteristics of the population in the year 2000, and the rate of decline of fertility rate to replacement level.

Year stationary population is reached - The year when stationary population size will be reached.

Population Density

Per sq. km. - Mid-year population per square kilometer (100 hectares) of total area; 1960, 1970, and 1980 data.

Per sq. km. Agricultural Land - Computed as above for agricultural land only; 1960, 1970 and 1980 data.

Population Age Structure (percent) - Children (0-14 years), working-age (15-64 years), and retired (65 years and over) as percentages of mid-year population; 1960, 1970, and 1981 data.

Population Growth Rate (percent) - Total - Annual growth rates of total mid-year population for 1960-69, 1970-79, and 1980-81.
Population Growth Rate (percent) - Urban - Annual growth rates of urban populations for 1960-69, 1970-79, and 1980-81.

Crude Birth Rate (per thousand) - Annual live births per thousand of mid-year population; 1960, 1970, and 1981 data.
Crude Death Rate (per thousand) - Annual deaths per thousand of mid-year population; 1960, 1970, and 1981 data.

Crude Reproduction Rate - Average number of daughters a woman will bear in her normal reproductive period if she experiences present age-specific fertility rates; usually five-year averages ending in 1960, 1970, and 1981.

Family Planning - Acceptors, Annual (thousands) - Annual number of acceptors of birth-control devices under auspices of national family planning program.
Family Planning - Users (percent of married women) - Percentage of married women of child-bearing age (15-44 years) who use birth-control devices to all married women in same age group.

FOOD AND NUTRITION

Index of Food Production per Capita (1960=100) - Index of per capita annual production of all food commodities. Production excludes seed and feed and is on calendar year basis. Commodities cover primary goods (e.g. sugarcane instead of sugar) which are milks and certain nutrients (e.g. coffee and tea) on a per capita basis. Aggregate production of each country is based on national average producer price weights; 1961-83, 1970, and 1981 data.

Per capita supply of calories (percent of requirements) - Computed from energy equivalent of net food supplies available in country per capita per day. Available supplies comprise domestic production, imports less exports, and changes in stock. Net supplies exclude animal feed, seeds, quantities used in food processing, and losses in distribution. Requirements were estimated by FAO based on physiological needs for normal activity and health considering environmental temperature, body weights, age and sex distribution of population, and allowing 10 percent for waste at household level; 1961-83, 1970 and 1980 data.

Per capita supply of protein (grams per day) - Protein content of per capita net supply of food per day. Net supply of food is defined as above. Requirements for all countries established by USDA provide for minimum allowances of 40 grams of total protein per day and 20 grams of animal and pulse protein, of which 10 grams should be animal protein. These standards are lower than those of 75 grams of total protein and 23 grams of animal protein as an average for the world, proposed by FAO in the Third World Food Survey; 1961-83, 1970 and 1980 data.

Per capita protein supply from animal and pulse - Protein supply of food derived from animal and pulse in grams per day; 1961-83, 1970 and 1977 data.
Child (ages 1-4) Death Rate (per thousand) - Annual deaths per thousand in age group 1-4 years, to children in this age group; for most developing countries data derived from life tables; 1960, 1970 and 1981 data.

HEALTH

Life Expectancy at Birth (years) - Average number of years of life remaining at birth; 1960, 1970 and 1981 data.
Infant Mortality Rate (per thousand) - Annual deaths of infants under one year of age per thousand live births; 1960, 1970 and 1981 data.

Access to Safe Water (percent of population) - Urban, urban, and rural - Number of people (total, urban, and rural) with reasonable access to safe water supply (includes treated surface waters or untreated but uncontaminated water such as that from protected boreholes, springs, and sanitary wells) as percentages of their respective populations. In an urban area a public fountain or standpipe located not more than 100 meters from a house may be considered as being within reasonable access of that house. In rural areas reasonable access would imply that the housewife or members of the household do not have to spend a disproportionate part of the day in fetching the family's water needs.

Access to Sanitary Disposal (percent of population) - Total, urban, and rural - Number of people (total, urban, and rural) served by sanitary disposal as percentages of their respective populations. Sanitary disposal may include the collection and disposal, with or without treatment, of human excreta and waste-water by water-borne systems or the use of pit privies and similar installations.

Population per Physician - Population divided by number of practicing physicians qualified from a medical school at university level.

Population per Nursing Person - Population divided by number of practicing male and female graduate nurses, assistant nurses, practical nurses and nursing auxiliaries.

Population per Hospital Bed - total, urban, and rural - Population (total, urban, and rural) divided by their respective number of hospital beds available in public and private general and specialized hospital and rehabilitation centers. Hospitals are establishments permanently staffed by at least one physician. Establishments providing principally outpatient services are not included. Rural hospitals, however, include health and medical centers not permanently staffed by a physician (but by a medical assistant, nurse, midwife, etc.) which offer in-patient accommodation and provide a limited range of medical facilities. For statistical purposes urban hospitals include WHO principal/general hospitals, and rural hospitals, local or rural hospitals and medical and maternity centers. Specialized hospitals are included only under total.
Admissions per Hospital Bed - Total number of admissions to or discharges from hospitals divided by the number of beds.

HOUSING

Average Size of Household (persons per household) - total, urban, and rural - A household consists of a group of individuals who share living quarters and their main meals. A boarder or lodger may or may not be included in the household for statistical purposes.

Average number of persons per room - total, urban, and rural - average number of persons per room in all urban, and rural occupied conventional dwellings, respectively. Dwellings exclude non-permanent structures and unoccupied parts.

Access to Electricity (percent of dwellings) - total, urban, and rural - Conventional dwellings with electricity in living quarters as percentage of total, urban, and rural dwellings respectively.

EDUCATION

Enrollment Ratios

Primary school - total, male and female - Gross total, male and female enrollment of all ages at the primary level as percentages of respective primary school-age populations; normally includes children aged 6-11 years but adjusted for different lengths of primary education; for countries with universal education enrollment may exceed 100 percent since some pupils are below or above the official school age.

Secondary school - total, male and female - Computed as above; secondary education requires at least four years of approved primary instruction; provides general, vocational, or teacher training instructions for pupils usually of 12 to 17 years of age; correspondence courses are generally excluded.

Vocational enrollment (percent of secondary) - Vocational institutions include technical, industrial, or other progress which operate independently or as departments of secondary institutions.

Teacher-to-student ratio - primary, and secondary - Total students enrolled in primary and secondary levels divided by number of teachers in the corresponding levels.

Adult literacy rate (percent) - Literate adults (able to read and write) as a percentage of total adult population aged 15 years and over.

COMMUNICATION

Passenger Car (per thousand population) - Passenger cars comprise motor cars essential less than eight persons; excludes ambulances, hearses and military vehicles.

Radio Receivers (per thousand population) - All types of receivers for radio broadcasts to general public per thousand of population; excludes unlicensed receivers in countries and in years when registration of radio sets was in effect; data for recent years may not be comparable since most countries abolished licensing.

TV Receivers (per thousand population) - TV receivers for broadcast to general public per thousand population; excludes unlicensed TV receivers in countries and in years when registration of TV sets was in effect.

Newspaper Circulation (per thousand population) - Shows the average circulation of daily general interest newspapers, defined as a periodical publication devoted primarily to recording general news. It is considered to be "daily" if it appears at least four times a week.

Cinema Annual Attendance per Capita per Year - Based on the number of tickets sold during the year, including admissions to drive-in cinemas and mobile units.

LABOR FORCE

Total Labor Force (thousands) - Economically active persons, including armed forces and unemployed but excluding housewives, students, etc., covering population of all ages. Definitions in various countries are not comparable; 1960, 1970 and 1981 data.

Female (percent) - Female labor force as percentage of total labor force.
Agriculture (percent) - Labor force in farming, forestry, hunting and fishing as percentage of total labor force; 1960, 1970 and 1981 data.

Industry (percent) - Labor force in mining, construction, manufacturing and electricity, water and gas as percentage of total labor force; 1960, 1970 and 1981 data.

Participation Rate (percent) - total, male, and female - Participation or activity rates are computed as total, male, and female labor force as percentages of total, male and female population of all ages respectively; 1960, 1970, and 1981 data. These are based on 10's participation rates reflecting age-sex structure of the population, and long time trend. A few estimates are from national sources.

Economic Dependency Ratio - Ratio of population under 15 and 65 and over to the total labor force.

INCOME DISTRIBUTION

Percentage of Private Income (both in cash and kind) - Received by richest 5 percent, richest 20 percent, poorest 20 percent, and poorest 40 percent of households.

POVERTY TARGET GROUPS

The following estimates are very approximate measures of poverty levels, and should be interpreted with considerable caution.

Estimated Absolute Poverty Income Level (US\$ per capita) - urban and rural - Absolute poverty income level is that income level below which a minimal nutritionally adequate diet plus essential non-food requirements is not affordable.

Estimated Relative Poverty Income Level (US\$ per capita) - urban and rural - Rural relative poverty income level is one-third of average per capita personal income of the country. Urban level is derived from the rural level with adjustment for higher cost of living in urban areas.

ABBREVIATIONS AND ACRONYMS

AAT	=	Airports Authority of Thailand
ARD	=	Office of Accelerated Rural Development
BAAC	=	Bank for Agriculture and Agricultural Cooperatives
BMA	=	Bangkok Metropolitan Administration
BMTA	=	Bangkok Mass Transit Authority
BOI	=	Board of Investment
BOR	=	Bangchak Oil Refinery
BOT	=	Bank of Thailand
CAT	=	Communication Authority of Thailand
CBR	=	Crude Birth Rate
CDR	=	Crude Death Rate
CIF	=	Cost, Insurance and Freight
CPI	=	Consumer Price Index
DED	=	Defense Energy Department
DMR	=	Department of Mineral Resources
EGAT	=	Electricity Generating Authority of Thailand
ESC	=	Export Service Center
ESS	=	Eastern Seaboard Study
ETO	=	Express Transport Organization
FAF	=	Farmers' Aid Fund
GDP	=	Gross Domestic Product
GDY	=	Gross Domestic Income
GPO	=	Government Pharmaceutical Organization
ICOR	=	Incremental Capital-Output Ratio
IEC	=	Information/Education/Communication
IFC	=	International Finance Corporation
IFCT	=	Industrial Finance Corporation of Thailand
IMF	=	International Monetary Fund
LNG	=	Liquefied Natural Gas
LRMC	=	Long-Run Marginal Cost
MCH	=	Maternal Child Health
MEA	=	Metropolitan Electricity Authority
MIOIC	=	Middle Income Oil Importing Countries
MOAC	=	Ministry of Agriculture and Cooperatives
MOC	=	Ministry of Commerce
MOE	=	Ministry of Education
MOF	=	Ministry of Finance
MOI	=	Ministry of Industry
MOPH	=	Ministry of Public Health
MWWA	=	Metropolitan Water Works Authority
NEA	=	National Energy Administration
NFPP	=	National Family Planning Program
NHA	=	National Housing Authority
OECD	=	Organization for Economic Cooperation and Development
ORRAF	=	Office of Rubber Replanting Aid Fund
PEA	=	Provincial Electricity Authority
PDP	=	Poverty District Program

PHC = Primary Health Care
PTT = Petroleum Authority of Thailand
PWD = Public Works Department
PWWA = Provincial Water Works Authority
REGP = Rural Employment Generation Program
RID = Royal Irrigation Department
RTG = Royal Thai Government
SMI = Small and Medium Industry
SRT = State Railway of Thailand
TFR = Total Fertility Rate
TOT = Telephone Organization of Thailand
TURA = Thai University Research Association
UNESCO = United Nations Education, Social and Cultural Organization
WHO = World Health Organization

THAILAND

MANAGING PUBLIC RESOURCES FOR STRUCTURAL ADJUSTMENTS

Overview

1. After two decades of remarkably rapid and sustained economic growth and development Thailand experienced three difficult years upon entering the 1980s. GDP growth slowed to about 5.5% p.a. on average for 1980-82, well below the average growth rate of some 8% p.a. in the 1960s and of 7% in the 1970s. If allowance is made for the impact of the drastic decline in Thailand's terms of trade on the purchasing power of the country's exports, real income growth adjusted for the terms of trade loss amounted to only about 2.5% p.a. and with a population growth of about 2.1% income growth thus virtually stagnated in per capita terms. Substantial balance of payments deficits on current account on the order of 6-7% of GDP in 1980 and 1981 reflected the impact of the second oil price shock of 1979/80 which compounded the already existing domestic imbalances, especially the growing saving-investment gaps.

2. However, Thailand was not alone in this regard. Most economies world wide shared in the recession which followed the second oil price shock, and by international comparison Thailand's economic performance was in recent years, as in the past, above average. Moreover, Thailand has embarked on a course of policy reform to adjust its economy to the new international environment brought about by the worldwide economic developments in the 1970s. This process started in 1979 with major successive increases in domestic energy prices. It was continued in 1980/81 with the formulation of Thailand's Fifth National Economic and Social Development Plan (1982-1986), which laid heavy emphasis on structural adjustment of the Thai economy and was accompanied by a number of policy actions designed to initiate this reform on a broad front. In support of these efforts Thailand received its first Structural Adjustment Loan from the World Bank in 1982, and a second one in 1983, reflecting the Government's commitment to continue swiftly with the implementation of the program of policy reform formulated in its Fifth Plan. This prompt and sustained action by the Royal Thai Government, especially if continued in future, should go a long way in countering the detrimental effects of the recent recession in the world economy, and of higher international interest rates and higher oil prices, and it should help Thailand reap the benefits of the international economic recovery which started in 1983.

3. Among the main areas in which the Government is aiming for structural reform - agriculture, industry, energy, fiscal policy, and public administration - the management of public resources has taken on major importance, as the role of the public sector grew rapidly over the last

decade in response to the challenges set by the dramatic shift in oil prices, and as it had to draw more heavily on economic resources both at home and abroad. As a result, the need for ensuring the effective management of these resources both for structural adjustment and for the achievement of Thailand's long term economic and social development goals has now become more pressing than at any earlier time. This need for attention to fiscal issues is heightened by the serious budget deficit incurred by the Central Government during its Fiscal Year 1982 (about 6% of GDP), and by the rapid increases in public foreign borrowing in recent years, which under the present circumstances of volatile and uncertain international capital markets has raised the Government's concern not to impair the country's credit standing nor to rely too heavily on costly foreign funds. Against this background, the Government has begun to reassess the public sector's revenue mobilization efforts, expenditure programs and foreign borrowing strategy.

4. Three years after the second oil price shock, and two years after the initiation of the Government's economic adjustment program, this Report reviews Thailand's path of adjustment from a retrospective vantage point and looks ahead toward the remainder of the 1980s, with particular emphasis on the last three years of the Fifth Plan period (1984-86). It considers the country's overall economic performance and outlook in Part I; provides an assessment of aggregate public resource management in terms of revenue mobilization, expenditure allocation, and foreign borrowing in Part II; and reviews the major sectoral policy issues and public investment requirements in Part III, dealing specifically with agriculture, industry, energy, transport and communications, and human resource development. Throughout this Report, the focus is mostly on the need for the Thai economy's adjustment to the international environment of the 1980s through a more efficient allocation of the country's resources so as to restore external and internal balance without unduly dampening the economic growth prospects. At various junctures, however, the Report also calls attention to the continued need to address Thailand's long-term development priorities, in particular poverty alleviation and human resource development.

Recent Economic Developments and the Outlook for the Medium Term

5. Thailand's economy grew rapidly over the past two decades and developed successfully by most standards of international comparison. With an average per capita income growth of almost 5% p.a. between 1960 and 1980 economic growth was among the highest sustained rates in developing countries. Thailand's success in reducing the incidence of poverty was exceptional for a country still placed only in the lowest third of the middle income developing countries, as the overall incidence of poverty dropped from about 57% in the early-1960s to about 31% in the mid-1970s. Despite its continuing reliance on traditional agriculture, Thailand experienced a far reaching transformation of its economic and social

structure during the past two decades, with a high growth in modern industrial and service sector activities leading the way, and with extension of transport and communications infrastructure throughout the country, rapid modernization, and a significant increase in the openness of the economy as regards trade and capital flows, tourism and international labor migration. The rapid growth in Thailand's exports played a particularly important role in providing a stimulus to aggregate demand and the necessary means to finance imports. Moreover, in part because of this rapid growth in exports, the Thai debt service burden remained moderate with the debt service ratio as a percent of exports of goods and nonfactor services fluctuating between 10% and 16% during the 1970s, despite the rapid accumulation of foreign debt during the second half of the 1970s.

6. However, because of the increased openness of Thailand's economy, and in particular because of its heavy dependence on imported oil, the Thai economy was substantially affected by the two oil price shocks of the 1970s and by the ensuing international economic upheavals. The effects of the first oil shock remained hidden for several years, because a simultaneous commodity price boom temporarily offset the impact of the oil price increase on the balance of payments, and because a conservative fiscal stance, while partially unintended, quickly brought domestic inflationary pressures under control. This adjustment, however, occurred at the cost of a substantial reduction in the share of public expenditure in GDP, a reduction which could not be sustained in the longer run. In the second half of the 1970s, the country's more ambitious social and economic development objectives led to a rapid expansion in public consumption and investment. Simultaneously, industrial protection and private investment incentives were increased substantially, not always with sufficient regard for economic efficiency. These policies combined resulted in high rates of economic growth, with GDP expanding at an average rate of 7.6% p.a. between 1975 and 1980. But they also led to accelerating inflation, a quickly deteriorating external balance, a rapidly growing saving-investment gap, especially in the public sector, and increased reliance on foreign borrowing. In order to limit domestic price increases and external imbalances the Government imposed price controls on selected important domestic consumption items, and did not adjust domestic energy and public service prices in line with steeply increased costs. The second oil price shock therefore hit Thailand at a time when it was already facing problems of internal and external balance, and with a more distorted set of incentives than had been the case in the early 1970s. Moreover, in the absence of a simultaneous commodity price boom, and faced by significantly higher real interest rates in the international capital markets as well as by a recession in the rest of the world, Thailand's task of adjustment after the second oil shock was more difficult than after the first.

7. Thailand is now adjusting its economy rapidly to the changed international environment. Some of this adjustment has necessarily involved a reduction in its economic growth rate. This was exacerbated in 1982 by unfavorable weather, by the direct and indirect effects of lower

commodity prices, and by a dramatic slump in private investment activity. As a result of these factors, GDP grew at only 4.2% in 1982, while the current account deficit improved substantially to 3% of GDP, compared with 7% in 1981. More important for the longer term, however, have been the Government's steps towards an adjustment in the structure of the economy through increases in energy and public service prices; reductions in domestic price controls, export taxes, and controls over agricultural exports; development of a program for improved land tenure; steps toward rationalization of the structure of incentives for industrial production, exports, and investment; exploration and development of domestic energy resources; and improvements in the Government's tax structure and administration. Continued implementation of the Government's program for structural adjustment should make it possible to restore external balance for the economy during the Fifth Plan period, with the current account deficit dropping to about 2.5% by 1986, while minimizing the impact of the second oil shock and its aftermath on the economic growth rate. One of the important elements of this program involves the reduction in the public sector's saving-investment gap. The required adjustment should come from an increase in tax effort by the Central Government, a reduction in investments originally planned for the Fifth Plan period (1982-86) by selected major state enterprises, especially in energy, transport and communications, and increased self-financing of state enterprises through improved operational efficiency and, where necessary, higher service charges.

8. Despite the Government's broad reform program, however, a slowdown in GDP growth for Thailand is to be expected for the medium term, compared with the 1960s and 1970s, because of the overall less favorable outlook for the world economy. GDP growth in Thailand is projected in this Report at about 6% p.a. between 1983 and 1990, based on the international environment of the central forecasts of World Development Report 1983 and assuming continued implementation of the Government's structural adjustment reform. In order to underscore the importance of these assumptions, the Report summarizes a series of indicative simulations using the World Bank's SIAM 1 macro-economic model which demonstrate the impact of alternative assumptions regarding the international economic environment and the domestic policy framework. One set of simulations involves more optimistic and more pessimistic assumptions about the world economy than does the central projection, reflecting the high degree of uncertainty of future international economic developments. With a more favorable international economic environment, Thailand would resume its historical growth rate of GDP at about 7% p.a. On the other hand, a more pessimistic outlook not only reduces further the rate of economic growth, but also exacerbates the difficult task of reaching external balance. The other set of simulations demonstrates the importance of continued implementation of structural adjustment policies. The impact of these policies in improving Thailand's capability to generate export growth substantially in excess of the developing country average is crucial, if the country is to experience continued above-average economic growth performance, continuing improvements in the current account of its balance

of payments, and a maintenance of its favorable international credit-worthiness. At the same time, a reduction in the public saving-investment gap through increased public resource mobilization and selectivity in public investments is an essential ingredient to restore both external and internal financial balance in Thailand, while permitting a revival of private investment activity. Specifically, it is necessary to plan for an increase in Central Government revenues as a ratio of GDP from below 14% in 1982 to about 16% in 1986.

9. The projected slowdown in the economic growth of Thailand will make it more difficult to increase employment opportunities at a rapid rate and to reduce the incidence of poverty and regional inequalities. This effect is somewhat cushioned by the fact that the terms of trade in future are not likely to continue moving against Thailand as they have done during the last four years. Thus the growth of Thailand's real income (after adjusting for the loss in purchasing power resulting from terms of trade changes) will approximately equal GDP growth, while during recent years it lagged behind GDP growth. Nonetheless, the likely slowdown in Thai economic activity in the medium term heightens the need for policies which raise the labor absorption of Thai development, including reform in investment incentives, removal of disincentives to exporting, and interest rates set at levels reflecting the real cost of capital. At the same time, it also heightens the need to maintain the Government's efforts in the areas of human capital development and rural development which affect particularly the poorest income groups and help them adjust to the new environment.

Public Resource Management and Planning

10. The increased importance and complexity of Thailand's public sector and its contribution in recent years to the country's external imbalances require a more systematic and comprehensive planning of public sector resource mobilization and use than has traditionally been the practice in Thailand. Besides the public sector's direct link with the structural adjustment process through the public saving-investment gap and its impact on the balance of payments, there are important fiscal dimensions to many of the sectoral policy issues in structural adjustment (e.g., agricultural export taxation, industrial trade tariffs and investment incentives, and energy taxation on the revenue side, and public support for agriculture, industry, and energy development on the expenditure side). Moreover, public resources are an essential ingredient for permitting a governmental role in reducing poverty and supporting long term development in the areas of health, population planning, education and rural development. Finally, the rapidly increasing role of public enterprises within the public sector has heightened the need for a thorough assessment of state enterprise investments, pricing, and operational efficiency.

11. The Government has recently begun to strengthen its resource management and planning capabilities for the entire public sector, including the Central Government, local government and state enterprises. Based on a collaborative approach with the Government's core agencies, i.e., the Bank

of Thailand, the Budget Bureau, the Ministry of Finance and the National Economic and Social Development Board (NESDB), the preparation of this Report aimed at assisting the Government's efforts to assess the trends, composition and consistency of its programs for public resource mobilization and use and to support the further development of a fiscal planning framework suited to the Government's objectives and capabilities. After a review of fiscal trends and issues during the last decade and in recent years, the Report assesses the fiscal outlook in the light of the Government's plans and programs.

12. With the exception of the unusual years 1974 and 1975, the public sector saving-investment gap was always close to or slightly above 5% of GDP between 1970 and 1978. Since 1978 this gap has increased rapidly, reaching 10% of GDP by 1981. Much of this increase is due to a rapid expansion in public investment, especially by state enterprises. The public sector saving rate also declined, but was less important a factor, particularly if allowance is made for depreciation in estimating gross public saving and if the value of public saving is adjusted to reflect the effect of inflation on the real value of public foreign debt.

13. Much of the rapid increase in public investment was concentrated in the energy sector and represented a response to the cumulative changes in the oil prices during the 1970s, and to the discovery of domestic energy resources (especially natural gas). However, in permitting the simultaneous and uncoordinated expansion of public investment, particularly by some of the major state enterprises, during the Fourth Plan period, while at the same time providing a major stimulus to private investment activity especially between 1977 and 1979, insufficient attention was apparently given to the rapidly rising cost of foreign borrowing, to the longer term implications for Thailand's international creditworthiness, and to the implications for internal and external stability resulting from the increase in the public saving-investment gap and the concomitant rise in transfers from the banking sector to the public sector. Since Thailand started from a relatively low level of public foreign debt and a relatively low current account deficit in the mid-1970s, these developments did not have any drastic consequences yet for Thailand. But after the second oil price jump of 1979/80, it became clear that the levels of public deficits which prevailed in the late 1970s and the early 1980s could not be sustained into the future.

14. While state enterprise investment, especially in the energy and related sectors, expanded rapidly and contributed significantly to the increased public saving-investment gap and public foreign borrowing requirements, some of the major service functions of Central Government, especially in the area of human resource development, expanded only slowly, or even declined in real per capita terms, as debt service and defense and general administration gained in importance. This relatively low growth in expenditures directed at agricultural and rural development, health and education during the Fourth Plan period, especially evident in a slow growth in non-wage expenditures for human resource development programs, led to the

perpetuation of serious shortfalls in public service provision in these areas, which are of primary importance to the long term development of Thailand.

15. On the revenue side tax revenues remained a very important source of public sector finances, although they stagnated in relation to GDP at a level of about 13%, which is low by international standards. Despite a rapid decline in the relative importance of taxes on international trade, indirect taxes remain the mainstay of Thailand's tax system. As a result, the existing tax structure and administration are quite an inelastic and inequitable source of public revenues. Based on earlier studies of the Thai tax system this Report identifies the priority areas for reforms in the tax structure which could contribute to make the Thai tax system more responsive to growth in the economy and more equitable and efficient. Similarly important are reforms in the tax administration which the Government has initiated, beginning with the income taxes and to be expanded to the indirect taxes in the near future.

16. State enterprise finances have taken on increased importance in the Thai fiscal system with the rise in the role of the state enterprise sector. The contribution of state enterprise own revenues to the financing of their investments declined from 65% in 1979 to 17% in 1980, as state enterprise investments expanded very rapidly. As a result, the state enterprises now account for about half of the total public sector saving-investment gap, indicating the importance which must be attributed to state enterprise financing in overall public resource management in Thailand. Having substantially increased state enterprise tariffs in 1981, the Government is planning to resolve the financial difficulties of those state enterprises which are still running operational deficits, by an appropriate adjustment in their tariffs and by improvements in their operational efficiency. A broader assessment of the level of state enterprise contribution to public sector saving in Thailand is, however, also required, including a review of the level and structure of user charges and of the favorable tax treatment which state enterprises receive. Taxation of state enterprises could contribute not only to a more efficient allocation of resources, but also to more effective mobilization of public resources and savings.

17. As the public saving-investment gap increased in relation to GDP, the public sector had to place increased reliance on debt financing, and, given also the large balance of payments current accounts deficit, which needed to be financed, the emphasis was on foreign borrowing. Because of the favorable initial situation, the level of overall foreign debt in Thailand, as well as the level of public foreign debt and the resulting debt service obligations, are still moderate by international comparison. But as for other developing countries, the burden of Thailand's foreign debt has in effect increased substantially since 1980 as a result of the increase in real interest rates and the much slower-than-expected growth in export values in the wake of the world-wide disinflation and the commodity price declines experienced for Thailand's traditional exports. Under these

circumstances, the high rate of increase in public debt in recent years, if continued into the future, could cause difficulties in terms of Thailand's international creditworthiness and in terms of the growing debt service obligations of the public sector which could eventually crowd out other future public expenditures.

18. The Government is aware of the urgency of integrated fiscal planning and public resource management so as to identify and decide on appropriate tradeoffs in public resource use and mobilization, and has made it a major component of its structural adjustment program. In this context it has begun to address the most pressing fiscal planning issues, including tax revenue mobilization, state enterprise tariff policies, public expenditure programming and public foreign borrowing policy. Much progress has already been made, with the main ongoing task now consisting in pulling together the various individual components into an overall fiscal program, consistent with the macroeconomic, sectoral and social objectives of the Government and with agency-specific expenditure and revenue programs. This Report reviews the results of the Government's fiscal planning efforts as of August 1982, assesses the public expenditure programs for each of the major sectors of Government activity, and provides a comprehensive analysis of the macroeconomic implications of the Government's plans for resource mobilization and use. The Report does not provide a blueprint for expenditure and revenue decisions, but represents an interim assessment of a major and innovative fiscal planning effort currently being carried out in Thailand.

19. For the Central Government, alternative expenditure scenarios were projected assuming (i) a constant service level, (ii) a continuation of the growth in service levels during the Fourth Plan, and (iii) an intermediate case where only priority sectors identified in the Fifth Plan, in particular agriculture, health and public utilities, grow in terms of their real service levels. Revenues were projected on the basis of a careful analysis of historical trends separating endogenous from discretionary revenue growth, and postulating a series of annual tax packages designed to bring Central Government revenues to a level of about 16% of GDP by 1986. With this revenue effort a reduced Central Government deficit of about 2.5% of GDP would be achieved by 1986, assuming the intermediate expenditure program. On the basis of the analysis of sectoral expenditure programs carried out one may conclude that these expenditure levels, especially in the agricultural and rural development programs and in education and health, would be important to attain the Fifth Plan goals for these areas.

20. For selected state enterprises, the investment programs originally proposed by the agencies themselves at the outset of the Fifth Plan period appeared to be overly ambitious in the light of recent macroeconomic and sectoral developments, especially in the energy, transport and communications sectors. For the energy sector, the combination of lower than

originally expected power demand growth, an initially lower domestic supply of natural gas, and some uncertainty about the longer term outlook for domestic gas availability account for the need to postpone public investments. For the transport sector, slow demand growth (railways and airports) and project-specific considerations (Bangkok rapid rail transit system) argue for reductions in originally planned investments. For the telecommunication sector, limited implementation capacity requires a somewhat lower program. These reductions in state enterprise investments originally planned for the Fifth Plan period would result in a program only about half that originally proposed by the state enterprises themselves. A significant proportion of these reductions during the Fifth Plan period result, however, from a phasing back of projects, rather than their reduction in overall size or total cancellation. The implications of this for the Sixth Plan period were not analyzed in detail in this Report, but should be considered in due course. In many of the areas reviewed, most notably in the energy and transport sectors, the Government has already moved to scale back state enterprises investment programs for the remainder of the Fifth Plan period.

21. Combining the Central Government expenditure and revenue program with the investment program and expected financing arrangements for the state enterprises as outlined in this Report, the macroeconomic impact of the public sector expenditures and revenues can be assessed. For the program proposed in this Report, a sizeable reduction in the public sector saving-investment gap would result as compared with recent years, sufficient to bring about external stability for the Thai economy, provided it is combined with the Government's other structural adjustment policies and takes place in an international environment of a moderate worldwide economic recovery. A failure to increase Central Government revenue effort (from 14% to 16% of GDP) or the failure to reduce state enterprise investment programs substantially below their original targets, would result in current account deficits and debt service requirements not commensurate with medium-term stability in Thailand. Increased revenue mobilization by state enterprises should also contribute to an appropriate fiscal solution, particularly in the longer term, but was not explored in depth by the Mission. On the other hand, sector considerations strongly argue that the Central Government's economic and social sector spending should not be curtailed below the already quite conservative rates of increase programmed as of mid-1982.

22. The implementation of this program of public resource mobilization and expenditure control would also be compatible with a public foreign borrowing program that would neither threaten the international credit-worthiness of the Thai economy, nor impose undue debt service burdens on future budgets. Moreover, the Government has recently moved to establish greater control over foreign borrowing by public agencies by reactivating the high-level Foreign Borrowing Committee, and by introducing a rolling three-year foreign borrowing program as part of its broader efforts to develop improved mechanisms for fiscal planning. These efforts should also

in future provide an opportunity to address two important issues of foreign borrowing policy. First, statutory limits on public foreign borrowing presently in operation require careful reassessment from time to time in the light of changing circumstances, and an appropriate balance needs to be struck between public borrowing from foreign and domestic sources for any given public investment program. Second, future public foreign borrowing should take into consideration the financial and technical assistance requirements of the so-called "social" sectors (i.e., health and education). In recent years, public expenditures in these sectors appear to have lagged behind other sectors partly because of reluctance in Thailand to borrow abroad for these purposes. However, foreign borrowing for these sectors could have enhanced the intersectoral balance of public expenditures, while also introducing elements of outside expertise and improvements in the efficiency of expenditures. Recently, the Government has expressed its renewed interest in supporting the longer term development of Thailand through public intervention in the areas of human resource development, including expanded reliance on foreign financial support.

Sectoral Adjustment: Policy Issues and Public Investment Priorities

23. In addition to the assessment of aggregate macroeconomic and fiscal trends and outlook, the Report reviews in some detail the major policy issues and public investment priorities in selected sectors of the Thai economy, including agriculture, industry, energy, transport and communications, and human resource development (population planning, health and education).

24. For agriculture, the rapid growth and diversification in Thailand, in contrast with other countries in the region, has in the past been based on a very fast expansion of land (including irrigated land), labor and light tractors, with low levels of fertilizer application, stagnant yields and highly variable production from year to year. Farm gate prices were in effect kept low by export taxation and input prices were largely unsubsidized. Together with a relative abundance of labor and land - the latter made accessible by a rapidly expanded road network - this policy environment resulted in high labor intensity and extensive use of land, resulting in low land productivity. This outcome has been broadly compatible with the resource endowment of Thai agriculture and with its strong export orientation, although lower export taxes would have resulted in even greater incentives for agricultural production and exports and in higher rural incomes. These characteristics of Thai agriculture remained largely intact during the 1970s, although there was a continued increase in the polarization of agricultural development between the Central Plains, where farmers intensified input use on fertile land as a substitute for land expansion, and the rest of the country, where farmers have continued the traditional approach to agriculture based largely on extensive cultivation of an expanding land base.

25. For the 1980s, the Report concludes that major efforts are now required to prepare the sector for more intensive use of inputs other than land so as to maintain the agricultural growth potential into the 1990s and beyond. Improved institutional performance, especially in research and extension, improved incentives for farmers through deregulation in the sector and permanent reduction of export taxes, a realistic land use policy with particular emphasis on improved land tenure, greater access to credit and continued development of rural infrastructure have been identified as essential ingredients to a strategy designed to make the best use of new land still available for cultivation and to support increased intensification. During the 1980s, continued extensive agricultural development is likely to contribute to some extent to the growth in agricultural production, since in some areas of the country underutilized land still appears to exist suitable for agriculture, especially for upland crops. As in the past, this continued expansion of agricultural land use may lead to important problems of erosion and soil depletion, which will need to be addressed. However, much of this area expansion will likely take place in areas no longer under forest cover and should therefore not stand in conflict with the Government's intention to maintain existing forest areas intact, nor interfere with the Government's efforts at reforestation in priority areas, such as watersheds.

26. Public investment in agriculture and rural development in the past has focussed mainly on infrastructure expansion, especially in irrigation and roads. In relation to total public expenditures, spending on agriculture itself declined between 1977 and 1981, but it is expected to remain at a roughly constant share during the Fifth Plan period. However, shifts in agricultural and rural development spending are required and aimed for in the Fifth Plan, both in terms of emphasis among programs in the sector, as well as within programs. These include a steady decline in large irrigation investments, an increased role of the Poverty District Program in relation to other rural development programs, accelerated rural electrification particularly in the early years of the Fifth Plan and increased investments by the departments of the Ministry of Agriculture and Cooperatives providing support to agricultural intensification in the rainfed areas. Overall, these shifts in public investment priorities for agriculture and rural development are fully justified, but continued efforts are required to improve investment planning, implementation and monitoring in this sector to ensure that the stated priorities are actually implemented.

27. For industry, Thailand's rapid development during the 1970s was similar to that of a group of developing countries which have successfully shifted away from specialization in primary goods in terms of production, exports and employment. In Thailand, as in these countries (including Malaysia, Colombia, Ivory Coast, Morocco and Tunisia), rapid growth has taken place in incomes and employment, based on labor intensive industries such as clothing, textiles, footwear, electronic components and other light

consumer goods. Industrial development in Thailand was further characterized by its close linkage with rapid agricultural growth, its reliance on small firms, its relatively low labor costs, and successful adaptation of foreign technology to local requirements and factor endowments. The policy environment during the last two decades generally supported private sector initiative and did not discourage labor intensive, export oriented and small-scale production. However, during the second half of the 1970s Thailand moved from being a country with relatively low distortions in its industrial incentive structure to one with a fairly high degree of distortion due to roughly a doubling of the effective rate of protection on major manufactured goods and a rapid increase in the use of investment incentives favoring large scale, capital-intensive industrial projects. The sector's growth was nevertheless increasingly dependent on export demand, which in part probably reflects the large extent to which the country's import substitution phase for final consumer products has been concluded. Additional protection therefore leads mainly to inefficiency, rather than further import substitution. A less distorting treatment of the industrial sector might have led to even more rapid expansion of exports as the sector could have benefitted more from the country's comparative advantage.

28. Substantial progress has, however, been made since 1981 in the implementation of an industrial restructuring program which is part of the Government's broader structural adjustment program. Most importantly, as a result of measures to rationalize the import tariff structure, effective rates of protection are estimated to have declined substantially between 1978 and 1982, in particular for import competing commodities. These efforts need to be continued, with particular emphasis on: a further rationalization of the protective structure, across the board and in particularly distorted sectors, such as the automobile industry; implementation of the investment incentives reform; continued support for exports; and continued careful assessment of large industrial ventures requiring Government support of any kind. This last point applies especially to the Eastern Seaboard Program. The Government has moved cautiously in developing the Eastern Seaboard, adopting a flexible approach permitting frequent reappraisals of investment options in the light of changing circumstances. A recent in-depth assessment of an earlier ambitious program design indicated that it is essential that each major project should be assessed on its own economic merits, and in terms of its feasibility and appropriate timing, given overall public and private finance constraints. Regional development criteria should not be the decisive factor influencing these decisions, given the limited and uncertain impact which the Eastern Seaboard Program is likely to have on the growth and development of Bangkok. However, it is important that infrastructure and public service requirements in the Region are carefully assessed in order to ensure an orderly development of the Region as and when it takes place. At the same time it is appropriate to consider what steps can be taken directly to improve the efficiency of resource allocation in Bangkok as a city (transport, drainage, land use, etc.) in support of continued industrial growth in Thailand. Such efficiency

improvements do not necessarily involve increased public expenditures, but rather should be sought in the improved utilization and management of private and public resources already devoted to the metropolitan area. Other concerns in the industrial sector revolve around the reform of the financial system, and of the indirect tax system, and focus on manpower development in support of further industrial growth.

29. For the energy sector in Thailand the outlook has changed significantly in recent years. The average level of domestic energy prices has been adjusted to levels comparable to those in most other developing countries; the external environment has changed substantially, leading to lower than expected economic growth in Thailand, to real international oil price declines in the short term and an outlook for only moderate increases in the medium term; domestic offshore gas supplies which seemed assured at substantial levels, now appear more uncertain, and the potential for their speedy development and utilization less evident, while at the same time the possibility of onshore gas and oil development has emerged. The main energy targets of the Fifth Five-Year Plan regarding reduction in the growth of energy consumption and imports, which appeared ambitious at the time of their formulation, are now clearly within reach, as the result of a less buoyant domestic and international demand for energy, and in spite of a less favorable outlook in domestic production.

30. While these developments might make further adjustment in the energy sector seem less urgent than was the case two years ago, continued attention in fact needs to be given to major issues in the areas of energy sector development strategy, energy pricing and energy conservation. First, the efficient development of Thailand's indigenous energy resources remains of primary importance for the realization of targets of reduced import dependence, foreign exchange savings, and gas based industrial development. An energy sector strategy must therefore be developed, taking full account of the increased costs of borrowing abroad, the scarcity of public sector resources, uncertainties with regard to availability and development costs of domestic energy resources, and the many other competing goals of public policy, including the needs for employment generation and increased investments in human resources. While a rapid pace of development of domestic energy resources was clearly of great importance during the second half of the 1970s, the outlook for the 1980s is such that a careful assessment of energy development potential and intrasectoral balance, as well as an evaluation of what are the least costly ways of meeting Thailand's energy requirements in an inherently uncertain environment have now become essential. Since 1982, the public investment program in the energy sector has been adjusted in line with changing expectations, especially as regards lower demand forecasts for power, and the delayed availability of natural gas. In individual agencies have thus demonstrated considerable flexibility and realism in their investment planning. However, high priority should now be accorded to the development of an energy sector strategy and its subsequent implementation under the Government's structural

adjustment program. Second, an appropriate energy pricing policy is an essential ingredient to an efficient development of the energy sector. The issues relating to the structure of petroleum product prices and to the appropriate gas and lignite pricing policy are currently being addressed by an important study, whose findings and recommendations should be quickly evaluated by the Government. The institutional steps required for their implementation should then be developed on a priority basis. Third, continued emphasis should be given to energy conservation by providing appropriate incentives and support for energy conserving investments by industries, the transport sector and households.

31. The expansion of transport and communications infrastructure in Thailand has played a major role in the country's rapid economic and social development during the last three decades. For the 1980s and beyond, continued expansion of this infrastructure and its efficient maintenance and operation remain an important challenge. This Report focussed mainly on the issues regarding the overall size and distribution of public investments in the sector. There is reason for cautious assessment of some of the major investment projects tentatively planned. In the transport subsector the major projects which should be dropped or substantially phased back beyond the Fifth Plan period are railway network expansion, Laem Chabang port construction, a new international airport, and the Bangkok rapid rail transit project. In telecommunications, the limitations of the institutional capabilities of public agencies involved in this sector require a more conservative investment program than originally planned, or than might be appropriate in terms of service demand and potential economic rates of return.

32. Finally, while problems of human resource development in the areas of population planning, health and education are not commonly addressed under programs of structural adjustment designed to respond to the external economic shocks of the 1970s, a case can be made that public policies and investments affecting human resource development are crucial determinants for a country's ability to transform itself efficiently and equitably from a traditional agrarian society into a modern agricultural and industrial economy. Therefore, taking a broad perspective of structural adjustment, this Report concludes by reviewing the major policy issues and public investment priorities in the area of human resource development.

33. The rate of population growth has crucial implications for any country's economic development and social welfare. Thailand's population program has been very successful in lowering fertility rates and thus the rate of natural population growth by making a wide range of contraceptive services available to a large portion of the Thai population with a demand for such services. However, indications are now that the rate of new acceptance of contraceptives, the effectiveness of increases in contraceptive use in terms of fertility reduction, and therefore the declines in fertility and population growth have begun to level off. The primary reason

for this phenomenon, which has been observed in other countries at similar stages of demographic transition, is apparently that a large number of couples wish to limit their family size at three, rather than two children. In order to achieve further reductions in the birth rate under these circumstances, measures need to be developed to induce further reductions in desired family size. The more important among these have been identified in the Fifth Plan, but more emphasis on implementation is required, as are efforts to make family planning services available to those groups which so far have had only limited access. Significantly increased efforts along these lines are required if the ambitious demographic target of 1.5% population growth per annum in the Fifth Plan is to be reached by 1986.

34. Health sector development was given a relatively low priority and a declining share of public sector resources in Thailand during the Fourth Plan period, despite the fact that Thailand's health problems have remained serious during the 1970s. There also are indications that earlier improvements in mortality rates are tapering off and that Thailand's public expenditures in the health sector have been low by international standards. The Fifth Plan expenditures program proposes to reverse these trends, albeit quite cautiously. This Report is in substantial agreement with the Fifth Plan's assessment of problems and issues, noting in particular the following: continuing high levels of preventable illnesses; continued health service disparities between urban and rural areas; inadequate distribution of health personnel; need for greater community participation and greater decentralization of decision making and resource allocation in health programs; and the need for better health data collection and analysis.

35. As far as can be discerned from available data, the public expenditures programmed in the health sector appear to be in line with appropriate priorities, in view of the increased importance given to basic health services in rural areas and to maternal and child health care programs, of the continued emphasis on family planning, and of the maintenance of small programs in the nutrition and pharmaceutical drugs subsectors. Reductions in the health sector programs would undermine the increased emphasis which the sector was to be given quite appropriately in the Fifth Plan, and endanger the substance of some of the small but important programs in the priority areas within the sector. Of particular importance under the prevailing fiscal stringency is that every effort is made to utilize what scope there is for improvements in the efficiency of health service provision, as regards staffing policies, intra-sectoral priorities as between preventive and curative activities, elimination of duplicative support structures within the public sector, and of duplication of effort between private and public agencies.

36. In the educational sector, the main priorities are as follows: continued efforts to extend coverage and access to primary education in specific rural areas and in urban slums, and improvements in primary education quality; increased coverage of lower secondary education, particularly in the North, Northeast and South and upgrading particularly of basic science teaching in secondary schools; selective improvements and extension of vocational programs in line with specific manpower need assessments and in areas not covered by vocational training programs in secondary schools; reduction in the share of public expenditure going into higher education and increased reliance on self-financing; increase in the share of overall expenditures directed to educational supplies, material and equipment, particularly for primary and secondary education; upgrading of teacher qualifications, rather than increased numbers of teachers, so as to permit an adaptation to the changing balance in school enrollment between primary and secondary levels, and to permit the improvements in educational quality aimed for in primary, secondary and vocational education and in the education for disadvantaged population groups; and strengthening of education planning, administration and evaluation.

37. Public expenditure for education declined in relative importance during the Fourth Plan period. For the Fifth Plan period, a more stable growth in education spending is programmed. These expenditures, however, represent conservative estimates of expenditure requirements despite expected drops in primary school enrollments. Requirements of improved quality and access, especially in the disadvantaged areas, imply higher unit costs than in the past. Increased emphasis on spending for education and materials and retraining of teachers, rather than employment of new teaching personnel, represent the highest priorities in the allocation of educational expenditures.

38. The maintenance of growth in public expenditures for human resource development remains therefore of high urgency in Thailand. However, efficiency improvements should be made in these areas, as more generally in all Central Government operations, through improved planning, management and monitoring of programs under the Government's institutional reform program. Moreover, fiscal and macro-financial stability require that these expenditure programs for human resource development, and for other Central Government expenditure functions, be matched by increased resource mobilization through higher Central Government tax revenues. Improved public resource mobilization, adequate allocation of budgetary resources for human resource development, and greater efficiency in the use of these resources would contribute very importantly to the long-term development of Thailand and the alleviation of poverty and regional inequities.

THAILAND

MANAGING PUBLIC RESOURCES FOR STRUCTURAL ADJUSTMENT

1. INTRODUCTION

1.01 Thailand's economy grew rapidly over the last two decades and developed successfully by most standards of international comparison. Its economic growth was among the highest sustained rates in developing countries and its success in reducing the incidence of poverty was exceptional for a country still placed only in the lowest third among middle income developing countries when ranked according to per capita income level. With its continued large share of agriculture in GDP and, even more so, in exports, with its lack of a colonial history, its reliance on relatively undistorted market forces and historically a low share of government in total economic activity, a low degree of urbanization, and yet an extreme degree of concentration of urban population in Bangkok, Thailand is in many respects an atypical developing country.

1.02 Yet, like most other developing countries, Thailand experienced a rapid transformation of its economic and social structure during the last two decades, with a rapid increase in modern industrial and service sector activities, extension of transport and communications systems throughout the economy, and an increased openness to and interdependence with the rest of the world, as regards trade and capital flows, tourism and international labor migration (from Thailand to the Middle East), largely uninhibited by government intervention or regulation.

1.03 With its increased openness to the rest of the world it is not surprising that Thailand was substantially affected by the two oil price shocks during the 1970s and the ensuing international economic disruptions. Thailand weathered the first oil shock with remarkable ease, helped along by a simultaneous boom in the international prices for its major commodity exports and by a conservative fiscal stance, which quickly brought temporary inflationary pressures under control, albeit at the cost of a substantial reduction in public sector activity. Having absorbed the first oil shock with apparent ease and not anticipating another shock, Thailand embarked on an ambitious strategy of public support for fast economic growth and development during the second half of the 1970s. This strategy involved rapid expansion in public consumption and investment in most of the important areas of public expenditure (especially energy, transport and communications), and supported a simultaneous expansion of private investment activity, all together resulting in high rates of economic growth between 1975 and 1979. At the same time, however, the external balance quickly deteriorated, led by a rapidly growing public saving-investment gap, requiring substantially increased reliance on foreign resources to finance public sector expenditures. At the same time the Government moved to limit domestic price increases and external imbalances through price controls and increases in the average effective rates of protection, and failed to adjust its domestic energy and public service prices in line with steeply increased costs.

1.04 At this juncture, Thailand was hit by the second oil shock, whose impact was much more severely felt because of Thailand's continued high dependence on oil imports at now even higher international prices, no offsetting trends in Thailand's major commodity exports, and the subsequent prolonged recession worldwide, but especially in the industrialized countries, to whom Thailand directs most of its exports. At the same time, there was no balancing adjustment in the public sector, which continued its rapid expenditure growth without commensurate increases in public savings.

1.05 Against this background, an Economic Mission visited Thailand in February/March 1980. The mission concluded in its report entitled Thailand: Coping with Structural Change in a Dynamic Economy (Report No. 3067a, December 23, 1980) that during the latter half of the 1970s continued growth in Thailand was accompanied by accelerating inflation, growing dependence on foreign borrowing, large budgetary deficits, and probably less success in furthering poverty alleviation than had been the case in the first half of the decade. The report's analysis and policy recommendations in five major areas of intervention (fiscal policy and resource mobilization, monetary policy, energy, industry and agriculture) formed the basis for the ensuing dialogue between the Government and the Bank, which was in turn reflected in the Fifth Five-Year Plan. The Fifth Plan includes a program of structural adjustment for external and domestic balance, on the basis of which the Government and the Bank prepared the first two Structural Adjustment Loans (SAL 1 and 2) to Thailand.

1.06 Significant progress has been made in Thailand over the last two years in terms of policy formulation and implementation. The Fifth Plan was prepared in a systematic and comprehensive fashion to come to grips with the medium-term structural adjustment problems faced by the Thai economy and to continue the progress towards poverty alleviation made during the late 1960s and early 1970s. Important adjustments have already been made in the areas of energy and public service pricing, and significant initiatives were taken as part of or in parallel to the programs formulated for SAL 1 and 2, including the substantial reduction in export taxes and controls on agricultural commodities, development of a program for improving land tenure, steps towards rationalization of the structure of incentives for industrial exports and investment, the aggressive exploration and development of domestic energy resources (especially of gas), reform of public administration institutions and procedures, selected improvements in the Government's tax structure and tax administration, and systematic steps towards rural poverty alleviation through a comprehensive village development program in especially identified rural poverty districts.

1.07 This progress on the economic policy front was facilitated by an unusually stable political context. General Prem Tinsulanonda took over in March 1980 as Prime Minister and since has led the country on a course of adjustment to the external and domestic economic realities of the 1980s, supported by the powerful Thai civil service, which provided essential continuity to the effort. The gradual movement towards democracy which was initiated in the second half of the 1970s is continuing. National elections

were again held on April 18, 1983, following the dissolution of Parliament by royal decree at the request of the Prime Minister. The elections were conducted three days before the automatic lapsing of certain transitional provisions attached to the 1978 Constitution. The Constitution envisaged that elections conducted after April 21, 1983, when these provisions expired, would be based on a provincial winner-take-all system, likely to consolidate the position of the larger, better organized political parties in the 324 seat House of Representatives, and to introduce greater political discipline. However, because elections were called early, they were conducted under the existing unitary constituency rules. Candidates from 10 parties were elected to Parliament. No party secured an outright majority but the three leading parties won 221 seats, and subsequently strengthened their position through the absorption of smaller parties or the affiliation of independent representatives. General Prem succeeded in forming a new four-party coalition government which includes two of the three leading parties and has the backing of approximately two-thirds of the elected representatives. The new Cabinet was announced on May 8. Prospects for the continuation of ongoing policy and institutional reforms are thus good. The other transitional provisions of the 1978 constitution did indeed lapse on April 21, 1983. They had been designed to ensure that, during a transitional five-year period (1978-83), serving military, civilian and other non-elected officials could continue to play a major stabilizing role in both the legislative and executive branches of government through their appointment to the powerful 225 senate or to Cabinet posts. Thus, the senate's powers have now been substantially curtailed and serving military and civilian officials may no longer participate in the cabinet.

1.08 Since the preparation of the last Economic Report the outlook for the world economy and for Thailand have changed extensively, as a worldwide recession has pushed Thailand to unusually low growth in 1982, international interest rates raised the cost of borrowing, and pervasive fiscal problems have asserted themselves as an issue of primary concern throughout the world, including also in Thailand. In this substantially changed context, the present Report reassesses Thailand's medium-term economic outlook, develops a strategy for public resource management, and reviews the main policy issues and public investment options in the major sectors of the Thai economy. The primary concern of this Report is to develop a fiscal planning framework linking the macro-economic concerns of the Government with an assessment of the intersectoral and intrasectoral priorities of public expenditure and with a detailed analysis of public revenue mobilization options.

1.09 This emphasis on public resource management was chosen for a number of reasons. First, the public sector's overall utilization of resources, as measured by the consolidated public accounts for the Central Government, local governments, and state enterprises, has increased rapidly over the last six to eight years, not only in absolute terms, but also in relation to the size of the economy (GNP). This increase took place mainly in the energy sector. In this sector, where the role of public agencies is preponderant, the value of production inputs (e.g., petroleum in electricity

generation) has increased substantially, while investments in the development of domestic energy resources has also been substantial. While there have been, therefore, good reasons for the increase in the relative size of the consolidated public sector, the fact remains that the efficiency of the use of resources in this sector has now taken on even greater importance than in the past.^{/1} In parallel with the expansion of the size of the public sector, its contribution to the growing saving-investment gap, and to external imbalances of the Thai economy has been increasing. It is therefore more important now than ever before, that public sector resources are efficiently utilized and that a reasonable balance is established between public saving and investment consistent with a sustainable external balance of the economy and with continued growth of private sector activity. The need for careful consideration of public resource management has been underscored by the fiscal problems of the Central Government, which took on major proportions in 1982 with a sizeable unexpected revenue shortfall, by the Government's concern over public borrowing trends and policies, and by an increasingly evident need to establish some control over the extensive investment activities of major state enterprises for the sake of macro-economic stability. Not surprisingly, the Fifth Plan lists financial and fiscal stability as its first objective.

1.10 There are furthermore important linkages between the management of public resources and the structural adjustment process. Most directly, there is the link between the public saving-investment gap and the current account deficit. The establishment of control over the public sector deficit therefore represents an integral part of any structural adjustment program designed to control the current account deficit. More indirectly, there exist important fiscal dimensions to many of the sectoral policies undertaken in support of structural adjustment. For example, for agriculture increased productivity requires the development of infrastructure and support services, while agricultural taxation has traditionally acted as a major disincentive to intensification. In industry, fiscal instruments, including trade tariffs and special tax treatment are used extensively to influence the pattern and pace of industrial growth, with important implications both for the relative efficiency or inefficiency of the industrial sector and for the public sector's resources mobilization effort. On the expenditure side, large-scale industrial ventures can easily absorb significant amounts of public resources in the form of equity contributions, subsidies, or infrastructure provision. In the energy sector, taxation has long played an important role in raising revenues, as well as influencing the relative prices of alternative forms of energy. Public investments in energy have also played a major part in Thailand in recent years in developing domestic energy resources, in particular power and natural gas.

1.11 Finally, public resources are an essential ingredient for permitting a Governmental role in supporting the long-term development of

^{/1} By international comparison, however, Thailand's public sector is still quite moderate in size.

the country through public expenditure in the areas of health, population planning, education, and rural development. In sum, public resource management exerts a pervasive influence on Thailand's short and medium term structural adjustment, on the efficiency and equity of economic development, and on long term development through investment in human capital.

1.12 Previous World Bank reports have not been oblivious of the growing role and importance of the public sector in Thailand.^{/1} The present Report differs from the earlier ones, however, in a number of important ways. First, public resource management is explicitly cast in the context of a structural adjustment strategy and linked to the macroeconomic objectives of the Government. Second, this Report is on balance more concerned with public expenditures than with public resource mobilization, and attempts to compile and assess the Government's expenditure programs both at the sectoral level and in the aggregate. Third, in preparing the ground for this Report a collaborative approach was chosen in working closely with staff from important Government agencies, especially the National Economic and Social Development Board (NESDB), the Ministry of Finance, the Budget Bureau, and the Bank of Thailand. The intent behind this was as much to assist the Government in developing its own fiscal planning capabilities as it was to provide an assessment of public resource allocation and mobilization patterns and practices. As a result it is hoped that many elements of the work carried out in the preparation of this Report will become an integral part of Thai public sector planning and management, adapted and further developed in line with the Government's own perceived needs.

1.13 This Report is organized in three parts, complemented by three annexes and a statistical appendix. Part I reviews the recent economic trends in an international perspective and assesses the macro-economic outlook of the Thai economy, paying particular attention to the role of fiscal policy intervention in achieving a sustainable external balance. Part II turns to an assessment of recent trends and issues in public resource management in Thailand, and of the current fiscal planning practices and their implications for public resource use and mobilization. Part III reviews the main trends and policy issues and assesses the public investment needs and programs in the most important sectors of the economy: agriculture and rural development, industry, energy, transport and communications, and human resource development (population, health and education). Annex 1 reports on a recent study carried out in preparation for this Report on shadow prices in Thailand, which form an important tool at the project level in ensuring the economic justification of public projects. Annex 2 provides background information on the section in Chapter 6 dealing with future availability of agricultural land. Annex 3 contains documentation for the assessment of public expenditure programs in Parts II and III of the Report. Annex 4 lists recent World Bank reports on Thailand. The Statistical Appendix compiles up-to-date basic economic data for Thailand.

^{/1} See especially A Study of Public Finances in Thailand (Report No. 574-TH, October 31 1974); and Thailand: Toward a Strategy of Full Participation (No. 2059-TH, September 1, 1978).

PART I

RECENT ECONOMIC DEVELOPMENTS AND MEDIUM TERM OUTLOOK

2. RECENT ECONOMIC DEVELOPMENTS IN AN INTERNATIONAL PERSPECTIVE

Two Decades of Growth and Development: 1960-1980

2.01 During the last two decades Thailand experienced a remarkably rapid and sustained rate of economic growth with an average growth rate of per capita income of 4.7% p.a. between 1960 and 1980. Among selected major countries in the region - Indonesia, Philippines, Korea and Malaysia - this growth performance was surpassed only by Korea, and was well above that of all middle income oil importing developing countries (Table 2.1).^{/1} This good record resulted from a rapid real GDP growth, although it slowed to 7.2% p.a. in the 1970s as compared with the very high growth of 8.4% p.a. in the 1960s. During the 1970s GDP growth in Thailand fell short of growth in Korea and the oil exporters, Indonesia and Malaysia, but remained substantially above that of the middle-income oil importing countries as a group. Progress was made on the population front with population growth declining from 3.0% p.a. in the 1960s to 2.5% p.a. in the 1970s. Despite this progress, however, Thai population growth remains quite rapid by international standards and its decline has recently shown signs of abating (see Chapter 10 below). Besides the continuing population pressures, a substantial decline of terms of trade has tended to reduce the real income gains in Thailand. The drop in terms of trade, although not uniform across the period, paralleled that in the comparator countries, with the exception of the oil exporters.^{/2} As a result of these broad countervailing factors, Thailand achieved a per capita income level of \$670 in 1980, which still put it only in the bottom third for all middle-income developing countries, at a level about equal to the Philippines, but less than half the per capita income of Korea and Malaysia, and of the average for all middle income oil importing countries.

2.02 Over the same period, Thailand witnessed a rapid transformation in its structure of production, with the share of agriculture in total value

^{/1} The international comparisons in this chapter are based on data from World Development Report, 1982, unless otherwise noted. For an explanation of country groupings, definitions, and data sources, see WDR 1982.

^{/2} Terms of trade data in Table 2.1 are based on UNCTAD estimates. Because of different definitions and weights, these differ from the terms of trade calculated by the Bank of Thailand (discussed in para. 2.19).

Table 2.1: GROWTH OF INCOME, POPULATION AND TERMS OF TRADE

	Per capita income 1980 (US\$)	Per capita income growth, 1960-80 (%)	GDP growth (%)		Population growth		Terms of Trade (1975=100)	
			1960-70	1970-1980	1960-70	1970-80	1960	1980
Thailand	670	4.7	8.4	7.2	3.0	2.5	121	63
Indonesia	430	4.0	3.9	7.6	2.0	2.3	98	135
Philippines	690	2.8	5.1	6.3	3.0	2.7	112	75
Korea	1,520	7.0	8.6	9.5	2.5	1.7	99	75
Malaysia	1,620	4.3	6.5	7.8	2.8	2.4	150	109
Middle income oil importers	1,580	4.1	5.8	5.6	2.4	2.3	109	83

Source: WDR 1982

Table 2.2: SECTORAL GROWTH AND STRUCTURE OF PRODUCTION

	Growth of production (%)						Structure of production					
	Agriculture		Industry		Services		Agriculture		Industry		Services	
	1960-70	1970-80	1960-70	1970-80	1960-70	1970-80	1960	1980	1960	1980	1960	1980
Thailand	5.6	4.7	11.9	10.0	9.1	7.3	40	25	19	29	41	46
Indonesia	2.7	3.8	5.2	11.1	4.8	9.2	54	26	14	42	32	32
Philippines	4.3	4.9	6.0	8.7	5.2	5.4	26	23	28	37	46	40
Korea	4.4	3.2	17.2	15.4	8.9	8.5	37	16	20	41	43	43
Malaysia	n.a.	5.1	n.a.	9.7	n.a.	8.2	37	24	18	37	45	39
Middle income oil importers	3.5	2.8	7.8	6.6	5.7	5.7	23	15	32	37	45	48

Source: WDR 1982

added declining from 40% in 1960 to 25% in 1980. This transformation was particularly rapid in the 1960s, but it left Thailand still relatively heavily dependent on agriculture when compared to the average middle-income oil importing countries (MIOIC), although not unusually so when compared to its neighbors, Indonesia, the Philippines and Malaysia (Table 2.2). The growth of Thai agricultural production was rapid by international standards, but other countries in the region, in particular the Philippines and Malaysia, paralleled or exceeded Thai performance on this score. Industrial growth was rapid in Thailand, in excess of that in the average MIOIC and in the Philippines, but substantially below that of Korea. Thailand's large service sector also experienced rapid growth, commensurate with that of the other two sectors. In sum, Thailand's economic growth has been based on rapid expansion in all three major sectors of the economy, particularly industry, albeit at a reduced rate during the 1970s when compared with the 1960s, largely in line with the less propitious international environment.

2.03 The transformation of the Thai economy has been less rapid in terms of its labor force and population distribution than in terms of its structure of production (Table 2.3). In 1980, an estimated three quarters of Thailand's labor force remained in agriculture, a share which was surpassed by only six other MIOIC. An estimated 86% of the Thai population remained in rural areas, virtually the same proportion as in 1960. Only two other MIOIC had a higher percentage of their population living in rural areas in 1980. This labor force and population distribution reflects the unusually extensive pattern of Thai agricultural growth and the pervasively rural nature of the Thai economy and society (see also Chapter 6 below). The exceptionally high concentration of urban population in one single metropolitan area is indicated by the high proportion of the urban population in Thailand living in Bangkok. Aside from the city states of Hong Kong and Singapore, only three small countries have a higher concentration of their urban population than does Thailand (Guinea, Lebanon, and Mozambique). Indeed, while about 9.7% of the Thai population lived in Bangkok in 1980, 32.7% of total GDP in Thailand originated in Bangkok, reflecting the very high degree of economic concentration in that city.

2.04 Associated with Thailand's rapid economic growth was a fast expansion in trade, particularly during the 1970s. As a result, the Thai economy has become much more open and subject to external economic influences. The share of imports in GDP, which had fluctuated between 19% and 22% during the 1960s, rose to 30% by 1980, while exports increased from an average of about 18% of GDP during the 1960s to 25% in 1980. At the same time, the composition of trade changed with a significantly increased share of oil in total imports, and a reduced role of Thailand's traditional principal export commodity, rice, in total exports. On both accounts, it

Table 2.3: LABOR FORCE AND URBANIZATION

	Share of labor force in agriculture (%)		Growth of labor force (% p.a.) 1970-80	Share of urban in total population (%)		Share of urban population in largest city (%)	
	1960	1980		1960	1980	1960	1980
Thailand	84	76	2.9	13	14	65	69
Indonesia	75	58	2.1	15	20	20	23
Philippines	61	46	2.4	30	36	27	30
Korea	66	34	2.8	28	55	35	41
Malaysia	63	50	3.0	25	29	19	27
Middle income oil importers	59	42	2.2	37	50	28	28

Source: WDR 1982.

has become more difficult to insulate domestic prices and incomes from fluctuations due to changes in external prices and demand./1

2.05 The benefits of growth were relatively well distributed throughout the country. Since most agricultural production is by smallholders, most of the estimated agricultural income growth accrued to the rural producers themselves. The overall incidence of poverty was reduced from about 57% in the early 1960s to about 31% in the mid-1970s, and from 61% to 35% in the rural sector. Poverty remains largely a rural phenomenon and mostly concentrated in the Northeast and parts of the North, where the fertility of the land is low./2 By comparison with other countries in the region, Thailand's poverty problem appears moderate (Table 2.4), but remains nonetheless a priority concern for policy makers, especially since little further progress appears to have been made in reducing poverty since the mid-1970s in the face of high oil prices and declining terms of trade.

2.06 In line with the reduction in poverty, life expectancy has improved significantly in Thailand during the last two decades, as has the infant mortality rate (Table 2.5). On both counts Thailand does as well as, or better than, the MIOIC average. Life expectancy about equals that in the Philippines, Korea and Malaysia, but infant mortality is still substantially higher than in Korea or Malaysia. Calorie supply as a percent of requirements, a broad measure of nutrition level, is the lowest in the region and below the MIOIC average. While these data are subject to some doubt, they appear to indicate that Thailand has a poor nutrition level for a country producing and exporting substantial amounts of food. Similarly, in terms of the availability of physicians, Thailand scores very low, witnessing actually a slight deterioration in this indicator during the 1970s, while other comparator countries typically saw dramatic improvements. Other indicators of health service availability confirm this poor situation in Thailand's health sector (see also Chapter 10 below). Thailand's estimated literacy rate is high, reflecting the progress which has been made particularly in primary school enrollment.

/1 While rice prices had, of course, fluctuated widely in international markets in the past, domestic rice prices were substantially insulated from world prices fluctuations by offsetting changes in the rice premium and reserve requirement.

/2 See Income Growth and Poverty Alleviation in Thailand, (Report No. 2566-TH, June 20, 1980). This report is based on data for 1975/76. More recent analysis of poverty and income distribution are not available, but it will soon be possible to assess recent trends on the basis of census and household survey data for 1980/81.

Table 2.4: INCIDENCE OF ABSOLUTE POVERTY IN SELECTED EAST ASIAN COUNTRIES

	Percentage of population in absolute poverty		
	Total	Urban	Rural
Thailand (1975/76)	31	15	34
Indonesia (1976-79)/a	47	28	51
Philippines (1974-78)	42	39	44
Korea (1976-79)	15/b	18	11
Malaysia (1974-78)	37/c	16	46

/a A 1981 report, using 1978 data, estimates the total at 34%, rural at 29%, and urban at 11%.

/b The Fifth Five-Year Plan puts the total at 15% in 1976, 12% in 1978, and 10% in 1980.

/c The Fourth Malaysian Plan puts the figure at 29% in 1980.

Source: World Bank staff estimates.

2.07 The factors contributing to this pace and pattern of economic development of Thailand were identified in earlier World Bank reports. Rapid growth in agriculture and rising exports have been major factors supporting the growth in the rest of the economy. The availability of additional agricultural land allowed expansion of traditional subsistence production, and helped absorb a growing labor force. It also facilitated the rapid diversification into new cash crops, which was the mainstay of the rapid growth of agricultural exports. These foreign exchange earnings allowed high levels of capital and intermediate goods imports for the whole economy. Agricultural expansion has contributed to the growth of commerce and trade, and agricultural incomes have been a major component in domestic demand, the primary source of industrial growth.

Table 2.5: SOCIAL INDICATORS

	Life expectancy		Infant mortality rate		Population per physician (thousand)		Calorie supply as % of requirement, 1977	Primary school enrollment at % of age group		Secondary school enrollment of % of age group		Adult literacy rate	
	1960	1980	1960	1980	1960	1979		1960	1979	1960	1979	1960	1977
Thailand	52	63	103	55	8.0	8.2	97	83	96//a	13	39/a	68	84
Indonesia	41	53	150	93	46.8	13.7	102	71	94	6	22	39	62
Philippines	53	64	106	55	n.a.	2.8	107	95	98	26	63	72	75
Korea	54	65	78	34	3.5	2.0	117	94	111	27	76	71	93
Malaysia	53	64	72	31	7.0	7.6	116	96	93	19	52	53	n.a.
Middle-income oil importers	54	63	111	69	6.5	4.0	110	85	96	18	44	60	73

/a Based on a recent UNESCO study (see Chapter 10 below).

Source: WDR 1982.

2.08 Economic markets have operated relatively efficiently in Thailand. The private market structure has provided outlets for agricultural surpluses at remunerative prices and supplied credit, support services, modern inputs, and "incentive" consumer goods to encourage the production of those surpluses. Industrial markets have been largely competitive, despite some protectionist policies, and dynamic indigenous entrepreneurs have been a primary factor in the sector's growth. There is no evidence of significant imperfections or segmentation in rural labor markets, and real wage rates for unskilled laborers do not vary widely throughout the country. There is considerable labor mobility, and the availability of a large potential supply of unskilled labor at relatively low and stable wages has been an important factor in Thailand's industrialization and competitiveness in manufactured exports. At the same time, these factors have resulted in a relatively wide distribution of the benefits of growth, as reflected in the reduction of absolute poverty.

2.09 The principal contributions of the public sector were to provide and maintain the basic social and economic infrastructure, to ensure the political stability necessary for the expansion of marketing throughout the country, to maintain a stable currency to facilitate foreign and domestic trade, and to encourage the monetization of the economy. After early ventures into direct involvement in productive activities in the 1950s, the Government recognized its relative inefficiency in that area and has since withdrawn from most production activities other than utilities. The Government has, however, intervened directly in the economy to promote or protect certain industries and to control certain prices for various reasons. This has had indirect effects on the structure of production and on productivity. In the social sectors, Government has emphasized the extension of education and population planning services, with relatively little emphasis given to the health sector.

Adjustment to Two Oil Price Shocks: 1973-1983

2.10 Thailand absorbed the immediate impacts of the 1973/74 international oil price increases and of the resulting international economic upheaval with no significant disruption of its growth momentum. The initial balance of payments effect of the oil price increase was cushioned by high export prices and by continued high transfer and service account earnings through 1975.^{/1} Domestic inflation shot up and then was quickly brought back under control in response to a tight fiscal policy, which was in part an unintentional side effect of higher trade values and lower real public expenditure growth in an inflationary environment. As a result, Thailand's domestic and external balance was restored by the mid-1970s, although

^{/1} This account of the impact of the first oil price shock summarizes the analysis in World Bank Thailand: Coping with Structural Change in a Dynamic Economy (Report No. 3067a-TH, December 23, 1980).

domestic energy prices were not adjusted in response to the increased international oil prices. By 1975, most Thai officials and other observers felt that the Thai economy had largely adjusted to the shocks of 1973/74 and directed their primary concern towards restoring the high growth rates of the 1960s and to expand public investment and social service expenditure in order to further promote poverty alleviation./1

2.11 A number of growth promoting measures were therefore introduced beginning in 1975. These included controlling certain key prices, such as energy and cement prices, maintaining a ceiling on interest rates, increasing protection, expanding public sector expenditures and deficits, and permitting rapid credit creation to support higher demand. These actions were able to stimulate growth because excess capacity was available in 1975, export growth was exceptional, increasing levels of foreign resources could be mobilized to fill the growing external and domestic savings deficits, price stability had been re-established, and real oil import prices were stable or falling after the 1973 increase. Given this environment, the private sector responded with an investment boom in 1977-79, which, combined with strong growth of public expenditures, resulted in a sharp worsening of external and domestic deficits, higher domestic inflation, and a build-up of foreign debt.

2.12 In 1979, when oil price increases hit the world economy for the second time, Thailand was therefore in a vulnerable position and the required adjustment very substantial: the current account deficit reached \$2 billion in 1979 (7.7% of GDP) and the public deficit was in excess of 6% of GDP; domestic real interest rates were negative and credit rapidly expanding; domestic prices were distorted, particularly for energy and investment goods, and the domestic incentive structure had been seriously affected by increased import protection and investment incentives, making domestic industrial production and investment more capital intensive and less efficient than in earlier years. In addition, the international economic environment made the adjustment much more difficult than in the past. The serious slowdown in the growth of industrial economies weakened the demand for Thai exports and resulted in a worsening of commodity prices; in addition, international capital markets saw a tightening of credit conditions with substantial increases in real interest rates and shorter maturities.

/1 The analysis of the World Bank's Basic Economic Report (Thailand: Toward a Development Strategy of Full Participation, Report No. 2059-TH, September 1978) supported this position and placed greater emphasis on growth and especially distribution than on further adjustments of energy prices or on reducing financial deficits.

2.13 In response to this challenge, the Royal Thai Government initiated a broad strategy of structural adjustment, which is embodied in its Fifth Five-Year Plan covering the period 1982-86 and which is supported by the World Bank's structural adjustment loans (SALs).^{/1} Indeed, since 1980 the Government has made considerable progress in implementing major policy reforms: price distortions were reduced for many goods and services (especially energy prices) either through removal of price controls or more frequent and appropriate adjustments; interest rate ceilings were raised and credit expansion brought under control; the level of tariff protection has already been reduced; and efforts towards poverty alleviation were speeded up through the Government's poverty areas program and related rural development programs. In other areas important preparatory work has been done or is currently under way: a program to reform investment promotion criteria is under preparation and the Eastern Seaboard development program is being carefully scrutinized; comprehensive studies are underway in energy and foreign trade protection; a public sector investment program will soon be completed and broader fiscal policy changes are to be implemented; and the Government is moving rapidly in carrying out institutional reform. Overall, significant improvements have been achieved in the design and implementation of structural adjustment policies but, given the complex and difficult task, implementation of policy reform is still ongoing and important adjustments are yet to be achieved.^{/2}

2.14 Between 1980 and 1982 the Thai economy began to respond to these changes in the international environment and in the domestic policy signals. In 1980 the current account deficit as a proportion of GDP was reduced to 6.2% from 7.7% in 1979, despite poor agricultural production and continued strong growth of public expenditures. In 1981 the external adjustment was temporarily slowed as the current account deficit rebounded to 6.9% of GDP. This was partly due to a more rapid expansion in GDP, associated with a good agricultural year, and partly a result of a worsening in the balance of trade following the rapid appreciation of the US dollar and thus of the Baht in relation to the currencies of other major trading partners. With low levels of foreign exchange reserves, a poor trade balance, and an unfavorable interest differential, confidence in the Baht reached a low in mid-1981, leading to considerable foreign reserve losses which in turn required an adjustment in the value of the Baht in relation to the dollar by 10%. This currency realignment, combined with an increase in real interest rates in Thailand and a dramatic improvement in the balance of trade - following, but only in part associated with, the adjustment in the exchange rate - quickly restored the confidence in the Baht.

^{/1} See Chapter 3 below for a summary of the Fifth Plan goals and strategy.

^{/2} For details of the structural adjustment programs and their status of implementation, see Second Structural Adjustment Loan (Report No. P3481-TH, P3481-TH, March 10, 1983).

2.15 In 1982, the state of the Thai economy weakened substantially in terms of its growth performance, largely in response to the rapid deterioration in the external economic environment. Inflation was greatly reduced, with consumer prices increasing by only about 5% in 1982. Export prices declined, and the decrease in inflationary expectations led to an inventory adjustment. Private fixed investments in constant prices, which had not been buoyant for several years, are estimated to have dropped by 12.4% in 1982, which brought them below the 1977 level measured in constant prices. The latest available 1982 estimates for growth in production and real income are about 5% for industry, 0.1% for agriculture (because of unfavorable weather), and 4.2% for GDP. The balance of payments current account deficit is, however, estimated to be considerably smaller in 1982 than in recent years. Partly because of a high carryover level of agricultural exportables into the year, export volume continued to grow at a very rapid rate (16%). Because of a large fall in export prices, export values, however, increased by only 5%. At the same time, given the squeeze on inventories and private fixed investments, imports declined by 12% in volume and 11% in value. Consequently, the current account deficit was reduced from about \$2.6 billion (6.9% of GDP) in 1981 to \$1.1 billion (3.0% of GDP) in 1982. At the same time the Central Government's fiscal position worsened substantially. Compared to actual FY 1981 and budgeted FY 1982 deficits of 2.5-3% of GDP, the actual FY 1982 deficit is estimated at about 6% of GDP. The increase can be attributed to shortfalls on the revenue side, which in turn were largely related to lower inflation, lower domestic activity and especially lower imports.

2.16 For 1983, the outlook is uncertain due to the uncertainties surrounding the world economy and the international price of oil. The most recent Bank of Thailand and NESDB estimates project that GDP growth will pick up again to reach 6.0% in 1983. In response to a revival in domestic demand the current account deficit is therefore expected to reach US\$1.6 billion, or 4.0% of GDP, while the Central Government deficit should improve to about 4.5% of GDP. The medium-term outlook, as further explored in Chapter 3 below, indicates that with a continued implementation of its structural adjustment program Thailand is well on its way to adjusting to the new international environment as far as its external balance is concerned. It also shows, however, that with its substantial dependence on international economic developments, Thailand will likely grow less rapidly than it did in the previous two decades, unless the world economy experiences a revival well beyond current expectations.

2.17 The adjustment to the second oil shock has therefore been more painful for Thailand than was the case after the first. However, in this Thailand is not alone. Worldwide the adjustment process has been difficult as was documented in World Development Report, 1982, and by comparison with selected other countries in the region, Thailand's recent performance must be considered quite successful (Table 2.6). Considering actual, estimated, and projected developments for 1981, 1982, and 1983 respectively, Thailand's

average GDP growth is exceeded only by that of Korea, while its current account and budget deficits as a percent of GDP have been moderate in comparison to most of its neighbors. In contrast to the aftermath of the first oil shock, Thailand now seems to be moving rapidly in adjusting its economy to the changed international environment by implementing its broad program of structural reform. The remainder of this chapter reviews selected major aspects of the recent macro-economic trends in some detail so as to place the subsequent assessment of the country's medium term outlook (in Chapter 3), of Thailand's public resource management (in Part II), and of the major sectoral trends and policy issues (in Part III) into an economy-wide and international perspective.

Table 2.6: ECONOMIC TRENDS IN SELECTED EAST ASIAN COUNTRIES, 1981-1983/a

	GDP growth rate in constant prices (%)			Current account deficit as % of GDP			Central government deficit as % of GDP /b		
	1981	1982	1983	1981	1982	1983	1981	1982	1983
Thailand	6.3	4.2	6.0	6.9	3.0	4.0	3.1	5.9	4.5
Indonesia	6.6	0.1	1.5	2.7	7.6	8.7	3.4	4.7	5.4
Philippines	3.8	2.6	2.0	6.0	8.5	6.2	4.0	4.2	2.4
Malaysia	7.5	4.0	4.6	9.6	12.9	10.5	15.2	16.1	15.6
Korea	6.4	5.4	7.5	6.8	3.7	3.3	3.6	3.3	3.5

/a Actuals for 1981; estimated for 1982; projected for 1983.

/b Fiscal years for Thailand

Source: World Bank staff estimates.

Selected Aspects of Recent Macro-economic Development: 1979-83 /1

2.18 Growth in Aggregate Production and Income (Table 2.7). Since 1979 Thailand's average economic growth fell below the average rate of growth in GDP experienced in the 1970s, indicating another downward adjustment in the country's trend rate of economic growth, when compared with the 1960s. In

/1 The analysis on this section is based on NESDB National Accounts data for 1970-82, and on Bank of Thailand projections for 1983 (dated April 1983).

constant 1972 prices GDP is estimated to have reached an average 5.3% growth per annum over the past four years, which is lower than in any four-year period during the 1970s. This record is not likely to be much improved in 1983. BOT and NESDB short-term projections indicate that GDP growth will not exceed 6% and thus the five year average annual growth in real GDP rate for 1979-83 will amount to about 5.4%, more than 1 1/2 percentage points below the average rate of 7.0% for the period 1970-79.

Table 2.7: GROWTH OF PRODUCTION AND INCOME, 1970-83
(in constant 1972 prices)

	1970-79/ <u>a</u>	1979	1980	1981	1982/ <u>b</u>	1983/ <u>c</u>	1979-83/ <u>a</u>
<u>Agriculture</u>	<u>4.8</u>	<u>-1.5</u>	<u>1.9</u>	<u>6.7</u>	<u>0.1</u>	<u>4.0</u>	<u>3.2</u>
Crops	<u>4.8</u>	<u>-3.3</u>	<u>4.6</u>	<u>8.0</u>	<u>0.9</u>	<u>3.4</u>	<u>4.3</u>
Other	<u>4.9</u>	<u>3.7</u>	<u>-5.1</u>	<u>3.1</u>	<u>-2.3</u>	<u>6.1</u>	<u>0.0</u>
<u>Nonagriculture</u>	<u>7.9</u>	<u>9.0</u>	<u>7.1</u>	<u>6.1</u>	<u>5.5</u>	<u>6.6</u>	<u>6.1</u>
Mining & quarrying	<u>5.1</u>	<u>10.4</u>	<u>5.5</u>	<u>-3.3</u>	<u>-0.2</u>	<u>6.6</u>	<u>1.3</u>
Manufacturing	<u>10.3</u>	<u>10.1</u>	<u>4.8</u>	<u>6.4</u>	<u>5.8</u>	<u>7.6</u>	<u>6.0</u>
Construction	<u>7.4</u>	<u>7.1</u>	<u>13.9</u>	<u>-6.5</u>	<u>1.4</u>	<u>9.8</u>	<u>3.0</u>
Other nonagriculture	<u>7.1</u>	<u>8.7</u>	<u>7.3</u>	<u>7.8</u>	<u>7.8</u>	<u>6.0</u>	<u>6.6</u>
<u>GDP</u>	<u>7.0</u>	<u>6.1</u>	<u>5.8</u>	<u>6.3</u>	<u>4.2</u>	<u>6.0</u>	<u>5.4</u>
<u>GDY /d</u>	<u>6.8</u>	<u>6.8</u>	<u>4.6</u>	<u>3.0</u>	<u>-0.3</u>	<u>7.9</u>	<u>4.7</u>
<u>GNP</u>	<u>6.8</u>	<u>5.0</u>	<u>5.4</u>	<u>4.8</u>	<u>4.2</u>	<u>5.9</u>	<u>4.9</u>
<u>GNY /e</u>	<u>6.4</u>	<u>6.2</u>	<u>4.5</u>	<u>2.2</u>	<u>-0.3</u>	<u>7.8</u>	<u>4.5</u>
<u>Memo:</u>							
Population	<u>2.5</u>	<u>2.2</u>	<u>2.2</u>	<u>2.1</u>	<u>2.1</u>	<u>2.0</u>	<u>2.1</u>
GDP per capita	<u>4.4</u>	<u>2.7</u>	<u>3.1</u>	<u>4.0</u>	<u>2.0</u>	<u>3.9</u>	<u>3.3</u>
GNY per capita	<u>3.8</u>	<u>4.0</u>	<u>2.3</u>	<u>0.1</u>	<u>-2.3</u>	<u>5.9</u>	<u>2.4</u>

/a Least square growth rates.

/b Preliminary.

/c Projection.

/d GDP adjusted for terms of trade losses (see para. 2.19).

/e GNP adjusted for terms of trade losses (see para. 2.19).

Sources: 1970-82 National Accounts, NESDB; 1983 short-term projections, BOT; and mission estimates.

2.19. If allowance is made for income losses resulting from Thailand's deteriorating terms of trade, the growth in domestic income was even below that indicated by GDP growth since 1979. Between 1970 and 1979, gross domestic income adjusted for terms of trade changes (GDY) grew only 0.2% points less rapidly than gross domestic product (GDP).^{/1} In contrast, reflecting the domestic deterioration of Thailand's terms of trade, gross domestic income (GDY) is estimated to have grown consistently more slowly than GDP between 1978 and 1982. In 1982, in fact, GDY declined slightly. Thailand's terms of trade are likely to improve in 1983. These gains will generate a growth of GDY larger than that of GDP, but it will still leave an average differential in GDP-GDY growth rates for the period 1979-83 of over one half a percentage point, indicating the substantial cumulative income loss which occurred during 1979-82 as a result of substantially worsened terms of trade. Allowance must be made furthermore for the impact of increasing net factor income deficits for Thailand since the mid-1970s, largely as a result of rapid increases in foreign borrowing and thus in debt service obligation. Gross national income (GNY) growth, which reflects the increase in incomes accruing to nationals of Thailand adjusted for terms of trade losses, slowed down even more than did GDY. Gross national income per capita thus increased by only about 1% between 1979 and 1982, or only just over a quarter of the rate of increase experienced for 1970-79.

2.20 Agricultural Growth and Incomes. Although the structure of domestic production has changed over time, with manufacturing and financial services (banking and insurance) gaining in importance, agriculture has remained the single most important sector (Table 2.8 and para. 2.02 above). Given its size and extensive linkages with the domestic economy, agricultural growth had a profound impact on overall economic performance. Before the second oil shock agriculture grew on average 4.8% p.a. and provided a basis for a rapid GDP growth of 7%. At the same time the agricultural sector in Thailand, largely rainfed, with relatively low levels of modern inputs and mechanization, and inadequately serviced by the banking system, was very susceptible to adverse weather conditions and unfavorable international price developments. These often resulted in large production and income variations which were passed on to the economy causing similar cyclical movements in exports and GDP. For example, the second oil shock in 1979/80 coincided with relatively poor agricultural growth ^{/2} which affected

^{/1} GDY is calculated by deflating the export component of GDP (in nominal terms) by the import price index. This provides a measure of the reduced capacity to import, and thus the reduced value of domestic purchasing power, when terms of trade deteriorate (or vice versa for improved terms of trade).

^{/2} In 1979 agricultural production actually fell from the previous year's good crop and recovered 1978 production levels only in 1980 (see Statistical Appendix, Table 2.4).

exports and GDP growth and seriously hampered the country's ability to cope with the worsening external environment. In contrast, during 1981, when crops resumed strong growth attributable largely to favorable price expectations (which in turn induced an increase in planted area) and favorable weather conditions, GDP followed with 6.3% growth, and ample exportable surpluses were carried over to 1982. Although prices actually turned out to be less favorable due to good agricultural production throughout the world and lower demand from OECD countries (caused by recession and imposition of quantitative import restrictions, e.g., quotas on cassava), an impressive export volume growth occurred in 1981 and 1982.

Table 2.8: SECTORAL DISTRIBUTION OF PRODUCTION
(as % of GDP)

	1970-78	1979	1980	1981	1982/ <u>a</u>	1983/ <u>b</u>
<u>Agriculture</u>	<u>29.8</u>	<u>26.4</u>	<u>25.4</u>	<u>23.9</u>	<u>20.6</u>	<u>20.9</u>
Crops	21.9	19.4	19.0	17.7	15.1	15.5
Other	7.9	7.0	6.4	6.2	5.5	5.4
<u>Nonagriculture</u>	<u>70.2</u>	<u>73.6</u>	<u>74.6</u>	<u>76.1</u>	<u>79.4</u>	<u>79.1</u>
Mining & quarrying	1.8	2.3	2.1	1.7	1.8	1.9
Manufacturing	18.1	19.7	19.6	20.1	20.6	22.1
Construction	4.7	5.3	5.8	5.3	5.2	6.1
Other nonagriculture	45.6	46.3	47.1	49.0	51.8	49.0
<u>Total GDP</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a Preliminary.

/b Projection

Sources: National Accounts, NESDB; short-term projections, BOT; and mission estimates.

2.21 Despite the impressive growth of agricultural production during 1981, the agricultural sector suffered a substantial income loss due to deterioration of both domestic and international terms of trade. During 1981, import prices increased by 14% and export prices only 1.2% implying a total terms of trade loss of 18.8 billion current baht. This loss was not, however, distributed equally through the economy since domestic relative

prices also changed. Agriculture lost 8.1 billion baht or 43% of the total, although it contributed only 25% to the gross value added, implying a 4.6 billion baht loss due to international terms of trade and 3.5 billion baht loss due to domestic terms of trade. Agricultural incomes were hurt even more since they lost not only prorated portions of international (4.1 billion) and domestic (3.1 billion) terms of trade losses to agricultural sector, but also an additional 3.1 billion baht within the agricultural sector because, according to National Accounts data, rents and capital depreciation maintained and even increased their real value (the share of nominal agricultural incomes in sectoral value added decreased by 2%). Overall, agricultural incomes lost 10.3 billion baht on account of terms of trade deterioration, and thus the purchasing power of those engaged in agriculture declined by 2.3% during 1981./1

2.22 Industrial Growth. Thailand's industrial structure reflects the continuing importance of agriculture in the Thai economy, despite the sectoral transformation discussed in para. 2.02 above. Processing of food and agricultural commodities accounted for 36% of manufacturing value added in 1979 compared with only 20% in Korea and 22% in Malaysia (Table 2.9). However, textiles and clothing are also very important manufacturing activities, contributing 23% to total manufacturing value added, a share which is exceeded only by Egypt and Greece among the other MIOIC. Value added in machinery is also relatively high when compared to other countries among the lower third of the middle income group. Chemicals are of relatively minor importance, although this may change in the future as domestic natural gas leads to the development of an indigenous petrochemicals industry. Vehicle assembly, construction materials, consumer durables and integrated circuits are newly emerging active branches of domestic manufacturing activity (see Chapter 7 below).

/1 Similar, if not more pronounced, losses in agricultural incomes are likely to have occurred in 1982; however, data are not yet available for calculating the full impact of price developments during that year.

Table 2.9 INDUSTRIALIZATION: COMPARATIVE DATA

Distribution of manufacturing value added, 1979 (1975 prices) (%) ^{/a}					
	Food and agriculture	Textiles and clothing	Machinery and transport equipment	Chemicals	Other
Thailand	36	23	11	7	23
Philippines	40	9	7	12	32
Korea	20	19	19	11	31
Malaysia	22	8	17	6	47

^{/a} 1972 prices for Thailand.

Source: WDR 1982.
Statistical Appendix, Table 8.3

2.23 After an impressive growth of 10% p.a. during the 1970s, 1980 saw the lowest manufacturing growth for the past 15 years, since after two years of slow agricultural growth all agro-processing industries declined and only moderate growth was recorded in other industries (Table 2.7 above). Manufacturing production growth recovered in 1981 (6.4%) but remained below historical levels and fell short of achieving the strong average growth that would have been commensurate with the high investment activity in the late 1970s. As a consequence, additions to capacity in many industries between 1977 and 1979 (see Statistical Appendix, Table 8.1) were not fully utilized in 1981 and excess capacity existed particularly in textiles, construction materials and car assembly industries. In 1982 an even lower growth occurred in the manufacturing sector (5.8%), reflecting mainly low level of economic activity, weak consumer and investment demand, and stagnant agricultural production. Agro-processing industries recorded relatively satisfactory levels of production during the first half of 1982 owing to a big agricultural output carry-over from the previous year. This contributed to strong export supply along with some other industries which had increased their output anticipating higher domestic demand, but had to push into exports when expectations for domestic sales failed to materialize. For 1983, the outlook for industry is improved, but remains modest, given the likely slow recovery in the world economy, and the expectation of a continued slack domestic demand.

2.24 Inflation and Interest Rates. Over the last twenty years Thailand's domestic prices were to a large extent determined by world price movements as Thailand remained an open economy with no major barriers to

foreign trade and with relatively insignificant domestic price controls.^{/1} The strong relationship between domestic and international prices was particularly apparent at times of large and sudden shocks to the world economy. During the first oil shock domestic inflation accelerated from 4.8% in 1972 to 15.6% in 1973 and further to 24.3% in 1974 in response to world prices. In 1975 domestic inflation fell by 19 points in response to a rapid deceleration of import and export price increases. Domestic price sensitivity remained high through the 1970s and into the second oil shock. Notably, the deceleration of international prices during 1981 and 1982 caused domestic inflation to slow down from 13% in 1981 to 5% in 1982 (Table 2.10). Other determinants (in particular monetary and fiscal policies) also affected domestic inflation, particularly in the short term, but to the extent that such policies have generated excess demand over extended periods, as during the second half of the 1970s, they have tended to result more in external imbalances and foreign exchange reserve losses, than in a protracted divergence between domestic and foreign rates of inflation.

2.25 Real interest rates historically were high in Thailand in comparison with other developing countries and central to the maintenance of a sustainable balance between savings and credit demands.^{/2} High interest rates induced rapid growth in financial assets of the private sector and directed credit demand to efficient uses. The deterioration in the private saving-investment balance that occurred in the second half of the 1970s (see below para. 2.30) followed a major decline in real interest rates (Table 2.11), just as the recovery in the private saving-investment balance followed a sharp increase in real interest rates since. Given Thailand's financially open economy, domestic interest rates were largely determined by international interest rates, except when statutory domestic interest rate ceilings prevented domestic rates to move in line with international rates (as was the case in 1972-74 and 1978-79). Early in 1980, the Government raised the interest rate ceilings and, with declining inflation and nominal interest rates world-wide during 1982, the present ceilings on commercial interest rates are not likely to be binding over the near future. Indeed, since the second half of 1982, commercial banks voluntarily lowered interest rates on loans and deposits, the first time that such a move has occurred based on market forces without a direct instruction from the Bank of Thailand. However, as a result of the higher real rates of interest in international

^{/1} See Thailand: Perspectives for Financial Reform (Report No. 4085-TH, July 31, 1982). While the nominal exchange rate in relation to the US dollar remained approximately unchanged, the real effective exchange rate moved within a band of $\pm 10\%$ between 1960 and 1980, which is very narrow by international standards.

^{/2} See Report No. 4085-TH, for a full discussion of the issues addressed in this paragraph.

Table 2.10: PRICES AND TERMS OF TRADE
(Annual Rate of Change in %)

	1970-79	1979	1980	1981	1982/ <u>a</u>	1983/ <u>b</u>
GDP deflator	9.2	11.6	16.4	8.0	4.8	3.9
CPI	9.0	9.9	19.7	12.7	5.2	3.9
Export price index	11.2	19.5	18.2	0.1	-10.1	6.0
Import price index	13.4	15.6	24.2	14.5	5.6	0.0
Oil/petroleum products	24.5	44.2	64.0	12.5	-3.8	-11.5
Terms of trade	-2.3	3.3	-4.8	-12.6	-14.9	6.0
International inflation:						
MUV index in US\$ <u>/c</u>	12.3	11.8	10.1	-4.8	0.5	6.5
MUV index in SDR	9.8	8.3	9.3	4.6	6.9	6.1
OECD North GDP deflator						
in US\$	9.5	9.9	8.9	-0.7	0.7	7.0
OECD North GDP deflator						
in national currency	7.7	7.5	8.7	9.6	7.1	6.6

/a Preliminary.

/b Projection.

/c MUV = manufacturing unit value.

Sources: National Accounts, NESDB; Monthly Bulletin, BOT; short-term projections, BOT; EPD, the World Bank (Report No. 814/82); and mission estimates.

Table 2.11: INTEREST RATES

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Real deposit rate of interest (ex post)/a	5.1	4.9	0.5	-8.4	-14.3	1.2	2.0	-1.3	-1.2	-2.6	-8.3	-1.5	5.5
Real loan rate of interest (ex post)/b	12.2	11.1	2.5	-9.8	-13.0	8.1	7.1	3.2	3.8	1.2	-4.0	2.9	8.4

/a Adjusted for observed rate of change in CPI.

/b Adjusted for observed rate of change in wholesale price index (WPI).

Source: Report No. 4085-TH, Annex 2.4, Table 2.4.7: Mission estimates.

capital markets and the Government's efforts to liberalize Thai domestic financial markets, real rates of interest which had been quite low, or even negative since 1977, increased substantially in 1981 and, especially, in 1982 (Table 2.11)

2.26 Employment and Wages. Between 1970 and 1979 employment recorded a high 2.7% p.a. growth, but still fell short of increases in the labor force (3.0% p.a.) caused by rapid population growth in the 1950s and 1960s. As a result open unemployment as measured by NESDB reached almost 300,000 by 1981, corresponding to an unemployment rate of 1.2%./1 Although the sectoral composition of employment changed in the past decade, with industry and commerce registering sizeable increases, agriculture still remains by far the major employer (71% of total employment in 1979; for details see Statistical Appendix Table 1.2) and will continue to do so throughout the 1980s.

2.27 Minimum wages were first introduced in April 1973 following the promulgation of general labor laws and legalization of labor unions in 1972. The area coverage was initially limited to Greater Bangkok but was subsequently expanded to the entire Kingdom divided into three (two, since October 1981) zones with different minimum wage levels applicable to all economic activities, except agriculture and government administration. Since their inception minimum wages have been adjusted ten times and these adjustments have generally exceeded the inflation rate: by October 1982 the minimum wage for Bangkok had been raised by 100% in real terms over its initial level in 1973; in other regions real increases since 1974 have ranged between 50% and 70%. In recent years, however, minimum wage adjustments were closely linked to past inflation yielding constant or even declining (in 1982) levels in real terms. Numerous surveys conducted by the Department of Labor and by the Bank of Thailand suggest low to moderate overall compliance with the minimum wage laws, strong positive correlation between firm size and compliance, and substantial sectoral and regional variations in compliance levels: e.g., sectors with high proportion of low skilled workers, big average firm size and predominantly urban locations, such as textiles, claim large effects of minimum wages, although total real effects might be on balance much smaller and declining over the last two years due to low general compliance levels and stagnant or decreasing real minimum wages.

/1 Unemployment estimates in Thailand are greatly influenced by substantial seasonal variations in employment and labor force, and thus include a large possible margin of error. For a more detailed discussion see Report No. 3906-TH, Growth and Employment in Rural Thailand, April 13, 1983. Unemployment as measured by BOT's broader concept reached almost one million people in 1979 (some 5% of the labor force) and stayed roughly at the same level until 1981.

2.28 Growth and Structure of Demand. Thailand's economic growth permitted a growth in consumption substantially in excess of population growth, and of consumption growth in the MIOIC as a group (Table 2.12). As the pace of economic growth slackened during the 1970s so did the growth of consumption, and even more so in the early 1980s (Table 2.13). The share of public consumption remains at a moderate level compared to most other countries in the region and to the MIOIC, but during the last two decades it has tended to increase faster than in most other comparator countries. Gross domestic investment grew rapidly at 15.8% p.a. in the 1960s, but slowed to about 7.7% p.a. in the 1970s, the lowest among the comparator countries in the region, and only somewhat higher than the average of 6.6% p.a. recorded for all MIOIC. As a result, while the share of investment in GDP in 1980 was almost double that in 1960, it is only about equal to the average in all MIOIC and below the share in the comparator countries in the region, with the exception of Indonesia. Historically, therefore, investment efficiency in Thailand was high by international standards as relatively low levels of investments generated high rates of growth. One of the reasons for Thailand's relatively low investment share is that gross domestic savings, too, have been low by regional standards, although about equal to that of Korea and the average MIOIC. Thailand's share of exports in total GDP at 25% is somewhat higher than that of the average MIOIC, but substantially less than that of most of its neighbors (with the exception of the Philippines).

2.29 Annual growth rates of private and public investment fluctuated in the 1970s and early 1980s: in particular years of the 1970s private fixed capital investments increased as fast as 36.7%, but also declined as much as -15.6%; public sector fixed investment growth varied even more (from -21.1% to 42.1%). Often these variations in public and private investment offset each other, yielding a more stable growth of gross fixed investment with two exceptions: In 1972 both private and public fixed capital investment decreased; in 1977 they both considerably advanced yielding a record 32.8% increase in real gross fixed investment (the share of fixed investment in GDP jumped from 21.7% to 25.3% between 1976 and 1977 and stayed at that level since). The investment boom of 1977, followed by another high addition to private fixed capital investment in 1979, was never fully translated into higher GDP growth as Thailand's economy was hit by high oil prices leading into worldwide recession and deteriorating terms of trade. As a result the incremental capital output ratio which had declined until 1977, increased rapidly thereafter.^{/1} The deteriorating economic outlook and protracted levels of substantial excess capacity induced a quick reaction in the private sector which decreased fixed capital investment in the 1980-82 period by about 6% p.a. on average and thereby reduced fixed capital investment in constant 1972 prices by the end of 1982 below the level in 1977, along with a significant drop in the private investment/GDP ratio (Table 2.14). Public sector fixed capital growth was less sensitive to

^{/1} The three-year ICOR (with output lagged by one year) dropped from 3.6 for 1970-72 to 2.6 for 1975-77, but then increased to 4.0 for 1979-81.

Table 2.12: GROWTH AND STRUCTURE OF DEMAND: INTERNATIONAL COMPARISON, 1960-80

	Growth of demand (%)						Structure of demand (% of GDP)							
	Public Consumption		Private Consumption		Gross domestic investment		Public Consumption		Gross domestic investment		Gross domestic savings		Exports (UNFS)	
	1960-70	1970-80	1960-70	1980-70	1960-70	1970-80	1960	1980	1960	1980	1960	1980	1960	1980
Thailand	9.7	9.2	7.0	6.3	15.8	7.7	10	12	16	27	14	22	17	25
Indonesia	0.9	12.9	4.1	8.1	4.6	14.4	12	13	8	22	8	30	13	31
Philippines	5.0	7.2	4.7	5.0	8.2	10.5	8	8	16	30	16	25	11	20
Korea	5.5	8.3	7.0	7.5	23.6	13.4	15	13	11	31	1	23	3	37
Malaysia	7.5	9.0	4.2	7.2	7.5	10.3	11	17	14	29	27	32	54	60
Middle income oil importers	6.1	6.4	5.5	5.1	7.9	6.6	12	14	21	27	19	21	14	22

Source: WDR, 1982.

Table 2.13: EXPENDITURE GROWTH
(% p.a., in constant 1972 prices)

	1970-79	1979	1980	1981	1982/a	1983/b	1979-83
<u>Consumption</u>	<u>7.1</u>	<u>7.7</u>	<u>4.2</u>	<u>4.1</u>	<u>2.5</u>	<u>5.9</u>	<u>3.9</u>
Private	6.8	6.2	4.8	3.2	2.5	6.1	3.8
Government	8.7	15.9	1.3	8.7	2.5	5.0	4.4
<u>Gross Fixed Investments</u>	<u>7.1</u>	<u>7.8</u>	<u>3.2</u>	<u>1.6</u>	<u>-6.6</u>	<u>11.5</u>	<u>1.3</u>
Private	7.2	10.2	-3.4	-0.1	-12.4	13.1	-2.2
Public	6.9	2.4	31.4	16.3	9.3	8.7	8.1
<u>Exports</u>	<u>7.5</u>	<u>9.9</u>	<u>6.5</u>	<u>13.1</u>	<u>15.8</u>	<u>0.0</u>	<u>9.4</u>
<u>Imports</u>	<u>6.3</u>	<u>19.6</u>	<u>-0.7</u>	<u>-0.2</u>	<u>-12.4</u>	<u>10.9</u>	<u>-1.8</u>

/a Preliminary.

/b Projection.

Sources: National Accounts, NESDB; short-term projections, BOT; and mission estimates.

adverse world and domestic economic conditions and it maintained high investment growth rates (31.4% in 1980, 16.3% in 1981 and 9.3% in 1982). This largely offset private investment reductions, so that gross fixed capital investment continued growing until 1982 when a substantial decline (-6.6) occurred (see Table 2.14). The increase in the ICOR since 1980 is therefore due largely to the heavy investment by the public sector in projects with long gestation periods (particularly in the energy, transport and communications sector; Chapter 4 below).

2.30 Gross domestic savings, which were typically shy of 21% of GDP in the 1975-77 period, improved to over 21% on average over the last four years because higher net private savings more than outstripped the decline in net public savings. As a result, the saving-investment gap and the matching gap between exports and imports, which peaked in 1979 (6.1% of GDP), gradually declined to 4.8% in 1981 and an estimated 0.5% in 1982 (Table 2.14). Public net savings declined as a percent of GDP since 1977, while public fixed investment continued to grow, yielding a higher public saving-investment gap. In 1977 public net savings covered nearly 40% of public fixed investment, but barely 13% in 1981. In 1982, public savings actually turned negative./1

/1 Chapter 4 below explores more fully the factors behind these public sector savings and investment trends, including the effects of adjusting public savings for depreciation and for the inflation effect on public foreign debt.

Table 2.14: EXPENDITURE SHARES
(as a % of GDP)

	1970-79	1979	1980	1981	1982/a	1983/b
<u>Consumption</u>	<u>76.6</u>	<u>75.6</u>	<u>75.9</u>	<u>77.3</u>	<u>77.7</u>	<u>77.8</u>
Private	65.9	63.5	63.9	65.1	64.9	65.3
Government	10.7	12.1	12.0	12.2	12.8	12.5
<u>Gross Fixed Investments</u>	<u>24.9</u>	<u>28.8</u>	<u>27.2</u>	<u>24.7</u>	<u>21.7</u>	<u>23.8</u>
Private	16.4	18.2	16.0	15.3	13.1	13.8
Public	6.5	7.7	9.8	8.7	8.8	8.9
Change in stocks	2.0	2.9	1.3	0.7	-0.2	1.2
<u>Domestic Savings</u>	<u>21.4</u>	<u>22.7</u>	<u>21.8</u>	<u>19.9</u>	<u>21.2</u>	<u>22.2</u>
Private(net)	11.6	13.5	13.4	11.3	13.5	14.0
Public (net)	2.6	1.7	1.0	1.1	-0.3	0.8
Depreciation	7.2	7.5	7.4	7.5	8.0	7.2
<u>Exports</u>	<u>20.3</u>	<u>23.7</u>	<u>24.5</u>	<u>24.9</u>	<u>24.7</u>	<u>23.5</u>
<u>Imports</u>	<u>23.9</u>	<u>29.8</u>	<u>29.9</u>	<u>29.7</u>	<u>25.2</u>	<u>25.2</u>
<u>Memo:</u>						
Private net saving/ investment gap	4.8	4.7	2.6	4.0	-0.4	-0.2
Public net saving/ investment gap	3.9	6.0	8.8	7.6	9.1	8.1
Resource gap	3.6	6.1	5.4	4.8	0.5	1.7

/a Preliminary.

/b Projection.

Sources: National Accounts, NESDB; short-term projections, BOT; mission estimates.

2.31 In the past decade merchandise imports volumes grew at 6.6% p.a., marginally slower than GDP. Their share in GDP in current prices, however, increased considerably from 19.5% in 1970 to 27.7% in 1979 due to unfavorable developments in import prices, especially oil prices. In the 1979-81 period prices of oil imports grew at 44.4% p.a., of nonoil imports 11.2% p.a., and of total merchandise imports 20.2% p.a., compared to export price inflation of only 9.3% and an increase in the GDP deflator of 12.6%. The share of merchandise imports in GDP in constant prices, however, fell by 1% in this period because of a decline in import volume (see Statistical Appendix Tables 2.8 and 2.10). This decline in import volume was particularly pronounced during 1982, when it is estimated to have amounted to 12.4% in response to the reduction in investment activity and draw-down in stocks.^{/1} The most dramatic shift in the composition of merchandise imports resulted from the change in oil prices. Before the first oil shock, oil imports accounted for only about 10% of total import value. This proportion increased to about 20% after the first oil shock, and further to 30% after the second oil shock. Increased domestic energy prices since 1980, however, have begun to exert a countervailing influence by limiting the growth in energy demand. Also, the development of domestic energy resources, in particular natural gas, has since 1981 permitted a reduction of oil imports (see Chapter 8 below). With the drop in international oil prices early in 1983, the oil import bill will also be favorably affected, in particular if these price changes are not fully passed on in terms of reduced domestic energy prices.

2.32 Merchandise exports substantially outperformed both GDP and import growth in real terms during the 1970s and thus reversed the pattern of the 1960s: exports of goods recorded 11.3% p.a. average volume increase, 1.6 times higher than GDP growth and 1.7 times higher than merchandise imports growth, since Thailand promptly responded to continuously strong world demand for its traditional exports and in addition managed to effectively penetrate new markets with manufactured exports. Thailand's impressive export growth performance is reflected in the fact that merchandise exports almost doubled as a share of GDP during the past decade, owing two-fifths of the change to traditional exports (agriculture and other primary commodities) and three-fifths to the expansion of manufactured exports. The structure of merchandise exports underwent considerable changes in the 1970s: Thailand evolved from an almost exclusively primary goods exporter (86% in 1970) into a much more diversified exporter; while agricultural goods still play the major role (60% in 1981), manufactured

^{/1} Analysis of quarterly import values by commodity groups indicates that capital goods imports and intermediate goods imports used in capital goods production led the decline in imports since mid-1981.

exports have emerged as an important contributor (30% of exports in 1981) (Table 2.15). After a relatively moderate export growth in 1978-80 period, Thailand resumed buoyant export performance with a 13.1% increase in 1981 followed by a 15.8% increase in 1982. Thailand's merchandise exports have also demonstrated considerable flexibility in responding to the changing world environment, and in particular to restrictive policies exercised by some countries (e.g. imposition of various import quotas and similar restrictions), by diversifying and deconcentrating: three major buyers (Japan, USA and Netherlands) now claim only just over 40% of Thai exported goods, since their share has decreased by 7 points during the 1970s, and a large number of small trading partners (with individual shares below 2.0%) combined now buy 38% of Thailand's merchandise exports, considerably more than in 1970 (22%).

Table 2.15: STRUCTURE OF MERCHANDISE EXPORTS
(in %)

	<u>1970</u>	<u>1981</u>
<u>Agriculture</u>	<u>71.0</u>	<u>59.4</u>
(Principal)	(62.0)	(50.3)
(Other)	(9.0)	(9.1)
<u>Nonagriculture Primary</u>	<u>15.0</u>	<u>7.9</u>
<u>Total Primary</u>	<u>86.0</u>	<u>67.3</u>
<u>Manufactures</u>	5.5	30.1
<u>Other</u>	8.5	2.6
<u>Total Merchandise Exports</u>	<u>100.0</u>	<u>100.0</u>

Source: NESDB and BOT.

2.33 Thailand enjoyed relatively stable terms of trade throughout the late 1960's. In the early 1970's they first dropped by 24% and then improved significantly, reaching a peak in 1973, before commencing a longer term downslide only briefly interrupted by minor improvements in 1978/79 (see Table 2.16). The dominant source of worsening terms of trade were declining export prices at times of continued world inflation (in 5 out of 13 years)

Table 2.16: TERMS OF TRADE EFFECTS

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Export price index (1966-70 = 100)	97.49	87.61	96.22	147.59	203.73	192.22	186.95	191.07	206.46	246.69	291.62	291.86	262.32
Import price index (1966-70 = 100)	97.76	115.22	114.67	126.68	207.79	220.47	232.51	250.06	269.63	311.76	387.12	443.27	468.29
Terms of trade index (1966-70 = 100)	99.72	76.04	83.91	116.51	98.05	87.19	80.41	76.41	76.57	79.13	75.33	65.84	56.01
Description:													
Declining export prices with rising import prices (+)	+	+				+	+						+
Faster growing import prices (x)					x			x			x	x	
Declining import prices with rising import prices (=)			-										
Faster growing export prices (#)				#					#	#			

/a Preliminary

or export prices growing more slowly than import prices (4 out of 13 years), whereas improvements in terms of trade were due to faster growing export prices with the exception of 1972 when import prices declined while export prices increased. Compared to average terms of trade in 1966-70, the terms of trade in 1982 had dropped by nearly half. It is clear that the terms of trade losses suffered since 1980 are the major underlying force explaining the slowdown in Thai economic growth in the 1970s and early 1980s when compared with the 1960s, and account to a large extent for the deterioration in the balance of payments since 1979. For 1983, terms of trade should improve, however, in response to improved commodity export prices and the lower international oil prices.

2.34 Balance of Payments and Foreign Debt. Thailand entered the 1970s with a 12.2 billion baht trade deficit (9% of GDP), but a much smaller 5.2 billion baht current account deficit (3.8% of GDP) owing to traditionally high surpluses in services and transfers. In the course of the 1970s the balance of payments position first improved before the first oil shock and stayed healthy through 1974 because of good export prices and sustained surpluses in the service account. This put off the pressure to adjust to the new world environment until 1975 when a number of unfavorable developments simultaneously occurred leading to a 12.4 billion baht current account deficit: export prices declined in nominal terms while import prices continued to grow, yielding a 15.8% deterioration of terms of trade in a single year; at the same time, surpluses on the service and transfer accounts suddenly diminished by a total of 4.5 billion baht (US\$220 million), largely as a result of the reduced U.S. military presence in the region. Partly unintended restrictive fiscal policies resulted in a reduced trade deficit and stabilization of the current account deficit at less than three percent of GDP in 1976. The Government then felt that the Thai economy had largely adjusted to the shocks of 1973/74 and directed its primary concern towards restoring high growth enjoyed in the 1960s as a means to achieving the objectives of the Fourth Development Plan. In doing so the Government opted for price and interest rate controls, increased levels of protection and expansionary monetary and fiscal policies. These policies provided substantial investment incentives for private sector investment, stimulated other components of domestic demand, boosted import demand and temporarily accelerated GDP growth, but failed to mobilize sufficient domestic resources and promote export growth: merchandise export growth decelerated after 1976 which, combined with fast growing imports, led to rapid increases in the trade deficits, the resource gap and the current account deficit in 1977 and 1979. These current account deficits were financed predominantly by a large decrease in reserves, by public medium and long term (MLT) borrowing and by private short-term borrowing.

2.35 In the most recent years these trends have gradually changed. The current account deficit dropped below 7% as a percent of GDP in 1980 and 1981, and fell to 3% in 1982 (Table 2.17). This was largely caused by the precipitous drop in import volume and continued rapid growth in export

Table 2.17: BALANCE OF PAYMENTS
(in \$ million)

	1979	1980	1981	1982/a	1983/b
<u>Trade Balance</u>	<u>-2,304</u>	<u>-2,829</u>	<u>-3,022</u>	<u>-1,674</u>	<u>-2,413</u>
Exports	5,235	6,448	6,902	6,848	7,022
Imports	-7,539	-9,277	-9,924	-8,522	-9,435
<u>Services Balance</u>	<u>158</u>	<u>544</u>	<u>284</u>	<u>381</u>	<u>491</u>
<u>Receipts</u>	<u>1,428</u>	<u>2,125</u>	<u>2,351</u>	<u>2,558</u>	<u>2,895</u>
(Workers' remittances)	(187)	(365)	(475)	(616)	(761)
<u>Payments</u>	<u>-1,270</u>	<u>-1,581</u>	<u>-2,068</u>	<u>-2,177</u>	<u>-2,404</u>
(Interest)	(554)	(728)	(1,026)	(1,082)	(1,150)
<u>Transfers (net)</u>	<u>60</u>	<u>208</u>	<u>169</u>	<u>177</u>	<u>283</u>
<u>Current Account Balance</u>	<u>-2,086</u>	<u>-2,077</u>	<u>-2,569</u>	<u>-1,116</u>	<u>-1,639</u>
<u>Memo:</u>					
<u>Current Account Deficit</u> (% of GDP)	7.7%	6.2%	6.9%	3.0%	4.0%
<u>Reserve Level /c</u>					
In US\$ million	3,100	3,026	2,721	2,674	
In months of imports	4.6	3.9	3.3	3.8	
<u>Foreign Debt as % of GDP /d</u>					
Public /e	14.9	17.4	21.9	22.9	
Private	10.4	12.3	15.8	18.7	
	4.5	5.1	6.1	4.2	
<u>Debt Service Ratio /d</u> (as % of exports <u>GNFS</u>)					
Public /e	14.9	15.4	15.6	17.6	
Private	4.9	5.5	7.3	8.4	
	10.0	9.9	8.3	9.2	

/a Preliminary.

/b Projection.

/c Foreign exchange plus gold valued at end of year London prices.

/d Medium and long term debt.

/e Public and publicly guaranteed.

Sources: National Accounts, NESDB; short-term projections, BOT; mission estimates.

volume. Despite the substantially worsened terms of trade, this led to an improvement in the trade balance. For 1983, the expected recovery in the economy and the end of the inventory adjustment which took place in 1982 will likely combine to produce a worse trade balance, which in turn will lead to an increase in the current account deficit to about US\$1.6 billion, or 4% of GDP.

2.36 In interpreting these trends in the current account deficit, it should be noted that the real resource transfer was substantially less than nominal current account deficits and the resulting nominal foreign borrowing rates might suggest. In an inflationary environment the annual real debt increase is lower than the rise in nominal debt, because the real value of outstanding debt is diminished each year by the rise in international prices. This results effectively in an amortization of debt over and above recorded amortization which can be added to the capital account of the country's balance of payments. In order to stay within the balance of payments accounting framework, an offsetting adjustment is made by reducing interest payments by an equal amount, thereby reallocating total debt service between the current and capital account, while holding its amount constant.^{/1} With such an adjustment, the current account deficit is reduced accordingly (Table 2.18). For Thailand, the net impact of the adjustment in recent years is that the adjusted current account deficit as a percent of GDP expanded at a much less rapid pace than did the unadjusted deficit, reaching a peak of just under 6% of GDP in 1979. However, in 1980 and 1981 this rate dropped to levels on the order of 4%. While still on the high side, these current account deficits indicate that Thailand had in fact begun a process of adjustment which has limited and reduced the real rate of increase in liabilities below the unprecedented rates experienced in the late 1970s. Another way of putting the same point is that during inflationary periods the inflation-adjusted current account deficit (reflecting the real resource transfer) is less than the nominal or unadjusted deficit would indicate. However, this also implies that as inflation abates, as it has done most recently, the inflation adjustment is also reduced and thus there is less of difference between nominal and real resource transfers. Therefore, under inflationary conditions higher nominal deficits will reflect the same real external balance (or imbalance) as a lower nominal deficit in noninflationary times.

^{/1} This also follows the notion that lenders are recompensed through higher interest rates for the loss in the real value of their assets due to inflation. However, this is strictly speaking the case only where inflation is accurately anticipated by the lenders. Nevertheless, from the country's perspective the procedure outlined in the text still provides an accurate assessment of the real change in the country's accumulation of net foreign liabilities.

Table 2.18: ADJUSTED /a CURRENT ACCOUNT

	1975	1976	1977	1978	1979	1980	1981
Gross Disbursement	453.8	519.0	663.3	1,286.0	2,058.0	2,384.6	2,250.6
Less: Change in real debt	<u>120.7</u>	<u>181.6</u>	<u>269.8</u>	<u>595.2</u>	<u>894.6</u>	<u>788.4</u>	<u>606.3</u>
Equals: Effective amortization	333.1	337.4	393.5	690.8	1,163.4	1,596.2	1,644.3
Less: Recorded amortization	<u>253.7</u>	<u>271.4</u>	<u>616.7</u>	<u>616.4</u>	<u>640.1</u>	<u>718.0</u>	<u>639.0</u>
Equals: "Amortization component of interest"	79.4	66.0	76.6	74.4	523.3	877.2	1,005.3
Plus: Real interest	<u>+24.2</u>	<u>+40.8</u>	<u>+48.8</u>	<u>+121.4</u>	<u>-201.6</u>	<u>-372.2</u>	<u>-319.5</u>
Equals: Recorded interest	103.6	106.8	125.4	195.8	321.7	505.0	685.8
Current Account Deficit	609.3	442.3	1,103.0	1,154.9	2,098.1	2,086.5	2,358.5
Less: "Amortization component of interest"							
Equals: Adjusted CAD	529.9	376.3	1,026.4	1,080.5	1,574.8	1,209.3	1,533.2
Memo: Adjusted CAD/GDP	3.6	2.3	5.3	4.7	5.8	3.6	4.2
Recorded CAD/GDP	4.1	2.7	5.7	5.0	7.7	6.2	6.9

/a Adjusted for inflationary impact on medium and long-term public and nonbank private debt.

Source: BOT; mission estimates.

2.37 These findings are also relevant to an interpretation of the rapid accumulation of foreign debt which has taken place in Thailand in recent years. By international comparison, the level of total external debt in Thailand is not unusually high (Table 2.19) and for the 1970s as a whole the average growth rate of Thai foreign indebtedness was similar to that in other developing countries over the same period (Table 2.20). Thailand has a low outstanding debt relative to GNP and an intermediate debt service ratio, a low interest service ratio, favorable roll-over ratio, and an average proportion of concessional loans. The weighted spread over LIBOR charged by commercial banks (0.59% in 1981) is among the lowest for developing countries. (Table 2.19)/1 These factors, combined with Thailand's continued good growth performance by international standards despite repeated external shocks have resulted in Thailand's good creditworthiness rating assigned by international money managers.

2.38 What distinguishes Thailand from most other developing countries is the time profile of borrowing during the last decade (Table 2.20). Many developing countries borrowed heavily in the early 1970s as access to international financial markets became widespread, global liquidity was high and real interest rates were low or even negative. By comparison, Thailand's growth in external debt was modest during the first half of the 1970s, partly due to the commodity price boom in 1974. After 1975, however, most oil importing countries had undertaken major adjustment measures to offset the impact of the first oil shock and responded to the substantial rise in real interest rates which began in 1978 by reducing the rate of increase in the growth of their external debt. By contrast, Thailand's external borrowing accelerated during this period, with peak rates of nominal growth of medium and long-term debt of almost 50% in 1979 and 1980, three times higher than in most of the comparator countries and coinciding with then record high nominal and real interest rates. As a result the ratio of debt to GDP more than doubled from less than 10% in 1974 to about 20% in 1981. Short-term debt also expanded rapidly since 1975, reaching some \$1 billion at the end of 1981./2 This recent trend of external borrowing, particularly with its insensitivity to rising real interest rates and volatile international capital markets might, if it were continued, lead to difficulties for Thailand akin to those currently faced by a number of other developing countries.

/1 The high average interest rate on new commitments from private creditors in 1980 is probably due to relatively greater reliance on commercial loans rather than supplier credits compared with other countries.

/2 Information on short-term debt (with maturity of one year or less) is notoriously unreliable, however. The figure in the text refers only to non-bank short-term debt.

Table 2.19: COMPARATIVE DEBT INDICATORS

	1980							
	Disbursed and outstanding debt/GNP/a	Debt /b service ratio	Interest /c service ratio	Roll-/d over ratio	% Con- cessional loans	Average interest rate on new com- mitments	1981 average spread	Euro- money /e ranking
Thailand	18.2	14.6	5.5	3.4	16.3	15.6	0.59	25
Malaysia	21.5	5.5	2.7	2.6	9.9	14.4	0.39	4
Philippines	23.9	12.6	6.9	4.2	13.2	14.7	0.89	37
Korea	29.0	12.7	6.0	2.4	16.8	14.0	0.64	29
Indonesia	27.3	12.7	5.3	2.0	41.9	12.8	0.51	13
East Asia	21.5	9.7	3.8	2.5	21.9	13.6	-	-
Middle income oil importers	22.2	19.5	8.5	2.3	8.7	n.a.	-	-
All LDCs	21.2	18.5	8.0	2.3	16.4	13.1	-	-

/a Public and private debt.

/b Debt service on medium- and long-term loans (including private non-guaranteed debt) divided by exports of goods and services.

/c Interest payments on medium- and long-term loans divided by exports of goods and services.

/d Disbursements of medium- and long-term loans divided by principal repayment on such loans.

/e Ranking by country risk rating for sovereign borrowers, including OECD countries, on the Euromarkets. Thailand is number 12 amongst developing countries. The risk rating is assessed by comparing the terms on country loans with general prevailing market conditions.

Source: Mission estimates.

Table 2.20: GROWTH IN EXTERNAL INDEBTEDNESS
(percent per annum)

	1971-80	1971-75	1975-80	1978	1979	1980	1981
Thailand	25.2	14.3	34.6	39.6	47.4	47.3	21.4
Malaysia	28.0	36.3	21.7	26.1	19.3	15.5	30.9
Philippines	19.6	13.4	26.7	22.9	15.3	16.6	20.6
Korea	23.5	24.2	22.9	30.1	21.8	16.8	23.6
Indonesia	20.2	31.6	11.8	11.4	1.4	10.4	6.0
East Asia	21.0	23.5	19.0	19.5	13.9	17.4	17.3
Middle income							
oil importers	23.0	24.8	21.6	27.2	19.8	15.4	16.7
All LDCs	20.8	22.3	19.6	24.6	13.9	14.3	16.0

Source: World Debt Tables; mission estimates.

2.39 However, as the earlier analysis showed, while in contrast to many other comparable developing countries nominal borrowing has increased rapidly in Thailand since 1975, the real resource transfers have been less than indicated by the nominal figures, and the rate of increase in the real value of foreign liabilities has been less rapid, due to the impact of high international inflation. What is more, the rapid increase in foreign liabilities during the late 1970s were mainly in support of a rapid expansion in investment activity, rather than of consumption. When substantial terms of trade losses began to add to the need for real resource transfers, starting with 1979 and accelerating through 1981, the Thai economy adjusted by reducing consumption and stabilizing investment, thus limiting the overall need for real resource transfers and leaving Thailand with an international debt position which is by comparison with many other oil importing developing countries still quite favorable. Overall, therefore, there appears no reason for concern about the current level of foreign indebtedness in Thailand, although a continuation of past growth in debt could eventually endanger Thailand's creditworthiness.

2.40 Thus it is the future growth of overall foreign indebtedness in Thailand which warrants some concern, as do the trends in the composition of foreign borrowing. The rapid growth in Thailand's external debt during the second half of the 1970s through 1981 is mainly attributable to the growth in foreign borrowing by the public sector. Outstanding public foreign debt grew at the very rapid rate of 43% p.a. between 1975 and 1981, while private sector debt increased by only 16%. The recourse to external borrowing

during a period of rapidly rising international interest rates in 1977-79 appears undesirable, since it in effect permitted, as well as resulted from an expansion of recurrent expenditure of General Government without commensurate increases in revenues, and permitted a substantial reduction in the share of state enterprise investments financed by internally-generated resources. Moreover, the financing of rapidly increasing public investments from substantially expanded transfers from the banking sector during 1980-81, facilitated by credit creation by the Central Bank and accompanied by concomitant foreign exchange reserve losses, is a costly way of financing public investments, in particular if domestic public resource mobilization continues to fall, as indeed it did during this period. The problem which Thailand now faces is that the public sector's heavy reliance on foreign resources and on the domestic financial system since 1977 cannot continue indefinitely without endangering the external creditworthiness of the country or without imposing constraints on private sector liquidity and running the danger of displacing private investment. The world recession and high interest rates have temporarily dampened private sector demand for funds and thus in fact produced the adjustment in the real (adjusted) current account which was identified above (para. 2.36) for the years 1980 and 1981 and continuing into 1982. However, should a rapid recovery materialize and stocks start to be rebuilt again, pressure on the banking system could become acute, if the public sector were to continue drawing so heavily on it. In order to avoid a crowding out of private investment, greater external borrowing, increased domestic public resource mobilization or reduced public investment growth would be required. Some reliance on external public borrowing continues to be appropriate, but at rates of increase below those of the recent years, requiring in effect an increased public sector resource mobilization effort through higher taxes and user charges, and a careful setting of public sector expenditure priorities.

2.41 It is of course possible in principle to justify a rapid expansion of public investment and foreign borrowing either on the grounds that this served as a counter-cyclical response to deteriorating private demand conditions in 1980 and 1981 following the onset of the international recession, or on the grounds that the public sector in Thailand had under-invested in the past and needed to catch up, particularly in view of the required structural adjustment after the second oil shock, thus resulting in very high returns to public sector investments. The first justification using a counter-cyclical policy argument is, however, negated by the fact that most of the additional borrowing since 1977 was concentrated in a few capital and import intensive activities, in particular substantial borrowing for investments in power generation and distribution, natural gas development, civilian aircraft purchase and military purchases, all of which have low domestic income and employment multipliers. Jointly these activities accounted for some 50% of total public foreign borrowing in 1981. The second justification, citing substantial investment opportunities, is more difficult to assess accurately. On a case by case basis, there can be

little doubt that the increase in oil prices during the 1970s, combined with the discovery of natural gas resources in Thailand, justified substantial investments in the energy sector, although with hindsight some of these investments may have turned out to be less profitable than expected due to the slower than projected growth in demand for power and because of the lower gas availability and greater gas extraction costs than expected. However, in permitting the simultaneous and uncoordinated rapid expansion of public investments in many other sectors during the Fourth Plan period (with the exception of the social sectors), little attention appears to have been given to the rapidly rising cost of foreign borrowing, to the longer term implications for Thailand's international creditworthiness, or to the implications for internal and external financial stability resulting from the drop in the share of the public investments financed by public savings and the concomitant rise in transfers from the banking sector. The Government is, however, moving now to increase public savings and to develop its capabilities for improved management and programming of public investment and foreign borrowing. This is more fully explored in Chapters 4 and 5 below.

2.42 More generally, with much lower rates of international inflation now and for the immediate future (compared with the late 1970s and into 1981) nominal rates of borrowing abroad (and thus by implication the current account deficit) must be scaled back if real resource transfers are to remain unchanged (see para. 2.36 above). A more cautious approach to (nominal) balance of payments management and foreign borrowing is therefore now required than was the case in recent years when actual and expected inflation rates were much above present levels. This is further explored in the next chapter which considers the medium term economic outlook for Thailand and the appropriate macro policy approach.

3. ECONOMIC PROSPECTS FOR THE 1980s

3.01 Worldwide the decade of the 1980s began under inauspicious signs pointing towards more difficult economic times ahead. Any expectations for a quick and easy adjustment to the second oil shock were quickly dispelled by a deepening recession in the industrialized countries, a serious slowdown in the growth of international trade, rapid increases in the real rates of interest and increasing tightness in international capital markets as international commercial lenders became significantly overexposed in a number of large borrower countries. With Thailand's increased openness and interdependency with international economic developments, fluctuations in export demand, commodity prices, terms of trade, and international capital market conditions were exerting a more decisive influence in shaping Thai domestic development than ever before. The adjustment to the second oil shock was assessed in the preceding chapter, which concluded that, while Thailand experienced difficulties like most other countries, its overall performance during these difficult years has, as in the past, been above average. What is more, the Government responded vigorously to the challenge posed by the international environment in its efforts to design and implement policies and programs in support of structural adjustment. This chapter reviews briefly the Fifth Plan, which contains the basis for, and major elements of, the Government's strategy to deal with Thailand's development problems in the 1980s. The chapter then provides a broad and indicative assessment of Thailand's economic outlook for the 1980s.

The Fifth Five-Year Plan: Objectives and Policies

3.02 In September 1981 the Cabinet approved the Fifth National Economic and Social Development Plan covering the period October 1981-September 1986. The final plan document, prepared by NESDB and major public sector line agencies on the basis of the plan outline agreed upon early in 1981, benefited greatly from the experience gathered during the past two decades of planning for social and economic development in Thailand. It addresses difficult issues the country currently faces and will likely encounter in the future.

3.03 Major Plan Objectives and Concerns. According to the Plan, rapid economic growth in the second half of the 1970s was supported by government policies often insufficiently sensitive to the difficult external environment and poor world economic outlook. Coupled with a lack of adjustment necessitated by the first oil shock, these resulted in a deterioration of Thailand's economic and financial stability during the Fourth Plan period. Increased domestic and external financial imbalances, a possible slowdown of economic growth in the medium and longer run, and a weak institutional framework were identified as weakening the country's ability to cope with outstanding development issues, in particular the redressal of

poverty in rural areas, the reversal of regional imbalances, and the required improvements in provision and distribution of social services. Concern was also expressed about the deteriorating land and forest resources and the stability of the country's social structure. Causes for these problems were seen not only in the greatly disturbed world economy and the country's slowness in responding to it with appropriate adjustment policies, but also in continued pursuance of once successful, but now increasingly inadequate growth promotion policies which sought to maximize growth in the short run with little attention paid to financial viability, distortions in incentives, and distributional and regional considerations. As a result growth was mainly concentrated in Bangkok and the Central region causing widening regional income disparities, slower eradication of poverty, inefficient use of natural resources, urban congestion in Greater Bangkok, social tensions from higher concentration of ownership and wealth, and a continuation of security problems in outlying areas partly exacerbated by unstable political developments in neighboring countries.

3.04 In response to the external and domestic challenges the Government formulated a set of interrelated development objectives and policies in the Fifth Plan designed to simultaneously address structural adjustment needs and broader issues of the development process. The Plan document lists the primary concerns as: firstly, restoration of the country's economic and financial position (i.e., reduction of domestic and external gaps to sustainable levels); secondly, structural adjustment, increased economic efficiency, and balanced regional growth; thirdly, completion of social infrastructure and more equal distribution of social services; fourthly, poverty alleviation in general and particularly in backward areas with high concentration of population below the absolute poverty line; fifthly, improvement in national security through better coordination between general development efforts and security management; and sixthly, institutional (development administration) reform and deconcentration of ownership and wealth. Stated differently, the substance of Fifth Plan objectives is to achieve stability (economic and financial, domestic and external), equity (financial, economic, social and regional), and security. Economic growth of the appropriate kind and magnitude is seen as a derived objective which will be pursued to the extent allowed by the world environment without endangering the fulfillment of the Plan's primary objectives.

3.05 Major Policy Thrusts of the Plan.^{/1} The Government aims at reconciling these objectives over the five-year period of the Plan mainly through a medium-term structural adjustment of the economy, including fiscal efforts to balance the public sector revenues and expenditures, and, for the longer run, accompanied by a redirection of economic and social development endeavors, and by reform of development administration institutions. The

^{/1} The details of the Plan's policies and programs are further reviewed in subsequent chapters.

structural adjustment program, which has already been initiated in many areas, with support of World Bank structural adjustment loans (SALs), is expected to develop appropriate production and investment incentives, increase efficiency and improve competitiveness of key economic sectors in both international and domestic markets. The prime sectoral focus will be on agriculture, industry and energy. In agriculture, significant improvements are sought in the areas of land use and land ownership, technical and financial services, farm productivity, prices, farmers' organizations, and investment incentives for agriculture and agro-related industries with the goal of increased yields and sustained high agricultural growth. Improvements in the protection, investment and export promotion regimes are expected to yield a major transformation of the industrial sector in both size and composition, and transform Thailand into a semi-industrial country with an adequate mix of exporting and import-substituting industries and more dispersed locational patterns. Exploration and extraction of domestic energy sources and energy conservation will be pursued to decrease the country's dependence on foreign oil and susceptibility to volatile world markets. The Government's effort in the fiscal area is to be integrated with the structural adjustment process to the extent that: (a) some vital dimensions of sectoral stability and viability, particularly in the energy sector, cannot be accomplished without a sound and efficient public sector; and (b) restoration of external economic and financial stability crucially depends on success in reducing public sector deficits to manageable levels in the medium run.

3.06 Although structural adjustment policies and programs will reflect the country's concerns for poverty, locational aspects of industry and general economic activity, and regional income disparities, a number of special programs are to be implemented emphasizing the Government's commitment to more balanced growth and equity in the development process. In these areas the Plan stresses measures to further reduce the country's population growth rate; expand the quantity and quality of compulsory education at the primary and lower-secondary levels; emphasize basic health care services involving the development of a network of village health volunteers; and develop a rural poverty eradication plan, designed to assist designated poverty districts through improved education and training, basic health services, and support for productive activities suited to the specific conditions and household needs prevailing in each poverty district. In the institutional area, the Plan emphasizes reform to improve coordination, planning, budgeting, and personnel management practice in the Central Government; reform of development administration at the regional and local levels aiming to decentralize authority and to promote local participation in public decision making; and improved collaboration between the private and the public sector.

3.07 To the extent that the needs in these areas were urgent and the remedies clear on the basis of prior analysis and action plans, the Government moved on them immediately during the first year of the Plan. In agriculture, guidelines were set on land use and land rights policy, a five-year program for land reclassification was developed, and the land reclassification process designed to improve security of land tenure is well underway. Moreover,

important measures were taken to rationalize Government interventions in agricultural marketing, taxation and pricing. In industry, important first steps were taken in narrowing the tariff band and in furthering subsectoral reform of protection in selected areas (especially electrical goods and automobiles). In addition, a decision was taken to initiate reforms in the investment incentive structure, biases against exports were removed, and large scale industrial investment projects were subjected to careful review and assessment. Important steps were also taken to liberalize the interest rate regime. In the energy sector, major price adjustments had already been made before the beginning of the Fifth Plan period and the Government continued with its vigorous support to develop domestic energy resources, especially natural gas. In the fiscal area, substantial tax packages were implemented aiming to increase public resource mobilization, tax administration improvements were actively promoted, and public expenditures, including the Central Government budget and major state enterprise investment programs, were subjected to scrutiny, resulting in selected cutbacks or rephrasing of originally planned expenditures. In the institutional area, major reforms of the Central Government budgeting system are being implemented and improved planning and programming procedures are being developed. The rural poverty eradication program is under implementation and first steps have been taken in the redirection of social services. In addition to this progress over a wide front, the Government has initiated policy studies in areas where significant preparatory action is needed. This includes, in particular, preparation for further action in agricultural and industrial incentives, energy prices and development strategy, and selected issues of institutional and fiscal reform. Overall, progress has been quite remarkable during the Plan's first year, as will further be documented in the remainder of this Report. Subsequent chapters will also provide some indication of the remaining challenges for the Fifth Plan and beyond./1

3.08 The Plan's Macroeconomic Scenario. The macro targets and projections initially incorporated in the Plan are summarized, and compared with previous periods, in Table 3.1. According to the Plan's projections, by 1986 the current account deficit would be reduced somewhat in absolute terms (to about \$2 billion), but it would be reduced by two-thirds in relative terms, to 2.4% of GDP, a level which would be sustainable in the long term. This improvement would be the result of a continued high real export growth at a rate of about 11% p.a., combined with a significant reduction in real import growth, to about 7% p.a. The export growth would be contingent on successful structural adjustment in agriculture (mainly based on improved incentives) and in industry (based on efficiency improvements). The reduction in import growth would be related mainly to stagnant or even falling energy imports. In terms of the saving-investment balance,

/1 See also Second Structural Adjustment Loan, Report No. P3481-TH, March 10, 1983, for further details on the Government's past implementation of its structural adjustment program and planned further steps.

the improvement would be located predominantly in public sector savings, as a result of a large increase in Central Government revenue mobilization. There would be a moderate reduction in the overall growth rate, but growth would still continue at a rate of about 6.5% p.a., quite respectable by international standards. Provided that the structure of this growth was appropriate, and that special, but not necessarily very costly, measures were taken to assist backward areas, where most of the poverty is concentrated, this scenario was, in the Government's view, consistent with continued progress in the alleviation of poverty.

Table 3.1: FIFTH PLAN MACRO-ECONOMIC PROJECTIONS

	Actuals 1976-81	Projections 1981-86	
A. Growth Rates of Constant			
<u>Price Aggregates (%)</u>			
GDP at market prices	7.1	6.5	
Private consumption	5.5	4.8	
Public current consumption	10.1	7.9	
Total investment in fixed assets	10.0	6.4	
Exports (GNFS)	11.0	10.9	
Imports (GNFS)	9.1	7.2	
	<u>Actuals</u>	<u>Projections</u>	
	1976	1981	
B. Ratios to GDP (%)			
Investment	24.9	24.7	29.4
National savings	22.2	17.8	27.0
Current account deficit	2.7	6.9	2.4
Government revenue	12.9	14.6	18.0

Source: NESDB.

Medium Term Prospects 1983-90: The Central Case

3.09 Two years have passed since the formulation of the Fifth Plan economic projections. During this period significant changes have occurred in the world economic environment which have left their impact on the Thai economy. In particular, as detailed in Chapter 2 above, the worldwide recession was deeper and more prolonged than had been anticipated, and as a result economic growth in Thailand during the first two years of the Fifth Plan has been significantly below the levels originally projected. With an economic recovery underway in mid-1983, both in Thailand and in the rest of the world, growth in Thailand is expected to resume for the remainder of the Fifth Plan period and into the Sixth Plan period, albeit at rates below the historical growth rates of the 1960s and 1970s. At the same time, with continued implementation of policies aimed at structural adjustment, internal and external financial balance should be fully restored by the end of the Fifth Plan period, even though the current account deficit is expected to rebound in 1983 and 1984 from the cyclical low experienced in 1982.

3.10 The major elements of the Mission's projections for the Thai economy for 1983-90 are summarized in Table 3.2. These projections were derived using the World Bank's SIAM 1 macro-economic model^{/1}. They reflect actual developments through 1982, based on revised national accounts data for 1981 and preliminary national accounts data for 1982. For 1983, short-term projections of the Bank of Thailand as of April 1983 were incorporated. From 1984 onwards developments were projected on the basis of the following main assumptions:

- (a) External environment:^{/2} Export demand for Thai industry is projected to grow at 14% p.a. in volume terms, and for services at 13% p.a. These rates are above the export growth rates projected in WDR 1983 for all developing countries on the assumption that Thailand will retain its competitive edge in international markets, provided implementation of reforms aimed at increasing the competitiveness of Thai industry and exports is continued. International prices for exports and imports (except energy) are assumed to grow at 6% p.a., with energy prices growing at 8% p.a. for 1984-90.

^{/1} For a description of this model, see Annex I of Thailand: Coping with Structural Change in a Dynamic Economy (World Bank, Report No. 3067a-TH, December 23, 1980).

^{/2} These assumptions incorporate the central case scenario in World Development Report 1983.

Table 3.2: MACRO-ECONOMIC OUTLOOK, 1982-90
(in percent)

	1979-83 /a	Projection	
		1982-86	1986-90
<u>Annual Growth Rates (constant prices)</u>			
GDP at market prices	5.4	5.7	6.2
Private consumption	3.8	5.2	5.8
Public consumption	4.4	5.0	5.0
Investment	1.3	9.1	6.0
Exports GNFS	9.4	6.2	7.8
Imports GNFS	-1.8	7.7	6.1
Agricultural production	3.2	4.0	4.0
	<u>1981</u>	<u>1986</u>	<u>1990</u>
<u>Ratios to GDP (current prices)</u>			
Investment	24.7	24.4	24.2
National savings	17.8	21.8	23.6
Current account deficit	7.0	2.6	0.6
Government revenue /b	14.6	17.1	17.5
<u>Memo</u>			
Debt service ratio	15.6	18.4	17.0
Terms of trade (1981 = 100)	100	103	101

/a BOT projections for 1983.

/b Central and local government revenues.

Source: Mission estimates.

(b) Agriculture: Agricultural value added is assumed to grow at 4% p.a. between 1983 and 1990. This represents a slowdown from the historical growth rate of about 5% in the preceding two decades, but is based on the assumption that some expansion of land area cultivated will occur during the 1990s, accompanied by aggressive and effective policy measures designed to increase yields and productivity in agriculture. /1

/1 Note, however that agricultural growth for the period 1981-86 is projected at only 3.2% p.a., given the low growth rate in 1982 as a result of unusually good harvests in 1981 and poor weather and commodity prices in 1982.

- (c) Investment: Investment is expected to rebound in 1983 from the unusually low levels in 1982, with a 6% p.a. growth from 1984 onwards. This is below the average levels of about 7% in the 1970s, but is compatible with higher real rates of interest projected for the 1980s as compared with the 1970s, and with a more cautious stance on public investments adopted by the Government as part of its structural adjustment program.
- (d) Government revenues: Effective tax rates are assumed to increase from 1984 to 1986 as a result of improved administration and selected reform measures in the tax structure so as to increase General Government revenues to 17% of GDP by 1986 (see Chapter 5 below).
- (e) Domestic prices: Domestic factor prices are assumed to rise in line with international prices (6% p.a.) as has been the experience in the past (see Chapter 2 above).
- (f) Energy: Imports of petroleum products are assumed to remain roughly constant in volume terms through the 1980s as a result of domestic energy resource development and conservation efforts, including adjustment in domestic energy prices in line with international prices from 1984 onwards (see Chapter 8 below).
- (g) Foreign borrowing terms and reserve levels: Average borrowing terms for Thailand from commercial sources are assumed to carry a 10% nominal rate of interest with five years maturity for nonguaranteed private debt. Longer maturities (8-20 years), but similar interest rates are assumed for nonconcessional public and publicly guaranteed foreign borrowing. International reserves are assumed to remain at a level equivalent to about three months worth of imports.

3.11 Based on these assumptions, Thailand's GDP is projected to grow at 5.7% between 1982 and 1986, and at a rate of 6.2% thereafter (Table 3.2). The slower initial growth rate during the remainder of the Fifth Plan period is due to the restrictive impact of the ambitious tax policy aimed at raising General Government revenues to about 17% of GDP by 1986. The relatively high investment and import growth rates for 1982-86 reflect the rebound in investments and imports in 1983 from the unusually low levels in 1982. Export growth, after a rather poor performance in 1983 (thus pulling down the average for 1982-86), is projected to reach 7.8% p.a. after 1986, a rate comparable to the average rate of export growth in 1970-79. With investment stabilizing at about 24% of GDP, but a substantial increase in national savings from 18% in 1981 to about 22% in 1986 and to over 23% in 1990 (mainly as a result of substantial public revenue mobilization efforts), the current account deficit is projected to fall to 2.6% in 1986 and to below 1% by 1990. As a result, the debt service ratio would continue to rise from its 1981 level of about

16% to reach 19.5% in 1988, but then would drop to 17% in 1990. The domestic price level would increase at about 6% p.a., while the terms of trade, after rebounding in 1983 from their severely depressed levels in 1982, would decline slowly reflecting the growth in real energy prices assumed for the second half of the 1980s.

3.12 These projections assume that the Government continues its structural adjustment efforts, in particular those aimed at rapid agricultural intensification, competitive Thai exports, stabilization of energy imports, and improvements in the public saving-investment balance. The primary measures and their expected effects are the following: In agriculture, reduced reduced export taxation and market regulation, as well as the reclassification of forest reserves suited for cultivation will, other things being equal, improve incentives to the farmers, stimulate production and thereby increase the availability of exportable agricultural products. In industry, removal of taxation on exports and a move in the trade and investment incentive structure towards strengthening Thailand's comparative advantage can be expected to make Thai manufactured exports more effective in penetrating existing foreign markets, developing new markets abroad for its manufactured products, and possibly moving into new export product lines. In energy, the large domestic price increases for petroleum products and electricity over the past years have resulted in significant reductions in the growth of energy demand, while continued investment in domestic energy resource development, especially natural gas, is expected to make substantial contributions to meeting domestic energy needs. Improved tax administration, selected tax measures, and increased state enterprise savings resulting from more efficient management and cost-conscious pricing policies would increase public sector resource mobilization, while a cautious public expenditure policy during the Fifth Plan period, especially as regards state enterprise investment, would limit the rate of growth of public consumption and investment. The specific dimensions of policy intervention in these four areas (fiscal, agriculture, industry and energy) are further explored below in Parts II and III.

Medium Term Prospects: Alternative Scenarios

3.13 Two major sets of factors determine the medium-term outlook for the Thai economy: domestic economic policies and international economic developments. The impacts of alternative policy interventions on macro-economic development in Thailand were explored in detail in the World Bank's last economic report.^{/1} Here only two alternative policy scenarios are simulated: one in which no structural adjustment efforts are made, and another in which all structural adjustment policies are pursued, except for fiscal measures. In addition, the likely impact of alternative international

^{/1} Thailand: Coping with Structural Change in a Dynamic Economy (Report No. 3067a-TH, December 1980).

economic development scenarios is explored through separate simulations. The importance of the latter simulations derives from two factors: First, the international economic prospects for the 1980s remain highly uncertain; and second, Thailand has, over the last two decades, become an increasingly open economy (see Chapter 2 above) and thus is now substantially influenced by international economic developments.

3.14 Impact of Policy Interventions. Given an international environment roughly comparable to the one assumed in deriving the macro-economic projections for Thailand outlined in the preceding section (para. 3.10), the importance of a continued structural adjustment effort can be demonstrated by comparing illustrative "without" and "with" structural adjustment simulations.^{/1} Under the "without" scenario it is assumed that no substantial new measures are taken to improve industrial exports, agricultural production, energy imports and public savings. The simulation results reported in Table 3.3 show, as compared to the "with" case, a substantial slowdown in economic growth, together with a renewed deterioration in the balance of payments and unsustainable rise in the debt service ratio. Without structural adjustments, this would have to be compensated by strict demand management, leading to further losses in growth momentum and incomes.

3.15 Assuming the type of measures broadly identified above in para. 3.12 are in fact implemented except for the fiscal policy measures, the simulation in Table 3.3 reflecting a "passive" fiscal policy stance provides some indication of the role of fiscal intervention. Under the "passive" fiscal policy regime, no increase in revenue mobilization is assumed to take place, leaving General Government revenue unchanged in relation to GDP (at about 14%), while state enterprise expenditures are assumed to grow at rates as programmed by the authorities in August 1982, before decisions were taken to reduce state enterprise investments during the remainder of the Fifth Plan period. Under this scenario, current account deficits would have remained above 3% of GDP throughout the 1980s. As a result the debt service ratio would have increased to almost 22% in 1986 and to 30% in 1990. The public sector deficit remains substantial under this scenario at about 9% of GDP, only marginally reduced from the high level of 10% in 1981. General Government and state enterprises would contribute in roughly equal proportions to the overall shortfall of public savings in relation to public investment.^{/2}

^{/1} The simulations reported in the following paragraphs are based on WDR 1982 projections for the world economic outlook and on data available for the Thai economy as of mid-1982. While these simulations are thus not directly comparable to the projections reported in the preceding section, they provide a good indication of the direction and order of magnitude of changes induced by alternative assumptions regarding policy interventions and the international economic environment.

^{/2} For details, see Chapter 5, especially Table 5.18.

Table 3.3: IMPACT OF POLICY INTERVENTION, 1982-90

	"Without" structural adjustment policies		"Passive" fiscal policy /a		Full structural adjustment policies /b	
	1982-86	1986-90	1982-86	1986-90	1982-86	1986-90
<u>Growth Rates</u>						
GDP at m.p.	5.0	4.5	5.7	5.5	5.2	5.5
Private consumption	4.6	3.9	5.3	4.9	4.6	4.9
Public consumption	5.0	5.0	5.0	5.0	5.0	5.0
Investment	6.9	6.0	6.9	6.0	6.4	6.0
Exports GNFS	4.8	4.9	6.4	6.8	6.9	6.8
Imports GNFS	5.6	4.9	6.2	5.7	6.2	5.7
Agricultural production	3.2	3.0	4.0	4.0	4.0	4.0
	<u>1986</u>	<u>1990</u>	<u>1986</u>	<u>1990</u>	<u>1986</u>	<u>1990</u>
<u>Ratios to GDP</u>						
Investment	26.8	28.6	26.1	26.8	26.2	26.9
National savings	22.1	22.6	22.5	23.6	23.7	25.1
CAD	4.7	6.0	3.6	3.2	2.5	1.8
Government revenue	14.2	14.5	14.2	14.4	17.2	17.5
<u>Memo</u>						
Debt service ratio	24.5	42.7	21.8	29.2	17.9	19.9

/a Assuming structural adjustment policies, but "passive" fiscal policy.

/b Assuming structural adjustment policies, including fiscal intervention.
See para. 3.14 (footnote) for explanation of differences with Table 3.2.

Source: Mission estimates.

3.16 A "passive" fiscal policy stance therefore would likely have yielded an outcome in which internal and external imbalances would have remained a serious problem for the Thai economy. The Mission therefore recommended a more active fiscal policy, as indeed the Government is planning to pursue as part of its structural adjustment program. Based on the analysis summarized in Parts II and III below the Mission concluded that a combination of higher public revenue mobilization and reduced state enterprise investments for the Fifth Plan period than assumed in the "passive" fiscal policy scenario is appropriate both on macro-economic and sectoral grounds. In contrast, an across-the-board reduction in the growth

of General Government expenditure was judged to be undesirable because of the already limited past and projected future expenditure growth for the important services provided by the Central Government, in particular education, health, agricultural and rural development, and highway construction and maintenance. An increase in the General Government revenue/GDP ratio to about 17% (16% for Central Government) through selected tax rate adjustments and administrative improvements, and a reduction by 8% in the total state enterprise investment program (reflecting cancellation or postponement of marginal projects) for the Fifth Plan period represents the order of magnitude of fiscal policy required to bring about internal and external financial balance. As a result of these fiscal interventions, the public sector deficit would drop to about 6% of GDP by 1986 (compared with 10% in 1981). Much of this improvement would be due to the improved savings performance by General Government, as the ratio of state enterprise investment to GDP would stabilize (under "passive" fiscal policy it would increase further), when compared with 1981 (see Table 5.18 below). As a result of these fiscal measures, GDP growth would be somewhat reduced compared to the "without" case but the current account deficit in relation to GDP would improve considerably (Table 3.3). As a result, the debt service ratio would stabilize at just under 20% by 1990. In sum, continued structural adjustment policies, including an active fiscal policy stance as outlined above, are important for Thailand's medium term growth performance, its domestic and external financial stability, and its international credit-worthiness.

3.17 Impact of Changes in the International Environment. Based on alternative WDR projections two additional scenarios were simulated, reflecting, on the one hand, a more pessimistic international outlook than assumed before, and a more optimistic outlook on the other. In the pessimistic scenario it is assumed that worldwide recession continues in 1984, with slow world production and trade growth beyond, low inflation, high real interest rates and deteriorating terms of trade for developing countries. For the optimistic case, fast recovery in the world economy is postulated for 1983 and rapid world economic growth thereafter; world trade is assumed to recover quickly, as do the terms of trade for developing countries; inflation is higher, but real interest rates drop. In line with the different conditions for export demand and prices under the alternative international scenarios, Thailand's investment and agricultural production growth rates are assumed to be lower in the pessimistic case, and higher in the optimistic case (see Table 3.4)./1

/1 Both scenarios as shown in Table 3.4 also assume a "passive" fiscal policy as defined in para. 3.15 above, but structural adjustment policies in all other areas. For the reasons indicated in para. 3.14, they are comparable with each other, but not directly with the central case projection shown in Table 3.2 above.

3.18 Under the pessimistic scenario, there would be only very limited scope for rapid growth of Thai exports, although they would still perform better than for other developing countries. Domestic sources of growth would also be weaker with investment and agricultural production at growing less rapidly. As a result, GDP growth would slow down to below 5% p.a., while the current account deficit would remain at almost 4% of GDP, and the debt service ratio would climb beyond 30% by 1990. One source of adjustment under these circumstances could be a spontaneous stagnation of private investment in the face of poor demand and capacity utilization, further depressing growth. Substantial fiscal adjustment would, however, also likely be required to achieve external balance, since public sector deficits would be major contributors to the overall saving-investment gap. In particular, public consumption and investment would have to be curtailed even further than postulated under the full structural adjustment case in Table 3.3 above.

3.19 Under the optimistic scenario, by contrast, Thailand's GDP would grow at a rate of some 7%. This shows that if international conditions were to return to those prevalent during the 1970s and even better, Thailand's growth performance in the 1970s would also recover to a level similar to or better than that during the 1980s. As a result of improved public and private savings, but a roughly unchanged ratio of investment to GDP, the balance of payments on current account would improve substantially. The resulting decline in foreign borrowing requirements, combined with more buoyant export growth, would lead to a reduction in the debt service ratio by 1990 below its level in 1981. These very favorable results might be offset in part by an even more rapid growth in private investment than is assumed in Table 3.4, in response to the more favorable expectations of investors. In addition, however, this environment would permit, and very likely require, more rapid growth in public investments (in power, telephones, water supply, as well as other public services) in response to the higher level of economic activity and incomes generated under the optimistic scenario. Therefore, and also in order to ensure budgetary stability for the Central Government and adequate cost recovery among state enterprises, improved public resource mobilization would remain an important policy priority even under this scenario, as would other structural adjustment measures in the agriculture, industry and energy sectors (which have been assumed on all these scenarios).

Table 3.4: SIMULATION OF CHANGES IN THE WORLD ENVIRONMENT, 1982-90 /a

	Alternative International Scenarios					
	Medium		Pessimistic		Optimistic	
	1982	1986	1982	1986	1982	1986
	-86	-90	-86	-90	-86	-90
<u>Growth Rates</u>						
GDP at m.p.	5.7	5.5	4.9	4.8	7.1	7.5
Private consumption	5.3	4.9	4.6	4.4	6.6	6.9
Public consumption	5.0	5.0	5.7	5.3	4.2	3.6
Investment	6.9	6.0	5.4	5.0	7.9	7.5
Exports GNFS	6.4	6.8	4.3	4.6	8.9	9.9
Imports GNFS	6.2	5.7	4.7	4.1	7.1	7.0
Agricultural production	4.0	4.0	3.5	3.5	4.5	4.5
<u>Ratios to GDP</u>						
	<u>1986</u>	<u>1990</u>	<u>1986</u>	<u>1990</u>	<u>1986</u>	<u>1990</u>
Investment	26.1	26.8	25.5	25.9	25.8	26.2
National savings	22.5	23.6	21.8	22.2	23.9	26.5
CAD	3.6	3.2	3.7	3.7	1.9	-0.3
Government revenue	14.2	14.4	14.4	14.5	14.4	14.5
<u>Memo</u>						
Debt service ratio	21.8	29.2	22.4	33.1	17.1	13.5

/a All runs assume continuation of structural adjustment policies, but a "passive" fiscal policy. For the reasons given in para. 3.14 (footnote) they are not directly comparable with the projections in Table 3.2.

Source: Mission estimates.

3.20 An example of the impact of changes in expected external circumstances may also be seen in a comparison of Tables 3.2 and 3.3 above. The somewhat better outlook for the Thai economy projected in Table 3.2 compared with the outlook shown in the last column of Table 3.3 above, especially after 1986, results directly from the improved outlook for the world economy which is found in WDR 1983 when compared with WDR 1982. Despite this improvement, however, uncertain as it remains, structural adjustment continues to be of major importance for the Thai economy.

Thailand's Economic Prospects for the 1980s: Issues, Trade-offs, and Uncertainties

3.21 The attempt in the preceding sections to quantify the likely economic prospects for Thailand during the remainder of the 1980s, and the implication of alternative assumptions regarding world economic recovery and domestic policy interventions raises a number of issues and identifies some important trade-offs. It also remains subject to a number of uncertainties which were not explicitly addressed through the model framework but are important to an understanding of the implications and limitation of the discussion in the preceding sections. The concluding paragraphs in this chapter briefly summarize the major issues and trade-offs apparent from the macro-economic scenarios outlined above, and highlight some of the more important uncertainties surrounding the analysis.

3.22 Slow-down in Economic Growth. An important conclusion of the preceding analysis is that a further slowdown in economic growth in Thailand as measured by GDP growth is to be expected for the 1980s, when compared with the 1970s, and even more so in comparison with the 1960s. Equally, important, however, are a number of qualifications to this finding: first, much of this slow-down is due to the relatively poor performance of the international economy, when measured by the standards of the last two decades. If the world economy were to rebound vigorously, Thailand could similarly re-establish its excellent historical economic performance, provided it maintains a policy framework of structural adjustment. Second, compared with the recent years (1979-82), the outlook for income growth adjusted for terms of trade changes is actually quite encouraging even under the medium scenario. This is because, although GDP grew at about 5.7% p.a., GDY grew much less rapidly due to the substantial deterioration in the terms of trade between 1979 and 1982. Since the terms of trade are expected to recover somewhat in 1983 and then to remain approximately unchanged through the decade, no similar discrepancy between GDP and GDY is expected in the future. Thus, the roughly 6% p.a. growth performance of the Thai economy translates into a respectable per capita income growth of between 4.0% and 4.5% per annum, depending on how fast population growth declines over the period. Third, compared with the average developing country, Thailand will remain an above-average performer, growing at least half a percentage point per year faster than the average middle-income oil importing country as projected in World Development Report 1983.

3.23 Downward Revision in Medium-term Outlook. The outlook developed above in the medium scenario represents a downward adjustment in expected economic growth when compared with earlier projections, both by the Government and by the World Bank./1 This is due, of course, to a significant extent to the direct impacts of the worsening in the international outlook which occurred during the last two years. However, another important reason is that the current account deficit which is judged sustainable in the medium-term must now be assessed as falling at a lower level in relationship to GDP than was the case in the past, thus requiring more extensive measures to reduce external imbalances. There are a number of reasons for this judgement. First, with substantially lower export growth in relation to GDP the foreign debt service capacity of the Thai economy according to one common measuring rod, the debt service ratio, is directly reduced. Second, the higher real interest rates and shorter maturities which now prevail for foreign borrowing, as compared with the past, contribute to a cumulation of debt service above what was previously expected. Third, as the rate of international inflation has come down, the real burden of international debt is no longer declining as rapidly as in the past. Therefore, a reduction in the nominal current account deficit is appropriate if the real level of desired resource transfer is to be maintained unchanged. Finally, Thailand will not likely be able to continue eroding its foreign reserve coverage as it has in the past. Given the volatility of international exchange markets and the Government's intent to retain a stable exchange rate (whether in relationship to a single currency or a currency basket), a stabilization of foreign exchange reserves in relation to imports, and possibly a slow increase in relation to the monetary base should be judged appropriate./2 This reduces the country's ability to run a current account deficit for given foreign borrowing and debt service levels as compared with a case where reserves are allowed to decline further or to stabilize in absolute amounts. However, for the late 1980s the projections shown above may be overly cautious as regards the current account deficit. Since the deficit falls to below 1% of GDP by 1990, an average level of net foreign borrowing in 1989/90 below that of 1982/83 results. This low level of net borrowing, combined with a drop in the debt service ratio after 1988, may not be necessary to maintain Thailand's international creditworthiness. A less restrictive fiscal policy stance, especially in terms of public expenditures, may therefore become appropriate during the Sixth Plan period (1986-91), compared with the remainder of the Fifth Plan, provided the international economic outlook does not worsen substantially. With a less restrictive public expenditure policy, the economic growth performance of Thailand would be further enhanced during the second half of the 1980s.

/1 In particular, Thailand: Coping with Structural Change in a Dynamic Economy (Report No. 3067a-TH, December, 1980) and Thailand: Structural Adjustment Loan (Report No. P-3201-TH; February 1982).

/2 See also Thailand: Perspectives for Financial Reform (Report No. 4085-TH).

3.24 Implications for Public Foreign Borrowing Policy. The reduced current account deficit is paralleled by, a reduction in total net borrowing levels. The level of debt outstanding as a ratio of GDP, however, will continue to increase, rising from 21.9% in 1981 to 26.9% in 1986, dropping thereafter to 22.5% in 1990. Under these circumstances it was appropriate for the Government to reduce its foreign borrowing target from an annual US\$2.40 billion to US\$2.06 billion for the remainder of the Fifth plan period, in line also with the reduction in public investments programmed. Given appropriate overall public borrowing needs the split between domestic and foreign public borrowing for the remainder of the Fifth Plan period should, however, be carefully assessed. To the extent that a sizeable public sector deficit remains even after appropriate measures have been taken to increase public resource mobilization and to eliminate or scale back marginal public investment projects, the public sector will need to borrow to fill the saving-investment gap. Any reduction in public foreign borrowing would be matched therefore by an increase in public borrowing from domestic sources, which in turn, for a given private saving-investment gap, would force the private sector to borrow abroad by similar amounts. Since private borrowing tends to take place at higher rates and shorter maturities, this would not necessarily be desirable from a national point of view. In order to ensure a disbursement pattern in line with net real transfer needs during the next few years, quick disbursing public borrowing (including SALs and syndicated loans) would remain an appropriate component in the overall public borrowing program.

3.25 Implications for Employment Growth and Poverty Eradication. The lower economic growth has direct implications for employment growth. In the extreme case where employment elasticities of sectoral growth are constant and real wages do not adjust, the reduction in the annual GDP growth rate from 6.6% projected in the Plan to about 6% projected here could increase unemployment projected in the Plan by up to 50%. Actual unemployment, however, is not likely to grow as much since labor incomes, especially in the informal sector, tend to be flexible downwards, thus resulting in commensurate income losses, rather than open unemployment. This reduction in employment opportunities or labor incomes would clearly be undesirable but could at least in part be counteracted by the impact of structural adjustment policies designed to raise the labor intensity of Thai development. These include the reform of investment incentives, the elimination of disincentives for exports and the increase in real interest rates, all of which jointly provide a substantial push in the direction of more labor intensive development. At the same time, in order to minimize the detrimental effects of the slowdown in growth on the Government's efforts to eradicate poverty, it is important not to cut those government expenditures which are supportive of human capital and rural development affecting especially the poorest income groups. The analysis of sectoral public expenditure programs in Part III below shows that this prescription is not at odds with an efficient allocation of public expenditures.

3.26 Uncertainties and Risks. Aside from the uncertainties surrounding the pace of overall recovery in the world economy there are a number of uncertainties and risks which need to be borne in mind when interpreting the macro-economic scenarios developed above. First, the role of private investment is highly uncertain. While some adjustment of private investment growth to changes in international conditions was postulated in the simulations, a more extensive reaction could also occur, which would reduce the need for public belt-tightening in the pessimistic scenario and increase the need for fiscal discipline in the optimistic case. Unfortunately, private sector investment behavior in Thailand is not well studied, and therefore, no unequivocal conclusion can be drawn. Second, the impact of tax policy on consumption and savings is similarly poorly understood. The simulations assume that much of the burden of additional taxes would be borne out of savings rather than consumption, thus reducing their stabilizing impact as compared with the case where consumption is reduced more heavily. The need for tax intervention for purposes of external balance is thus assessed on the conservative side. Third, the assumption that agricultural production will grow at 4% per annum during the 1980s may be overly optimistic, particularly if commodity prices remain depressed, or if agricultural incentives and policies in support of rapid intensification are either not fully implemented or do not have the predicted impact in terms of rapid increases in yield. The continued availability of land suitable for new cultivation does provide a cushion during the 1980s for continued agricultural growth even in the absence of substantial yield increases (see Chapter 6 below). However, this extensive agricultural development alone will not be sufficient to produce a 4% annual growth rate in agricultural value added nor will it be costless in terms of public investments required to provide the necessary access and to help prevent soil depletion and erosion.

3.27 The possible overall impact of these uncertainties on the macro-economic projections presented in this chapter is difficult to assess. What they indicate is that flexibility in macro-economic policy is desirable, so as to permit mid-course corrections in plans and policy interventions as conditions change, particularly in regard to the macro-economic outlook. Fortunately, such mid-course corrections are feasible, since many of the policy measures, particularly those in the fiscal area, are spread over a number of years. If and when the international outlook changes, or other changes occur, a more expansive or restrictive fiscal strategy can readily be adopted. All simulations indicate, however, that a determined public sector revenue effort is necessary during the remainder of the Fifth Plan period. If this is implemented successfully, and international conditions improve or some of the relationships assumed in the projections turn out to be conservative, a more expansionary public expenditure stance than the strict are projected above may become appropriate for the Sixth Plan period.

PART II

PUBLIC RESOURCE MANAGEMENT AND PLANNING

ii.1 Public expenditure in Thailand increased rapidly during the second half of the 1970s and into the early 1980s, rising from a cyclical low of 13.4% of GDP in 1974 to 23.3% in 1981 /1 (see Table 4.1 below). This has given rise to concern about the possibly changing role of the public sector in Thailand and the need to raise public resources to finance the growing expenditures. However, a longer historical perspective suggests that while public expenditure as a share of GDP reached an unprecedented level by 1981, the public sector's share in GDP was unusually low in 1974, even when compared with spending levels in the early 1960s, since the Government drastically curtailed especially investment activity, in part inadvertently, in response to the inflationary pressures generated by the first oil price shock and the concomitant commodity price boom. Public spending gradually recovered from this cut back and reached its 1970 share in GDP by 1978. Thereafter, the public expenditure share continued to increase to levels significantly above historical levels in Thailand. Much of this increase above historical levels has been due to a rapid expansion of public investment since 1980, a period during which GDP growth slackened and overall investment growth slowed down as a result of a real decline in private investment activity. The public sector's share in investment therefore substantially expanded during the 1970s, reaching 40% in 1981/82, up from 30% in 1970 and 15% in 1974. While public expenditure growth has thus been less dramatic when seen in a longer historical setting, rather than merely the period 1974-82, there is justifiable concern to ensure that the resources which the public sector commands are efficiently and equitably managed, that they are financed in ways that do not endanger internal price stability or external creditworthiness, and that the overall level and growth of future public spending do not interfere with the Government's goals for internal and external economic balance.

ii.2 Actually, the public sector's utilization of resources is even greater than suggested by the national accounts, which do not include the recurrent expenditures of state enterprises. Including these expenditures, consolidated public sector spending reached almost 35% in 1981 when expressed in relation to GDP (Table 4.1). Of course, since these recurrent expenditures represent intermediate inputs, the consolidated expenditures are not directly comparable (in economic terms) to the value added concept of GDP. In the subsequent analysis of public sector resource management in Thailand, reference is repeatedly made to these consolidated public accounts, since they provide a basis for an assessment of the trends in overall size and composition of national resources subject to public sector decisions, rather than to market forces. Of course, a normative assessment of these

/1 Using the national accounts definition of public expenditure which includes general (central and local) government consumption and fixed capital outlays of general government and of state enterprises.

trends has to be based on additional information regarding the appropriateness of expenditure allocation for specific public services and of resource mobilization through particular revenue investments, including taxes and user charges.

ii.3 Despite the public sector's important and expanding role in Thailand, scant attention was until recently given to the planning of public sector resource mobilization and use, although various reports, including those prepared by or for the World Bank, have analyzed Thailand's public finances from a descriptive and policy perspective.^{/1} Symptomatic of this lack of fiscal planning is the fact that none of Thailand's five national development plans contained a public expenditure and revenue program. However, as part of the Government's structural adjustment program which has been initiated under the Fifth Five Year Plan with World Bank support, the authorities have now begun to develop comprehensive fiscal planning procedures with the aim of linking the Plan's macroeconomic and sectoral targets to specific programs of public sector resource mobilization and use. This effort is still in its infancy (see below, paras. 5.15-5.33 for a description of the current fiscal planning exercise), but is expected to be carried further as experience is gained and the usefulness of such exercises becomes more widely accepted within Government circles.

ii.4 This Report aims to assist the Government in this process of public sector resource planning. Part II reviews, first, recent trends and issues in public resource mobilization and use (Chapter 4), and then assesses current public expenditure and revenue mobilization plans (Chapter 5). The discussion of sectoral policy issues and priorities in Part III also includes a review of sectoral expenditure programs. This analysis of public resource management is intended to provide an example of how an overall public resource planning effort can help identify some of the major constraints and tradeoffs, which in the past have tended to be hidden in the partial and ad hoc approaches to public resource use and mobilization decisions. In the context of an Economic Mission this exercise can only be indicative of the kinds of approaches to be taken and of the choices to be made in fiscal planning. Nevertheless, the goal of the following discussion is to assist the Government in two ways: first, to assess its resource mobilization and utilization programs in terms of overall trends, composition and consistency; and, second, to help in developing the fiscal planning processes which the Government itself is beginning to put into place.

ii.5 Throughout this Report reference is made to three types of public sector agencies: Central Government, comprising the Ministries and departments making up the central administration; local government,

^{/1} See, for example, Report No. 574-TH, "A Study of Public Finances in Thailand," October 1974; Report No. 2059-TH, "Basic Economic Report", September 1978, especially Background Working Paper No. 6; and "Fiscal Reforms for Resource Mobilization in Thailand", Report prepared by Medhi Krongkaew for the World Bank and NESDB, April 1981.

departments making up the central administration; local government, consisting of the Bangkok Metropolitan Administration, Pattaya city, 72 provincial (Changwat) administrations, and 834 municipalities and sanitary districts, under the authority of the Ministry of Interior, but each with separate budgets; and the state enterprises, which consist of 76 individual public and publicly owned and managed firms, each with its own budgetary autonomy.^{/1} The most important of these enterprises are involved in the provision of public services, including power, public transportation, water supply, etc. Others include various commercial and industrial enterprises, but, contrary to many other developing countries, this latter category of state enterprises is relatively unimportant in Thailand, contributing only about 3% of total public investment in 1981. The Report concentrates its discussion on the currently most important types of public agencies: the Central Government and the major state enterprises. Local government and minor state enterprise programs and finances are not covered in detail. However, a number of studies currently under way in Thailand should throw light in future on these public agencies.

ii.6 Unfortunately, public sector accounts in Thailand are still not available on a comprehensive and fully consolidated basis. The data on consolidated public sector expenditures cited in this Report are not fully comprehensive of all public sector financial transactions, since many of the smaller revolving funds and special accounts which the Government operates are not covered by the financial data collected by the Bank of Thailand. Moreover, while an effort has been made to net out interagency payments and transfers in consolidating the public accounts (most importantly, transfers between Central Government and state enterprises, transfers from Central Government to local governments, and payments between the power companies (EGAT, MEA and PEA), there very likely remain a number of instances of double counting. The data must therefore be interpreted with caution, and increased efforts should be devised by the appropriate agencies to develop more reliable public sector accounts.^{/2}

^{/1} There exist also numerous extrabudgetary funds, mostly under the control of specific ministries, but outside regular budgetary control. Most of these funds involve only minor financial transactions, and, due to the dearth of information, are not covered in this Report. A study is currently under way in the Ministry of Finance of these extrabudgetary funds.

^{/2} The analysis in Part II is based on actual public expenditure and revenue data through 1980, on preliminary data for 1981 and on estimates for 1982.

4. TRENDS AND ISSUES IN PUBLIC RESOURCE MANAGEMENT

Overall Trends in Public Resource Mobilization and Use

4.01 The public sector in Thailand not only increased its relative share in the economy since 1970 (Table 4.1), but also spent substantially more resources than it generated during the 1970s and into the early 1980s, as public savings fell short of public investment (Table 4.2). With the exception of the years 1974 and 1975 when the Government pursued a restrictive fiscal policy in response to the first oil shock, the public sector saving-investment gap was close to or above 5% of GDP. Since 1978, this gap has rapidly increased and in 1981 reached an estimated 10% of GDP. The deteriorating public sector deficit since 1977 has been due to the continuous drop in the public savings rate matched by a steady share of public investment in GDP between 1977 and 1979, and by a substantially higher public investment share from 1980 to 1982. The private sector, in contrast, saved enough during the 1970s to finance all of its investment. In fact, it experienced a slow increase in its saving rate during the decade and into the early 1980s, roughly matched until 1979 by increases in private investment, which then, however, dropped off rapidly (in absolute and relative terms) in the period 1980-82, in response to the domestic uncertainties, high interest rates, and slow down in international demand following the second oil price shock. As a result, the private sector generated substantial surpluses on the saving-investment balance. These surpluses were channeled to finance the public sector deficits via transfers through the banking system (Table 4.2). The notable feature of aggregate public sector finances in Thailand has therefore been that between 1977 and 1979, substantially increased public foreign borrowing substituted for substantial drops in the public saving rate, while public investment remained approximately unchanged as a share of GDP. Since 1980, however, a rapid expansion in public investment was matched by a drop in private investment, and was financed largely by increased transfers from the private to the public sector. Overall, the total domestic saving-investment gap which had increased to about 6% in 1979, dropped to 4.6% in 1981 as a result of the increased private net savings surplus which more than offset the increase in the public net savings deficit.

4.02 The increased public saving-investment gap since 1977 can be traced to parallel increases in the saving-investment gaps for the general (central and local) government and for the state enterprise sector (Table 4.3).^{/1} However, the reasons for the increases in these gaps are different for the two sets of public agencies. For general government, savings

^{/1} The public sector accounting concepts used in Tables 4.2 and 4.3 differ because of different classifications adopted in national accounts (Table 4.2) and government finance statistics (Table 4.3). However, the direction of change and orders of magnitude of the relative size of each public subsector remain comparable.

Table 4.1: ROLE OF PUBLIC EXPENDITURE IN THAILAND, 1960-81

Calendar Year	Percent of GDP				
	General government consumption	Public investment	Total public sector expenditure <u>/a</u>	Consolidated public expenditure <u>/b</u>	Public investment as percent of total investment
1960-64 (average)	9.9	5.2	15.1	n.a.	28.1
1965-69 (average)	10.2	7.3	17.5	n.a.	30.2
1970	11.5	7.7	19.2	n.a.	29.5
1971	11.8	7.2	19.0	n.a.	29.8
1972	10.9	6.9	17.8	n.a.	33.8
1973	9.8	4.9	14.7	n.a.	20.7
1974	9.6	3.8	13.4	n.a.	15.1
1975	10.4	5.2	15.6	n.a.	20.3
1976	11.0	6.9	17.9	n.a.	29.6
1977	10.6	7.7	18.3	28.7	29.1
1978	11.4	7.8	19.2	30.1	28.9
1979	12.0	7.7	19.7	30.7	26.9
1980	12.0	9.8	21.8	34.2	36.2
1981/ <u>c</u>	12.1	11.2	23.3	34.7	40.0
	(11.4)/ <u>e</u>	(9.3)/ <u>e</u>	(20.7)/ <u>e</u>		(36.9)/ <u>e</u>
1982/ <u>d</u>	n.a.	n.a.	n.a.	n.a.	n.a.
	(12.4)/ <u>e</u>	(9.7)/ <u>e</u>	(22.1)/ <u>e</u>		(41.7)/ <u>e</u>

/a National accounts definition, i.e., consumption of general (central and local) government, plus fixed capital outlays of general government and state enterprises.

/b Consolidated public sector finances, i.e., recurrent and capital expenditure of general government and state enterprises, netting out intergovernmental transfers.

/c Preliminary

/d Estimate

/e Figures in brackets reflect estimates of the Bank of Thailand (December 1982).

Source: Statistical Annex, Table 2.8, Report No. 82-TH, Table 2.3; Bank of Thailand; Mission estimates.

Table 4.2: FINANCING INVESTMENT: A SECTORAL FLOW OF FUNDS, 1970-81

	% of GDP					% of investments				
	1970-75	1977	1979	1980	1981 /d	1970-77	1977	1979	1980	1981 /d
Private Sector										
Investment /a	17.9	18.4	21.2	17.3	16.7	100.0	100.0	100.0	100.0	100.0
Financed by:										
Domestic savings /b	18.2	17.6	21.0	20.8	22.4	101.7	95.6	99.5	120.2	134.1
Foreign resources	1.8	1.8	1.5	3.7	2.5	10.1	9.8	7.1	21.4	15.0
Transfer from banking system	-2.3	-1.0	-1.4	-7.2	-8.2	-12.8	-5.4	-6.6	-41.6	-49.1
Public Sector										
Investment /c	6.0	7.7	7.7	9.8	11.2	100.0	100.0	100.0	100.0	100.0
Financed by:										
Domestic savings	2.9	3.0	1.7	1.0	0.9	48.3	39.0	22.1	10.2	8.0
Foreign resources	1.4	1.8	3.9	3.7	3.7	23.3	23.4	50.6	37.8	33.0
Transfer from banking system	1.5	2.9	2.1	5.1	6.6	25.0	37.7	27.3	52.0	58.9
Thailand										
Investment	23.8	26.0	28.8	27.2	27.9	100.0	100.0	100.0	100.0	100.0
Financed by:										
Domestic savings	21.1	20.6	22.7	21.8	23.3	88.7	79.2	78.8	80.1	83.5
Foreign resources	3.1	3.6	5.3	7.5	6.2	13.0	13.8	18.4	27.6	22.2
Changes in net foreign assets of banking systems	-0.5	1.9	1.4	-0.8	-0.3	-2.1	7.3	4.9	-2.9	-1.1
Statistical discrepancy	-0.0	-0.1	-0.6	-1.3	-1.3	0.0	-0.4	-2.1	-4.8	4.7
Banking System										
Transfers from private sector	2.3	1.0	1.4	7.2	8.2	9.7	5.8	4.9	26.5	29.4
Transfer from government	-1.5	-2.9	-2.1	-5.1	-6.6	-6.3	-11.2	-7.3	-18.7	-23.7
Transfer from abroad	-0.5	1.9	1.4	-0.8	-0.3	-2.1	7.3	4.9	-2.9	-1.1
Statistical discrepancy	0.0	-0.1	-0.6	-1.3	-1.3	-0.0	-0.4	-2.1	-4.8	-4.7
Memo: Saving-Investment Gaps										
Private sector /a /b	0.3	-0.9	-0.1	3.5	5.7					
Public sector /c	-3.1	-4.7	-6.0	-8.8	-10.3					
Total	-2.7	-5.5	-6.1	-5.4	-4.6					

/a Including changes in stocks.

/b Including depreciation.

/c Excluding depreciation.

/d Preliminary.

Sources: Bank of Thailand; mission estimates.

**Table 4.3: TRENDS AND DISTRIBUTION OF PUBLIC SECTOR DEFICITS,
1970-82 (as % of GDP) /a**

	Fiscal years							
	1970- 1977	1977	1978	1979	1980	1981 /b	1982 /c	1977- 1981
General Government								
Current surplus	2.4	1.9	1.8	1.0	0.6	1.3	0.1	1.2
(Revenue)	(15.1)	(14.7)	(15.2)	(15.0)	(15.7)	(15.8)	(15.4)	(15.2)
(Expenditure)	(12.7)	(12.8)	(13.4)	(14.0)	(15.1)	(14.5)	(15.3)	(14.0)
Investment	4.4	4.6	4.5	4.0	4.9	4.2	4.6	4.4
Deficit /d	-2.0	-2.7	-2.8	-3.0	-4.3	-2.8	-4.5	-3.2
State Enterprises								
Operating surplus	0.7	0.9	1.0	0.9	0.8	0.8	0.9	0.9
Investment	1.9	2.5	3.5	2.9	4.4	4.0	4.0	3.6
Deficit /d	-1.2	-1.6	-2.5	-2.1	-3.7	-3.2	-3.1	-2.8
Total Public Sector								
Current surplus	3.1	2.8	2.7	1.8	1.3	2.1	1.0	2.0
Investment	6.3	7.1	8.1	6.9	9.3	8.2	8.6	8.0
Deficit /d	-3.2	-4.3	-5.4	-5.1	-8.0	-6.0	-7.6	-6.0

/a Based on Bank of Thailand Government Finance Statistics; note that the classification of expenditures and revenues differs from the National Accounts classification (shown in Table 4.2).

/b Preliminary.

/c Estimated.

/d Negative values indicate deficits to be financed from borrowing or reserves.

Sources: Statistical Annex Tables 5.1-5.7.

dropped from an average of 3.7% of GDP for fiscal years 1970-77 to 1.6% in fiscal 1981, while investments remained approximately constant as a proportion of GDP. The drop in general government savings in turn was caused by a more rapid increase in general government consumption than in revenues. For the state enterprises, savings remained roughly constant in relation to GDP during the 1970s and early 1980s, albeit at a low level of less than 1% of GDP, while state enterprise investments surged in relation to GDP, almost doubling on average for the period 1977-81, as compared with 1970-77. In sum, the combination of rapid recurrent expenditure growth for general government and of rapid growth of investments for the state enterprises, neither of which were matched by increased public resource mobilization efforts in relation to GDP, accounted for the deterioration of the public saving-investment gap since 1977.

4.03 As a possible qualification to that finding, one can note that the public savings data readily accessible in Thailand's national accounts underestimate public savings for two reasons. First, the public savings data refer to public savings net of depreciation of state enterprise capital stock, since depreciation is not broken down by sector and is generally lumped together with net private savings in assessing the private saving-investment gap (see Tables 4.2 and 4.3 above). In order to make a correct assessment of private and public gross savings in relation to private and public net savings respectively, depreciation must be broken down between private and state enterprise depreciation. Short of a full investigation of state enterprise accounts or historical national accounts data sources, a rough estimate of the share of state enterprise depreciation in total depreciation can be derived by equating it to the average historical share of state enterprise investment in total investment which falls at about 10%./1 Gross public and private savings can therefore be

/1 The share of public investment in total investment has amounted to about 25% in the last 20 years (Table 4.1 above), while state enterprise investment accounted for about 40% of total public sector investment (Table 4.3 above). Therefore, state enterprise investment on average amounted to about 10% of total investment. An independent estimate of state enterprise investment was also built up for FY82 by aggregating actual depreciation allowances for five major state enterprises (EGAT, PEA, MEA, PTT and TOT) from enterprise accounts as reflected in World Bank project appraisal reports. Total depreciation for these agencies was B 4.9 billion in FY82. The investment of these enterprises as a proportion of total state enterprise investment amounted to about 65% in recent years. Taking this as a rough proxy for the relationship of capital stock and thus depreciation, total state enterprise depreciation in FY82 can be estimated as B 7.6 billion, which is about 0.9% of GDP in FY82. With total depreciation amounting to about 7.5% of GDP in recent years, this puts state enterprise depreciation at about 12% of total depreciation, an estimate which is very close to that arrived at above using aggregate investment data.

approximated by adding respectively about 10% and 90% of total depreciation to net public and private saving.^{/1} Table 4.4 shows the resulting estimates for gross public savings. Second, as for total domestic savings, public savings may be adjusted for the effect of inflation on the real value of public debt and of interest payments. This is particularly important for recent years, where public debt, interest payments, and inflation rates were relatively high by historical standards. Table 4.4 reflects the adjustments in gross public savings, if only the inflation effect on public foreign liabilities is accounted for.^{/2} The net impact of the two adjustments is to leave the public saving ratio largely unaffected between 1975 and 1981. However, because much of the deterioration in the public saving-investment gap was due to the rapid expansion of public investment as a percent of GDP especially from 1980 onwards, the gap continues to grow substantially, even after the adjustments are made on the savings side.^{/3} Thus the relationship of public sector resource mobilization to public resource use remains a source of concern for recent years, even if the adjustments for depreciation and inflation are made.^{/4}

^{/1} It is possible that the share of state enterprise in total depreciation has increased in recent years in line with the rapid growth in state enterprise investment. However, this effect is likely to be small, and may have raised the share of public in total depreciation from about 8% to 12% between 1970 and 1981. This further refinement would, however, not affect the general magnitude of adjustments made in Table 4.4.

^{/2} A similar adjustment could also be made for domestic public debt, but is more controversial, since much of the adjustment would reflect unanticipated capital gains by the public sector at the expense of the private sector. Note that the adjustment in savings for the effect of inflation on the real value of debt is exactly parallel to the adjustment made in Chapter 2 above to the current account deficit to reflect the impact of inflation on the value of real resource transfers. The point here is that the capital gains accruing to borrowers from inflation as a result of the erosion of the real value of their debt should be counted as realized savings.

^{/3} For 1970-77, the average adjusted gross saving-investment gap was on the order of 2.2 of GDP, which is about one half of the adjusted gap for 1977-79, and only about one-third of the adjusted gap for 1980/81.

^{/4} See paras. 2.41 and 2.42 for some further discussion of the reasons for such a concern from the perspective of overall macroeconomic management.

**Table 4.4: ESTIMATES OF ADJUSTED GROSS PUBLIC SAVINGS
AND OF SAVING-INVESTMENT GAP, 1975-81
(as a % of GDP)**

	1975	1976	1977	1978	1979	1980	1981
Net public saving	2.7	1.4	3.0	2.6	1.7	1.0	0.9
Plus state enterprise deprec.	0.7	0.7	0.7	0.7	0.8	0.7	0.7
Equals gross public saving	<u>3.4</u>	<u>2.1</u>	<u>3.7</u>	<u>3.3</u>	<u>2.5</u>	<u>1.7</u>	<u>1.7</u>
Plus inflation adjustment	0.2	0.2	0.3	0.4	1.0	2.0	1.6
Equals adjusted gross public saving	3.6	2.3	4.0	3.7	3.5	3.7	3.3
Memo:							
<u>Public Saving-Investment Gap</u>							
Net public saving - gross public investment	-2.5	-5.5	-4.7	-5.7	-6.0	-8.8	-10.3
Adjusted gross public saving - gross public investment	-1.6	-4.6	-3.7	-4.6	-4.2	-6.1	-7.9

Sources: Mission estimates; for methodology, the text, para. 4.03.

4.04 A more systematic assessment of the macroeconomic and financial implications of the aggregate public sector investment program could have alerted the policy makers to the need to face tradeoffs in investment decisions between sectors, and in financing decisions between external borrowing, domestic borrowing from the banking sector and public savings. In the absence of a public investment program for the Fourth Plan, which would have established appropriate benchmarks for overall public investment growth and priorities between sectors, and given the lack of a systematic public financing plan which could have established the appropriate scope for financing from alternative domestic and foreign sources, public investment and financing decisions were made on a case-by-case basis by the various public agencies concerned. As indicated earlier, the Government has recently moved on a broad front to establish more effective control over public sector expenditures and financing decisions. Before turning to a detailed review of these efforts, however, a more disaggregated assessment of public expenditure and revenue trends in recent years will set the stage for the subsequent discussion of public expenditure programs and financing plans for the Fifth Plan Period.

Growth and Composition of Public Expenditures

4.05 Consolidated public expenditures, which provide the most comprehensive measure of Government activities in Thailand, grew at a rapid pace between FY77 and FY82, tripling in terms of current prices, doubling in

terms of constant 1976 prices, increasing by two thirds in real per capita terms and by one third as a ratio of GDP (Table 4.5).^{/1} The growth rate of total public expenditures was 13% of GDP in 1982. Within the total, capital expenditure grew somewhat slower than the average (10.4% p.a.), while recurrent expenditures, which account for about three quarters of the total, grew somewhat more rapidly. There also was a substantial increase in the share of state enterprises, which grew from 38.3% to 48.4% of the total between 1977 and 1982.

4.06 Expenditure under all major functional headings benefited from this rapid growth in public spending, but significant shifts took place in the functional distribution of public spending between FY77 and FY82 (Table 4.5). These shifts are the consequence of a number of exogenous factors (especially in the energy sector) as well as explicit or implicit policy decisions. Consequently, they cannot by themselves provide the basis for normative conclusions with regard to appropriate expenditure levels or changes therein. The following discussion therefore mainly serves a descriptive purpose. Normative conclusions regarding the balance between various expenditure categories must draw on an assessment of sector specific expenditures in relation to some measure of need or net benefit. Bearing this in mind, the main shifts in public expenditures which can be observed are as follows: Expenditure on industry, mining, energy, transportation and communication, which in FY77 accounted for 38.5% of the total, increased its share to 46.4% in FY82, mainly because of the near doubling in the share of energy sector spending. In contrast, the share of public spending on agriculture, education, health and other services ^{/2} dropped from 33.3% of total public expenditure in FY77 to 26.9% in FY82. Health expenditure, in particular, expanded at only a very low rate, growing at 2.3% in real terms during the Fourth Plan period, and thus only just matching the rate of population increase. Agricultural spending grew by about 4% in real per capita terms, which is less than half the real per capita growth rate of total public expenditure, but still sufficient to provide for a slight increase as a percent of GDP.^{/3} The trends in education spending are

^{/1} Consolidated public expenditures consist of recurrent and capital expenditures of general government and state enterprises, netting out intergovernmental transfers. This concept, which differs from the conventional national accounts approach (which does not include the recurrent account of state enterprises, on the grounds that their expenditures do not represent value added), is used here as an important indicator of the size of the public sector in terms of its control over resources, whether involving final or intermediate expenditure in terms of national accounts terminology. See also para. ii.2 above.

^{/2} Excluding defense, administration and Central Government debt service, but including all local government expenditure.

^{/3} One reason for this drop is the slowdown in irrigation spending as the major dams and systems were completed. However, there was insufficient priority given to match this decline in capital outlays by necessary increases in operations and maintenanc spending (see Chapter 6 below).

Table 4.5: GROWTH AND STRUCTURE OF CONSOLIDATED PUBLIC EXPENDITURE, FY77-82

	Fiscal years						Average 1977- 81
	1977	1978	1979	1980	1981 <u>/d</u>	1982 <u>/e</u>	
Consolidated Public Expenditure							
In current prices (B billion)	107.0	136.1	158.0	223.2	264.4	315.2	177.7
In constant 1976 prices " <u>/a</u>	99.4	117.2	123.8	146.2	153.6	183.1	128.0
In constant 1976 prices per capita (B '000)	2.3	2.6	2.7	3.1	3.2	3.8	2.8
As a % of GDP	28.2	30.2	29.5	34.2	34.2	37.0	31.8
Distribution by Object (in %)							
Recurrent expenditure	74.7	73.7	76.8	72.9	76.2	77.9	74.9
Capital expenditure	25.3	26.3	23.2	27.1	23.8	22.1	25.1
<u>Total</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Distribution by Function (in %)							
Defense & Administration	21.3	22.7	23.7	21.0	19.9	19.2	21.7
Agriculture	6.5	6.0	6.2	5.5	5.4	5.3	5.9
Industry and mining	8.5	7.2	6.7	6.3	6.5	6.4	7.0
Transport & communication	17.5	17.5	18.6	18.8	17.5	17.6	18.0
Energy	12.5	14.4	12.6	18.9	22.1	22.4	16.1
Education	6.2	5.8	5.9	5.2	9.7/ <u>f</u>	9.6	6.6
Health	2.5	2.3	2.4	2.0	1.8	1.8	2.2
Other <u>/b</u>	25.0	24.2	23.9	22.4	17.0/ <u>f</u>	17.5	22.5
<u>Total /c</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Distribution by Type of Agency (in %)							
Central government	50.5	48.5	50.2	45.8	49.7/ <u>f</u>	47.1	48.9
Local government	11.2	10.9	10.7	10.4	4.9/ <u>f</u>	4.5	9.6
State enterprises	38.3	40.6	39.1	43.8	45.4	48.4	41.4
<u>Total</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a Deflated by consumer price index.

/b Including debt service for Central Government debt, and all local government expenditure.

/c May not add to 100.0 due to rounding.

/d Preliminary.

/e Estimated.

/f In 1981 responsibility for primary education was shifted from local government to the Central Government with an offsetting reduction in central-to-local government transfers. This explains the discontinuous shifts in these expenditure shares between 1980 and 1981.

Source: Annex 3.

somewhat obscured by the shift in the responsibility for primary education from local government to Central Government in FY81.^{/1} Estimates of total expenditure on education indicate, however, that the share of education dropped from 13.2% in total public spending in FY77 to 9.6% in FY82, and that real per capita expenditure grew at a rate of only about 3%, one third of the growth of total public expenditure (although nearly keeping pace with GDP growth). Expenditures on defense, security and administration increased between FY77 and FY79, but fell back subsequently as overall expenditures increased very rapidly. As a result, their share fell to below 20% of total public expenditure by FY82, but this still implied an increase in their share in GDP over the period.

4.07 These shifts in functional expenditure shares are directly associated with shifts in the distribution of public expenditure between general government and state enterprises. As stated earlier, spending of state enterprises, which play a predominant role in energy, industry and mining, transport and communication, increased from less than 40% of total public expenditure in FY77, to almost 50% in FY82. One important factor in this development has been the increase in energy costs experienced during the 1970s. State enterprises, especially in the energy and transport sectors, are heavily dependent on energy inputs, and thus their reoccurrent expenditure rose rapidly with rising energy prices. At the same time, higher prices for imported energy and the discovery of domestic energy resources warranted substantial increases in energy-related investments. Thus the share of energy in total consolidated expenditures doubled between 1977 and 1981 (from 16% to 32%) before falling back somewhat in 1982. Arithmetically, therefore, other shares had to come down. This does not imply, however, that the extent of the decrease in shares of other components was justified. As indicated above and spelled out in more detail in Part III below, it appears that public spending in agriculture and human resource development has expanded less than may have been appropriate.

4.08 Trends in capital spending generally followed those of aggregate public spending (Table 4.6). Particularly notable is that real public investment in FY82 was more than double the average annual public investment for FY70-77. Even in per capita terms, real capital outlays nearly doubled during the same time span. The expansion in public investment was especially large in the energy sector, which surpassed by FY81 the other major sector, transport and communication, in relative importance. Investment in irrigation and highways traditionally were major sectors contributing to total public investment, but they lost increasingly in importance during the Fourth Plan period. Together with the declining, and in any case small, shares of other general government investment, this led to a substantial

^{/1} This is reflected in Table 4.5 by the increase in the educational share between FY80 and FY81, and an offsetting decline in the share of the "other" category. Since most of local government spending on education was financed by transfers from the Central Government budget to local authorities, a matching reduction occurred in central-local transfers, which was netted out in the expenditure consolidation.

Table 4.6: CONSOLIDATED PUBLIC CAPITAL EXPENDITURES, FY70-82

	Average 1970-77	Fiscal years					1981 /a	1982 /b	Average 1977-81
		1977	1978	1979	1980	1981			
Consolidated Public Capital									
<u>Expenditure</u>									
In current prices (in B bln)	14.8	27.0	35.8	36.6	60.4	63.0	73.2	44.6	
In constant 1976 prices (B bln)	18.1	25.1	30.8	28.7	39.6	36.6	40.5	32.2	
In constant 1976 prices per capita (B'000)	0.45	0.58	0.69	0.63	0.85	0.77	0.84	0.70	
As a % of GDP	6.3	7.1	8.1	6.9	9.3	8.2	8.6	8.0	
<u>Distribution by Function (%)</u>									
Agriculture	13.1	14.8	12.8	15.6	12.3	12.5	12.6	13.3	
(of which Irrigation)	(10.3)	(10.0)	(9.2)	(10.7)	(9.1)	(8.3)	(8.3)	(9.3)	
Industry and mining	1.4	2.2	1.4	1.1	0.9	1.4	1.9	1.3	
Energy	15.8	13.7	17.0	13.1	25.5	31.9	28.6	22.5	
Transport & communication	29.9	31.1	30.2	34.4	31.5	28.1	25.8	30.7	
(of which Highways)	(19.6)	(18.8)	(14.0)	(15.3)	(15.7)	(16.5)	(15.0)	(16.0)	
Education	8.0	9.3	8.4	8.7	6.0	8.9	8.7	8.0	
Health	1.6	1.9	2.2	2.2	1.7	1.9	2.0	1.9	
Water supply & sewerage	3.6	4.8	5.9	4.6	3.1	3.0	4.0	4.0	
Administrative buildings, etc.	9.5	8.9	7.3	7.3	5.6	4.9	7.9	6.4	
Local government	15.7	12.6	13.1	11.5	12.3	6.2	7.1	10.6	
Other	1.4	0.7	1.7	1.5	1.1	1.2	1.4	1.3	
<u>Total</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	
<u>Distribution by Type of Agency (%)</u>									
Central government	54.6	52.6	42.5	46.2	39.6	44.8	45.8	44.2	
Local government	15.7	12.6	13.1	11.5	12.3	6.2	7.1	10.6	
State enterprises	29.7	34.8	44.4	42.3	48.1	49.0	47.1	45.2	

/a Preliminary.

/b Estimated.

Source: Statistical Annex, Tables 5.1, 5.7.

reduction in the relative importance of general government capital outlays, relative to those of the state enterprises, with state enterprises increasing their share from an average of about 30% p.a. in FY70-77 to 45% p.a. during the Fourth Plan period.

4.09 The Central Government, however, remains by far the single most important public entity in Thailand in terms of its expenditure levels, despite its recent relative decline. What is more, most of the public services directed at supporting Thailand's human resource development in the areas of education, health and welfare and at fostering development in the rural areas of the country, are the responsibility of the Central Government. A closer look at the trends and composition of Central Government expenditures is therefore warranted (Table 4.7). The picture which emerges is mixed. Total expenditures as a percent of GDP have increased from 17.0% in FY77 to a projected 20.2% in FY83, with a virtually uninterrupted increase from year to year. However, if one subtracts expenditure on defense, general administration (which rose especially between FY77 and FY80), and interest payments on Central Government debt (which rose continuously over the period), the increase in expenditures on public service provision and transfers to local governments and state enterprises in relation to GDP is only relatively small, from 9.8% in FY77 to 10.5% in FY83, with some fluctuations in this ratio in between. The provisional figures for FY83 indicate that this increase was accounted for mainly by a greater emphasis on agricultural spending during FY82 and FY83, and by slightly increased expenditure ratios for education and health,^{/1} and that both capital and recurrent spending shared in the increased expenditure on public services in relation to GDP.

4.10 The breakdown of Central Government recurrent expenditures into wage and salary payments and non-wage expenditures was possible only with reference to budget appropriations.^{/2} These indicate that between FY79 and FY83 wages and salaries increased from 28.3% to 31.4% in total central government spending, while non-wage recurrent expenditures (excluding debt service) declined from 37.4% to 33.2% as a percent of total budget appropriations and remained virtually unchanged in relation to GDP. Thus, while Central Government expenditures kept up with inflation and even GDP growth in all major expenditure categories since FY77, much of the rapid rise in total expenditure over and above inflation and GDP growth must be attributed to three factors: rapid increases in salary and wage payments,

^{/1} As noted in para. 4.06 above and in footnote ^{/c} of Table 4.7, the substantial increase in educational expenditure in FY81 resulted from a transfer of responsibility of education from local to central government with a largely offsetting reduction in transfer from central to local government.

^{/2} Apart from the fact that these are not actual or realized expenditures, budget appropriations in Thailand also do not include foreign financed expenditures.

in debt service obligations, and in spending for defense and general administration. Capital expenditures increased only slightly in relation to GDP and actually dropped as a share of total Central Government expenditure from 22% in FY77 to 20% in FY83. Of itself, this declining importance of capital spending is not necessarily a drawback since sectoral analyses (see below, Part III) show that most shortcomings in Central Government expenditure have been in the areas of operating and maintaining of existing facilities (especially roads and irrigation networks) and lack of adequate expenditures for non-wage inputs, such as medical supplies and educational materials. For these same reasons, however, the recent trends towards stagnation of spending on non-wage and non-debt service items, while wages and salaries have continued to expand rapidly, must be of considerable concern./1

Table 4.7: COMPOSITION OF CENTRAL GOVERNMENT EXPENDITURES, FY77-83
(As % of GDP)

	Fiscal years	1977	1978	1979	1980	1981	1982 <u>/a</u>	1983 <u>/b</u>
<u>Total Expenditures</u>		17.0	17.8	17.5	18.9	18.3	19.4	20.2
(-) Defense, Administration, etc.		6.0	6.9	7.0	7.2	6.8	7.1	7.2
(-) Interest payments		1.2	1.3	1.5	1.6	1.8	2.0	2.5
(=) <u>Expenditures on Services & Transfers</u>		<u>9.8</u>	<u>9.6</u>	<u>9.0</u>	<u>10.1</u>	<u>9.3</u>	<u>10.3</u>	<u>10.5</u>
Of which:								
Agriculture		1.6	1.6	1.6	1.6	1.6	1.7	2.0
Transport & commerce		1.8	1.5	1.4	1.7	1.6	1.6	1.5
Education		1.8	1.7	1.8	1.8	3.3/c	3.6	4.0
Health		0.7	0.7	0.7	0.7	0.6	0.7	0.8
Transfers		2.7	3.0	2.6	3.2	1.2/c	1.1	1.0
Capital expenditures		3.7	3.5	3.2	3.8	3.7	4.0	4.0
Current expenditures (incl. transfers)		6.1	6.6	5.8	6.3	5.6	6.3	6.5

/a Estimate.

/b Projection.

/c Responsibility for education was shifted from local to central government in FY81, with a commensurate reduction in transfers.

Sources: Statistical Annex Tables 2.1, 5.3; Bank of Thailand; mission estimates.

/1 The extent to which increases in average wage rates, shifts in the wage structure, or increases in employment in the Central Government accounted for the increase in wage and salary payments could not be assessed. This is, however, an important area for further work in future.

4.11 Two main conclusions may be drawn from these findings regarding growth and composition of public expenditures in Thailand. First, while some shifts in public spending towards energy investments were appropriate in view of the drastic increase of real energy prices during the 1970s, the relatively low growth in expenditures directed at agricultural and rural development, health and education during the Fourth Plan period, especially when coupled with a slow growth in non-wage expenditures in support of human resource development programs, has led to the perpetuation of some serious shortfalls in public sector involvement in these areas. Some progress appears to have been made during the first two budget years of the Fifth Plan period in shifting resources towards these areas, but movement in this direction should continue. The substantial increase in the domestic relative prices of energy products since 1979 have led in turn to substantial downward adjustments in energy demand growth, thus making continued rapid growth in energy investments of lesser priority (see below, Chapter 8). At the same time, there continue to exist urgent needs in the areas of agricultural, rural, and human resource development, which must be addressed if Thailand's long-term development needs are to be met.

4.12 Second, and as a corollary of the first conclusion, with the emergence of the state enterprise sector roughly equal in importance to the Central Government as regards command over public resources, it has become essential to plan and direct state enterprise activities not merely from the point of view of each agency's particular objectives and concern, but to take into consideration, especially for the larger state enterprises, the macroeconomic impact of their investment and financing decisions. Similarly, in designing macroeconomic policies the role of state enterprise expenditures must be explicitly considered. Failure to do so may have two types of undesirable consequences: (a) the effectiveness of macroeconomic policy responses, in particular stabilization policies and measures designed to shore up the country's creditworthiness, is substantially limited if only Central Government expenditures (and revenues) are adjusted; and (b) unless state enterprise expenditures and revenues are explicitly incorporated into the macroeconomic policy framework, such policies will not be neutral as between sectors, since some functions, especially agricultural, rural, and human resource development, are highly concentrated under the Central Government, while others, especially energy, transport and communications development, are heavily concentrated in the state enterprise sector. Even intrasectoral balances (e.g. in the transport sector, as between highways and other transport expenditures) can be affected where the Central Government (highways) and the state enterprises (railways, ports, aviation, urban transit) are both involved. The scale and interdependencies of public sector resource management issues have thus become much more intricate in Thailand and more explicit procedures for fiscal planning must therefore be developed to deal with the problems they give rise to. How the Government has begun to tackle this set of issues will be discussed in Chapter 5, after a review of selected issues in public resource mobilization in the remainder of this chapter.

Public Sector Resource Mobilization

4.13 The public sector in Thailand draws on three major categories of financial resources to finance its expenditures: tax revenues, which are

mainly the source of finance for central and local government; service charges and user fees, which traditionally have been most important for state enterprise financing; and foreign and domestic borrowing, which have been a source of finance for general government and state enterprises alike. With the rapid increase in the relative importance of state enterprises in terms of expenditures their operational receipts have also grown rapidly. The share of these gross incomes in total public sector financing (including borrowing and financing by the monetary authorities) increased from 33% in FY77 to 40% in FY82, while the share of tax revenues in total public sector financing declined from 44% to 35% over the same period. This trend underscores the great and recently increased importance of state enterprise service charges and fees, and the resulting need to give careful attention to level and structure of these charges, not only because of their implications for the financial viability and efficiency of the public service provision, but also from the point of view of macro-economic resource mobilization. The share of financing from borrowing and the monetary authorities fluctuated between the extremes of 15% and 22% (Table 4.8). The trends and composition of these three major categories of public sector resources, and some of the issues and concerns which they raise are discussed in the following paragraphs.

Table 4.8: FINANCING OF CONSOLIDATED PUBLIC EXPENDITURE, FY77-82

Fiscal years	1977	1978	1979	1980	1981 /a	1982 /b
<u>Total Consolidated Expenditure</u> (in B billion)	<u>107.0</u>	<u>136.1</u>	<u>158.0</u>	<u>223.2</u>	<u>264.4</u>	<u>315.2</u>
<u>Financed by (in%):</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Central government revenues	48.7	47.2	47.7	41.4	44.0	39.4
of which: Taxes	(44.2)	(44.2)	(44.2)	(38.4)	(37.7)	(34.9)
Local government revenues	3.6	3.3	3.2	2.5	2.5	2.4
State enterprise own revenues	32.6	31.5	32.3	34.0	36.7	40.3
Subtotal: revenues	<u>84.9</u>	<u>82.0</u>	<u>83.3</u>	<u>77.9</u>	<u>83.1</u>	<u>82.1</u>
Net external borrowing	3.3	7.0	8.2	11.1	9.1	6.5
Net domestic borrowing	6.1	6.7	2.5	4.9	2.4	4.6
Monetary authorities	5.8	4.3	6.1	6.0	5.4	6.8
Subtotal: deficit	<u>15.1</u>	<u>18.0</u>	<u>16.7</u>	<u>22.1</u>	<u>16.9</u>	<u>17.9</u>

/a Preliminary.

/b Estimated.

Source: Statistical Appendix Tables 5.2 and 5.5.

4.14 Tax Revenues: Trends and Structure. Although tax revenues in Thailand now rank behind state enterprise service fees and user charges (gross of cost) in terms of their share in financing consolidated public expenditures, they remain a vital element for public resource mobilization. This is the case despite the fact that taxes have accounted for only 13-14% of GDP during the 1970s, including local governments (or 12-13%, if only Central Government taxes are considered), which is low by international comparison.^{/1} The tax/GDP ratio in Thailand expanded rapidly in the 1960s, from 8.7% in FY51 to 11.6% in FY61, thereafter increasing only slowly to reach 12.7% (13.6% with local taxes) by FY70. Taxes fluctuated around this level for much of the 1970s (Table 4.9). The composition of tax revenues, however, has changed substantially since the 1960s. Taxes on international trade, which in FY61 accounted for more than half of Central Government tax revenues, declined steadily in relation to GDP and as a share of total taxes, both because of a reduction in the reliance on commodity export taxes in the wake of the growing diversification of Thailand's exports and reduced export tax rates, and because of reduced average rates of import taxes, associated with import substitution, more extensive exemptions granted by the Board of Investment (see para. 7.20 below), and recent reductions in nominal rates of protection (see para. 7.14 below). The reduction in trade tariff revenues was offset, however, by a commensurate increase in the tax/GDP ratios for the broad-based income and consumption taxes, especially the corporate income tax. This tax started from a low base in FY61, but during the 1970s surpassed the personal income tax, which hardly increased in relation to GDP. This expansion in the corporate income tax reflects both the relative ease of administration of this tax, at least for large companies, and the rapid growth in the largely Bangkok based industrial activity.^{/2} Business (turnover) and excise tax revenues increased similarly rapidly in absolute and relative terms during the last two decades for the same reasons. As a result of these shifts, Thailand now relies less heavily on trade taxes than does the typical middle-income developing country, but is more dependent on indirect domestic taxes. Despite their recently increased importance, direct tax revenues in Thailand are, however, still of relatively limited importance by international comparison (Table 4.10). Because of this continued heavy reliance on indirect taxes, the incidence of Thailand's tax system has been found to be slightly regressive, a

^{/1} In 1977, for 19 middle-income developing countries falling in the range of per capita incomes of \$420-750, the median tax/GDP ratio was 17.8 (Table 4.10). According to WDR 1983 (Figure 5.1) the average central government revenue to GDP ratio in middle-income countries in 1980 was 26% and for low income countries 17%. These revenues are mostly taxes.

^{/2} About 85% of the corporate income tax was collected in Bangkok during the Fourth Plan period.

Table 4.9: TRENDS AND COMPOSITION OF GENERAL GOVERNMENT REVENUES, FY61-82
(As % of GDP)

	Fiscal years /a										
	1961	Avg. 1961 -70	1970	Avg. 1970 -77	1977	1978	1979	1980	1981 /b	Avg. 1977 -81	1982 /c
<u>Income Taxes</u>	1.2	1.4	1.6	1.9	2.2	2.5	2.6	2.6	2.8	2.6	2.9
Personal	0.8	0.8	1.0	0.9	0.9	1.1	1.1	1.1	1.1	1.1	1.3
Corporate	0.4	0.6	0.7	1.0	1.2	1.4	1.4	1.5	1.7	1.5	1.6
<u>Business & Excise Taxes</u>	2.9	4.2	4.8	5.1	5.5	5.3	5.5	5.7	5.7	5.6	5.8
<u>Trade Taxes</u>	6.2	5.4	4.8	3.8	3.6	3.5	3.6	3.4	3.2	3.4	2.6
Imports	4.0	3.9	4.0	3.1	3.1	3.2	3.1	2.9	2.8	3.0	2.4
Exports	2.2	1.5	0.7	0.6	0.4	0.4	0.5	0.5	0.4	0.5	0.2
<u>Other Taxes /d</u>	1.3	1.4	1.5	1.4	1.2	1.4	1.4	1.4	1.0	1.2	0.9
Subtotal all taxes	11.6	12.4	12.7	12.2	12.5	12.7	13.1	13.1	12.7	12.8	12.2
<u>Nontax Revenue</u>	0.9	1.2	1.3	1.2	1.2	1.0	1.0	1.0	1.6	1.2	1.3
<u>Total Cen- tral Gov- ernment Revenue /e</u>	12.5	13.6	13.9	13.4	13.6	13.8	14.0	14.1	14.3	14.0	13.5
<u>Local Govern- ment Revenue</u>	N/A	N/A	0.9	0.9	1.0	1.0	0.9	0.8	0.9	0.9	0.9
<u>Total Gen- eral Gov- ernment Revenue</u>	N/A	N/A	14.8	14.3	14.6	14.8	14.9	14.9	15.2	14.9	14.4

/a GDP also on fiscal year basis.

/b Preliminary.

/c Estimated.

/d Including profits of fiscal monopolies.

/e Not including extrabudgetary receipts and foreign grants.

Sources: 1961-70: Report No. 82a-TH, Statistical Appendix, Table 5.1a.
1970-80: Statistical Appendix, Table 5.4 1981/82: Bank of Thailand,
August 1982.

Table 4.10: COMPARATIVE DATA ON TAX/GDP RATIOS AND ON SOURCES OF TAX REVENUE FOR MIDDLE-INCOME COUNTRIES, 1977

Middle-income countries /a	Ratio of central government revenue to GDP (in %)	% of total central government current revenue from		
		Taxes on income, profits & capital gains	Domestic taxes on goods & services including profits from fiscal monopolies	Taxes on international trade
Ghana	N/A	19.7	30.8	39.8
Kenya	16.8	35.0	33.0	17.2
Lesotho /b	N/A	8.9	3.3	61.8
Indonesia	15.3	67.3	13.1	10.1
Yemen Arab Republic	25.0	2.9	3.0	71.9
Mauritania	28.4	19.3	16.2	32.1
Senegal	20.0/c	22.0	19.2	33.9
Liberia	19.2	41.9	21.4	30.5
Honduras	15.3/d	18.9	26.6	33.6
Zambia	25.9	37.1	43.2	6.2
Bolivia	11.1	14.2	26.6	35.4
Egypt	42.9	8.6	10.7	37.6
El Salvador	16.6	14.3	23.2	52.9
Cameroon	23.9	14.4	18.0	45.7
Thailand	14.3	14.9	44.1	24.7
Philippines	12.8	22.8	33.2	24.6
Nicaragua	13.3/d	14.3	36.8	21.8
Papua New Guinea	17.8	46.8	16.7	19.6
Congo, People's Rep. /c	28.7	28.8	16.5	28.7
Morocco	26.1	20.7	34.3	19.9
Peru	14.7	16.3	43.2	24.5
<u>Median for Middle-Income Countries</u>	<u>17.8</u>	<u>19.3</u>	<u>23.2</u>	<u>30.5</u>

N/A = not available.

/a GNP per capita between US\$420 and US\$3,000.

/b Data from 1974.

/c Data from 1975.

/d Data from 1976.

Source: World Tables, 1980.

regressivity which has further been compounded by the fact that public expenditures have on balance favored the wealthier groups./1

4.15 Buoyancy and Elasticity of the Tax System. The buoyancy of the Thai tax system in the 1970s was slightly above unity, as reflected by the increase in the tax/GDP ratio between 1970 and 1980./2 However, some of this responsiveness of tax revenues to GDP growth is the result of discretionary tax rate changes. If one wants to assess the intrinsic responsiveness of the current tax system to changes in economic growth, it is necessary to "clean" the revenue series in order to assess what revenue changes would have occurred had the present tax structure been in force all along./3 As background to the revenue projections summarized later in this Report, a disaggregated analysis of revenue elasticity was carried out for the 12 major tax categories in the Central Government tax system and for nontax revenues. Table 4.11 summarizes the elasticity estimates derived from this exercise./4 Not surprisingly, the income taxes, and the gasoline excise taxes have elasticities at or above unity, while most of the other revenue sources have elasticities below unity. Overall, the long-term elasticity of the Thai tax system is estimated to have an elasticity of 1.00. This result is lower than the elasticities estimated in previous World Bank reports (1.39 in Report No. 574-TH, 1974; and 1.27 in Report No. 2059-TH, 1978). Although differences in methodology (which are relatively minor for Report No. 574-TH in comparison with this Report's estimate) limit the comparability of results, the downward trend in elasticity estimates appears to indicate that the responsiveness of the Thai tax system to changes in GDP has fallen during the 1970s.

/1 These conclusions are based on the findings in Report No. 2059-TH, pp. 23-25. Recent reductions in commodity export taxation and increased emphasis on rural poverty programs (including rural electrification, basic health care, etc.) may have reduced the regressivity of the fiscal system in Thailand. In the absence of a thorough assessment this remains, however, a conjecture.

/2 Buoyancy reflects the overall responsiveness of the revenue generated by a tax or tax system in relation to GDP and is measured as the ratio between the growth rate of revenue and the growth rate of GDP.

/3 This "intrinsic" responsiveness of a tax or tax system to GDP growth, i.e., absent any further changes in the tax rates, is technically referred to as the elasticity of a tax or tax system.

/4 The method of analysis and the findings of this analysis are summarized in a technical note.

Table 4.11: CENTRAL GOVERNMENT REVENUE ELASTICITIES

	Elasticity	Period of estimation
Personal income tax	1.386	FY63-81
Corporate income tax	1.214	FY75-81
<u>Excise Taxes</u>		
Tobacco (domestic)	0.369	FY72-81
Tobacco (cigarettes)	1.178	FY72-81
Gasoline	1.386	FY72-81
Diesel	1.126	FY72-81
Other	0.654	FY72-81
Import taxes	0.774	FY70-81
Business tax	0.875	FY79-82
Entertainment tax	0.725	FY79-82
Fiscal monopolies	0.783	FY70-81
Other taxes	1.156	FY70-81
Other revenues	0.713	FY70-81
Total revenue	1.002/a	

/a Implied elasticity resulting from combination of all component elasticities; derived from projections for FY82-86 reported on in Chapter 5.

Source: Mission estimates.

4.16 This apparent decline in elasticity is due either to changes in the structure of taxation making the system less elastic or, more likely, is due to discretionary changes not captured by the analysis, such as reductions in the effectiveness of administration or increasing exemptions for certain types of taxpayers. The latter set of reasons appears to have been of particular importance, as Thailand's tax administration has experienced increasing difficulties in coping with the growing task of effectively collecting taxes, and as exemptions, especially those granted by the Board of Investment (see paras. 7.18-7.19 below) and those given to the rapidly growing state enterprises, have become more important in recent years. For the future, the elasticity of the Thai tax system should stabilize, provided the deterioration in tax administration can be stopped, and no further increases in the relative importance of exemptions takes place. A number of factors argue that past trends should indeed be reversed

in these respects: First, the Government is making major efforts to improve tax administration; second, it is beginning to reform the industrial incentives scheme; third, state enterprise growth in the future is likely to be less rapid in relation to GDP than it was in the past; fourth, some elements in the tax structure have recently been made more elastic, especially as a result of the conversion of selected excise taxes from specific to ad valorem rates, a trend which is likely to continue into the future; and finally, as the less elastic taxes, especially trade taxes, lose in relative importance, and the more elastic revenue sources gain commensurately, the overall revenue system will become more elastic in the aggregate.^{/1} For these reasons, the elasticity estimates derived for this Report are used below in projecting revenues for the remainder of the Fifth Plan period.

4.17 In FY82, a substantial and unexpected slowdown in tax collections occurred. Over 80% of this shortfall can be attributed to unexpected, but temporary or cyclical, changes in the economy (including an inventory reduction resulting in lower business and import tax receipts, and including a cyclically lower real economic growth rate during 1982), and to a lower rate of inflation. None of these changes appear to reflect changes in the long-term elasticity of the Thai tax system in response to real economic growth, although the once-for-all inventory adjustment provides a downward bias for estimates of tax elasticity in the short term. What is more, with expenditures budgeted on the basis of the original revenue projections, the unexpected revenue shortfall resulted in a substantial unintended increase in the Central Government deficit from a planned 2.3% of GDP to an actual 5.9%.^{/2}

4.18 Tax Administration. As mentioned above, the reduced effectiveness of traditional tax administration organization, systems and procedures in Thailand is likely to have been a major cause underlying the apparent downward trend in the responsiveness of the Thai tax system to economic growth. Problems in tax administration were identified already in the early 1970s (if not before), including poor organization and staffing of tax offices, fragmented authority and responsibility for tax enforcement, inadequate audit procedures, lack of coordination between tax departments, cumbersome tax procedures, and lack of modern data processing techniques.^{/3}

^{/1} However, because of the present preponderance of indirect taxes, especially the business tax, this effect is not likely to take effect for some time to come unless the business tax is transformed into an intrinsically more elastic tax. See also Chapter 5, para. 5.38 below.

^{/2} According to Bank of Thailand data of April 1983.

^{/3} Report No. 574-TH, 1974, p. 101.

As a result of these problems, tax evasion has been significant and on the rise. For the corporate income tax, for example, it has been estimated that 5,000 of the 40,000 corporations in Thailand do not file tax returns, and about half of the corporations filing reported no profits in recent years. Tax arrears are substantial (nearly B 9 billion at the end of FY82, including those subject to appeal by taxpayers). Recognizing these deficiencies, the Government requested, and since 1976 has received, IMF technical assistance for the modernization of its tax administration.

4.19 Six major administrative problems are common to the three tax departments, and measures of administrative reform are well under way in all tax areas for the Revenue Department. The six areas are:

- (a) Need for Functional Reorganization. Tax administration in Thailand was organized in line with individual tax categories, rather than along functional lines. Reorganization along functional lines has just been completed for the Revenue Department and is under consideration for the other two departments. A major component of this reorganization is the creation of a strong internal audit unit for each department.
- (b) Delegation of Authority. Insufficient delegation of authority within departments has hampered effective management. Expanded powers of delegation, matched by improved internal audit, are an essential element of the proposed administrative reform.
- (c) Improved Personnel. Government-wide systemic difficulties in public personnel management and remuneration make it especially difficult for the tax departments to attract and retain skilled managers, legal personnel, accountants, and computer specialists. The Government is currently reviewing its overall organization, management and compensation of the civil service.
- (d) Staff Training. Training programs for modern managerial and technical skills are required, including basic training in tax administration, short-term seminars in specialized areas, and on-the-job training for special technical skills. The Government is planning to set up a Tax Training Institute which would focus on developing the teaching personnel and providing the more formalized training.
- (e) Reporting. Excessive and poorly designed internal reporting should be replaced by a carefully designed management information system.
- (f) Tax Collection Targets. Annual and monthly revenue targets, which have commonly been used in Thailand, are not effective means of managing or improving tax administration. While revenue

forecasts are an essential element of fiscal planning, they should not be used as performance targets for collection personnel, since most of the determinants of actual revenue collections are beyond the control of the tax officials and since the targets may in fact act as a disincentive to efficient collection.

4.20 Beyond these problems common to all three tax departments, specific requirements exist in each department. For the Revenue Department, a program of decentralizing tax administration in Bangkok, where about 75% of the Department's taxes were collected in recent years, is well under way with the creation of eight metropolitan-area tax offices. The need for further strengthening of these offices and the streamlining of tax administration outside Bangkok remains, however. Substantial progress has also been made in assigning unique tax identification numbers, organizing a master file system, and computerizing the tax administration. This permits much more efficient mailing of tax returns and tax refunds, identification of taxpayers who have stopped filing or have high audit potential, and cross-checking of taxpayer information. This program needs to be completed to cover all taxes and regions, but is currently hampered by lack of adequate computer facilities and trained personnel. In the Customs Department the most urgent task is a reorganization to separate the Department's headquarters from the customs administration in Bangkok. Other possible organizational and procedural reforms include the simplification of customs valuation and control through the use of sampling techniques. The Excise Department also requires reorganization along functional lines, as well as expanded use of financial audits in place of on-site physical controls at the factory gate. With the transformation of most excises from specific to ad valorem rates, this will in fact become a necessity, requiring in turn development of an audit program and extensive changes in the Department's staffing.

4.21 The potential impact of these administrative reforms on the revenue performance of Thailand's tax system can be substantial, although its precise measurement is subject to many difficulties. However, with the completion of the lengthy reform process in the Revenue Department covering the corporate income tax and the business tax, and with the extension of the program to the other two departments, the deterioration of the tax system's elasticity should be arrested and even reversed. Under the Government's fiscal reform program supported by the Bank's structural adjustment loans, these administrative reforms are to be continued, with the next steps including full computerization of the Revenue Department's operations, reorganization of the Customs Department and rationalization of customs procedures, reorganization of the Excise Department and creation of a Tax Training Institute./1

/1 For details see Second Structural Adjustment Loan (Report No. P3481-TH, March 10, 1983).

4.22 Tax Structure. Thailand's tax structure has been the subject of repeated comprehensive reviews and assessments, which have led to the conclusion that while on balance tax rates are high, there is some room for improvement in the tax structure.^{/1} Some changes have recently been made, and others are planned or subjected to further study under the Government's structural adjustment program. In each of the major categories of taxes, recent reforms and further planned and possible reforms are summarized in Table 4.12. Some progress has been made already in rationalizing the tax system, most importantly the introduction of periodic current payments of the personal income tax for self-employed persons and of the corporate income tax, inclusion of income from the sale of real estate under the personal income tax, conversion of selected excise taxes from specific to ad valorem rates, narrowing of the import tariff band, and reduction in export duties. Further steps are planned for implementation during 1983, including rationalization of personal income tax deductions and exemptions, and the conversion of selected business taxes into ad valorem excise taxes. There remain, however, important areas for tax reform, which are currently not directly being tackled, including expanded capital gains and estate taxation; abolition of preferential tax rates for companies listed at the stock exchange and of exemption of selected state enterprises; rationalization of business tax rates, exemptions and deductions; and further rationalization of import duties and of petroleum product taxes.^{/2}

4.23 Recent changes in the tax structure have contributed substantial additional amounts of tax resources, although these have been partly offset by the detrimental effects of cyclical economic developments mentioned above (para. 4.17).^{/3} Some of these measures were in support of the progressive reform of Thailand's tax structure (see Table 4.12); others contributed quite effectively to revenues during a time of severe fiscal resource shortages, but should not be seen as desirable permanent features of Thailand's tax structure. These latter measures include especially the amnesty of penalties on tax arrears, temporary tariff surcharges, and substantial increases in cement and premium gasoline excise tax rates. Tax amnesties, if used frequently, undermine the effectiveness of the penalties

^{/1} The most recent in-depth survey of Thailand's tax structure is contained in Krongkaew, op. cit., 1981. Based on this report, the Fifth Plan has developed an extensive agenda for reform in Thailand's tax structure.

^{/2} For details of these proposed measures and their justification, as well as other proposals, see Krongkaew, op. cit., 1981. Many of these measures are also proposed in the Fifth Plan.

^{/3} Tax measures introduced during FY82 yielded an estimated incremental revenue of B 5.7 billion, while measures already implemented in FY83 are expected to yield incremental revenues of B 10 billion.

Table 4.12: REFORM OF TAX STRUCTURE

	Personal income tax (PIT)	Corporate income tax (CIT)	Business and excise taxes	Import and export taxes
Measures taken since January 1981	<ol style="list-style-type: none"> 1. Income from the sale of immovable property acquired through inheritance, gift, or nonprofit motive to be taxed under PIT (Feb. 27, 1982). 2. Increase in withholding tax on interest income from fixed deposits increased from 10% to 12.5% (Feb. 27, 1982). 3. Periodic current payment of PIT by self-employed professionals, paralleling previously existing withholding requirement for wage and salaried employment (October 1982). 	<ol style="list-style-type: none"> 1. Periodic current payment of CIT (early 1981). 2. Acceleration of periodic payment (October 1982). 3. Companies or partnerships of which more than 50% of the shares or capital are owned by one person or family ("closely held company") have been made liable to pay CIT; previously they had the option to pay PIT or CIT (March 1982). 	<ol style="list-style-type: none"> 1. Excise tax on cement was changed from a specific to an ad valorem rate. 2. Study ongoing on structure of excise taxes on petroleum products. 	<ol style="list-style-type: none"> 1. Narrowing of import tariff band to range of 60% at top to 5-10% at bottom in successive stages (between October 1981 and November 1982). 2. Reduction in rubber export tax and in rice premium, and elimination of rice reserve requirement in successive stages (between May 1981 and June 1982).
Measures currently planned for implementation in 1983	<ol style="list-style-type: none"> 1. Reduction of standard deductions for self-employed persons (allowable deductions are currently overly generous and discourage taxpayers from proper bookkeeping). 2. Rationalize exemptions, including income from interest, awards and prizes, and from the operation of private schools. 	<ol style="list-style-type: none"> 1. Use of corporate income tax as instrument in support of revised industrial incentives scheme administered by the BOT. 	<ol style="list-style-type: none"> 1. Substitution of excise taxes for business taxes on selected commodities (including automobiles, motorcycles and tires; electric appliances; detergent and soaps; iron and steel products used in construction; ice, paper and glass produced at factories; wood and wood products; food seasoning; and bathroom fixtures). 2. Study to assess the feasibility of introducing value added tax. 	<ol style="list-style-type: none"> 1. Eliminate use of import tariff surcharges and exemptions as part of the reform of industrial incentives administered by the BOI.
Measures for future consideration or study	<ol style="list-style-type: none"> 1. Introduction of estate tax and expanded capital gains taxation. 	<ol style="list-style-type: none"> 1. Abolition of preferential rates for companies listed at the stock exchange, since this favors large and capital-intensive enterprises. 2. Abolition of tax exemption for selected state enterprises. 	<ol style="list-style-type: none"> 1. Simplification of complex business tax rate structure (e.g., by imposing three uniform rates: low rate for essentials and intermediate inputs, high rates for luxuries, medium rate for all other products). 2. Elimination of differentially higher business tax rates on imports compared with domestic products. 3. Streamline exemptions and deductions for business taxes. 4. Rationalize petroleum product taxes. 	<ol style="list-style-type: none"> 1. Further narrowing of the import tariff band. 2. Specific import tariff reform for priority sectors, currently under study (automobile industry, chemicals, industry, etc.)

for tax delinquency and thus harm tax collection. Import tariff surcharges, while temporary, go against the overall trend of trade liberalization intended under the Fifth Plan. High cement taxes negatively affect construction activity which has already been in the doldrums,^{/1} and higher premium gasoline taxes, without matching increases in regular gasoline and diesel fuel taxes have led to a substantial switch from premium to regular gasoline consumption, not warranted by underlying economic cost differentials.

4.24 In sum, the Government has in recent years begun to make significant efforts to modernize tax administration and to reform the tax structure. Further specific steps are planned for the immediate future and additional reforms are still outstanding. These will be necessary if the intrinsic responsiveness of Thailand's tax system is to be increased in future so as to contribute to an increase in public saving, without requiring substantial reductions in the expenditure/GDP ratio. The outlook for future medium-term resource mobilization and specific requirements for tax policy are further analyzed below in Chapter 5.

4.25 State Enterprise Finances. With the rapid expansion of the operations of state enterprises during the 1970s, their finances also took on increasingly greater importance. Relative to total revenues mobilized by the public sector, those contributed by state enterprise gross receipts increased from 32.6% in FY77 to 40.3% in FY82 (Table 4.8 above) and state enterprise revenues as a percent of GDP increased from 9.2% to 14.9% over the same period (Table 4.13). State enterprises, therefore, in contrast to the Central Government, raised substantially increased amounts of revenues in relation to GDP through the sale of their services.^{/2} The savings performance of state enterprises has been less buoyant; however, since 1977 state enterprise savings rates have been as good as, or even better than, during any of the preceding 11 years, with the exception of the period 1968-71 (Table 4.13). Nevertheless, the extent to which state enterprise savings financed state enterprise investments has drastically changed during the last 17 years, mainly because of the increase in the investment rate, especially during the Fourth Plan period. The proportion of state enterprise

^{/1} The argument has been made that cement production is energy intensive and that therefore an excise tax on cement contributes to energy conservation. This is, however, a second best solution. Appropriate pricing and taxation of energy inputs is clearly preferable.

^{/2} About 10% of the total state enterprise revenues is accounted for by enterprises producing manufacturing products (most important among these is the Tobacco Monopoly). Even if these enterprises are not counted among enterprises producing "public" services, the amount of financial resources passing through state enterprises to finance public services has increased substantially.

Table 4.13: AGGREGATE INDICATORS OF STATE ENTERPRISE FINANCES, 1966-82

Fiscal year	Consolidated state enterprise finance ratios (%)				Ratio of state enterprise saving-investment gap to total saving-investment gap	Net transfers from Central Government to state enterprise /b	
	Investment GDP	Savings GDP/a	Savings Investment /a	Own revenues GDP		B mln	As % of Central Gov't. deficit
1966	1.6	0.8	51.4	N/A	N/A	552	86.7
1967	1.6	0.8	50.9	N/A	N/A	491	43.4
1968	1.8	1.1	60.6	N/A	N/A	543	18.7
1969	2.3	1.6	67.2	N/A	N/A	481	16.8
1970	1.9	1.2	65.2	N/A	}	841	19.8
1971	1.8	1.0	55.0	N/A	}	741	11.2
1972	1.8	0.7	37.2	N/A	}	551	7.1
1973	1.8	0.5	26.4	N/A	}	461	9.6
1974	1.4	0.6	39.8	N/A	}	-7	0.2
1975	1.5	0.4 (1.2)/a	25.6 (80.0)/a	N/A	}	180	4.0
1976	1.8	0.4 (1.2)	23.4 (66.7)	N/A	}	-279	-2.6
1977	2.5	0.9 (1.8)	36.3 (72.0)	9.2	37.2	1,113	9.0
1978	3.5	1.0 (1.9)	28.0 (54.3)	9.5	46.3	2,083	12.9
1979	2.9	0.9 (2.2)	29.4 (75.9)	9.6	41.2	296	1.5
1980	4.4	0.8 (2.5)	17.0 (56.8)	11.6	46.3	1,276	4.1
1981/c	4.0	0.8 (2.4)	18.9 (60.0)	12.6	53.3	1,455	5.8
1982/d	4.0	0.9	22.5	14.9	40.8	107	0.3

N/A = not available.

/a Figures in brackets reflect savings adjusted approximately by adding the estimated state enterprise depreciation figures and half the inflation adjustment figure from Table 4.13 above. See also text, para. 4.26, especially footnote 2.

/b Not including the net profits of the fiscal monopolies (Tobacco Monopoly and State Lottery) which are counted as taxes in the Central Government revenue accounts.

/c Preliminary.

/d Estimated.

Sources: Statistical Appendix Tables 5.3, 5.4, 5.5 and 5.7.

enterprise investments financed from own resources fell by about two thirds between the late 1960s and the early 1970s, dropping as low as 17% in FY80. In line with these trends, the share of state enterprises in the total public saving-investment gap has increased significantly in recent years.

4.26 The assessment of these trends is complicated by the fact that one deals with a multiplicity of state enterprises and severely limited information for many of them, and that no uniform criteria exist for evaluating the aggregate saving-investment performance of these enterprises as a group. If one were to assume the rule of thumb which at times is employed in public utility companies (such as telephone companies) that self-financed revenues should cover 20-25% of capital outlays in any given year,^{/1} then Thailand's state enterprise sector has fallen in, or short of, this range only during the last three years. Indeed, if saving is taken to include depreciation, then no recent year has seen the gross saving-investment ratio fall below 30%.^{/2} As another measuring rod one may consider the size of net transfers from the budget of the Central Government to the state enterprises, since these can be taken as a measure of budgetary subsidies and of the direct drain which state enterprise represent as a group on the Central Government budget. In Thailand these net transfers have been generally small in relation to the Central Government's cash deficit in recent years (Table 4.13).^{/3} Even if the gross transfers from the Central

^{/1} See, for example, the covenant in the World Bank's recently approved project for the Telephone Organization of Thailand (TOT), Report No. 3784-TH, p.31.

^{/2} Taking the estimated state enterprise depreciation/GDP ratios from Table 4.4 above, the following gross saving-investment ratios can be calculated in combination with the net savings figures from Table 4.13:

	<u>FY75</u>	<u>FY76</u>	<u>FY77</u>	<u>FY78</u>	<u>FY79</u>	<u>FY80</u>	<u>FY81</u>
Gross saving-investment ratio for state enterprises (in %)	73.7	61.1	64.0	48.6	58.6	34.1	40.0

If one adds, furthermore, an adjustment reflecting the impact of inflation on the real value of foreign debt and interest payments, as done for total public debt in para. 4.4 above, even higher saving rates, and higher saving-investment ratio are obtained for state enterprises as indicated by the figures in parentheses in Table 4.13. However, the saving-investment ratio, even after these adjustments, is lower in the most recent years (FY80 and FY81) as compared with the mid-1970s (FY75-77).

^{/3} The transfers do not include contributions of profits by fiscal monopolies (Tobacco Monopoly and State Lottery) to the budget, since these are counted as tax receipts in Central Government accounts.

Government to state enterprises were counted, that contribution to Central Government deficits has been less than 20% in recent years, indicating that an elimination of such transfers would not have very significantly affected the financial position of the Central Government./1

4.27 Nevertheless, state enterprise resource mobilization in Thailand has not been fully satisfactory in recent years, since the high investment rates were not matched by increases in savings and have thus resulted in significant increases in borrowing during periods when real interest rates, and thus the cost of capital, were rising rapidly./2 Under these circumstances it would have been appropriate to raise state enterprise savings more substantially from the low levels prevailing in the mid-1970s than was actually the case and to avoid the partial erosion in state enterprise savings performance which took place after FY78. The authorities made some important efforts in remedying the situation by raising a number of state enterprise tariffs in 1980, and especially in 1981, which resulted in the stabilization, and eventually a small improvement, in the state enterprise saving rate by FY82./3 These increases occurred during a period when inflation in Thailand was still high and, with the exception of power and telephone charges, were not sufficient to match cost increases for some of the important state enterprises. As a result, operating deficits in the State Railway of Thailand, the Bangkok Metropolitan Transit Authority, and the Metropolitan and Provincial Water Works Authorities, and to a lesser extent the National Housing Authority, have amounted to about 0.2% of GDP. A resolution of the financial difficulties of these entities is urgent through appropriate adjustment of tariffs and improvements in the operational efficiency and management. The Government is presently developing a program toward this effect, since it is committed as part of its structural adjustment program to eliminate operational losses in state enterprises.

4.28 Another issue which deserves further investigation in Thailand is tax treatment of state enterprises. Many state enterprises, especially those set up by special act or decree, which includes all of the major enterprises, excepting the Thai domestic and international airlines and the Krung Thai Bank, appear in principle to be fully tax exempt, including corporate income tax, business, and import taxes. Some of these state enterprises, however, are required to make contributions to the Central Government budget (especially the fiscal monopolies, but also the Telephone

/1 Some state enterprise deficits, however, have been financed through Central Government borrowing from the banking system; therefore, the deficit level and effective transfers were higher than indicated in the text, although the importance of this bias could not be ascertained.

/2 This is further discussed below in paras. 4.29-4.35.

/3 These adjustments included substantial increases in electricity and telephone tariffs, increased bus and rail fares, and higher water charges.

Organization of Thailand, TOT). The World Bank's 1974 Fiscal Report /1 recommended that this issue be studied, but also stated that in principle all state enterprises should be subjected at least to the corporate income tax. The reason for treating state enterprises like private firms is that only where such taxes are levied and reflected in the prices charged by the enterprises for their goods and services, will distortions be avoided between the prices of private and publicly provided commodities, respectively. So far no progress appears to have been made toward addressing this issue in Thailand, but the Government has now indicated its intention to examine the possibility of taxation of selected enterprises. If a policy of broader taxation of state enterprises were, in fact, introduced this would contribute not only to a more efficient allocation of resources, but also to a more effective mobilization of public resources and savings.

4.29 Public Borrowing. As the public saving-investment gap increased in relation to GDP, the public sector had to place growing reliance on debt financing. In the early 1970s, much of the public sector cash deficit was financed by the monetary authority (FY70/71) or by borrowing from commercial banks (FY72/73), with very little reliance on foreign borrowing (Table 4.14). From the mid-1970s onward, however, public foreign borrowing rapidly increased from 0.5% of GDP in FY75 to almost 4% in FY80, and financed increasing shares of the growing public sector deficits, reaching 54% in FY80, compared with 23% in FY75 and 0% in FY70. The share of the public deficit financed by net domestic borrowing from the private sector declined over the same period, with the monetary authority financing the remainder, amounting to between 25% and 40% of the total deficit, or between 1% and 2% of GDP. The use of financing from the monetary authority and the Government Savings Bank was restricted largely to the Central Government, while bond issues and direct borrowing from commercial banks was a source of domestic finance for both the Central Government and the state enterprises. In FY1982, the Central Government more than doubled its borrowing from the nonbank public compared to earlier years mainly because of its efforts to increase the attractiveness of government bonds, including higher interest rates for these bonds, an increase in the withholding tax on bank deposits which increased the relative yields of government bonds, and encouragement to banks to sell newly issued government bonds, as well as advertisement campaigns.

4.30 Special importance attaches to the rapidly increased reliance on public foreign borrowing, not only because of its growing contribution to public sector finances, but also because of the increased role which the public sector has played in Thailand's total foreign borrowing since the mid-1970s. Outstanding public debt grew at the very rapid average rate of 43% p.a. between 1975 and 1981, while private debt increased by only 16% p.a. (Table 4.15). The share of the public sector in total foreign debt

/1 Report No. 574-TH, p. 81.

Table 4.14: FINANCING OF PUBLIC SECTOR CASH DEFICIT, 1970-82

Fiscal year	Cash surplus (-:deficit)		Total	Financed from: (%)					Monetary authorities, etc. /c
	B bln	% of GDP		Net foreign borrowing	Net domestic borrowing			Subtotal	
					From public	Gov't sav-ings bank	Commercial banks		
1970	-3.9	-2.9	100.0	-0.2	2.1	11.3	4.0	17.4	82.9
1971	-6.0	-4.2	100.0	3.1	0.1	12.7	35.1	47.9	49.0
1972	-8.3	-5.2	100.0	6.2	1.7	17.5	62.3	81.5	12.4
1973	-6.1	-3.0	100.0	16.2	11.0	36.4	42.5	89.9	-6.1
1974	+3.3	+1.3	100.0	(32.1)	(3.3)	(59.2)	(9.1)	(71.6)	(-203.7)
1975	-6.0	-2.1	100.0	22.9	6.5	7.6	46.9	61.0	16.0
1976	-15.2	-4.6	100.0	22.8	6.5	8.0	26.2	40.7	36.5
1977	-16.2	-4.3	100.0	21.4	11.0	14.6	14.7	40.3	38.3
1978	-24.5	-5.4	100.0	38.8	7.6	7.8	21.5	36.9	24.3
1979	-26.4	-4.9	100.0	48.7	6.4	6.1	2.7	15.2	36.2
1980	-49.2	-7.5	100.0	50.4	1.8	8.1	12.4	22.3	27.3
1981/a	-44.6	-5.8	100.0	53.9	3.9	3.9	6.2	14.0	32.0
1982/b	-56.5	-6.6	100.0	36.5	7.7	7.0	11.1	25.8	37.8

/a Preliminary.

/b Estimated.

/c Includes borrowing from the Bank of Thailand, Exchange Equalization Fund, Counterpart Fund, coin issue and net use of cash balances.

Source: Statistical Annex Table 5.2.

Table 4.15: EVOLUTION OF DISBURSED EXTERNAL DEBT
(US\$ million)

	1965	1970	1975	1979	1980	1981	Average nominal growth		Average real growth /a	
							1970-75	1975-81	1970-75	1975-81
Level of Debt										
Public Sector	197.5	315.1	610.7	2,831.8	4,128.0	5,169.2	14.1	42.8	-3.0	27.2
Direct government /b	84.0	176.4	237.9	1,270.4	1,647.7	1,946.3	6.2	42.0	-9.8	26.5
Public enterprises	113.5	138.7	372.8	1,561.4	2,480.3	3,222.9	21.9	43.3	3.6	27.6
Private Sector	-	549.7	1,139.3	2,719.6	2,898.8	2,748.0	15.7	15.8	-1.7	3.2
Non-Bank /c	-	410.3	735.5	1,243.3	1,921.7	2,098.6	12.4	19.1	-4.5	6.1
Commercial banks /d	33.7	139.4	403.8	1,476.3	977.1	649.4	23.7	8.2	5.1	-3.6
Total Debt Outstanding	-	864.8	1,750.0	5,551.4	7,026.8	7,917.2	15.1	28.6	-2.1	14.6
Memo item:										
Short term debt /e	-	-	0	0	228.3	1,093.6				
Public	-	-	0	0	60.0	392.0				
Private	-	-	0	0	168.3	701.6				
Distribution of Debt							% of nominal increment		% of real increment	
							1970-75	1975-81	1970-75/f	1975-81
Public Sector	-	36.4	34.9	51.7	58.7	65.3	34.4	73.9	49.9	89.4
Direct government	-	20.4	13.6	22.9	23.4	24.6	6.9	27.7	79.8	33.3
Public enterprise	-	16.0	21.3	28.1	25.3	40.7	26.4	46.2	-29.9	56.1
Private Sector	-	63.6	65.1	49.0	41.3	34.7	66.6	26.1	50.1	10.6
Nonbank	-	47.4	42.0	22.4	27.3	26.5	36.7	22.1	94.7	14.2
Commercial banks	-	16.1	23.1	26.6	13.9	8.2	29.9	4.0	-44.6	-3.6
Total	-	100	100	100	100	100	100	100	100	100
Memo item:										
Short term debt/long-term	-	-	0	0	3.2	13.8				
Public	-	-	0	0	1.5	7.6				
Private	-	-	0	0	5.8	25.5				

/a. Deflated by an import unit value index.

/b. Central and local governments.

/c. Includes some publicly guaranteed private debt.

/d. Derived from IFS and Bank of Thailand figures.

/e. Prior to 1980, inflows of short-term debt exactly balanced outflows in each year for which data is available. As the stock of short-term debt was not measured, it has been deduced from the stock and flow figures for 1980. Short term debt of the banking sector is not included.

/f. % of real decrease.

Sources: World Debt Tables, 1980; World Bank Report 3067a-TH, 1980; mission estimates.

therefore doubled over that period from one third to two thirds, and it accounted for 74% of the increase in nominal debt, or 89% if debt is measured in real terms (i.e., in terms of the volume of imports that would be foregone by paying off the debt).^{/1}

4.31 More than half of the foreign public borrowing was carried out by state enterprises in support of their rapid increase in investments, with most of this borrowing contracted for projects in the energy, transport, and water supply sectors (Table 4.16). Central Government debt abroad, which before 1975 had often accounted for more than half of total public foreign debt, was traditionally contracted to support investments in the agricultural and transport sectors. Foreign borrowing for social services, including health and education, has always been very limited. Recently, however, two new important uses were made of foreign funds: defense expenditures, and counterpart fund requirements (Tables 4.16 and 4.17).

4.32 Although high by Thai standards, the current level of foreign public debt and the debt service burden which it has given rise to remain moderate by international standards.^{/2} However, the rate at which public foreign indebtedness has increased and some of its implications present a number of issues which need to be addressed. One important issue is the apparent lack of interest rate responsiveness in public foreign borrowing. In the early 1970s, when real international interest rates fell and actually turned negative by 1975, the public sector reduced its real level of debt, but thereafter expanded it rapidly at a time when real interest rates rose dramatically from about -3% in 1975 to about +7% in 1981 ^{/3} (Table 4.15). Private sector borrowing, in contrast, expanded only very slowly in real terms from 1975 to 1981, and over the last two years, in particular, when real interest rates were high, real private foreign debt has fallen markedly.

^{/1} Some of this increase in the share of public debt was due to deliberate actions by the authorities aimed at reducing in particular the relatively volatile foreign debts of domestic commercial banks.

^{/2} In 1970, Thailand had the sixth lowest ratio of public foreign debt to GDP in all developing countries for which debt data are given in the World Development Indicators, 1982 (WDR, 1982). In 1981, the public debt/GDP ratio in Thailand was 13.5%, compared to an average ratio of 15.4% in 1980 for all middle income oil importing countries. The public debt service/GDP ratio in Thailand was 1.6% in 1981, compared with the average ratio of 2.4% for middle income oil importing countries in 1980 (Statistical Appendix Table 4.1 and World Development Indicators, 1982, Tables 13 and 15).

^{/3} The real rate of interest is here defined as the nominal rate of interest on US Treasury Bills, deflated by the US GDP deflator.

**Table 4.16: SECTORAL ALLOCATION OF DISBURSED EXTERNAL DEBT FOR MAJOR
PUBLIC ENTERPRISE BORROWERS AND FOR THE CENTRAL GOVERNMENT
(US\$ million)**

Public enterprises	1965	1970	1975	1979	1980	1981	1981 % of subtotals	1981 % of grand total
Non-Financial	<u>112.8</u>	<u>130.5</u>	<u>365.3</u>	<u>1,293.5</u>	<u>2,118.7</u>	<u>2,863.8</u>	<u>88.85</u>	<u>55.40</u>
EGAT	66.6	68.3	179.9	466.0	687.9	1,102.1	34.20	21.32
Thai International	-	-	24.4	348.6	422.9	497.5	15.44	9.62
PTT	-	-	-	-	138.0	274.4	8.51	5.31
PEA	-	10.6	14.4	71.9	103.1	139.7	4.33	2.70
MWWA	-	-	2.9	108.5	109.3	118.9	3.69	2.30
Financial	<u>0.7</u>	<u>8.2</u>	<u>27.5</u>	<u>267.9</u>	<u>361.6</u>	<u>359.1</u>	<u>11.14</u>	<u>6.95</u>
BAAC	-	-	-	69.4	97.4	110.7	3.43	2.14
IFCT	0.7	8.2	27.5	80.2	135.0	165.5	5.14	3.20
GHB	-	-	-	118.3	129.2	82.9	2.57	1.60
Total Public Enterprises	<u>113.5</u>	<u>138.7</u>	<u>372.8</u>	<u>1,561.4</u>	<u>2,480.3</u>	<u>3,222.9</u>	<u>100.00</u>	<u>62.35</u>
Central Government	<u>84.0</u>	<u>172.7</u>	<u>236.8</u>	<u>1,270.4</u>	<u>1,637.7</u>	<u>1,946.3</u>	<u>100.00</u>	<u>37.65</u>
Agriculture	16.3	33.9	37.4	146.9	208.2	274.3	14.09	5.31
Manufacturing	0.2	0.6	12.9	12.7	12.6	12.6	0.65	0.24
Elec. light & distrib.	27.5	15.3	36.5	35.5	34.5	52.1	2.68	1.01
Transport, storage & communication	16.7	96.7	121.3	202.4	256.8	292.1	15.01	5.65
Community, social & personal services	-	-	-	20.8	25.1	36.7	1.89	0.71
General government services	-	-	-	0.5	1.6	4.4	0.23	0.09
Health administration	4.3	3.4	1.1	3.5	6.9	21.3	1.09	0.41
Education	-	4.3	9.1	47.7	61.1	72.7	3.74	1.41
Multi-sector	19.0	18.5	18.6	414.2	493.5	478.8	24.60	9.26
Military	-	-	-	386.2	537.4	701.3	36.03	13.57
GRAND TOTAL	<u>197.5</u>	<u>311.4</u>	<u>609.6</u>	<u>2,831.8</u>	<u>4,118.0</u>	<u>5,169.2</u>	N.A.	<u>100.00</u>
(Total public enterprises plus central government)								

Sources: World Debt Tables, 1980; mission estimates.

Table 4.17: FOREIGN BORROWING FOR COUNTERPART FUNDS /a

<u>Borrower</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
<u>US\$ Million</u>					
Central government	0.0	0.0	270.9	313.7	314.4
Public enterprises	0.0	0.0	236.0	531.8	686.2
Public sector	0.0	0.0	506.9	845.6	1,000.5
<u>% of Total Debt Outstanding</u>					
Central government	0.0	0.0	21.33	19.04	16.15
Public enterprises	0.0	0.0	15.12	21.44	21.29
Public sector	0.0	0.0	17.90	20.48	19.36

/a Includes loans for general balance of payments support.

Source: World Debt Tables, 1980; mission estimates.

has fallen markedly. In fact, the rise in foreign borrowing costs to the public sector was even steeper than that reflected in the figures cited above. From 1970 to 1981 Thailand's access to sources of concessional finance worsened dramatically, and even within nonconcessional finance, Thailand's public borrowing shifted from the less costly bilateral and multilateral sources to private sources of finance (Table 4.18). The problems caused by rising real interest rates are, at the project level, that more productive projects need to be identified and selected to justify continued and increased borrowing. At the budgetary and balance of payments level the problems are that the growing debt service burden makes rapidly increasing contributions to the budget and balance of payments deficits, which in the aggregate are only justified if the public investment program results at the margin in growth of public revenues and foreign exchange at least equal to the debt service generated./1

Table 4.18: SOURCES OF PUBLIC SECTOR EXTERNAL FINANCE

	Average annual growth of outstanding debt (%)			Distribution (%)		
	1970	1970	1975	1970	1975	1981
	-81	-75	-81			
Concessional	15.8	5.8	24.8	72.6	50.7	22.8
Bilateral	23.2	16.8	28.9	27.7	31.7	17.3
Multilateral	6.4	-4.2	16.1	45.0	19.1	5.6
Nonconcessional	41.3	27.9	53.6	27.4	49.3	77.2
Bilateral	25.5	-10.1	65.8	11.5	3.6	8.8
Multilateral	46.1	63.9	32.8	5.7	35.7	23.4
Bonds	-	-	-	-	-	2.6
Financial institutions	84.5	78.7	89.5	0.8	10.6	40.8
Supplier credits	9.3	-12.0	30.8	9.3	2.6	1.6
<u>Total</u>	28.6	13.7	42.5	100.0	100.0	100.0

Sources: World Debt Tables, 1980; Mission estimates.

/1 For the Central Government, in particular the growing momentum of debt service obligations, foreign and domestic, has begun to drive the growth of overall spending and will continue to do so in the future, squeezing the scope for growth in other areas, unless government revenues are similarly expanded.

4.33 As mentioned above (Chapter 2), many of the projects financed by public borrowing during the late 1970s and early 1980s were justified by the earlier low levels of public investment and by the substantial requirements and opportunities associated with the oil price shocks and the development of domestic energy resources in Thailand.^{/1} However, an institutional framework was lacking which would have ensured that all public projects were adequately appraised and monitored in their implementation and that project-level investment decisions took into consideration the rapidly rising costs of foreign borrowing, the longer term implications for Thailand's credit-worthiness, and the implications for the fiscal and balance of payments stability of the country.^{/2} Public foreign debt management tools, such as statutory limitations on public foreign borrowing (in particular the 9% limit on the public debt service to exports ratio, and the limits on foreign borrowing commitments by the Central Government and selected state enterprises set as a percentage of Central Government revenues), could not under these circumstances serve to provide a safeguard against inappropriate decisions, either because they were not binding during the period in question, or were relaxed when they became binding,^{/3} or because they were not designed to address some of the main issues, including the intersectoral allocation of public investments and the appropriate levels of public sector resource mobilization and of financing from the banking sector.

4.34 The Government has, however, recently moved on a broad front to establish more effective control over public sector investment activity and financing decisions, including the public foreign borrowing policy. The scope and nature of these fiscal planning efforts are described in the next chapter. As regards foreign borrowing policy, in particular, the Government has reactivated its high-level Foreign Loan Committee with the Fiscal Policy

^{/1} Besides expanded public investment levels, two factors account for the increased public foreign borrowing levels during this period. First, the Government deliberately chose to substitute volatile or unreliable private debt by public debt. Second, in the early 1980s, the Government chose to reduce gradually the unexpectedly large balance of payments deficits as a deliberate aspect of its structural adjustment approach aiming a gradual adjustment in the medium term.

^{/2} Foreign borrowing for defense, as an extreme case, produces no direct economic, budgetary or foreign exchange benefits, even though the expenditures which it finances may be justifiable from a broader country perspective. The budgetary and balance-of-payments effects from such borrowing must therefore be addressed through specific efforts to raise the budgetary and foreign exchange resources necessary to pay the debt service obligation resulting from military debt.

^{/3} For example, the 7% public debt service ratio which was established in 1964 was amended in 1976 by permitting an additional 2% for military purposes. These separate ceilings were amalgamated in 1981 into an overall 9% debt service ceiling.

Office in the Ministry of Finance as its Secretariat. All public foreign loan applications must be sanctioned by this committee after the project has been reviewed and approved by the NESDB. What is more, a three-year rolling public foreign borrowing plan is now to be prepared every year in parallel with NESDB's macroeconomic projections and public investment programming exercise. With assistance from the World Bank, the Government is also currently reviewing its statutory limitations on public foreign borrowing and its foreign debt data management and reporting practices in order to develop a systematic approach toward determining appropriate overall levels of public foreign borrowing and to ensure a complete and consistent data base necessary to implement such an approach.

4.35 Finally, there are two policy issues which need to be addressed in developing public foreign borrowing programs in Thailand. First, to the extent that foreign loans carry concessional terms, these have generally been passed on to the borrowing agency, and often by the agency to the ultimate beneficiary of a foreign-financed project. However, at times these interest rate subsidies are generally not conveyed as a matter of deliberate policy in support of a priority institution or special target group worthy of such subsidies, but more often than not are the outcome of what may largely be accidental reasons of loan distribution across agencies. The Government now intends to initiate a study to develop explicit guidelines for distributing funds among implementing agencies so that the advantages of access to concessional funds accrue to the Government, or are distributed according to government priorities. Second, institutional and political resistance has existed in Thailand to borrowing foreign funds for "social" projects, especially in the health field. Given the rigidities in Thailand's budgetary system, where foreign-financed expenditures are treated as extrabudgetary items, additional to the budgetary allocations, social sector expenditures may receive less financial support than they deserve and are commonly thought to be given. For example, in the case of the health sector, the common perception generated by budgetary statistics (which exclude foreign-financed expenditures) is that health spending occupies a larger share and is increasing more rapidly in relation to total expenditure than has actually been the case (see below, Chapter 10). More importantly, as a result of their lack of access to foreign funds and expertise, these sectors may be receiving insufficient inputs or technical assistance which need to be purchased abroad. The common notion, on the other hand, that social projects have a payoff only in the long term, is not a relevant consideration, as long as the economic rates of return to these projects are high (as, indeed, is the case for well-designed projects; see Chapter 10), and as long as the overall borrowing program is designed in connection with fiscal measures which ensure that sufficient public revenues and foreign exchange are generated in the aggregate to service the overall public foreign debt.

5. PUBLIC RESOURCE MANAGEMENT IN THE FIFTH PLAN PERIOD

5.01 The planning of public resource mobilization and use in Thailand in the past has been short-term and partial, mostly focusing on the annual budget cycle for the Central Government, with little explicit consideration of the longer-term fiscal implications of budgetary decisions or a more comprehensive view of the public sector, including the local government sector and the state enterprises. This absence of medium-term fiscal planning was generally without major consequences in the past, because the public sector was relatively small and dominated by the Central Government. Moreover, fiscal management, while short term in focus, was very conservative in orientation. In recent years, however, the setting has changed: Thailand's public sector has grown substantially in relative size, and within the public sector, state enterprises have begun to play a much more important role in terms of mobilizing and using financial resources, domestic and foreign. In parallel with these developments, overall public sector resource management became less conservative, placing increased reliance on deficit financing for the Central Government and the state enterprises alike, thus requiring more extensive domestic and foreign borrowing.

5.02 The rapid increase in public sector activity in recent years can be justified in terms of the requirements for adjustment to the two energy price shocks and the need for continued, or even increased, efforts to alleviate Thailand's rural poverty problems and the shortfalls in social services. But it has given rise to two issues. First, with the much greater amounts of economic and financial resources directly managed by the public sector, improved planning and management procedures are required to ensure that these resources are spent effectively and in line with the overall development goals and priorities of the Government. Secondly, while the substantial increase in the public savings-investment gap and the attendant internal and external imbalances were in part the result of deliberate policy decisions, the scale and pattern of these developments was not foreseen or planned, given the absence of an effective and comprehensive fiscal planning mechanism. For the future, the country's room for maneuver has been reduced as a result, because of the now higher levels of public indebtedness, the continuing existence of fiscal and financial imbalances, and an international outlook which, unless it were to improve unexpectedly, will result in a downward adjustment of Thailand's medium-term economic growth performance, when compared to historical growth rates in Thailand. Therefore, prudent public resource planning and management is now an urgent task in Thailand.

5.03 The Government is aware of the urgency of this task and as part of its structural adjustment program has begun to develop measures for comprehensive institutional reform aimed at improved public sector management. As part of this overall effort, it has initiated a fiscal planning program which will address many of the issues requiring

urgent attention, including revenue mobilization, state enterprise tariff policies, public foreign borrowing policy, and public expenditure programming. This chapter first assesses the present status of this fiscal planning exercise; second, it reviews the results of the aggregate public resource planning efforts carried out by the Government with support from the World Bank; third, it reports on an in-depth review and assessment of public expenditure programs for each of the major sectors of Government activity; and, finally, it provides an analysis of the macroeconomic implications of the Government's plans for resource mobilization.

5.04 As mentioned earlier, this Report cannot and does not intend to provide a blueprint for public sector resource mobilization and use. Rather, it represents an interim assessment of a major and innovative fiscal planning effort currently being carried out in Thailand, and aims primarily to assist in pulling together the lessons and implications that can be drawn so far, and in pointing towards the next steps which can be taken in continuing the progress which has already been made.

Fiscal Planning: General Objectives and Approaches

5.05 Fiscal planning should be designed to cover a large array of highly interrelated financial decisions and programs of a country's major public agencies, including the Central Government, the state enterprises, and local authorities. These decisions involve revenue mobilization, expenditure programming, and borrowing strategy for any given year and usually three to five years into the future. Two types of broad objectives can be served by systematically and comprehensively planning these decisions. First, fiscal planning has the objective to ensure the consistency of spending and resource mobilization plans at the project, sectoral and agency, macro- and intertemporal levels. In the absence of such consistency checks, difficulties may be incurred during the implementation of public programs and projects, e.g., resulting from lack of counterpart funds for foreign-financed projects, lack of maintenance of costly infrastructure, unpopular emergency measures to raise revenues or to cut back expenditures. Because of inherent uncertainties, fiscal planning cannot ensure complete avoidance of such problems, but it does reduce the risk of inconsistent decision-taking. Second, fiscal planning involves the normative task of defining trade-offs and of setting priorities in the area of public resource mobilization and use. These trade-offs are manifold and complex, including those of allocating resources between the public and the private sectors, between public consumption and investment, between different types of revenue measures or sectoral expenditure functions. Fiscal planning provides an opportunity and the discipline to identify and evaluate these and related trade-offs and to translate broad policy objectives systematically into specific public action. It also provides a means of tracing the sectoral implications of macro stabilization measures. This is important, since the usual instrument of macroeconomic fiscal control, i.e., the Central Government budget, involves expenditures for only a subset of all public sector services, particularly those for

social services and rural development. Macrofiscal measures which concentrate exclusively on the budget will therefore directly imply sectoral shifts of public spending, which may conflict with the Government's broader development objectives. A broader approach to macrofiscal policy is therefore desirable, covering not only the revenues and expenditures of the Central Government, but also those of the major state enterprises.

5.06 Comprehensive fiscal planning is a very complex task requiring extensive information on specific revenue instruments and agency programs, and partial approaches are therefore appropriate, especially in the early stages of a fiscal planning effort. Nevertheless, at least an indicative overall fiscal picture should be developed wherever possible, and major linkages and trade-offs between revenue, expenditure and borrowing programs should be defined. A general discussion of the issues and techniques involved is presented in the following paragraphs. Their specific application to Thailand is discussed in the next section.

5.07 Central Government. On the revenue side, standard methods of revenue forecasting are available involving an analysis of historical trends to determine the relationship between the revenue from major taxes and important variables in economic development in the absence of discretionary policy changes. In the first instance, The future likely growth of revenues can then be projected on the basis of these relationships and the expected trends in economic development, and considering desired discretionary changes in revenue (tax) policy. On the expenditure side, three types of approaches can be distinguished: First, "top-down" expenditure targeting allocates overall expected available resources for each year of the planning period by sector and subsector in line with the Government's broad sectoral and intrasectoral priorities. In designing annual budgets, these sectoral and subsectoral targets can then be used to establish ministerial or departmental ceilings. Second, "nondiscretionary" expenditure items, to which the Government is committed for some years to come (in particular, debt service on existing debt, pensions, and substantial portions of government salaries and wages and of operations and maintenance, defense and administrative expenditure) can be forecast. Given assumptions regarding public resource availability, this permits an assessment of how much room there is for discretionary expenditure changes, particularly for capital outlays. Third, "bottom-up" project and activity-level expenditure programming traces out the expenditure implications of ongoing as well as of new projects or activities, covering both capital and recurrent outlays. Project and activity-level expenditures can then be aggregated by program and sector and into total expenditure for each year. The consistency of these aggregated expenditures with overall resource availability and inter- and intrasectoral priorities can be checked, and necessary changes can then be traced back to the project or activity level by reducing, phasing or

scrapping low-priority activities, by adding or accelerating high priority activities and/or by reconsidering discretionary changes in tax policies or in Central Government support to public enterprises. Under this system, annual budgets would represent time slices of the multiyear expenditure program, which would be revised and updated on a rolling basis as part of the annual budgeting process. Finally, an assessment of borrowing needs and priorities can be carried out in line with the aggregate revenue and expenditure plans, taking into consideration both the macroeconomic implications of different types of public borrowing and the debt service implications which they give rise to.

5.08 Ideally, all major components of fiscal planning should be carried out iteratively, usually beginning with a baseline projection of revenues, establishing a benchmark of resource availability which can guide the ensuing "bottom-up" programming of expenditures, and a firstround estimate of borrowing needs. The revenue, expenditure and borrowing programs must then be brought in line with each other by considering at the margin the relative costs and benefits of changing revenues, spending and borrowing requirements. In this iterative process, much can be gained by considering in specific terms what revenue measure would be taken and what expenditure would be cut, rather than merely specifying broad targets whose achievements may be unrealistic and whose relative costs or benefits cannot be assessed.

5.09 State Enterprises. Major state enterprises generally develop their own expenditure and revenue forecasts, frequently on a more systematic and elaborate basis than is the case for the Central Government. These projections should be compiled and reviewed in terms of the underlying planning assumptions, particularly as regards projected demand growth, capacity utilization, pricing policies, maintenance and operations requirements, borrowing programs, etc. Such a review would aim to determine what are the marginal projects or activities planned by the enterprise, to what extent additional revenues could be generated efficiently by higher user charges, and what are the implications of additional borrowing for the financial structure of the enterprise. A comprehensive compilation of recurrent and capital revenues and outlays by state enterprise can then be used to develop a set of consolidated public sector accounts, permitting an analysis of trends in historical and planned public spending by function or by object, and an evaluation of trends in financing from alternative revenue sources. A full accounting of past and planned expenditure and revenue flows on current and capital account for all agencies also provides an effective check on assumptions regarding interagency financial flows (in particular transfers to and from Central Government) and on the accuracy of consolidation which requires the netting out of all interagency transfers in order to avoid double counting.

5.10 Local Governments and Extrabudgetary Funds. Local government expenditures and revenues in principle should be projected in a manner analogous to the projections for the Central Government, but for the purposes of

national fiscal planning such an exercise is ruled out by the large number of local authorities. As a first step, it is, however, desirable to establish historical revenue and expenditure trends by broad categories for all local governments combined and extrapolate their likely growth on the basis on simple analyses of revenue buoyancy, local government employment growth, borrowing programs, and central-local transfers.^{/1} The last item, in particular, deserves careful consideration in a national fiscal planning effort, since such transfers tend to be treated as residuals and are the first to be squeezed during periods of fiscal austerity, to the detriment of important local public service programs. Extrabudgetary funds play an important role in Thailand and also need to be brought into an overall fiscal planning effort. Revenue and expenditure trends in principle can be forecast and assessed much as is the case for state enterprises, except that information tends to be scarce and forecasting at the level of individual funds more difficult, particularly for the smaller ones.^{/2}

5.11 Consolidated Fiscal Planning. Once the fiscal planning exercise has been carried out at the level of individual agencies, a projection of overall (consolidated) fiscal aggregates can be assembled. Major interagency interrelationships will already have become apparent in the process of assembling agency-specific forecasts, but in assessing the consolidated expenditure, revenue and borrowing prospects for the public sector, particular attention can be focused on the following issues: (i) the consistency of overall revenue, expenditure and borrowing levels with the macroeconomic goals of Thailand and external stability; (ii) the possible role of state enterprise finances in achieving macroeconomic goals and in maintaining the desired intersectoral balance of public expenditures in times of fiscal austerity; and (iii) the role and justification of interagency transfers in pursuing particular fiscal goals, such as deficit financing of state enterprises, or revenue support for local government.

Fiscal Planning in Thailand

5.12 Past Fiscal Planning Practices in Thailand. Until recently, official fiscal planning in Thailand was rudimentary and fragmented. Central Government resource planning was limited to the annual budget process. On

^{/1} Special attention should be given also to expenditure and revenue programming in Bangkok of the Bangkok Metropolitan Administration (BMA), even in the context of a national fiscal planning exercise, since the BMA is by far the largest single local government and is likely to absorb a lion's share of the resources channeled to local authorities.

^{/2} Because of their relatively modest size, local government and extra budgetary funds will only be treated in passing in the remainder of this chapter.

the revenue side, forecasts were prepared by the Ministry of Finance for the next budget year, based on a simple linear extrapolation of past revenue growth for each of the major taxes, making allowance for changes in tax rates where appropriate, and for other special considerations thought of relevance at the time. This procedure resulted in a point estimate of revenues which was then used, together with a target budget deficit to be financed by borrowing, to determine the overall resource ceiling available for allocation among expenditures by the various ministries and departments. During times of rapid economic growth, and especially during years of accelerating inflation, this revenue forecasting method usually produced relatively conservative estimates which could be met or exceeded quite easily. In FY82, however, the system broke down as Thailand experienced a major revenue shortfall as a result of the economic slowdown, decline in the rate of inflation, and, in particular, the marked decline in imports. Since these events were not predicted, and probably were not even predictable, more refined forecasting methods would also have faced difficulties at the time. Nevertheless, even for annual budget projections, it would be appropriate to relate revenue projections to projected economic developments and to apply sensitivity analysis for revenue forecasts, based on alternative macroeconomic scenarios, growth and inflation assumptions, in order to give the decision makers, including Parliament, a better understanding of the range of possible or likely outcomes and the risks attached to any particular budget ceiling.^{/1} On the expenditure side, the Budget Bureau in the past compiled departmental budget requests, which were then brought within the overall budgetary ceiling, with the relative priority of projects and programs generally determined by the Budget Bureau in direct negotiation with the departments concerned. Little or no information was available for, or attention given to, the longer-term implications of any particular budget request or allocation. In any case, expenditures financed from foreign grant or loan proceeds were not, and still are not, part of the central budget and were not specifically planned in any comprehensive manner, often resulting in difficulties when insufficient Baht counterpart funds were budgeted, given the lack of explicit linkage between domestic resource and foreign resource budgeting.

5.13 State enterprises, particularly the larger ones which had long-standing associations with external lenders, such as EGAT, PEA, MEA, TOT and SRT, have for some time carried out medium-term financial forecasts

^{/1} Sensitivity analysis in revenue forecasting has recently been applied by the Bank of Thailand for its short-term forecasts of fiscal activities.

at a fairly sophisticated level, but until very recently, no systematic effort appears to have been made by any central agency to compile these programs into an overall program, although NESDB staff concerned with reviewing state enterprise project proposals have had access to these programs. Moreover, most state enterprises are required to submit their annual budgets for review to NESDB in preparation for Cabinet approval. NESDB staff, in conjunction with staff from the Budget Bureau, Ministry of Finance and Bank of Thailand, have in the past reviewed these budgets, with little or no attention given to the recurrent or operating portion, but more frequently with a careful review of the capital budget. However, these reviews appear not to have been concerned either with the longer-term implications of the expenditures budgeted, or with the compilation of budgets across agencies to ascertain the overall size and sectoral distribution of public spending and financing requirements.

5.14 Thailand's past five-year plans, including the Fifth Plan, did not contain a public investment and financing program. As background for the preparation of the Fifth Plan, however, major individual ministries, departments and state enterprises prepared five-year expenditure programs related to their programs of activities which were submitted to NESDB's sectoral units for review and information. However, these programs do not appear to have been systematically compiled into an overall program in preparing the Fifth Plan, and no direct link was established at that time between these programs and the Plan's macroeconomic projections and targets for public resource mobilization and use, specifically the targets for Central Government revenue and expenditure growth, and for overall public investment and saving. As a result, the Plan did not provide either a consistency check for ministerial and state enterprise expenditure programs, nor any feedback to individual agencies as regards the inter- and intrasectoral trade-offs in the context of constrained resource availability.

5.15 Current Fiscal Planning in Thailand: Approaches and Issues. The Government has recently begun to develop new, more systematic and comprehensive methods of planning for the mobilization and use of Thailand's fiscal resources. The process began in the context of the Government's structural adjustment program and while it has progressed a considerable distance from its elementary starting points, further development is required to establish consistent and mutually complementary fiscal planning procedures in the numerous agencies which are involved in this highly complex process. The discussion in the following paragraphs provides an outline and assesment of the efforts which are currently underway, both as a basis for recommendations regarding further steps to be taken, and as background for the discussion of the actual plans and programs in the subsequent sections.

5.16 Four central, or "core," agencies - NESDB, the Budget Bureau (BOB), the Ministry of Finance (MOF) and the Bank of Thailand (BOT) - are directly involved in the Government's current fiscal planning efforts, in addition to

the numerous line ministries and departments, as well as state enterprises which now have prepared medium-term expenditure and financing programs. The various interlocking activities are briefly reviewed below for each major agency or group of agencies.

5.17 (a) NESDB: Currently, NESDB is the single most important Governmental unit in terms of its involvement in overall fiscal planning. NESDB's efforts in this area have focused mainly on the expenditure side and involve four major sets of activities: the preparation of a five-year public expenditure program by NESDB's Fiscal Planning Unit covering the Fifth Plan period; a rolling three-year program for public foreign borrowing; the preparation of the "Pink Book," a project list so named for the color of its cover and compiled as an input into the preparation of the budget for FY83, which sets out NESDB's project priorities in line with the Fifth Plan goals; and, finally, reviews of departmental and state enterprise investment programs carried out by NESDB's sectoral units.

5.18 NESDB's five-year public expenditure program is the most comprehensive of the four activities. It covers the Central Government, 55 state enterprises (including all the major nonfinancial state enterprises), and the local authorities. For each of these three sets of agencies, different programming methods were used. For the Central Government a "top-down" approach was adopted. It started with the Fifth Plan targets for Central Government revenues and deficit,^{/1} which were derived from NESDB's macroeconomic model as consistent with the macroeconomic targets for domestic and external variables (in particular the current account deficit target). Using the macroeconomic model, these terminal-year targets were translated into annual allowable expenditure figures for FY82 through FY86, excluding foreign-financed expenditures, following budgetary practices. These annual figures were divided into development and nondevelopment expenditures,^{/2} with development expenditures targeted to receive 40-42% of the annual total, and

^{/1} The most important targets were set originally as: revenues at 18% of GDP and budget deficit of B 22 billion by FY86. In mid-1982, these targets were revised to revenues at 16% of GDP and budget deficit of B 26 billion.

^{/2} This classification follows the UN convention and is used also by the Budget Bureau as a classification device for Central Government expenditures. In essence, it classifies all expenditures on defense and internal security, general administration, debt service and headquarter expenditures of line ministries as "nondevelopment" expenditures. The rest is classified as "development."

defense a maximum of 25% of the budget and not exceeding 5% of GDP. Debt service obligations were set in line with projections by the Budget Bureau given projected domestic and foreign loan commitments required to finance the projected annual budget deficits. Development expenditures were allocated across sectors and subsectors by adjusting past trends according to the general (qualitative) guidelines set in the Fifth Plan, by postulating terminal-year sectoral and subsectoral development expenditure shares, without reference, however, to any specific "bottom-up" expenditure programs. No breakdown between capital or recurrent expenditures, or by object (wages and salaries, nonwage expenditures, etc.) was carried out. Foreign-financed Central Government expenditures were projected separately, based on NESDB's foreign borrowing program for new projects (see below, para. 5.23), and from BOT and BOB information on expenditures programmed under ongoing foreign-financed projects.

5.19 State enterprise expenditures are aggregated "bottom-up" on the basis of five-year expenditure programs submitted by the individual state enterprises, and based on each agency's own projected demand and cost estimates without consideration for macroeconomic constraints or intersectoral priorities. The financing of state enterprise capital expenditures is projected by aggregating disbursements from foreign loans (derived from NESDB's borrowing program) and own financing and government grants (derived from the programs submitted by the state enterprises), and deriving domestic borrowing requirements as a residual. Local government expenditures are projected "top-down," based on extrapolation of past revenue trends making allowance for the estimated effects of new property tax measures, but not for loan financing. The sectoral breakdown is assumed to follow past trends and Fifth Plan guidelines (as for Central Government), while the breakdown between capital and recurrent expenditure is projected on the basis of the historical average shares of 30% and 70% respectively.

5.20 NESDB's five-year public expenditure program thus represents a complex combination of "top-down" (domestically financed Central Government expenditures), "bottom-up" (state enterprise and foreign-financed Central Government expenditures), and mixed (local government) approaches. Only the first of these three is fully integrated into the macroeconomic framework of the Fifth Plan, and ostensibly reflects the Fifth Plan's intersectoral priorities. The other program components, particularly the state enterprise programs, are largely demand-driven as seen by each state enterprise. This has two potentially important consequences: First, to the extent that changing macroeconomic circumstances require adjustments in public expenditure programs, under present planning approaches these adjustments can be translated directly only into the Central Government portion of the expenditure program. Combined with the fact that the nondevelopment portion of the Central Government expenditures are largely driven by nondiscretionary components (debt service, defense, etc.), such adjustments will be mostly reflected in

trimming of the development portion. Second, with the exception of the Central Government portion, NESDB's expenditure program is largely descriptive, rather than normative, summarizing individually planned programs, rather than setting priorities and defining inter- or intrasectoral trade-offs. At the same time, since the Central Government portion currently lacks linkage with the "bottom-up" projects and activities of specific departments, the implications of normatively postulated intersectoral and intrasectoral shifts cannot be translated into specific project or activity terms and no assurance exists that the marginal projects and activities would be selected in or out of the program as and when the expenditure allocations are translated into budgetary ceilings./1

5.21 NESDB's five-year expenditure programming exercise, therefore, is neither a comprehensive tool for checking the consistency of individual agencies' programs with overall resources available and sectoral or subsectoral priorities, nor does it reflect a consolidated normative view of where the public sector should be going. Nevertheless, the exercise is an important starting point, since for the first time a complete framework for public expenditure planning has been developed in Thailand, on the basis of which some first judgments can be made about the appropriateness of public expenditures planned by specific agencies in terms of their implications for macro-economic development and for the intersectoral allocation of resources. Moreover, it provides a basis for possible next steps which would include the following: (i) development of "bottom-up" expenditure programs for at least the most important Central Government sectors (education, health, highways, etc.), and contrasting these with the "top-down" ceilings already in existence; (ii) an assessment of the state enterprise expenditures programs in terms of their overall size relative to other sectors, and in terms of the economic justification of major program components; (iii) more comprehensive assessment of state enterprise financing plans, in particular the appropriateness of their self-financing targets; (iv) a "bottom-up" assessment of expenditure programs for local governments, most importantly for the Bangkok Metropolitan Administration; and (v) integration of the multiyear program with the annual budget process. Items (i) and (ii), in particular, are more fully addressed in Part III below; item (iii) is the subject of another planning exercise undertaken by MOF (see below para. 5.29), while item (v) is already being tackled in NESDB through the preparation of the Pink Book discussed below (para. 5.22). All of these extensions require more substantive contacts and exchanges within NESDB between the staff in

/1 In any case, the rules of thumb used to allocate sectoral and intra-sectoral shares on the basis of a qualitative interpretation of the Fifth Plan's goals and priorities cannot be very meaningful in the absence of an assessment of how they affect specific programs and activities.

charge of the overall public expenditure programming exercise and the staff in charge of reviewing sectoral programs and projects, and extensive interaction between NESDB staff and ministerial and state enterprise planning staff. Particularly at the ministerial level, program planning must also be improved and be given a multiyear financial dimension, if it is to be of use as an input for NESDB's overall fiscal planning procedures.

5.22 The first "Pink Book" was compiled as an input into the preparation of the FY83 budget. NESDB's institutional role in the budget process is to provide sectoral guidelines in accordance with Plan goals and targets, a role which the "Pink Book" was designed to support. For each sector covered by the Central Government's budget this document identified those programs and projects, ongoing and new, which in NESDB's views should receive priority in the budget allocation process as matching the Fifth Plan goals. The project list contained in the Pink Book, as well as the subset of priority projects listed, was prepared on the basis of information provided by line agencies and discussed between NESDB and line agency planning staff. As a minimum the process therefore served as an important vehicle for increasing the communication between NESDB and line agencies and in facilitating the articulation of a priority listing, even if mutual agreement was not always assured in the end. Moreover, the Pink Book was welcomed by BOB as an input into the budget process, assisting BOB in the interpretation and implementation of Fifth Plan goals and policies, and thus was an important vehicle of communication between NESDB and BOB. The precise impact which the Pink Book had on the shape of the FY83 budget is, however, difficult to assess. The Pink Book's immediate and direct impact may not have been very large, since it only covered about one third of all projects, leaving the rest entirely to the line agencies' discretion; since in some important sectors (e.g., health and education) the Pink Book's priorities were ostensibly fully in accordance with standing priorities of the line agencies; and since it did not include any suggestions as regards sectoral or subsectoral ceilings and was not integrated into NESDB's multiyear expenditure programming exercise. However, as a starting point the Pink Book is an excellent vehicle for further refinements, in particular an explicit linkage with the multiyear expenditure programming exercise and the development of intersectoral guidelines linked to the ministerial ceilings which the new budget process now establishes.

5.23 Next among NESDB's arsenal of fiscal planning tools is its three-year foreign borrowing program which is prepared yearly as an input into MOF's annual foreign borrowing program, which in turn is submitted to the Cabinet-level Foreign Borrowing Committee for approval. NESDB's borrowing program consists for each of the three years of a listing of "firm" projects and a listing of less firm "back-up" projects. Since the list of firm projects does generally not exhaust the full annual foreign borrowing ceiling established originally as part of the Fifth Plan preparation process, projects from the back-up list are expected to move into the firm

listing as their preparation progresses and their priority status is ascertained. The lists are compiled from submissions by ministries and state enterprises. On the basis of planned loan commitments, expected disbursement flows and counterpart requirements are then calculated, which serve as inputs for NESDB's overall public expenditure programming exercise (as mentioned above, para. 5.18) and for BOB's assessment of counterpart requirements in budget preparation. The foreign borrowing program also serves as an important monitoring device for NESDB to keep track of foreign borrowing plans of the various public agencies. In the past, these agencies have tended to deal directly with foreign lenders, often approaching NESDB only at a late stage for review and approval. The program also serves as a communications device directly between NESDB and foreign lenders, since it permits a cross-checking of lending and borrowing programs respectively and can act as an early warning device for any divergences in expected timing, size, or nature of projects between NESDB and the lending agencies.

5.24 Finally, within NESDB the sectoral units review expenditure and investment programs of the agencies operating in the sectors under each unit's purview. Within NESDB these units have the most complete information available and are in the best position to make judgments about intrasectoral priorities and funding needs. Their role in providing inputs into the overall investment programming exercise and the preparation of the Pink Book and the foreign borrowing program is thus essential. They should be given every encouragement to compile, review and assess sectorwide expenditure programs based on line agency submissions and to communicate these to the NESDB staff in charge of the overall programming efforts. In turn, the sectoral and subsectoral implications of resource constraints or shifts in intersectoral allocations should be fully explored by the staff responsible for overall programming with their sectoral colleagues, and at the appropriate juncture with line agency planning personnel. All this requires increased attention by sectoral staff to sectorwide programming issues which in turn may require less emphasis on project-specific reviews. In any case, the role of the sectoral staff is pivotal in public investment programming and must be carefully developed.

5.25 (b) Budget Bureau: Besides its central involvement in the preparation of the annual budget for the Central Government, BOB has initiated two efforts with a direct bearing on multiyear fiscal planning for the Central Government. First, and foremost, with the assistance of a team of consultants financed by USAID, BOB has developed a multiyear bottom-up expenditure programming exercise. This is based on annual submissions by line agencies of detailed project-by-project projections of capital and recurrent expenditures for five years into the future. All currently ongoing projects, and projects to be initiated during the next budget year are included. This is a very ambitious exercise and requires a learning process in the line agencies to satisfy the information requirements, and only with FY83 has it begun to function on a reasonably comprehensive basis.

Once fully installed, computerized, and reliably operating, this system can, among other purposes, serve as an important input into the multiyear expenditure programming exercise carried out by NESDB, since it provides precisely one of the main elements currently missing in NESDB's forecasts, namely the "bottom-up" information for Central Government development expenditures. For NESDB's purposes it will, however, need to be complemented by an assessment of new projects planned for initiation after the next budget year. Since most if not all of the most important development projects involve foreign assistance of some form, NESDB's foreign borrowing program will provide much of the additional inputs required.

5.26 A second BOB effort in the context of the Government's structural adjustment program implementation has been the preparation of a five-year expenditure program for the Central Government, focusing particular attention on the "nondiscretionary" elements of the budget, in particular debt service, wage and salary payments and the like. This exercise was further developed with consulting assistance provided by the World Bank and its results are incorporated into the overall review of aggregate public expenditure trends for the Fifth Plan in the next section. This exercise serves as a useful device to trace out the impacts of some important elements driving the budget and to determine the scope for discretionary decision-making in budget preparation. However, for full effectiveness, this approach should eventually be integrated with NESDB's overall expenditure programming work and with BOB's "bottom-up" exercise of tracing out the expenditure implications of ongoing and new development projects.

5.27 (c) Ministry of Finance (MOF): MOF has traditionally been the main unit responsible for revenue forecasts in budget preparation. As a result of the revenue shortfalls experienced in FY82, its customary procedures of short-term projections have been subjected to intense internal review and, with assistance from IMF missions, careful reassessments of revenue potential and the need for additional tax increases under changing economic conditions were carried out. These short-term revenue estimates were complemented by a first internal MOF effort (with World Bank assistance) to develop medium-term revenue projections as part of the fiscal planning exercise undertaken in the context of Government's structural adjustment program.^{/1} Departing from the conventional MOF approach of linear extrapolation of past revenue growth, historical patterns of revenue growth were analyzed by separating for each tax the impact of growth in the tax base from the impact of discretionary changes in the tax structure and tax administration. Standard methods widely used in fiscal projections elsewhere were used to "clean" the historical revenue series from the impact

^{/1} Earlier World Bank reports had carried out medium-term revenue projections (see Chapter 4 above), but this practice apparently had not been adopted by MOF as an internal management and planning tool.

of discretionary changes, and then to estimate the relationship of "automatic" or "endogenous" revenue growth to changes in the structure of the economy, including changes in relative prices and shares of the tax bases in overall economic activity. On the basis of these historically established relationships and alternative projected scenarios for economic growth and inflation, revenues were projected for each major central government revenue source. In this process, MOF staff drew on inputs from NESDB in assessing the macroeconomic outlook for the Fifth Plan Period.^{/1} The results of these forecasts were then combined with the expenditure projections derived from BOB's broad expenditure forecasting approach (see above para. 5.26) to ascertain the likely overall budget deficit in the absence of discretionary tax measures. The broad effects of tax measures, both in the area of administrative reform and changed tax structure and rates were then assessed to determine the scope for reducing the budget deficits to desirable target levels by raising additional revenues over and above the expected "automatic" growth. The consistency of these target revenue, expenditure, and budget deficit levels with overall macroeconomic stability was verified by NESDB through the use of its macromodel.^{/2}

5.28 The development of this medium-term revenue planning approach has had immediate impacts on the Government's outlook for resource mobilization. As the revenue planning exercise was carried forward, it became evident that the Fifth Plan's target of an 18% ratio of Central Government revenues to

^{/1} In principle, a close linkage between NESDB's macromodeling efforts and MOF's revenue projections is highly desirable. First, tax base growth projections may be related directly to major economic variables in the macromodel, such as sectoral production, income by type of recipient, and various demand components, in particular exports, imports, energy use, etc. The results of refined revenue forecasts, in turn, can be used to inform the formulation and application of the macromodeling exercise. In practice, however, integration of these two approaches tends to be complicated by differences in definitions of variables, differences in primary objectives between macroprojections and tax revenue projections, and the institutional "distance" between MOF and NESDB. Increased interrelationships between the two projection exercises should be aimed for over time, particularly as the more disaggregated macromodeling framework, which is currently being jointly developed by NESDB and World Bank staff (SIAM 2 macroeconomic model) is becoming operational. For now, the broad reflection of NESDB's macroeconomic outlook is adequate to ensure broad consistency between NESDB and MOF projection work.

^{/2} The major aspects of this work are summarized in the next section, while the details of the revenue projection methodology as developed and applied by a World Bank consultant in collaboration with MOF is fully explained in a technical note.

GDP was not likely to be achieved under realistic assumptions regarding the effects of feasible improvements in tax administration and in tax structure. As a result, the target ratio of Central Government revenue to GDP was reduced to 16%, the deficit target revised upwards, and expenditure targets reduced.^{/1} This increased realism is essential in that it focuses decision makers' attention on (a) assessing the need for priority intervention on the revenue side to achieve the new revised revenue targets and the difficulties and risks attendant to setting revenue targets; (b) tracing out the implications of reduced revenue forecasts on appropriate expenditure ceilings and making appropriate adjustments in the expenditure plans; and (c) considering the implications of alternative budget deficit targets on macroeconomic developments, as well as the potential for developing alternative fiscal policy measures of containing, to the extent necessary, the overall savings-investment gap of the public sector. The first two of the implications appear to have been fully developed by the Thai authorities in their recent review of the fiscal outlook and targets. The extent to which the third implication was assessed is uncertain, at this point. The scope for doing so will further be explored in later sections of this chapter.

5.29 MOF has been involved in two other efforts which eventually need to be integrated into the Government's overall fiscal planning program. First, MOF has reviewed the financial performance of major state enterprises and developed financial targets and a schedule of public utilities' price adjustment which was approved in principle by the Cabinet for implementation during 1983. Combined with improvements in the management and operational effectiveness of state enterprises, the goal of these tariff adjustments was to reduce initially, and eliminate eventually, the operational losses of state enterprises and to increase the extent of selffinancing of state enterprise investments. However, only limited progress has been made with the implementation of this program. Second, the MOF has initiated a review of extrabudgetary funds, the most important of which will be subjected to a more detailed assessment of the operations. Both activities, so far, have not been integrated with the overall public sector fiscal planning effort carried out by NESDB, which should be aimed for eventually, however.

5.30 (d) Bank of Thailand (BOT): BOT has in the past devoted significant amounts of staff resources to assemble public sector financial data on an up-to-date basis including state enterprise and local government accounts, budgets and investment programs. These efforts have provided the basis for historical financial accounts for the public sector (see Chapter 4) and have been used by BOT to carry out short-term projections, usually for the

^{/1} These downward revisions were necessitated at least partly by the recent revenue shortfalls discussed previously, which, despite two major tax packages introduced in FY82 and FY83, will leave the revenue/GDP ratio at only about 14% for FY83, thus making achievement of any higher target ratio during the Fifth Plan that much more difficult.

current fiscal year, and for one budget year into the future. On the basis of its own Central Government revenue forecasts, BOT has also participated in setting revenue targets or ceilings for the budget as inputs into the annual budget exercise. So far, the consistency of the revenue forecasting approaches used by BOT and MOF does not appear to have been ascertained, nor has the consistency of NESDB and BOB expenditure projections with those of BOT.

5.31 (e) Assessment and Recommendations: The review of current fiscal planning efforts in Thailand carried out in the preceding paragraphs indicates that much progress has been made since the initiation of the Fifth Plan with numerous innovative initiatives being taken in the four core agencies: NESDB, BOB, MOF and BOT. It is important that the momentum is maintained, that the initiatives so far taken become permanent features modified over time in line with the experience gained and with improved planning capabilities both in the core agencies and among the line agencies. The following areas should be given special attention.

5.32 First, refinement of current fiscal planning methods is necessary only in a few areas, most importantly the introduction of a "bottom-up" element into NESDB's Central Government expenditure program. Second, more essential is the integration of the various medium-term fiscal planning efforts currently underway in the four core agencies. This requires consolidation in particular in the context of Central Government expenditure planning between NESDB and BOB, and for state enterprise financial analysis and planning between NESDB and MOF. Short of full integration of the various efforts, at least the consistency of each of these related efforts should repeatedly be ascertained and differences explored fully in interagency discussions. The relationship between all major fiscal planning components and NESDB's macro framework, and their implications for, and dependence on, macroeconomic assumptions and concerns should be borne in mind. Moreover, intersectoral and interagency priorities should be explicitly explored and defined, not only within the Central Government, but also among state enterprises, and as between the Central Government and state enterprises. This need for consolidation of efforts clashes, however, with the traditional quest for the four core agencies to maintain independence and authority over their respective areas of primary responsibility and concern. The Government is planning to take steps to broaden the role of the Fiscal Policy Office in MOF with the goal of transforming it into a Central Fiscal Planning Unit. The success of this unit will depend on its ability to convince the other core agencies that its role is not to usurp authority, but to act as a clearing house for fiscal planning information, for providing technical support in planning efforts carried out elsewhere, and for providing leadership in pulling together the various exercises into a comprehensive and mutually consistent exercise. It will only succeed, if there is agreement at the highest levels in each core

agency that fiscal planning is indeed a priority matter and that collaboration among core agencies under the general direction of MOF's Central Fiscal Planning Unit is indeed necessary and appropriate./1

5.33 Third, a direct linkage between medium-term fiscal plans and the annual budget process should be developed. Many of the elements for this process are in place, including NESDB's "Pink Book" and BOB's five-year expenditure programming exercise. Fourth, a more extensive linkage between overall expenditure programs and sectoral and agency-specific programs should be introduced by drawing NESDB's sectoral units directly into the fiscal planning process, and by strengthening the multiyear expenditure programming capabilities within each line agency, at the ministerial and even departmental level. In Part III, specific sectoral planning needs and improvements are defined in the context of the review of sectoral expenditure programs. Finally, these various further steps in improving Thailand's fiscal planning process must be firmly imbedded in the overall institutional reform which is currently being carried out, designed to improve the overall planning, programming, budgeting and monitoring capabilities of the core agencies. The role of the group of interlocking consultancies currently working in NESDB, BOB and MOF is crucial in this context in assisting to develop consistent planning and programming methodologies and practices.

Results of Current Fiscal Planning Exercises in Thailand

5.34 This section draws together and reports on the results of the fiscal planning efforts described in the preceding section. Beginning with the Central Government, the results of the MOF/BOB analysis of projected expenditures, revenues and deficits is reviewed, followed by and compared with the projections for the Central Government prepared by NESDB. NESDB's compilation of state enterprise expenditure and financial plans are then presented, which combined with the central and local government expenditure and revenue programs provide an overall picture of the current scale and

/1 A proposal was recently made in Thailand which recommends the setting up of a high-level Committee on Fiscal Policy, supported by a number of interagency working groups for technical level staff, covering the areas of revenues, expenditures, domestic public debt, external borrowing and grants, state enterprise finance, and local government finance. Since most of these working groups are already in existence, although not as a part of an overall institutional framework for fiscal planning and policy, no major new departures would be required. The main need would be to ensure communication among working groups, the effective operation and technical support for each working group, and an institutional locus for pulling together the work of all working groups. This could be the function of the secretariat to the Committee on Fiscal Policy, a role which could be assigned to MOF's Central Fiscal Planning Unit. This proposal should be given serious consideration in further efforts to improve medium-term fiscal planning in Thailand.

distribution of the Government's planned expenditures. In each case, the projected trends and patterns are compared with those in the past. The last section of this chapter places the Government's public expenditure and financing patterns into an overall macroeconomic perspective and draws in the results of sectoral expenditure program reviews (which are reported on in Part III) in providing a summary assessment of Thailand's public investment plans and programs for the Fifth Plan period.

5.35 Central Government: BOB/MOF Program.^{/1} The inputs into this program were derived, as explained in the preceding section, from separate expenditure projections emanating from BOB and revenue projections prepared by MOF. Only the broad outlines of the approaches used are reported here.

5.36 (a) Central Government expenditures: Three scenarios were projected: one assuming no growth in Central Government service provision; a second assuming real growth of service provision continuing the rather high trend of the Fourth Plan period; and a third assuming continued growth for the high-priority sectors of the Fifth Plan (agriculture, health, public utilities and social welfare), but constant services for the other sectors. The projection method used was, briefly stated, as follows: Based on FY82 budget appropriations, recurrent expenditures for most major functions ^{/2} were projected by separately forecasting for each function permanent employment, wages and salaries per employee,^{/3} nonwage expenditures per employee, and wages for temporary employees. Capital expenditures, and expenditures on defense and security were projected on the basis of assumed real growth rates adjusted by the rate of inflation.^{/4} Debt service

^{/1} The programs which are reported under this heading were developed by BOB and MOF staff, assisted by World Bank staff and consultants, as part of the work carried out in the context of the implementation of the Government's structural adjustment program and the preparation of this Report.

^{/2} Economic services, education, health, public utilities and welfare, administration and "others."

^{/3} Wages and salaries per employee were assumed to increase at a uniform 6% for all scenarios because of the automatic progression of employees through the grades. Nominal wages for each salary step and grade were therefore assumed to be constant. In FY85, however, a general across-the-board wage increase is programmed (see Fifth Plan, p. 72) which is shown separately in the projections.

^{/4} The rate of inflation was initially assumed to be 7% for FY82-85, and 6% for FY86. Sensitivity analysis was also carried out for alternative rates of inflation. For the final projections (see below, Table 5.6) combining revenue and expenditure projections, a uniform rate of inflation of 6% p.a. was used for expenditures and revenues alike.

forecasts were based on separate BOB projections derived from existing debt levels, maturities and rates and expected new borrowing.^{/1} In the three scenarios ("Constant Services," "Fourth Plan Trends," and "Fifth Plan Goals") growth rates of employment and of real expenditure on nonemployment-related items were then projected to reflect the basic assumption underlying each scenario, thus varying the overall growth rate, as well as the functional distribution of expenditures among scenarios (for details see Table 5.1). The philosophy behind this approach is therefore to focus on some of the main elements driving Central Government expenditures: employment growth, and linked to it nonwage recurrent expenditure; wage rate growth, which is largely autonomous with the exception of occasional wage scale adjustments; autonomous debt service growth; and defense and capital expenditure. Between scenarios, the rate of growth of employment changes, as does the inflation-adjusted real growth of expenditures not related to employment, with the exception of debt service (Table 5.1).

5.37 Table 5.2 summarizes the results, which permit the following conclusions: First, real expenditure growth under the "Constant Services" scenario is 3.2%, because of the combined impact of the wage adjustment and of debt service increases. Expenditures in relation to GDP, however, drop over the Fifth Plan period. For the "Fifth Plan Goals" scenario, real expenditures grow roughly in proportion with GDP, while an extrapolation of Fourth Plan trends would lead to a real rate of increase of 8.5% with a concurrent increase in the expenditure-GDP ratio from 19% to almost 21%. Second, because of the built-in momentum of growth in recurrent expenditures, the balance shifts in favor of recurrent spending under all three scenarios. What is more, capital expenditure in relation to GDP drops, except under assumptions of continued Fourth Plan trends. Third, and for the same reason, nominal expenditure growth is relatively insensitive to changes in the rate of inflation, with the effect that as inflation rates fall, expenditure growth in real (i.e., constant price) terms increases, raising the ratio of expenditures to GDP.^{/2} In other words, as inflation drops, as it has during the last two years, real expenditure growth is more difficult to control, unless the growth in government employment and (by implication) in real services provided is reduced, as compared with a high inflation environment. Fourth, the total expenditures budgeted under the FY83 and FY84 budgets (B 177 billion and B 192 billion respectively) are close to forecasts in Table 5.2 for the "Constant Services" case. These budgets therefore reflect a stringent fiscal stance in terms of real services, despite the fact that expenditure appropriations in current, and even in constant prices, have increased from year to year.

^{/1} No relationship, however, was established between projected debt service and deficits under the alternative scenarios. This link should explicitly be established in the future.

^{/2} For the "Constant Services" scenario with low inflation (5%), real expenditure growth is 3.9% and the expenditure/GDP ratio in FY86 17.4%. For high inflation (9%), real expenditure growth is only 2.3% and the expenditure/GDP ratio in FY86 is down to 16.3%.

Table 5.1: ASSUMPTIONS UNDERLYING BOB/MOF CENTRAL GOVERNMENT EXPENDITURE PROJECTIONS

	Constant Services	Fourth Plan Trends	Fifth Plan Goals
Recurrent Expenditures			
<u>Major Functions /a</u>			
Employment	Constant	Trend rate FY76-81 by function	<u>Priority Functions</u> Agriculture (8%) Health (11%) Public utilities (7%) <u>Transport & Communications (0%)</u> <u>Others (2%)</u>
Wages and salaries per employee	6% p.a.	6% p.a.	6% p.a.
Nonwage expenditure per employee	Rate of inflation	Rate of inflation	Rate of inflation
Temporary wages	Rate of inflation	Rate of inflation	Rate of inflation
Defense	Rate of inflation	Real trend rate FY76-81 adjusted by rate of inflation	Rate of inflation
Debt service /b	Standard BOB projections	Standard BOB projections	Standard BOB projections
<u>Capital Expenditures</u>	Rate of inflation /c	Real trend rate FY76-81 adjusted by rate of inflation	<u>Priority Functions</u> Health (4.5% adjusted by inflation) Utilities (1.6% adjusted by inflation) <u>Others: rate of inflation</u>
<u>Wage Adjustment</u>	B 8.4 bln (FY85)	As for Constant Services	As for Constant Services

/a Economic services, education, health, public utilities, and welfare, administration and "others".

/b Debt service is incorrect across scenarios; this should be changed in future projections of this type, linking debt service on an iterative basis to Central Government deficits that have to be financed by borrowing.

/c A constant real level of (gross) capital outlays by the Central Government is compatible with "Constant Services," only if they equal replacement investment requirements.

Sources: Budget Bureau; mission estimates.

**Table 5.2: CENTRAL GOVERNMENT EXPENDITURE PROJECTIONS (BOB/MOF)
UNDER ALTERNATIVE SCENARIOS /a
(B billion)**

	Fiscal years				
	1982 (Budgeted)	1983	1984	1985	1986
Budgetary Goals of Fifth Plan					
<u>Current Expenditure</u>	<u>124.4</u>	<u>142.7</u>	<u>160.4</u>	<u>182.9</u>	<u>202.5</u>
Economic services	9.3	9.4	10.6	11.9	13.1
Education	24.4	26.4	28.6	31.0	33.3
Public health	5.0	5.9	6.9	8.1	9.4
Public utilities	7.8	8.9	10.2	11.8	13.1
Defense and internal security	39.0	44.0	49.7	56.2	61.1
Administration	4.0	4.3	4.7	5.1	5.4
Debt services	21.0	28.6	33.1	40.8	48.1
Other	13.9	15.2	16.5	18.1	19.0
Capital expenditure	36.6	39.3	42.3	45.4	48.8
Wage adjustment	-	-	-	8.4/b	8.9/b
<u>Total Expenditure</u> (% of GDP) /d	<u>161.0</u> (18.9)	<u>182.1</u> (18.8)	<u>202.7</u> (18.5)	<u>236.7</u> (19.0)	<u>260.2</u> (18.5)
Constant Services					
Current expenditures	124.4	138.8	150.6	174.4/c	189.7/c
Capital expenditures	36.6	39.2	41.9	44.9	47.6
<u>Total Expenditure</u> (% of GDP) /d	<u>161.0</u> (18.9)	<u>178.0</u> (18.4)	<u>192.5</u> (17.5)	<u>219.2</u> (17.6)	<u>237.3</u> (17.0)
Continuation of Fourth Plan Trends					
Current expenditures	124.4	145.4	165.7	200.3/c	229.4/c
Capital expenditures	36.6	41.4	46.8	53.1	60.4
<u>Total Expenditure</u> (% of GDP) /d	<u>161.0</u> (18.9)	<u>186.8</u> (19.3)	<u>212.6</u> (19.4)	<u>253.5</u> (20.4)	<u>289.8</u> (20.7)

/a Equivalent to budget appropriations, excluding foreign-financed expenditure.

/b General wage and salary adjustment programmed for FY85. The FY86 figure incorporates the standard 6% increment resulting from movements of personnel across wage and salary steps and grades.

/c Including wage adjustment figures.

/d GDP assumed to grow at 6% p.a. in constant prices; inflation assumed at 7% p.a. for FY83-85 and 6% for FY86.

Sources: Budget Bureau; mission estimates.

5.38 (b) Central Government revenues: The MOF forecasts start from the estimates of historical revenue elasticities described above in Chapter 4 and summarized in Table 4.11, applying them to actual revenues collected in FY82 and assuming a GDP growth rate of 6% and an inflation rate of 6% for the remainder of the Fifth Plan period. Table 5.3 summarizes the results. The overall elasticity of the tax system as projected is 1.002 for FY82-86, with a virtually unchanged revenue/GDP ratio, remaining at about 13.4 through the Fifth Plan period. Revenue growth is, of course, quite sensitive to assumptions in the real growth rate of the economy. A one-percentage point drop in growth from 6% to 5% for the Plan period, leads to 4% lower revenues by FY86. Because of the relatively high elasticity of income taxes, their share in total revenues continues to increase as in the past (Table 5.4). Taxes on consumption (business and excise taxes) retain a roughly constant share, because of offsetting trends in business taxes (with a reduced share) and excise taxes (with an increased share). The share of taxes on international trade continues to decline because of the continued drop in the share of import duties, offset only partially by more rapid increases in export tax revenues projected mainly as a result of improved commodity export prices.

5.39 The revenue projections reported in Table 5.3 do not include the effects of the tax package which was introduced in October 1982. This package consisted of the acceleration of payments of the corporate income tax to a current-year basis for all corporations and of the personal income tax for selfemployed professionals; increases in the tax bases of personal income taxation by limiting exemptions and deductions; increases in import duty rates, principally of items currently taxed at less than 5% and imposition of a special surcharge of 10% of the existing duty rate for dutiable imports currently subject to duty rates of 60% or less; and restructuring of liquor distillery concessions and levy, including introduction of annual concessionary fees and profit-sharing fees and conversion from specific to ad valorem excise rates on special blend liquor, imported liquors, and beer. The total revenue impact of this package is estimated at B 10 billion in FY82, with effects also in subsequent years.

These are projected in Table 5.5. The package increases the projected revenues for FY83 to 14.5% of GDP, decreasing to 14.3% thereafter, largely because of the temporary nature of the 10% import surcharge./1

Table 5.3: CENTRAL GOVERNMENT REVENUE PROJECTIONS (BASELINE) FY82-86 /a
(B billion)

	Fiscal years				
	1982 Actual /b	1983	1984	1985	1986
		(Projected)			
Personal income tax	11.4	13.3	15.6	18.3	21.4
Corporate income tax	13.1	15.0	17.0	19.4	22.1
Business tax	21.9	24.3	26.9	29.8	33.0
Excise tax	27.5	32.2	36.3	41.1	45.9
Profits of fiscal monopolies	2.8	3.0	3.3	3.6	3.9
International taxes	0.4	0.4	0.4	0.4	0.4
Import duties	19.9	21.8	23.9	26.1	28.6
Export duties	1.8	2.4	3.1	4.1	4.8
Other taxes	5.5/c	6.2	7.1	8.1	9.3
Nontax revenues	9.5/d	10.4	11.3	12.3	13.4
<u>Total</u> (% of GDP)	113.7 (13.3)	128.8 (13.4)	144.9 (13.5)	163.1 (13.5)	182.8 (13.4)
<u>Total with 5% GDP Growth</u> (% of GDP)	113.7 (13.3)	127.1 (13.4)	141.4 (13.4)	157.6 (13.4)	175.2 (13.4)

/a Assuming an inflation rate of 6% p.a. and real GDP growth of 6% p.a.

/b Revenue figures based on MOF revenue data as of December 3, 1982, except for taxes specifically noted.

/c Includes stamp taxes, royalties, licenses, and miscellaneous items.

/d Derived from BOT preliminary data (see Statistical Annex Table 5.4).

Sources: Ministry of Finance; mission estimates.

/1 Actually, this decrease may be larger, since the projections for the revenue effects of the tax package did not fully account for the fact that some other components of the changes in corporate income and in excise taxes were of a temporary nature. The projections shown in Table 5.5 are therefore likely to be on the optimistic side for FY84 and beyond. Note that Table 5.5 also contains projections for additional revenue measures designed to achieve the Government's 16% revenue IGDP target. These measures are discussed further below in para. 5.43-5.45.

Table 5.4: DISTRIBUTION OF CENTRAL GOVERNMENT REVENUES, FY82, FY86
(%)

	FY82 actual	FY86 projected
<u>Income Taxes</u>	<u>21.5</u>	<u>23.8</u>
Personal	10.0	11.7
Corporate	11.5	12.1
<u>Consumption Taxes</u>	<u>43.4</u>	<u>43.2</u>
Business	19.3	18.1
Excise	24.2	25.1
<u>Trade Taxes</u>	<u>19.1</u>	<u>18.3</u>
Imports	17.5	15.6
Exports	1.6	2.6
<u>Other Taxes</u>	<u>7.7</u>	<u>7.3</u>
<u>Nontax Revenues</u>	<u>8.4</u>	<u>7.4</u>
<u>Total</u>	<u>100.0</u>	<u>100.0</u>

Source: Table 5.3.

5.40 (c) Central Government deficit and additional revenue measures:
The next steps require the linking of expenditure and revenue forecasts in order to estimate future deficits. To do so on a cash basis, however, requires a number of adjustments: On the expenditure side, projections need to be based on budgeted expenditures for FY83. This was done for two scenarios, the "Constant Services" scenario and the "Fifth Plan Goals," using the same assumptions as specified in the preceding paragraphs. At the same time, the inflation assumption was aligned to a uniform 6% rate so as to be fully compatible with the assumptions underlying the revenue forecasts. Moreover, foreign-financed expenditures need to be included, and the fact that budgeted amounts are generally not fully spent needs to be allowed for. Foreign financed expenditures were estimated separately by projecting the expected disbursements from committed debt and from planned future commitments as derived from the Government's foreign borrowing program. The required adjustment for underspending was estimated as 5% of total budgeted domestic and planned foreign-financed expenditure, by comparing for FY83 the total budgeted/planned expenditure with the total cash expenditure forecast by the Bank of Thailand for the same year, which makes adjustments for

**Table 5.5: IMPACTS OF OCTOBER 1982 TAX PACKAGE AND
ADDITIONAL FUTURE TAX MEASURES, FY83-86 /a
(B billion)**

	Fiscal years			
	1983	1984	1985	1986
Personal Income Tax				
Baseline	13.3	15.6	18.3	21.4
October 1982 tax package	2.1	2.5	2.9	3.4
Additional measures	-	1.0	1.7	2.0
Subtotal	<u>15.4</u>	<u>19.1</u>	<u>22.8</u>	<u>26.7</u>
Corporate Income Tax				
Baseline	15.0	17.0	19.4	22.1
October 1982 tax package	1.7	1.9	2.2	2.5
Additional measures	-	1.2	1.4	1.6
Subtotal	<u>16.7</u>	<u>20.2</u>	<u>23.0</u>	<u>26.2</u>
Business Tax				
Baseline	24.3	26.8	29.8	33.0
October 1982 tax package	-	-	-	-
Additional measures	-	3.0	6.2	9.9
Subtotal	<u>24.3</u>	<u>29.8</u>	<u>36.0</u>	<u>42.9</u>
Excise Taxes				
Baseline	32.2	36.3	41.1	45.9
October 1982 tax package	2.9	3.3	3.7	4.1
Additional measures	-	1.5	3.6	6.4
Subtotal	<u>35.1</u>	<u>41.1</u>	<u>48.4</u>	<u>56.4</u>
Import Taxes				
Baseline	21.8	23.9	26.1	28.6
October 1982 tax package	3.3	1.3	1.5	1.6
Additional measures	-	2.0	2.2	4.4
Subtotal	<u>25.1</u>	<u>27.2</u>	<u>29.8</u>	<u>34.6</u>
All Other Revenue				
Baseline	<u>22.4</u>	<u>25.2</u>	<u>28.5</u>	<u>31.8</u>
Totals - Baseline (% of GDP)	<u>128.8</u> (13.4)	<u>144.9</u> (13.5)	<u>163.1</u> (13.5)	<u>182.8</u> (13.4)
Baseline Plus October 1982 Tax Package (% of GDP)	<u>138.8</u> (14.5)	<u>153.9</u> (14.3)	<u>173.4</u> (14.3)	<u>194.4</u> (14.3)
Baseline Plus Additional Measures (% of GDP)	<u>138.8</u> (14.5)	<u>162.5</u> (15.1)	<u>188.5</u> (15.6)	<u>218.6</u> (16.1)

/a Assumes 6% rate of inflation and 6% real GDP growth rate.

Sources: Ministry of Finance; mission estimates.

underspending on the basis of past experience. On the revenue side, projections of foreign grants are added to the total of domestically raised resources. For FY83, the Bank of Thailand projected grants on the order of B 4.5 billion, which, conservatively, are assumed to stay constant in nominal terms for the Fifth Plan period. The resulting expenditure and revenue estimates can be combined to project Central Government deficits (Table 5.6).

5.41 In the first instance, one can focus on the cases in which no additional tax measures are assumed to be introduced over and above the October 1982 package described above. Under this assumption, Government revenues remain at about 14.3% of GDP, and the deficit remains at a high level of 4.6% of GDP by FY86, if one assumes the Fifth Plan Goal scenario on the expenditure side, which is projected on the basis of only moderate selective increases in services (line A-C in Table 5.6). This deficit could be reduced to 3.0% of GDP by FY86 if the Government were to select a "Constant Services" budget. Considering that with continued population growth, this scenario implies in fact a declining per capita aggregate level of services, this cannot be viewed as an attractive solution. The alternative is to pursue additional revenue measures to raise additional revenues required to maintain the Fifth Plan scenario on the expenditure side, but at the same time bring down the budget deficit.

5.42 The Government announced in the Fifth Plan its intention to raise Central Government revenues to 18% GDP by 1986. Since the recent reassessment of historical revenue performance has indicated that the present tax system allows an expansion only about in proportion with GDP unless tax rates are raised and tax administration is improved, and considering that during the first year of the Fifth Plan, the revenue/GDP ratio actually declined, the target ratio of 18% is very ambitious and probably not attainable in the absence of major tax rate increases which the Government has indicated it cannot carry out. The Government has, therefore, decided to reduce its revenue target ratio to 16% of GDP by 1986.^{/1} The mission agrees that this is appropriate since, in fact, Thailand's tax rates, especially those for direct taxes, are already high by international comparison. As a result, additional revenues should be sought, mainly through improvements in tax administration and selective improvements in the tax structure as proposed in the Fifth Plan and as indicated in Chapter 4 above. A possible scenario for revenue mobilization is summarized below. While in principle feasible and compatible with general directions of improvements in Thailand's tax structure suggested in Table 4.12 above, this scenario is likely to be politically difficult to implement and may well be on the optimistic side as regards the short-term impacts of administrative reforms.

^{/1} The 16% target refers to Central Government revenues only. With local government revenues, it increases to a total of 17% for general government.

Table 5.6: PROJECTED CENTRAL GOVERNMENT DEFICITS, FY83-86 /a
(B billion)

	Fiscal year			
	1983	1984	1985	1986
<u>Revenues (including grants) /b</u>				
A. With October 1982 tax package	143.3	158.4	177.9	198.9
B. 16% revenue/GDP ratio by FY86	143.3	167.0	193.0	223.1
<u>Expenditures</u>				
<u>Domestically Financed</u>				
Constant Services budget	177.0/c	191.1	216.2	234.3
Fifth Plan Goals budget	177.0/c	196.0	232.7	257.4
<u>Foreign-Financed Expenditure</u>				
	15.3	15.0	18.8	17.8
<u>Projected Cash Expenditure /d</u>				
C. Constant Services	182.7	195.8	223.3	239.5
D. Fifth Plan Goals	182.7	200.5	238.9	261.5
<u>Deficits</u>				
A-C (Tax package - Constant Services)	-39.4	-37.4	-45.4	-40.6
A-D (Tax package - Fifth Plan Goals)	-39.4	-42.1	-61.0	-62.5
B-C (16% target - Constant Services)	-39.4	-28.8	-30.3	-16.4
B-D (16% target - Fifth Plan Goals)	-39.4	-33.5	-45.9	-38.3
<u>Memo: Deficits as % of GDP</u>				
A-C	-4.1	-3.5	-3.8	-3.0
A-D	-4.1	-3.9	-5.0	-4.6
B-C	-4.1	-2.7	-2.5	-1.2
B-D	-4.1	-3.1	-3.8	-2.8

/a Assuming 6% p.a. inflation and 6% p.a. real growth of GDP. For this reason, expenditure projections here are slightly below those in Table 5.3.

/b Grants are assumed to be B 4.5 billion p.a. This explains the difference with the totals in Table 5.5.

/c Equal to FY83 budget approved by Parliament.

/d Equal to 95% of sum of domestically financed budget expenditure plus foreign-financed expenditure. The 5% reduction adjusts for underspending which generally occurs.

Sources: Tables 5.2 and 5.3; mission estimates.

5.43 For the personal income tax, the FY82 tax package includes administrative improvements estimated to net incremental revenues of B 2.1 billion. Further incremental revenues of B 1.0 billion in FY84 and B 0.5 billion may be feasible with continued attention to personal income tax administration. For each incremental amount of revenues, the automatic (elasticity-based) growth is assumed in subsequent years. For the corporate income tax, estimates indicate that 5,000 of 40,000 corporations in Thailand do not presently file tax returns and that corporate income tax could be significantly raised if these corporations are brought onto the tax rolls. Assuming that as a result of current administrative reforms one half of the nonfiling corporations are brought onto the rolls by FY84, this will increase revenues that year by an incremental B 1.2 billion if the new corporations pay on average as much as the average filing corporation does at present./1

5.44 After allowing for these administrative improvements in direct tax administration, a total of about B 18.65 billion is required in new tax measures between FY84 and FY86, if the 16% of GNP target of Central Government revenues is to be attained. The following measures could be implemented. For the business tax, changes could be sought to obtain a total of B 8.9 billion over the period: B 2 billion from improved administration, B 1 billion from removal of BOI exemptions as part of BOI reform (see Chapter 7 below), B 1 billion from adjustments in deductions and exemptions, and B 4.9 billion from phased reform in tax rates, aiming at more uniform rates. For excise taxes, a total of B 5.75 billion in tax revenues could be raised: B 1 billion from improved administration, B 3 billion from phased increases in the tax on diesel fuel, reducing the present gap between diesel and gasoline prices by only about one quarter (see Chapter 8 below), and B 1.75 billion from higher excises on luxury consumer durables, especially automobiles and electrical appliances. Finally, import tariff revenues could be raised by an incremental B 4 billion: B 1 billion from reducing BOI tax exemptions currently granted (see Chapter 7 below), and B 3 billion from gradual narrowing of the tariff band, including in particular further increases at the lower end of the tariff scale. Table 5.7 provides an indicative phasing of tax measures, which has been used in projecting the additional revenues to be generated so as to reach the 16% revenue/GDP target by FY86./2

/1 This may be optimistic, since the corporations currently not on the files are likely to be smaller than those on the files.

/2 The projected cumulative revenue impacts of these additional tax measures are shown in Table 5.5.

Table 5.7: SUMMARY OF NEW TAX MEASURES, FY1984-86
(B billion)

	Oct. 1982 tax package	FY84	FY85	FY86	Total FY84-86
Personal income tax	2.10	1.00	0.50	-	1.50
Corporate income tax	1.70	1.20	-	-	1.20
Business tax	-	3.00	2.90	3.00	8.90
Excise taxes	2.90	1.45	2.00	2.30	5.75
Import taxes	3.30	2.00	-	2.00	4.00
<u>Total</u>	<u>10.00</u>	<u>8.65</u>	<u>5.40</u>	<u>7.30</u>	<u>21.35</u>

Source: Mission estimates (see text, paras. 5.43-5.44).

5.45 The measures thus proposed are indicative only of the fact that the required additional revenues can be obtained in ways which systematically improve the tax system and without falling on a single tax, or group of tax payers, and involve amounts that, by comparison with recent tax packages, should not be deemed excessive. One important drawback of these measures is that, with the exception of the tax administration improvements, revenues derived from direct taxes are not increased substantially. Further consideration should therefore be given to the direct tax measures proposed in Chapter 4 (Table 4.12) above. This is the more important as some of the revenue impacts shown in Table 5.7 may be on the optimistic side, particularly as regards the impact of tax administration improvement for the remainder of the Fifth Plan period. Considering the lead time required for effective implementation of tax reform measures it is essential to plan ahead by two to three years so as to avoid ad hoc and poorly prepared tax measures. Assuming additional tax packages on the order of magnitude shown in Table 5.7 are introduced, the deficit as a percent of GDP can be reduced to 2.8% by FY86, while maintaining the "Fifth Plan Goals" scenario on the expenditure side (line B-D in Table 5.6). A combination of higher taxes with a more restrictive expenditure policy ("Constant Services"), could reduce the deficit even further to 1.2% of GDP. However, the desirability of such a restrictive approach is highly questionable in the light of the urgent service needs identified in Part III below for specific services provided by the Central Government, in particular health, education, and agricultural and rural development. What is more, as will be argued further below, such a restrictive policy is not required from a macroeconomic perspective, provided that important issues regarding state enterprise investment and savings are adequately addressed.

5.46 Central Government: NESDB August 1982 Program. NESDB prepared its own expenditure projection for the Central Government in the manner explained above (para. 5.18). The August 1982 version was still based on the assumption of an 18% revenue/GDP target by FY86, which, together with a deficit of about 1.4% of GDP, permitted a rate of increase in Central Government spending roughly equal to the "Fourth Plan Trend" scenario outlined above. Given this scenario, the NESDB projections allocated the allowable expenditure total between development and nondevelopment spending and across functions as summarized in Table 5.8. The push of nondiscretionary components in the nondevelopment portion of the budget is reflected in the slow, but steady increase in the share of nondevelopment spending in the total. Within the development portion, health and related expenditures are given an expanded role, while the share of economic services, and especially of transport and communication is expected to drop quite substantially. Education also is expected to drop from its expanded FY83 share so as to leave the overall five-year average roughly equal to that during the Fourth Plan. The shares of all development expenditure categories are, however, on the high side, if allowance is made for two factors: First, total expenditure is not likely to grow at the rates projected by NESDB in August 1982 due to the difficulty of raising the revenue/GDP ratio to 18%. Second, with lower overall expenditure growth and considering the built-in momentum in nondevelopment expenditures, development expenditures are likely to be squeezed even more than has already been projected by NESDB. Leaving the relative priorities within development expenditure unchanged, this would very likely require a drop in the share of education in the total, an even larger drop in the share of economic services (with agriculture and rural poverty programs probably barely constant in percentage terms) and with health and related expenditures hardly increasing in relative terms. In view of the significant shortfall which has been identified in the nonwage portion of education and health spending (see Chapter 10 below), this must be a matter of serious concern. Less troublesome is the shift from capital to recurrent expenditure, which is likely to occur for the same reasons (see para. 5.37 above). Thailand's Central Government has in the past emphasized capital spending relatively heavily by international comparison. Moreover, an analysis of sectoral spending priorities indicates that capital expenditures in health and education should for the Fifth Plan be given lesser priority as compared with recurrent spending, especially on teaching materials and medical supplies and other nonwage expenditure items (see Chapter 10).

**Table 5.8: DISTRIBUTION OF CENTRAL GOVERNMENT EXPENDITURE
AS PROJECTED BY NESDB, FY84-86
(% of Total)**

	Fourth Plan FY77-	Fiscal year					Fifth Plan FY82-
	81	1982	1983	1984	1985	1986	86
<u>Development Expenditure</u>	41.4	42.4	41.0	40.4	40.2	40.1	40.7
Economic services <u>/a</u>	15.0	16.2	13.9	13.4	13.6	13.9	14.1
Education	19.7	19.5	20.4	20.0	19.5	19.0	19.6
Public health, utili- ties, etc. <u>/b</u>	6.6	6.7	6.7	7.0	7.1	7.2	7.0
<u>Nondevelopment Expendi- tures /c</u>	58.6	57.6	59.0	59.6	58.8	59.9	59.3
<u>Total</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a Includes agriculture, fuel and power, manufacturing and mineral resources, transportation and communication, and special programs for employment and poverty eradication (following BOB classifications).

/b Includes health, public utilities, social development, general administration and "other" (development portion only).

/c Includes administration, defense and internal security and debt service.

Sources: FY77-83: Budget Bureau, Budget in Brief. FY84-86: NESDB, Macro Planning Division, August 1982.

5.47 State Enterprises: NESDB August 1982 Program. NESDB assembled the expenditure programs of 55 state enterprises for the Fifth Plan period (see para. 5.18 above). The initial program (March 1982) included total capital expenditures of state enterprises on the order of B 210 billion. A subsequent revision (August 1982) increased this to about B 260 billion, because of a 25% increase in the energy, transport and communications sectors and a 33% increase in the public utilities sectors. It is noteworthy that as part of the same process of revision, Central Government expenditures were revised downward by about 3%, indicating a substantial shift in spending in favor of state enterprises, even before allowing for the likely further reductions in Central Government expenditures required because of the downward revision in the central government's revenue target. The Mission's concern about the relative balance between state enterprise and Central

Government expenditure programs was further heightened by the fact that expenditure programs of state enterprises collected by the Mission, especially in the energy sector, exceeded even those reflected in NESDB's revised (August 1982) program. For the record, the following paragraphs summarize the Mission's review and assessment of the NESDB program of August 1982. Subsequent revisions in state enterprise investment programs have demonstrated the Government's flexibility in investment planning, as programs have been revised downward in line with changing expectations, particularly in the energy sector (see Part III below). The resulting investment plans closely approximate those suggested by the mission.

5.48 Under NESDB's August 1982 program, total expenditures of state enterprises were to continue growing rapidly, increasing from the actual level of 15.5% in relation to GDP in FY81 to 22.3% in FY86. The average level for the Fifth Plan period as a whole as a percent of GDP was therefore to be 57% higher than the average for the Fourth Plan period (Table 5.9). The greater part (87%) of the incremental spending was contributed by recurrent spending of state enterprises. This on top of an already substantial amount of recurrent spending by state enterprises at the beginning of the Fifth Plan period (14.4% of GDP) underscores the urgency of close attention being paid to the operational efficiency of state enterprises, even if the increase in recurrent expenditures actually turns out to be lower than was foreseen in these estimates. As an indicator, given the relative sizes in the August 1982 program, a saving of 10% in recurrent expenses would permit as much as a 35% increase in capital spending while leaving total expenditure during the Fifth Plan period unchanged.^{/1} Capital spending of state enterprises in relation to GDP was to increase by 30% from the Fourth to the Fifth Plan period as a whole, from 3.6% to 4.7%. The FY82 capital expenditures, however, are likely to have been actually some 20% lower than foreseen by NESDB according to preliminary Bank of Thailand estimates (Statistical Annex, Table 5.7). On the other hand, the absolute decline in capital expenditure in FY86 is likely in part to reflect the fact that state enterprise programs did not make allowance for currently unidentified projects in the outer years, especially FY86. Given initial delays and cutbacks then already identified by state enterprises, it is quite likely that the peak of some B 60 billion would have been reached only in FY86.

^{/1} This presumes no cutback in services provided and thus no reduction in operational revenues. Such increases in pure operational efficiency may be possible in some state enterprises (such as MWWA, as a result of reducing water losses, or in BMTA, as a result of more efficient use of currently idle bus capacity), but would be much more difficult to achieve, if at all, in other enterprises, especially in the energy sector. The 10% figure in the text is therefore cited merely as a way of demonstrating the relationship between recurrent account expenditure savings and the potential for increasing capital spending, emphasizing the relative importance of the current outlays of state enterprises.

Table 5.9: TRENDS IN PROJECTED STATE ENTERPRISE EXPENDITURE FOR THE FIFTH PLAN

	Fourth	Fiscal years /b					Fifth
	Plan /a FY77-81	1982	1983	1984	1985	1986	Plan /b FY82-86
Expenditures (B billion)							
Recurrent	275.2	123.2	146.0	178.0	218.5	258.9	924.6
Capital	100.8	42.7	44.3	55.6	61.6	55.2	259.3
<u>Total</u>	<u>375.9</u>	<u>166.0</u>	<u>190.3</u>	<u>233.6</u>	<u>280.0</u>	<u>314.1</u>	<u>1,183.9</u>
Expenditures (as % of GDP) /c							
Recurrent	9.9	14.4	15.1	16.2	17.6	18.3	16.6
Capital	3.6	5.0	4.6	5.1	5.0	3.9	4.7
<u>Total</u>	<u>13.5</u>	<u>19.5</u>	<u>19.7</u>	<u>21.3</u>	<u>22.5</u>	<u>22.3</u>	<u>21.2</u>

/a Actual expenditures.

/b Projected.

/c Assuming a 6% p.a. real growth in GDP and 7% p.a. rate of inflation.

Sources: NESDB Macro Planning Division, August 1982; mission estimates.

5.49 The sectoral distribution of state enterprise expenditures in NESDB's August 1982 program is summarized in Table 5.10, comparing the composition in the Fifth Plan period with that of the Fourth Plan period's actual expenditure patterns. Capital spending on energy, which already accounted for some 50% of total investment during the Fourth Plan, was programmed to increase its share even further to some 53% at the expense of every other broad sectoral category, except public utilities.^{/1} This continued increase in energy sector development outlays clearly needed to be subjected to careful scrutiny, not merely because of its absolute size, but also because the drastic changes in energy price levels since 1980 and their effects on energy demand made traditional sectoral investment planning approaches no longer appropriate. A review of the energy sector investment program (see Chapter 8) indeed suggested that cutbacks in energy investment programs were appropriate even in the absence of macroeconomic considera-

^{/1} For a listing of the agencies included under each sectoral category, see Annex 3.

tions, on the basis of revised energy demand and supply conditions. This cut-back amounted to about 20% of the program envisaged by NESDB in August 1982. If one added to this a cutback of B 4 billion in the investments of state enterprises involved in the transport sector, but considers also that the NESDB program for telecommunications, in particular for TOT, appears to have been on the low side, requiring an additional B 10 billion, then the total saving in state enterprise investments would be about B 22 billion, amounting to 8.5% of the total state enterprise investment program. If, on the other hand, total investment programs as originally envisaged by the state enterprises in mid-1982 were to be carried out, this would have required an increase of B 94 billion over and above the NESDB program, or almost 50% higher than the program suggested by the mission (see Annex 3). Provided that changes in the energy sector investment program recently introduced by the major energy sector agencies are implemented, and that selected major investments in the transport sector are delayed beyond the Fifth Plan period (see Chapters 8 and 9 below), the currently planned state enterprise investments are roughly on the order of magnitude suggested by the mission.

5.50 According to NESDB's August 1982 program, the financing of state enterprise investment was to rely more heavily on own-financing during the Fifth Plan than had been the case during the Fourth Plan (Table 5.11). This would have been largely offset by a decline in the share of Central Government transfers to the state enterprises, with total state enterprise borrowing retaining a share of about two thirds in the Fifth Plan, approximately equal to that in the Fourth Plan. In relation to GDP, however, borrowing would have increased from 2.4% to 3.0%, with two thirds of this increase to be forthcoming from domestic sources. The bulk of the borrowed resources (86%) would have gone to the energy, transport and communications sectors, the largest sectors in terms of investment and in terms of the share of total investment to be financed by borrowing (Table 5.12). To the extent that investments in this sector were cut back, borrowing could be reduced, both external and domestic, assuming that own-financing is maintained at the levels forecast by NESDB. However, the increases in self-financing forecast by NESDB will require a considerable effort by state enterprises to increase both their service charges and their operational efficiency.

5.51 Consolidated Government Expenditure.^{/1} Combining estimates of Central Government, local government and state enterprise expenditures for the Fifth Plan period, a set of indicative consolidated expenditure figures can be derived (Table 5.13). Intergovernmental transfers are netted out and

^{/1} For a discussion of the definition, limitations, and appropriate uses of this concept, see para. ii.3 above (Introduction to Part II).

Table 5.10: COMPOSITION OF STATE ENTERPRISE EXPENDITURE,
FOURTH AND FIFTH PLANS
(%)

	Fourth Plan /a (FY77-81)	Fifth Plan /b (FY82-86)
<u>Recurrent Expenditure /c</u>		
Agriculture	1.6	3.5
Industry, mining, commerce and services	20.4	20.8
Transport and communications	29.9	23.6
Energy	37.6	49.0
Public utilities and social development	10.2	3.2
<u>Total Recurrent</u> (As % of total expenditure)	<u>100.0</u> (73.2)	<u>100.0</u> (78.1)
<u>Capital Expenditure /c</u>		
Agriculture	1.5	0.9
Industry, mining, commerce and services	2.4	1.9
Transport and communications	32.8	29.9
Energy	50.9	53.3
Public utilities and social development	12.3	13.7
<u>Total Capital</u> (As % of total expenditure)	<u>100.0</u> (26.8)	<u>100.0</u> (21.9)

/a Based on data on actual expenditures provided by Bank of Thailand; consolidation of recurrent expenditures in energy sector carried out by the Mission.

/b Based on NESDB projections dated August 1982; consolidation of recurrent expenditures in energy sector carried out by the mission.

/c For a list of agencies and groupings by functional categories, see Annex 3.

**Table 5.11: FINANCING OF PROJECTED STATE ENTERPRISE INVESTMENTS,
FOURTH AND FIFTH PLANS**

	Fourth Plan (FY77-81)		Fifth Plan (FY82-86)	
	% dis- trib.	% of GDP	% dis- trib.	% of GDP
Own resources	23.1	0.8	27.5	1.3
Transfers from central government	11.3	0.4	6.6	0.3
Domestic borrowing	8.1	0.3	16.8	0.7
External finance	57.5	2.1	49.2	2.3
<u>Total</u>	<u>100.0</u>	<u>3.6</u>	<u>100.0</u>	<u>4.7</u>

Sources: NESDB Macro Planning Division, August 1982; mission estimates.

**Table 5.12: FINANCING OF FIFTH PLAN PROJECTED STATE ENTERPRISE
INVESTMENT BY SECTOR, FY82-86
(%)**

	Agri- culture	Industry mining, commerce, etc.	Transport & commu- nication	Energy	Public utilities & social dev.
Own resources	74.0	78.3	34.3	24.8	11.9
Transfers from central government	0.1	0.6	3.7	3.7	25.9
Domestic borrowing	22.6	10.1	13.6	14.7	31.3
External finance	3.3	11.0	48.4	56.8	30.9
<u>Total</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: NESDB, Macro Planning Division, August 1982.

Table 5.13: CONSOLIDATED PUBLIC SECTOR EXPENDITURE, FIFTH PLAN

	Fourth	Fiscal years					Fifth
	Plan FY77-81	1982	1983	1984	1985	1986	Plan FY82-86
Total Expenditure (B billion)	888.7	310.1	377.4	440.4	529.1	590.0	2,247.0
Recurrent	665.9	238.1	288.7	337.8	411.0	474.4	1,750.0
Capital	222.8	72.0	88.6	102.5	118.2	115.7	497.0
Total Expenditure (1976 Constant B billion /a	640.2	171.6	195.1	212.8	239.0	249.0	1,067.5
Recurrent	479.4	131.7	149.3	163.2	185.6	200.2	830.1
Capital	160.8	39.8	45.8	49.5	53.4	48.8	237.3
% Distribution:							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Recurrent	74.9	76.8	76.5	76.7	77.7	80.4	77.9
Capital	25.1	23.2	23.5	23.3	22.3	19.6	22.1
% of GDP: Total /b	31.8	36.4	39.0	40.1	42.5	41.8	40.3
Recurrent	23.9	27.9	29.8	30.8	33.0	33.6	31.4
Capital	8.0	8.4	9.2	9.3	9.5	8.2	8.9
State Enterprises (%)							
In total expend.	41.4	47.0	50.4	53.0	52.9	53.2	51.8
In capital expend	45.2	47.9	50.0	54.2	52.1	47.7	50.5

/a Assuming 7% p.a. inflation for Fifth Plan period.

/b Assuming 6% p.a. real growth in GDP.

Sources: Fourth Plan: Bank of Thailand; mission estimates. FY1982: Bank of Thailand (except local government). FY1983-86: NESDB for state enterprises and local government, August 1982; mission estimates for Central Government (based on Table 5.6).

a uniform inflation rate is assumed.^{/1} The resulting estimates reflect the status of public investment and expenditure programs as of August 1982, drawing on the "Fifth Plan Goal" scenario for the Central Government and on NESDB's August 1982 program for state enterprises. Given these building blocks, total consolidated expenditure would have increased quite rapidly, increasing at a real rate of 10.1% between FY81 and FY86, only slightly lower than the growth rate experienced during the Fourth Plan period. Total capital expenditure, however, would grow only at a real rate of 5.9%, roughly in line with expected GDP growth.^{/2} For the Fifth Plan period as a whole, therefore, capital expenditure would then have taken a smaller share of consolidated public expenditure than was the case during the Fourth Plan. Relative to GDP, however, average capital expenditure during the Fifth Plan would exceed that during the Fourth Plan, reaching almost 9% of GDP, compared with 8% under the earlier Plan. Overall, the role of the public sector would have continued to grow in terms of its involvement in economic activity.^{/3} The role of state enterprises in total and in capital spending of the public sector would also have continued to grow, reaching some 50% of total and of capital spending for the public sector as a whole. In view of the fact that energy and transport sector investment programs were reduced since August 1982, and that energy input prices have fallen, the share of state enterprises in total public expenditures will increase more slowly than shown in Table 5.13. Still, there is little doubt that the share of state enterprises in the total utilization of resources by the public sector will continue to increase, and that therefore the need for aggregate analysis and planning of state enterprise spending will become more pressing during the Fifth Plan.

^{/1} This assumption required reestimating Central Government expenditure from Table 5.6 and elimination of all transfers from Central Government to local government and state enterprises. Local government expenditures are based on NESDB projections, which for FY82 are approximately B 6 billion lower than the estimate of actual local government expenditure made by Bank of Thailand. Judging from historical data as collected by Bank of Thailand, the NESDB estimates appear to be on the low side. State enterprise projections are based on the NESDB program of August 1982. The impact of recent downward revisions of state enterprise investment programs on aggregate state enterprise investments for the Fifth Plan period are discussed in para. 5.54 below.

^{/2} However, this growth rate is depressed by the relatively low projected state enterprise capital expenditure projected for FY86. For the period FY81-85, the real growth rate of capital expenditure is 9.9%.

^{/3} However, the ratio of consolidated public expenditure to GDP does not indicate the share of the public sector in value added, since much of the recurrent expenditure of state enterprises is not counted as part of GDP in national accounts convention, but as an intermediate input.

Public Sector Resource Management in a Macroeconomic Context

5.52 The integration of public sector expenditure programs and revenue mobilization efforts with macroeconomic objectives is an essential component of any fiscal planning exercise. For the purposes of this Report the main parameters of the expenditure and revenue projections reported on earlier in this chapter were introduced into the framework of the SIAM 1 macro model in order to check on the consistency of the fiscal projections with the macroeconomic objectives outlined in Part I above, and to assess the macroeconomic implications of alternative fiscal policy scenarios. The following paragraphs summarize the findings of this exercise.

Table 5.14: MACROECONOMIC INDICATORS FOR ALTERNATIVE FISCAL SCENARIOS

	1979-82 actuals	1986 projected levels (in %)		
		Full structural adjustment policies	Passive fiscal policy	High state enterprise investment
GDP growth rate <u>/a</u>	5.7	5.1	5.5	5.1
Investment growth rate <u>/a</u>	1.7	6.0	6.0	6.1
Investment/GDP ratio	23.2	26.2	26.1	26.9
Current account deficit/GDP ratio	3.2	2.5	3.6	3.1
Debt service ratio (1990)	18.5	19.9 <u>/b</u>	29.2 <u>/b</u>	25.4 <u>/b</u>

/a In constant prices.

/b Debt service ratio for 1990.

5.53 The analysis starts with the medium scenario simulation developed in Part I above, assuming a moderate outlook for the world economy and implementation of the Government's structural adjustment program, including fiscal policies.^{/1} The fiscal policy assumptions were based on the general government revenue and expenditure projections summarized earlier in this chapter, assuming the additional tax packages required to yield a general government revenue/GDP ratio of about 17% (this is equivalent to a Central Government revenue/GDP ratio of about 16%, since local government revenues are included). For state enterprises, the investment program compiled by NESDB was used, but adjusted downward by the amounts which the mission identified as representing marginal expenditures (see para. 5.49 above).^{/2} Two other cases were also explored: The case labeled "passive fiscal policy" assumes that no effort is made to raise the Central Government revenue/GDP ratio from its current levels and that state enterprise investments take place as programmed by NESDB as of August 1982. The case labeled "high state enterprise investment" assumes that the Central Government does make the additional revenue effort (as under the "full structural adjustment policies" case but that state enterprise investments are at a level about 8% higher than those programmed by NESDB.^{/3}

5.54 These three cases thus represent three broad sets of possible outcomes: one, where concerted fiscal action is taken as recommended in this Report; another, where no special fiscal effort is made, except that state enterprises are held to investments programmed by NESDB in August 1982; and a third, where the Government makes a successful revenue effort, but does not succeed in holding state enterprises to its own programmed level of investment. The purpose of this approach is to demonstrate the importance of considering not only the macroeconomic impact of fiscal policy as applied to the Central Government, but also of policy interventions aimed at the state enterprises, in particular their investment activity. Of course, other fiscal policy scenarios could have been explored, including expenditure reductions for the Central Government or increased savings mobilization by state enterprises. However, since the findings of this and the preceding chapter pointed primarily to the insufficient resource mobilization by the Central Government and the unchecked growth of state enterprise investment as the twin problems of fiscal policy in Thailand, these are the elements considered directly in this concluding section.

^{/1} This is equivalent to the "full structural adjustment policies" case shown in Table 3.3 above.

^{/2} In effect, this amounted to a downward adjustment of state enterprise investments by 8% as of 1982.

^{/3} This is a conservative assessment of the potential for overspending by state enterprises, however, since the state enterprises' own programs as of mid-1982 envisaged expenditures on the order of 36% above the level programmed by NESDB (see para. 5.49 above).

5.55 The macroeconomic implications of the three fiscal policy scenarios are summarized in Table 5.14 for 1986, the last year of the Fifth Plan period. Of particular interest is the relationship between fiscal policy and external balance. With continued fiscal action, the current account deficit drops to 2.5% of GDP in 1986 and the debt service ratio (in 1990) is about 20%. Without fiscal intervention, however, the current account deficit rises to 3.6% of GDP in 1986 and the debt service ratio takes a substantial jump to almost 30% by 1990. Similarly, though less dramatically, for the case of high state enterprise investments the current account deficit and the debt service ratio deteriorates as compared with the combined fiscal action case. In fact, if state enterprises were to invest at the levels which they themselves originally programmed (particularly in the energy and transport sectors), namely on the order of 36% higher than projected by NESDB, the current account deficit could well be above 4% in 1976 with resulting dramatic implications for the debt service burden. The importance of containing state enterprise investments over the Fifth Plan period is thus well established from the macroeconomic perspective. As it happens, sectoral considerations similarly dictate a curtailment of state enterprise programs in selected sectors as shown in Part III below. Another conclusion is equally relevant, however: Provided sufficient efforts are made by the Central Government to increase its revenues to a level of about 16% (17% for general government), and provided state enterprise investment programs are at appropriate levels, there is no reason from a macroeconomic perspective to reduce Central Government expenditure programs below those envisaged by the "Fifth Plan Goals" scenario above (see para. 5.36) on which the macroeconomic projections here are based.

5.56 Table 5.15 spells out the implications of the alternative fiscal scenarios for the public sector savings-investment gap. For combined fiscal action, the total public sector gap drops from 10% of GDP in 1981 to 6% by 1986, mostly because of the substantially reduced gap of the Central Government, which drops from almost 6% of GDP in 1981 to some 2% in 1986.^{/1}

^{/1} This saving-investment gap/GDP ratio is somewhat lower than the deficit shown in Table 5.6 above for case (B-D), which corresponds to the full structural adjustment policies here. The reasons are: first, the SIAM 1 model is based on national accounts definitions, rather than government accounting definitions; second, Table 5.14 shows calendar, not fiscal years; third, it reflects general government, rather than Central Government; and finally, the model forecasts in Table 5.14 result in a slightly higher revenue/GDP ratio than do the fiscal forecasts in Table 5.6, reflecting a slightly higher revenue effort (about 0.2% of GDP). Overall, however, the gaps shown in Table 5.14 are compatible with the deficits in Table 5.6.

The state enterprise saving investment gap remains virtually unchanged, however, despite the reduction in state enterprise investments which this scenario envisages, compared with the NESDB investment program. Of course, in the case where state enterprise investments are even higher than the NESDB program, the gap of the state enterprise sector actually increases from 4.1% in 1981 to 4.7% in 1986, resulting in a commensurate increase in the public sector gap. Under this scenario, state enterprises would account for 70% of the total public sector savings-investment gap. These scenarios demonstrate the important role which state enterprise investment activities are likely to play in the Fifth Plan period in shaping the overall public sector gap, and thus the internal and external balance of the Thai economy. Similarly important is the revenue effort by the Central Government, as reflected in the substantially higher general (and central) government saving-investment gap without fiscal action and the resulting increase in the public sector gap.

Table 5.15: FISCAL INDICATORS OF ALTERNATIVE FISCAL SCENARIOS

	1981 actuals	1986 projected GDP ratios (in %)		
		Full structural adjustment policies	Passive fiscal policy	High state enterprise investment
<u>General Government</u>				
<u>Expenditure</u>	20.2	19.3	19.1	19.2
Consumption	(13.9)	(14.0)	(13.9)	(13.9)
Capital	(6.4)	(5.3)	(5.2)	(5.2)
Revenues	14.4	17.2	14.2	17.2
<u>Saving-Investment Gap</u>	<u>5.9</u>	<u>2.1</u>	<u>4.9</u>	<u>2.0</u>
<u>State Enterprises</u>				
Capital expenditure	4.8	5.1	5.5	6.0
Own financing	0.7	1.3	1.2	1.3
<u>Saving-Investment Gap</u>	<u>4.1</u>	<u>3.9</u>	<u>4.3</u>	<u>4.7</u>
<u>Public Sector</u>				
Investment	11.2	10.4	10.7	11.2
Savings	1.2	4.5	1.5	4.5
<u>Saving-Investment Gap</u>	<u>10.0</u>	<u>6.0</u>	<u>9.2</u>	<u>6.7</u>

Source: Mission estimates.

5.57 Finally, Table 5.16 traces out the implications of the alternative fiscal policy scenarios for the financing requirements of the public sector. Table 5.16 is based on the assumption that the public foreign borrowing program does not vary across scenarios, so that all changes in public deficits are transmitted directly into changes in domestic public borrowing. Alternative assumptions for public foreign borrowing are, of course, possible and can be explored in future refinements of the fiscal planning work carried out thus far. It should be noted, however, that, say, a reduction in public foreign borrowing under the "full structural adjustment policies" case would require commensurate increases in public domestic borrowing, which in turn would require a higher level of private foreign borrowing to maintain the balance-of-payments identity. Maintaining public foreign borrowing at the levels implied by the original commitment levels would have the advantage of relieving any possible pressures on the domestic banking system and reducing the risk of crowding out domestic investment in case a revival of domestic investment activity should take place beyond the levels assumed in the forecasts here. What is more, from a country perspective, public borrowing tends to be cheaper and at more favorable maturities than private borrowing./1

5.58 In sum, the fiscal policy actions embodied in the "full structural adjustment policies" case appear to be both necessary and sufficient to restore external balance for the Thai economy, while not cutting unduly into the Government's development objective from a sectoral and intersectoral perspective, or placing undue strains on the public sector's revenue mobilization capacity. The main areas for action which were identified are increased revenue effort by the Central Government and expenditure restraints for state enterprises. Increased revenue mobilization by state enterprises could also contribute to an appropriate fiscal solution. Sectoral consideration strongly argue that the Central Government's economic and social sector spending should not be curtailed beyond the already quite conservative rates of increase (when measured in terms of services provided) programmed above. By implication, also, the main risks in the fiscal policy area for not achieving the desired external balance lie in the nonachievement of the Central Government's revenue target and in an insufficient level of control over state enterprise spending. Given the recent adjustments in state enterprise investment programs, the major challenge for the remainder of the Fifth Plan period appears to be on the revenue side, where the political and practical obstacles to tax reform and mobilization of increased state enterprise savings rule out easy solutions. However, considering the importance of the Central Government's economic and social

/1 The main difficulty encountered in public foreign borrowing is the slow disbursement of project-tied multi- and bilateral loans. Quick disbursing program loans, such as the World Bank's SALs, and syndicated loans from private sources are therefore important instruments to ensure the necessary resource transfer in the short term.

Table 5.16: FINANCING OF PUBLIC SECTOR DEFICITS FOR ALTERNATIVE FISCAL SCENARIOS

	1981 actuals	1986 projected GDP ratios (in %)		
		Full structural adjustment policies	Passive fiscal policy	High state enterprise investment
<u>Public Sector Deficit</u>	<u>10.0</u>	<u>6.0</u>	<u>9.2</u>	<u>6.7</u>
<u>financed by</u>				
Domestic borrowing	5.5	3.2	6.4	4.0
Foreign borrowing	4.5	2.8	2.8	2.8
General Government	(1.0)	(0.8)	(0.8)	(0.8)
State enterprises	(3.5)	(2.0)	(2.0)	(2.0)
<u>Memo Items</u>				
<u>Private Sector</u>				
Investment	15.2	15.8	15.3	15.7
Savings	19.9	19.3	21.0	19.3
<u>Net Savings</u>	<u>4.7</u>	<u>3.6</u>	<u>5.6</u>	<u>3.6</u>
Net private foreign <u>borrowing/a</u>	2.4	-0.3	0.8	0.4

/a Excluding change in reserves.

Source: Mission estimates.

services for Thailand's longer term development prospects, the risks inherent in a failure to mobilize additional resources are significant. At the same time, every effort should be made to increase the efficiency of Central Government operations through improved planning, management, and monitoring and evaluation techniques. The institutional reform sought under the Government's structural adjustment program with Bank and USAID support should go a long way to provide for improvements in this area.

PART III - SECTORAL ADJUSTMENT: POLICY ISSUES AND INVESTMENT PROGRAMS

iii.01 Thailand's overall development trends and outlook are substantially shaped by the development of its most important sectors: agriculture, industry, energy, transport and communications, and population planning, health and education. The subsequent chapters discuss the major sectoral issues which currently face the Thai economy in these areas, and the policy and public investment responses which would permit an appropriate adjustment to the rapidly changing external and domestic circumstances with which Thailand has been confronted in recent years. Jointly, these areas contain most of the important opportunities for, as well as obstacles to, further rapid development in Thailand.

iii.02 In agriculture, the 1980s are likely to witness continued rapid agricultural growth partly based on extensive cultivation on new land. However, since this is likely to represent the last phase of Thailand's traditional form of agricultural development, major efforts are required to prepare the sector for more intensive use of inputs so as to maintain agricultural growth during and beyond the 1980s.

iii.03 In industry, the main challenge for Thai policy makers consists in persisting on their chosen path to reverse the various distorting public interventions which proliferated during the second half of the 1970s. The incentive system must be designed to encourage Thai industrialists to increase their competitive edge in a more difficult international environment than in the past, characterized by slower growth in overall demand for manufactured exports. Continued rapid growth of Thai manufacturing exports will therefore depend on Thailand's ability to increase its market share substantially. Fortunately, the same types of policies which tend to foster export-led manufacturing growth, also tend to support relatively labor intensive, and on balance more decentralized industrial growth.

iii.04 For the energy sector, major changes in outlook have taken place during the last two years. On the one hand, energy consumption growth is likely to be less buoyant than had originally been foreseen, and the international oil price developments and outlook are more favorable than originally expected. On the other hand, the development of domestic energy resources, which can substitute for costly oil imports, has been slower and more difficult than planned and the outlook for the next 10-15 years, while still quite positive, is more uncertain. Under these conditions, the main challenge for the Thai policy makers are the development and implementation of a strategy for the energy sector, which takes account of the uncertainties on the supply and demand side, and avoids costly errors associated with overly ambitious investment programs.

iii.05 In the transport and communications sector, important public investment requirements remain, especially as regards further development of rural road and telecommunications infrastructure. In other subsectors, such as aviation, ports and urban transit, difficult choices lie ahead requiring careful assessment of large and potentially very costly public investments. In this sector, crucial financial and institutional issues also need to be addressed during the years ahead.

iii.06 Finally, major issues arise in the area of human resource development, i.e. population planning, health and education. Thailand's population program which has been very successful in the past, now appears to be faced with a possible saturation of current demand for family planning services, a consequent levelling off in the declines of the birth rate, and therefore a slowdown in the decline of the rate of growth of population. This phenomenon, which has been observed also in other countries at similar stages of the demographic transition, requires a shift in emphasis away from the traditional family planning approaches, if the momentum in population growth reduction is to be maintained and thus the pressures on the Thai labor markets, rural resources and urban services in the coming years are to be reduced. In the areas of health and education, the scope and impact of public expenditures and investments in recent years have been limited by fiscal austerity in the Central Government budget, and by the difficulties encountered in attempting to translate sectoral priorities into effective public expenditure programs. For the remainder of the Fifth Plan period, and for the Sixth Plan, these sectors present the major challenges as attention will need to shift from the short and medium term structural adjustment problems (arising in the wake of the international and domestic economic changes during the 1970s) towards the opportunities too and constraints on the longer term development and structural transformation of the Thai economy, which will revolve substantially around the need for rapid and equitable development of Thailand's human resources.

6. AGRICULTURE AND RURAL DEVELOPMENT

Overview and International Comparison

6.01 Despite the decline in the relative importance of Thailand's agriculture in total GDP over the last two decades, this sector still accounts for a quarter of total value added and occupies up to three quarters of the country's labor force.^{/1} If one allows for the share of activities directly related to agriculture, the agricultural sector remains of major importance to the Thai economy, particularly in rural areas, where much of non-farm activities and employment have been found to depend on the backward and forward linkages with agricultural activities.^{/2} Agricultural growth in Thailand has been high by international standards at an average annual rate of 5% during the last two decades, with most of the growth attributable to increases in the area planted (about 4% per year). Thus Thailand remains heavily rural in terms of its population distribution with only 14% of its population classified as living in urban areas in 1980.

6.02 Within the agricultural sector there has been considerable diversification in land use and production during the last two decades. The share of the area planted with paddy decreased from 72% to 66% between 1970 and 1980, mainly because of the very high increase in land use for upland crops (7% per annum as compared with 2.5% for rice), while the share of paddy in crop value added (in constant prices) decreased from 48% to 40% during the last decade.^{/3} Non-crop agricultural activities either just about held their own in total agricultural GDP (livestock) or declined during the same period

^{/1} In recent years the proportion of the labor force in agriculture has oscillated between 71% (during the peak agricultural employment season of 1980) and 58% (during 1979's off-peak agricultural employment season). The difference is largely due to the withdrawal of farm family workers from the labor force in off-peak periods in the North and Northeast regions.

^{/2} The recently completed World Bank Study entitled "Growth and Employment in Rural Thailand" (Report No. 3906-TH) points to the overriding importance of agricultural growth both as a direct source of income and as generator of non-farm economic activity in rural areas, given the limited and specific nature of rural manufacturing other than providing farming inputs, processing agricultural output or meeting the consumer demands resulting from farm incomes.

^{/3} Using the three-year averages centered on 1970 and 1980, in 1972 prices, as the basis for comparison.

(forestry and fisheries) (Table 6.1). Despite the declining importance of rice resulting from diversification in crop production, rice still remains a significant component of Thai GDP (about 8% in recent years) and a large source of foreign exchange (accounting for 17% of merchandise exports in 1981). Thailand is in the unusual position of being a major exporter /1 of the commodity that is its main food staple, while the productivity in its rice farming operations is by conventional measures the lowest of any major rice growing country in the region (Table 6.2).

6.03 In comparison with its major neighbors Thailand's agriculture has been characterized by its rapid increase in production and diversification, based on a very fast expansion of land (including irrigated land), labor and tractors, with low levels of fertilizer application, stagnant yields and a high variability of agricultural production from year to year (Tables 6.2 and 6.3). In essence, Thailand employs a cash-thrifty mode of agricultural production as a result of its relative abundance of land and labor resulting in high land and labor intensity and low productivity per unit of land and labor. Tractors have been used as a factor complementary to land expansion and in an efficient combination of "contract tractoring" for four-wheelers and the use of highly versatile small engines on two-wheel chassis. Compared with many other countries, farm gate prices for agricultural output were kept low relative to input prices as a result of agricultural export taxation and largely unsubsidized inputs./2 This approach has been consistent with the relative resource endowment of the Thai economy and with the export orientation of a significant part of Thai agriculture, and contrasts with the food security emphasis in other countries where a lack of comparative advantage in food production requires protection of agriculture./3 One of the adverse consequences of Thailand's extensive mode of production, however, has been its high sensitivity to weather conditions reflected in the wide annual swings in agricultural production with economy-wide repercussions.

/1 In 1982 Thailand was, for the third consecutive time, the largest rice exporter - its share of the world market being consistently over 20%. The role of rice in Thailand's agricultural exports actually increased slightly during the 1970's (see Table 6.7 below).

/2 See World Development Report, 1982, Box 5.4, page 48. Thailand's low output/input price ratio is due mainly to low output prices, rather than high input prices. For example, Thailand's fertilizer prices are among the lowest in the region, but its paddy prices have tended to be lower yet.

/3 Japan is a case in point. The indicators in Table 6.2 show that a costly combination of fertilizer and machinery has substituted for scarce land and labor and resulted in high yields. The levels of agricultural protection are commensurately high (WDR 1982, Box 5.4, page 48).

Table 6.1: VALUE ADDED IN AGRICULTURE
(at current market prices)

	(A)		(B)		Index	
	Average 1969-71		Average 1979-81		(B)/(A)	Deflated
	billion	(%)	billion	(%)	x 100	by CPI
	bath		bath			
Agricultural value added	40.2	100.0	172.0	100.0	428	171
Livestock	5.1	12.7	21.1	12.3	416	166
Fisheries	4.1	10.2	12.2	7.1	297	119
Forestry	2.8	7.0	9.6	5.6	338	135
Crops	28.2	70.1	129.0	75.0	457	183
of which:						
Paddy	11.1	27.6	47.4	27.6	427	171
Maize, sorghum and mungbeans	2.1	5.2	9.5	5.5	459	184
Cassava and kenaf	1.8	4.5	9.8	5.7	558	223
Sugarcane	0.9	2.2	10.0	5.8	1,080	432
Rubber	1.8	4.5	8.4	4.9	473	189
Garlic, onions and chili	2.0	5.0	4.2	2.4	210	84
Tobacco, cotton and groundnuts	1.5	3.7	9.4	5.5	614	246
Other vegetables	1.3	3.2	5.0	2.9	388	155
Fruits	4.7	11.7	21.2	12.3	450	180
All 8 commodity groups		(67.6)		(72.6)		

Source: National Accounts, NESDB. (3-year averages).

Table 6.2: THE AGRICULTURAL ECONOMY OF THAILAND IN REGIONAL PERSPECTIVE, 1980

	Burma	Indo- nesia	Thai- land	Philip- pines	Korea	Japan
<u>Land</u>						
<u>Agr. labor force (ha/person) /a</u>	1.37	0.67	1.12	1.27	0.36	0.79
% of land under irrigation	10.0	28.0	15.0	13.0	51.0	67.0
% of land in paddy	50.0	45.0	50.0	35.0	55.0	49.0
<u>Agr. value added /c (US\$)</u>	282.0	366.0	445.0	808.0	1,857.0	7,984.0
<u>Labor force /a</u>						
<u>Agr. labor force /a</u>	0.51	0.58	0.75	0.45	0.37	0.10
<u>Agr. labor force</u>						
<u>% Population in urban areas /d</u>	27.0	20.0	14.0	36.0	55.0	78.0
<u>Fertilizer use (kg/ha) /b</u>	10.5	44.1	17.4	34.6	384.0	478.0
<u>Land</u>						
<u>Land (ha) /a</u>	1,075.0	1,538.0	486.0	582.0	815.0	4.5
<u>Tractors in use</u>						
<u>Paddy yield (ton/ha) /a</u>	2.5	3.3	1.9	2.2	5.5	5.6
<u>Paddy production (kg) /a</u>	360.0	201.0	370.0	157.0	174.0	114.0
<u>Population /d</u>						
<u>Paddy price (farmgate) /e</u>	n/a	0.45	0.28	0.29	0.71	2.08
<u>Fertilizer (urea) price</u>						

/a FAO 1981 Production Yearbook (data for 1980). "Land" refers to arable land and land in permanent crops.

/b FAO 1980 Fertilizer Yearbook (data for 1979/80).

/c ESCAP Statistical Yearbook 1979 (data for 1978/79).

/d World Bank WDR, 1982.

/e World Bank (EPDCE), Rice Handbook 1981.

**Table 6.3: THE AGRICULTURAL ECONOMY OF THAILAND IN REGIONAL PERSPECTIVE:
CHANGES 1970-1980**
(Index numbers for 1980, with 1970 = 100)

	Burma	Indonesia	Thailand	Philippines	Korea	Japan
Population	127	126	128	130	118	112
Cultivated land	96	108	131	104	96	89
Irrigated area	118	124	135	157	116	98
Forest area	100	99	71	77	99	100
Agr. production	131	140	165	158	151	101
paddy production	157	155	129	148	120	82
Agr. labor force	103	104	118	108	99	60
% lab. force in agric.	86	88	94	85	73	53
Tractors	182	153	460	218	2,314	394
Fertilizer/ha	309	371	229	162	160	124
Paddy yield	148	141	99	133	120	101
Cereals yield	150	144	97	123	137	105
Variability of Agr. Production /a	12	32	35	15	17	4

/a Measured as coefficient of variation for agricultural production.

Source: As in Table 6.2.

6.04 The remainder of this chapter will briefly review some of the major aspects and implications of the agricultural growth performance of Thailand, by considering its production patterns and income effects, trends and patterns in agricultural exports, the role of past and future land expansion, and the outlook for agricultural production and the attendant requirements for agricultural policy and public expenditures in the sector.

Agricultural Production and Incomes

6.05 Crops accounted for the major share of agricultural production growth in the 1970s, while fisheries and forestry stagnated mainly due to resource limitations and production cost increases. Livestock production kept roughly in pace with the rapid growth of crops. Value added for all major crops increased at rates higher than the average for the crop subsector with the exception of paddy. The increased importance of cassava and sugar-cane is clearly related to the availability of new land and the prompt response of farmers and processors to market opportunities, even in spite of government regulations, for example in the case of restrictions placed on the

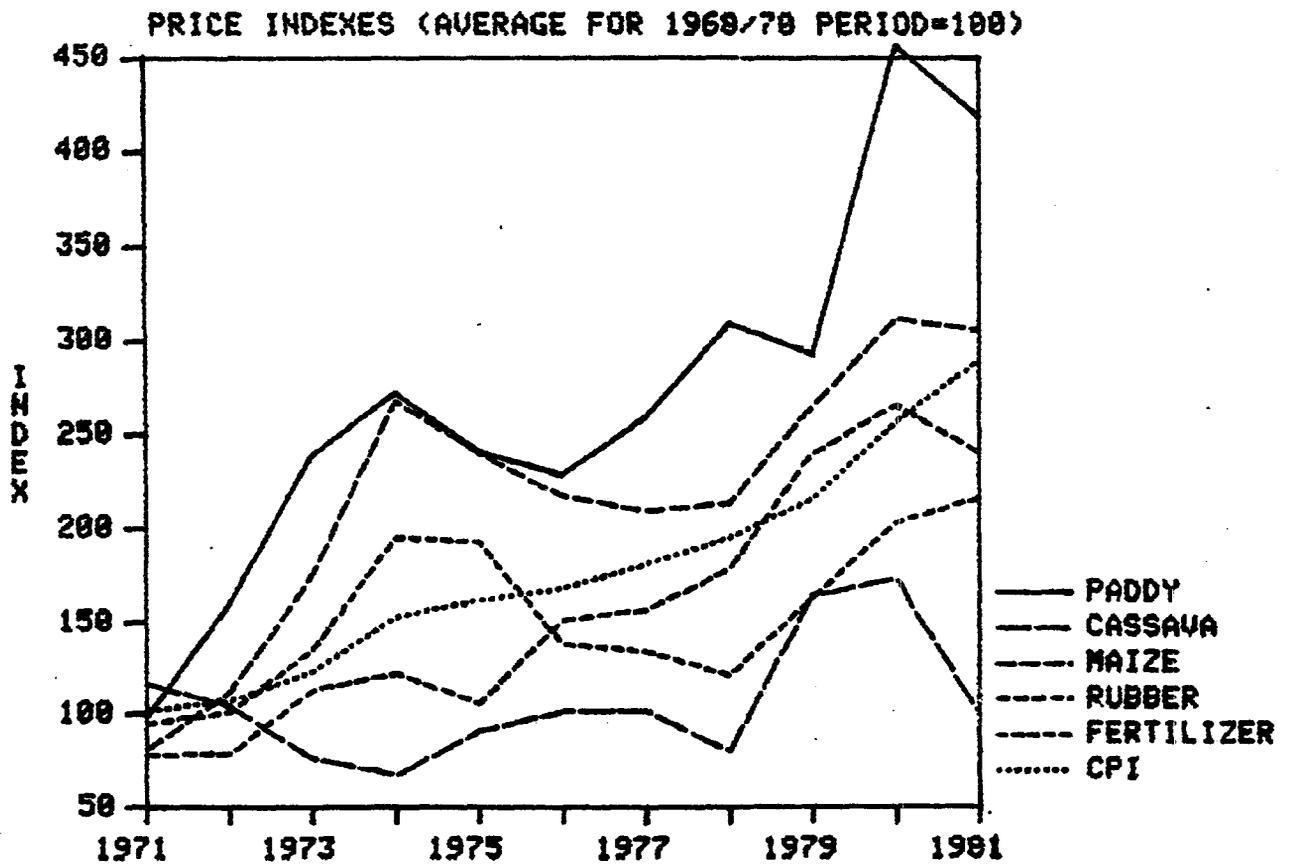
establishment of new sugar mills. The rapid increases in area planted and production of upland crops during the 1970s (Table 6.7 below) were in good part responding to increases in product prices for the whole period, but especially during 1972-74 (Figure 6.1). Of particular interest is the fact that crop prices on balance increased at least as fast as the consumer price index and in any case faster than the price of fertilizer.

6.06 In terms of the common five-region classification of Thailand, agricultural activity has been of greatest importance to the regions outside Bangkok and the Central Plain (Table 6.4). In the North and Northeast, which jointly accounted for 56% of Thailand's population in 1980, 45% of regional GDP derived from agriculture as compared with a national average of 26%. For these two regions, GDP grew less rapidly during the 1970s than the national average, and it would have lagged even further behind had it not been for the fact that agricultural prices grew more rapidly (at nearly 12% per annum) than the general price level (which increased at about 10% p.a.). In the North, large increases in the area planted in paddy, maize and associated crops (especially sorghum and mungbeans) explain the fast agricultural growth there and have resulted in a relatively diversified sector with substantial crop substitution possibilities. In the Northeast, value added in crops increased at about the same rate as in the North, but required larger increases in the area planted because of declining yields, especially for rice. Particularly striking in the Northeast was the opening up of land used for cassava production which now accounts for over two-thirds of farm cash incomes in the region. In contrast, livestock and forestry production stagnated in this region, accounting for the much lower growth in total agricultural value added in the Northeast than in the North. In the Center, rice production increases have come almost exclusively from increased dry season cropping through increases in irrigated land, double cropping and yields; second crops associated with maize, such as sorghum, cotton and mungbeans, have also contributed to the expansion of crop production in that area. In the South, agricultural growth was determined mostly by overall favorable conditions for rubber and forestry, only partly offset by the less favorable developments for fisheries.

6.07 These diverse regional agricultural development patterns occurred in response to differences in the comparative advantage of each region, as reflected by rough estimates of the regional production costs by crop (Table 6.5). Incidentally, the broad relationships of output price to production costs also provide an indication of the incentives underlying the recent diversification of crop production in Thailand. The comparative cost differentials across regions have probably been amplified by public intervention: public investment in irrigation works and land titling efforts were concentrated in the Center, as was the availability of subsidized agricultural credit.^{/1} Fertilizer use in the Center accounted

^{/1} See Report No. 4085-TH. "Thailand: Perspectives for Financial Reform". About 70% of agricultural lending by commercial banks is to farmers in the Central Region.

FIGURE 6.1



Source: Statistical Appendix Table 7.1.

Table 6.4: REGIONAL GROWTH IN THE 1970s
(Two year averages; 1979/80 index based on 1970/71=100, in current prices)

	North	Northeast	Center	South	Bangkok	Kingdom
GDP	396	404	465	469	453	434
GDP per capita	323	316	391	364	308	354
GDP per capita deflated by regional CPI	124	137	157	145	126	140
Value added in:						
Agriculture	413	386	412	415	-	405
Crops	433	433	458	412	-	434
Livestock	484	308	361	467	-	376
Fisheries	273	584	305	246	-	291
Forestry	207	115	352	1,650	-	342
Memo items (average 1979/80)						
Regional shares of GDP (%)	14	14	28	12	32	100
Agriculture-value added (% of GDP)	45	45	30	39	-	26
GDP per capita ('000 Baht)	9	5	18	13	39	13

Source: National Accounts, NESDB.

for less than half of nationwide fertilizer use in 1971, but of the additional fertilizer applied in Thailand during the 1970s, the Center accounted for 70% (due in good measure to the rapid increase of area under irrigation) while crop-land expanded at a rate substantially below the national average. In the North and Northeast, in contrast, public investment concentrated heavily on constructing and improving roads in support of crop-land expansion, rather than intensification. As a result, the 1970s have seen an increasing gap between the yields obtained in the Center as compared with the North and Northeast, which is indicative of the continued polarization of Thailand's agriculture in recent years: Central Plains farmers intensified input use as a substitute for land expansion, while farmers in the rest of the country have continued the traditional approach to agricultural production.

Table 6.5: PRODUCTION COSTS AND FARMGATE PRICES (1977/81)
(4-year average - baht per ton)

	Cost					Prices	Costs/ prices
	North	Northeast	Center	South	Kingdom	Kingdom	Kingdom
Paddy (main crop)	2,009	3,446	2,510	2,721	2,757	2,488	1.11
Paddy (dry season)	n.a.	n.a.	2,125	n.a.	n.a.	2,488	0.85
Maize	1,589	1,915	1,810	n.a.	1,695	2,110	0.80
Cassava	278	353	373	n.a.	363	583	0.62
Sugarcane	255	264	292	n.a.	282	400	0.71

Source: Office of Agricultural Economics, MOAC.

Note: Due to data limitations, the production cost figures in this table should be understood as indicative only of relative magnitudes, rather than absolute levels. They include imputed costs for capital and family labor, as well as financial costs and other cash expenses. One serious limitation of the data relates to the fact that labor costs (which account for over half of all production costs) were calculated using the legal minimum wage applicable to each province.

6.08 Overall, agricultural producers as a whole probably saw increases in their incomes relative to other occupational groups during the 1970s, mainly because of the favorable output price increases in relation to the CPI and major input prices (Figure 6.1 above), combined with favorable growth in the volume of agricultural production.^{/1} These improvements in relative agricultural incomes are also reflected in the regional GDP figures, which indicate that on a per capita basis regional GDP grew least rapidly in Bangkok of all five major regions (Table 6.4 above). For the remaining four regions, however, regional GDP per capita growth was most rapid in the Center, followed by the South, while the poorest regions, the North and Northeast, experienced the slowest growth among the four areas.^{/2} For the Center, the

^{/1} However, since 1981 these trends have been reversed due to the deterioration of commodity prices.

^{/2} Differences in gross regional production per capita are, however, likely to have been ameliorated by seasonal migration.

good growth performance was due to improvements in crop productivity linked to increased input use intensity and better access to public support, and due to the relatively high growth in non-agricultural activities in that region linked to overall agricultural growth in the region and the country.^{/1} In contrast, the Northeast experienced a low regional per capita product growth because of a combination of adverse factors: high population growth, stagnation of noncrop agricultural activities, and slightly below average crop production growth. In sum, it appears that the regional distribution of GDP has worsened during the 1970s, with the relatively better off regions (Center and South) consistently scoring higher in terms of growth in regional agricultural value added, regional GDP, and regional GDP per capita, as compared with the North and Northeast. The impact of seasonal migration flows is likely to have partly offset the uneven growth of GDP but the regional distribution of incomes is probably more skewed, on balance, at the beginning of the 1980s than it was a decade ago.

Agricultural Exports

6.09 Agricultural exports have dropped from their dominating share of about three quarters of total merchandise exports in 1970, but they remain very important at 60% of the total in 1980 (Table 6.6). Of the major crops, rice remained the single most important agricultural export commodity, retaining about a quarter of total agricultural exports during the 1970s. A slow growth in domestic demand for rice coincided with a relatively fast increase in production in the face of largely favorable export prices, thus resulting in a rapid growth in the exportable surplus in all regions, except the South.^{/2} Cassava exports grew rapidly, destined mostly to the EEC, and is now the most important agricultural export commodity next to rice. Sugar exports also expanded at a fast pace, with Thailand's share in world trade increasing from 1% in 1970 to 6% in 1980. The share of rubber and maize exports, by contrast, dropped substantially as a percent of total and of agricultural exports. Although both commodities started the 1970s with already large shares of agricultural exports, rubber faced rather inelastic supply conditions in an environment of uncertain (and recently declining) price trends; in contrast, maize experienced favorable price trends and rapid growth in production, but export growth was dampened by the high growth in domestic demand (about 10% p.a.) associated with a substantial growth in the

^{/1} See Report No.3906-TH: "Growth and Employment in Rural Thailand".

^{/2} Rough estimates indicate that during the 1970s rice consumption increased at about 2.5% p.a., approximately in line with population growth, while production grew at over 3% p.a., due to increases in irrigated area and yields in the Center and increases in area planted with constant yields in the Northeast. Rice exports grew at about 10% p.a.

Table 6.6: AGRICULTURAL EXPORTS

	Current baht(billion)		Percentages			
	1969-71	1979-81	1969-71	1979-81		
All merchandise exports	15.1	129.7	100.0	100.0		
All agricultural exports (1970 and 1980)	11.0	77.7	74.3	59.6		
5 major crops exports	8.4	59.0	55.6	(100.0)	45.5	(100.0)
Rice	2.8	20.5		(33.3)		(34.7)
Cassava	1.1	13.7		(13.1)		(23.2)
Rubber	2.3	11.9		(27.4)		(20.2)
Sugar	0.2	5.8		(2.4)		(9.8)
Maize	2.0	7.1		(23.8)		(12.0)

Source: Bank of Thailand, Quartely Bulletin (3-year averages).

livestock sector, and by misguided export controls/¹ aiming to ensure adequate maize supplies for the domestic feed mills and effectively discouraging both exports and production.

6.10 In the future, rice exports will, as in the past, depend on the balance between domestic supply and demand. On the supply side, practically no new land suitable for paddy is available (see below) so that any increase in area planted will have to come from decreases in the nearly 20% of banded land not planted in an average year, and from increases in the area under double cropping. Assuming yields during the 1980s increase significantly only under dry season irrigation, production would grow at about 1.5% p.a. and thus roughly at a rate equal to the expected growth in consumption.² By implication, rice exports would stagnate at their current level of about 3.5 million tons. Assuming real export prices do not increase significantly,³ faster

¹ Most controls on maize exports have been relaxed since mid-1981.

² Yield increases due to improved practices and input use are not likely to have a significant impact before the end of the 1980s. Meanwhile urbanization and slower population growth are expected to keep the rate of increase of domestic rice consumption below 2% p.a.

³ International rice prices are subject to considerable uncertainty. Since gross rice exports worldwide represent only about 5% of total production, annual output fluctuations tend to result in even greater price fluctuations. Thailand is particularly exposed to these fluctuations, since it accounts for more than 20% of worldwide gross exports.

output and export growth is likely to result only if the farmgate output/input price ratio were to improve either as a result of reduced export taxation below the average level pertaining in the 1970s, or because of reduced effective input costs, particularly for fertilizers.^{/1} For other major agricultural export commodities, continued production and export growth will similarly depend on increased intensification and diversification in response to market opportunities and supported by vigorous agricultural policies. However, during the 1980s, much will depend also on the availability of new agricultural land, which will be considered next.

Land: Recent Developments and Prospects for the 1980s

6.11 Cropland expansion was the main force behind the sustained agricultural growth of the 1970s, accounting for over three-quarters of output increases. While absolute increments in the paddy area represented 45% of total cropland expansion, in relative terms upland crops area (which doubled in the last decade) grew much more rapidly (Table 6.7).

Table 6.7: CHANGES IN AREA PLANTED

	Average 1966/67-1970/71		Average 1976/77-1980/81		Shares of incre- ment (%)	% Growth p.a.
	mil. rai	%	mil. rai	%		
Paddy	45.6	68	58.5	61	45	2.5
Upland crops	13.2	19	26.0	27	45	7.0
Tree crops	9.1	13	11.8	12	10	2.6
<u>Total</u>	<u>67.9</u>	<u>100</u>	<u>96.3</u>	<u>100</u>	<u>100</u>	<u>3.6</u>

Source: Office of Agricultural Economics, MOAC.

Note: Of the 96.3 million rai planted on average during the period 1976/77 - 1980/81, about 88.8 were under single cropping and 3.7 under multiple cropping (counted twice at least).

^{/1} A reduction in the effective cost of fertilizers could be brought about by increased availability of cheaper types of fertilizers and improved distribution systems, without the necessity of subsidizing fertilizer use. See Report No. 3705a-TH: "Program and Policy Priorities for an Agricultural Economy in Transition". A study of the fertilizer distribution system is currently being undertaken by the Office of Agricultural Economics, MOAC, as part of the structural adjustment program.

This is in marked contrast with the trend of the 1960s (when increases in paddy land accounted for 66% of total cropland expansion) and has resulted in rapid diversification of the sector in response to market opportunities. Throughout the 1970s, expansion of area planted was supported by continued growth of the road network (see Table 6.10) and by a parallel process of forest denudation at annual rates of up to 6 million rai (Annex 2, Table 2-1), in spite of the Government's forest preservation policy.^{/1}

6.12 Assessments of the prospects for increases in area planted have tended to be based on the assumption that by 1980 there would be little or no room for further expansion of the cultivated area^{/2}; agricultural growth in the 1980s would thus have to depend almost exclusively on yield increases (and multiple cropping). A reassessment, based on new information contained in a recent study,^{/3} suggests that cropland expansion could continue to be a significant cause of agricultural growth in the 1980s. Together with availability of land, infrastructure and resource development, government policy and market opportunities will be the main determinants of the actual rate of expansion of cropland. The Fifth Plan emphasis supporting the intensification of input use in agriculture is setting the basis for future growth through productivity increases but, while essential for Thailand's agricultural growth in the longer term, intensification is unlikely to produce the growth rates expected of the sector^{/4} until the end of the 1980s. Continued expansion of area planted allowing the transition process to take place without a further slow-down in growth appears feasible and should not be restricted. The availability of new land is clearly not evenly spread throughout the country and this transition will increase the polarization of the sector, with farmers in some areas (especially the Center) continuing to intensify input use on limited lands while in other areas (particularly the Northeast) new land continuing to be brought into cultivation. It should also be noted that the expected expansion of land under upland crop cultivation could worsen the already serious erosion problems. Increased land development and conservation efforts are therefore required to prevent continued deterioration of the productive potential of land.

^{/1} The 1964 Forest Reserves Act targeted an unrealistic 166 million rai (over half of the country's area) for forest preservation. By 1980, about a quarter of the land in "forest reserves" had been encroached and settled by farmers.

^{/2} "Cropland" or "cultivated area" refer here to land regularly used for agriculture and include fallow but not (in contrast with "area planted") do not count multiple cropped areas more than once.

^{/3} TURA, Land Use and Development Policy, Bangkok, 1981. Annex 2 presents details on the data used for the reassessment of prospects for cropland expansion and discusses their limitations.

^{/4} The Fifth Plan (in 1981) anticipated a 4.5% annual growth rate for the agricultural sector, based mostly on expected yield increases for the major commodities. More recent assessments estimate the agricultural growth rate for the 1982-86 period at between 3% and 4% per annum, with yield increases accounting for less of the growth than anticipated by the Fifth Plan projections but for slightly more than had been the case during the 1970s.

Table 6.8: LAND USE AND AVAILABILITY, circa 1980
(million rai)

	Suit- able	Cultivated		Available	
		Max.	Min.	Min.	Max.
Paddy	84	84	74	0	10
Upland and Tree Crops	90	63	37	26	52
<u>Total</u>	<u>174</u>	<u>147</u>	<u>111</u>	<u>26</u>	<u>62</u>

Source: See Annex 2.

6.13 Given the limitations of the data on the potential availability of agriculturally suitable land/¹ and the evolving nature of land use in Thailand, all that is justifiable at this point is to derive a range of values for the amount of land available. This range (Table 6.8) implies that between 15% and 36% of the land suitable for agricultural use is presently not cultivated and that cropland could expand by between 26 and 62 million rai (as compared with between 143 and 111 million rai cultivated, and 100 million rai planted c. 1980). While the potential for expansion of area planted may be greater than the potential for cropland expansion (through multiple cropping, reduction of fallow land, etc.), there are also obstacles to the realization of such potential. Difficult accessibility and security risks in the areas suitable for (but not currently under) cultivation have been significant constraints in the past; the cash and labor costs of clearing and preparing new land are likely to be an increasingly important factor. Fully realizing this potential would result in increases of the area used for upland and tree crops of between 41% and

¹ The potentially available land is estimated by comparing data on land suitability (based on soil types and slopes) and data on present land use (presently cultivated land). Previous analyses had used 12% as the maximum slope in determining the suitability of land for agricultural use, thus limiting estimated land availability to not much more than lowland areas and underestimating the potential for diversification into upland crops (since crops were being grown on land with slopes up to 60%). The TURA study on which this reassessment is based uses a slope of 35% as the threshold for agricultural suitability. The two estimates for cultivated area come from land use interpretation of satellite imagery (which tends to overestimate agricultural use of land) and land utilization surveys (which tend to underestimate the area under cultivation).

139% (from the 1980 levels), with small or no increases in the paddy area. While the bottom of this range probably gives a more realistic estimate of the amount of land potentially available for cultivation by the end of the 1980s, the middle of the range may be a reasonable longer-term availability estimate.

6.14 Analyzing the potential for growing major upland crops individually (by combining soil and slope classifications with considerations of whether the crop is already established in the area or in similar areas) permits bringing into the discussion market opportunity factors and also reveals the regional distribution of this potential (Table 6.9).

Table 6.9: SUITABILITY OF UPLAND FOR MAJOR CROPS
(million rai)

	North	Northeast	Center	Kingdom
Maize <u>/a</u>	15.2	8.6	5.9	29.6
Sugarcane <u>/a</u>	3.9	2.8	6.2	12.9
Cassava <u>/a</u>	1.0	19.3	4.7	25.0
Total suitable for upland crops <u>/a</u>	20.0	30.7	16.8	67.5
Total under cultivation upland crops <u>/b</u>	9.4	15.8	12.0	37.2
Total planted in upland crops <u>/c</u>	9.5	8.6	7.8	25.9

/a Excluding marginal soils (and thus the South).

/b Midpoint of the range referred to in text and shown in Table 6.8.

/c Annual average for 1978/79-1980/81 period.

Source: See Annex 2.

From a countrywide production perspective, maize (and associated crops, such as sorghum or mungbeans) appear to have the most potential, with nearly 30 million rai roughly suitable (as compared with about 10 million rai planted in the most recent years), and the North would continue to account for just over half of that area. The Northeast cropland would greatly depend for its expansion on cassava-type crops, on which the regions' farm cash incomes are already heavily dependent (para. 6.06 above). These findings reinforce a widely held concern for the prospects for agricultural growth and rural development in the Northeast (and the importance of tree crops development in the South).

6.15 Road construction (and improvement) and forest denudation have in the past acted as prerequisites for significant cropland expansion. In the future, the role of roads is likely to be even greater, as most of the potential is for cash crops which require market outlets, and relatively little of the newly cultivated area is expected to be used for subsistence cropping (a major factor in cropland expansion in the past).

Table 6.10: EVOLUTION OF THE ROAD NETWORK

	1960	1965	1970	1975	1980
Paved and Gravel Roads (1,000 km)	10.4	12.3	16.3	20.2	28.2
Increment between years (1,000 km)	1.9	4.0	3.9	8.0	
Average annual growth rate (%)	3.4	5.8	4.4	6.9	

Source: Department of Highways, MOC.

The impact of the very rapid growth of the basic road network during the late 1970s (Table 6.10) will be felt throughout the 1980s; the current Government policy of directing public investment more towards rural roads will tend to amplify the impact of recent primary and secondary road construction and will, thus, support the continued expansion of cropland. Forest denudation also occurred at rapid rates during the late 1970s (29.1 million ha between 1973 and 1978, see Annex 2), setting the stage for undertaking cultivation of areas that were until recently under forest cover and are suitable for agriculture.

6.16 Government policy affects land use directly through land administration measures and improvements in the accessibility to potential farming areas and indirectly through tax and subsidy policies. The Government recently approved a comprehensive set of policy guidelines on land use with the dual purpose of preventing any further encroachment of forests and improving the security of tenure of farmers in areas classified as forest reserves but suitable for agriculture. Measures to prevent further forest encroachment are unlikely to be effective by themselves,^{/1} and in the case of areas suitable for permanent cultivation the tradeoff between conservation and

/1 Effective land policy has in the past been made more through infrastructure development than through Land Acts. Consistency between the aims of road construction programs and of nominal land policy needs to be more explicitly attempted.

growth of agricultural output and rural incomes should be taken into account. Measures to regularize and improve the security of tenure of farmers throughout the country will likely play an important role in the longer-term process of agricultural growth, land conservation, and input use intensification. The liberalization of export controls which in the past played a role in limiting the expansion of certain upland crops, especially maize, could strengthen the responsiveness and competitiveness of Thai agriculture. In contrast, supply control interventions would limit upland crop expansion and distort the incentives for agricultural growth.

6.17 The discussion above has outlined the potential and obstacles for expansion of cultivated area. With production being more and more market oriented, prices and market prospects will be a major determinant of actual rates of expansion. The potential exists for increasing the area planted in upland and tree crops at rates of about 3% (even without exhaustive encroachment of forest areas suitable for agriculture) for at least the remainder of the decade;^{/1} market prospects and prices will partly determine the overall rate of expansion and particularly how much new land will be planted in each crop. For maize and associated crops (notably sorghum and mungbeans) market prospects appear reasonably good and could lead to growth in area planted by up to 6% p.a. (a rate similar to that of the 1970s). Sugarcane could also see a rapid expansion of area planted, since sugarcane is now a well established crop and plenty of land (13 million rai, of which just over 3 million are currently planted) is located within reach of presently underutilized sugar mills, but it would require that prices in the world market recover from the current lows and that the limitations imposed by the International Sugar Agreement be overcome. Market prospects for cassava are somewhat limited, at least in the medium term, because of import restrictions in the EEC, Thailand's main customer for cassava pellets, and the area planted is unlikely to expand beyond the most recent peaks until new markets are developed.

Recent Developments in Agriculture and Agricultural Policies

6.18 After two years of relatively low agricultural growth, the 1981/82 cropping season saw significant increases in planted area and output for virtually all crops (with the exception of rubber) as a result of a good

^{/1} Table 6.8 and Annex 2. At 3% p.a. it would take a minimum of 12 years and a maximum of 30 years to exhaust the land available for upland and tree crops, not including marginal soils and without taking into account the potential for double cropping. This compares with growth rates of over 5% during the last two decades.

price outlook at planting time and favorable weather throughout the crop year. Forestry and fisheries continued to experience declining production due to forest closures in the case of the former subsector, and higher production costs and lower fish yields in the latter.

6.19 However, during the 1981/82 harvesting season and thereafter crop prices declined substantially (Figure 6.1 above) requiring extensive policy adjustments by the Government. Between mid-1981 and mid-1982, the average rubber export tax was reduced by a third, the export quotas for maize were liberalized, the ban on white sugar export was lifted, and cassava export controls were relaxed. For livestock, initiatives were taken to begin to free private slaughter activities from government control. For fisheries, export duties on ground fish were reduced from a range of 50-75% to 5-10%. For rice, the effective rate of export taxation (the combined impact of the ad valorem tax, the premium and the reserve requirement) as a percent of f.o.b. prices was cut from over 30% prevailing in mid-1981 to about 11% in mid-1982 by a significant reduction in the rice premium and the gradual reduction and eventual elimination of the rice reserve requirement.^{/1} Changes were also introduced in the non-tariff regulations governing rice exports in order to liberalize trade. In mid-1981 the Government's rice policy consisted in the traditional - and contradictory - elements of export taxation to maintain low domestic rice prices and purchases in the rural areas of over one million tons of rice at higher-than-market prices in an apparent effort to support farm incomes. As prices in the world market fell precipitously during the second half of 1981 (and through 1982), the uncertainty about Government's reaction, its delay in reducing export duties, the large crop harvested and the ineffectiveness of the price support program resulted in farm-gate prices about 20% below the Baht 3,750 target level, in spite of public expenditures of the order of US\$150 million (reflecting the accumulated losses of the price support scheme) over the two-year period. This recent experience underscores the importance of adopting a more systematic rice policy and the urgency of moving towards mechanisms capable of consolidating rice price stabilization and farmgate price support objectives over the cycle of rice price fluctuations.

6.20 While efforts to liberalize agricultural exports and the realignment in the dollar value of the baht in mid-1981 contributed significantly to the continued growth of agricultural exports during 1982, they could only cushion, but not prevent, an erosion of domestic farmgate prices and of agricultural incomes (see para. 2.21). As a result, the incentives for agricultural production increases were significantly reduced during 1982

^{/1} Associated with the elimination of the rice reserve requirement the Government also abandoned its cheap rice distribution program which had recently been restructured to provide for a significantly larger share to be distributed outside Bangkok than had previously been the case.

which - together with poor weather conditions in parts of the country - has resulted in a poor outlook for agricultural growth during the 1982/83 cropping season, and by implication for a relatively poor agricultural export performance for 1983, even if, as is projected, agricultural export prices are to recover from their 1982 low.

Public Expenditure in Agriculture and Rural Development

6.21 Government investment in agriculture and rural development in the past has focused mainly on infrastructure expansion, especially irrigation and roads, various rural employment generation programs, and special efforts to make areas subject to security risks more accessible and secure, mainly through road construction. Investments in agriculture itself accounted for about 6% of total public expenditure during the Fourth Plan period, and about 9% of Central Government spending (Table 6.11). In relation to total public expenditure, spending on agriculture declined between 1977 and 1981, mainly as a result of the much more rapid expansion of state enterprise spending, particularly in the energy sector. For the Fifth Plan period, agriculture is expected to roughly maintain its expenditure share, compared with the Fourth Plan. However, shifts in agricultural and rural development spending are required and aimed for in the Fifth Plan, both in terms of emphasis among programs in the sector, as well as within programs. The following paragraphs discuss the major concerns for public expenditure planning in agriculture and rural development by assessing the expenditures currently programmed, and by reviewing investment programming and budgeting practices for the sector.

Table 6.11: PUBLIC EXPENDITURE FOR AGRICULTURE, 1977-86

Agriculture expenditure as percent of	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982/a</u>	Fourth	Fifth
							Plan 1977- 1981	Plan 1982- 1986
Central government spending	9.3	8.8	8.8	8.6	8.9	8.8	8.8	8.6
(of which for irrigation)	(5.1)	(5.1)	(5.3)	(5.8)	(4.9)	(4.8)	(5.2)	(n.a.)

/a Estimated.

Source: Statistical Appendix, Tables 5.1 and 5.3; mission estimated.

Note: Agricultural expenditures do not include expenditures on rural infrastructure (roads, power, etc.)

6.22 In the absence of an overall public investment and expenditure program for agriculture and rural development during the Fifth Plan period, information on planned expenditures had to be pieced together from separate, often only incompletely formulated programs supplied by individual line agencies and by NESDB. Undoubtedly, one of the biggest needs in this area is the improvement of public expenditure data and increased efforts on the part of all major agencies to develop medium term expenditure programs and to support their compilation into an overall sectoral program. Only this will allow an assessment of past spending trends and patterns and of planned future investments. Because of the shortcomings of the available information at present, only a tentative expenditure program could be assembled as summarized in Annex 5.

6.23 About one quarter of all expenditure on agriculture and rural development for the Fifth Plan period is to be devoted to irrigation, another quarter to rural road construction and electrification, about one-third to a variety of rural development programs, and the remainder is split evenly between rubber replanting and all the other investments made by MOAC departments apart from RID. Overall, over the Fifth Plan period the program is not expected to grow more than about 1.5% p.a. in constant 1981 prices, indicating that no accelerated effort is planned for the sector as a whole. However, some significant shifts in priorities are reflected in the program, including a steady decline in large irrigation investments, particularly towards the end of the Fifth Plan period. Under the rural development program, the Poverty District Program (PDP) will take up the slack created by cutbacks in the Rural Employment Generation Program (REGP) and the Security Program. Rural electrification will accelerate early in the Plan period, but then slow down as the goal of full rural electrification is rapidly being approached. Finally, spending for rubber replanting is expected to be somewhat higher than in recent years, while a significant expansion is planned (about 15% p.a. in real terms) for investments by MOAC departments, other than RID and ORRAF, with most of the growth occurring towards the end of the period as foreign lenders, including the World Bank, are expected to direct a larger portion of their lending to nonirrigation investments. This highlights that a relatively small reduction in the proportion of spending directed to irrigation can permit a substantial increase in nonirrigation investments in agriculture. A number of concerns are addressed through this shift in spending priorities, while others remain to be dealt with as part of the Fifth Plan implementation process.

6.24 Irrigation. The main issues in irrigation expenditures relate to the size of the program, the scale and geographical distribution of schemes constructed, and the operation, maintenance and rehabilitation of the existing irrigation systems. The Government's intentions, as reflected in the expenditure program, is to limit further system expansion, with no real increase in total new investments planned between 1981 and 1986. In fact, much of the expenditure in the early years of the Fifth Plan are the result of projects initiated during the Fourth Plan. A number of large new projects previously planned have been postponed, and no new large projects have been recently proposed, leading to the projected absolute decline in spending for

large and medium-scale projects after FY 1983. This change in focus is appropriate, as more attention is to be given to fostering agricultural development in rainfed areas and, within the irrigation subsector, to increased development of small-scale projects^{/1} and the improvement of operation and maintenance of existing irrigation schemes. The increased emphasis on small-scale schemes is in principle a move in the right direction, inasmuch as it leads to increased exploitation of irrigation potential beyond the Central Plain in the poorest areas of the country and provided it is accompanied by greatly needed improvements in the quality of projects and their implementation. The process of project design and selection, and of construction, operation and maintenance for these schemes has in the past been subject to many difficulties and as a result, utilization of small-scale irrigation schemes has, according to a recent Japanese study, been only on the order of 15% to 20% of what would be required to achieve even the minimum feasible economic rate of return of 8% in many of these projects. As regards the broader issue of new construction versus improved operations and maintenance of existing schemes, the need for greater emphasis on the latter has already been recognized in Thailand, but it has been difficult for the Royal Irrigation Department to shift its primary focus in this direction.^{/2} Given the past concentration of public irrigation investments in the Center region (which accounts for 65% of irrigated area in the country), emphasizing rehabilitation and improved operation and maintenance will imply continuing to concentrate public irrigation expenditures in the center region. The priority given to small-scale projects in new construction may adequately offset the geographical concentration of other irrigation expenditures, but possibilities for economically justifiable large and particularly medium-scale projects in the Northeast should continue to be explored.

6.25 Other Agricultural Programs. The main beneficiary of the shift away from irrigation expenditure is a set of MOAC activities designed to support increased agricultural intensification in the rainfed areas. Considering the need for rapid intensification during the remainder of this century, which will become particularly urgent towards the end of the 1980s, Fifth Plan activities in the areas of agricultural research, extension, land development and reform, and in livestock and fisheries are of special importance. Even greater emphasis on activities in these areas would be desirable, but are currently constrained by the limited absorptive capacity of the implementing departments. Efforts, including extensive World Bank

^{/1} The emphasis should be more on carefully prepared and implemented small-scale projects than on expanding the already large number of new small-scale projects undertaken each year.

^{/2} An assessment of the foreign borrowing program prepared by NESDB in mid-1982 indicates that NESDB staff continues to be concerned about insufficient emphasis being paid to irrigation systems operations and maintenance (NESDB, "Three-Year Plan of Loan Projects (1983/85)," Bangkok, 1982).

project involvement, are underway to strengthen the institutional framework, but further expansion in programs managed by these departments will likely have to await the next Plan period.

6.26 The rubber replanting scheme has in recent years been expanded by a strong institution (ORRAF) with external assistance and has been successful in propagating the use of high-yielding clonal varieties. However, ORRAF's operations have been hampered by the slump in world rubber prices, which resulted in a dramatic drop of revenues from the rubber cess that directly supports ORRAF's program. While it would ultimately be best to finance rubber replanting schemes - together with other agricultural activities - from general budgetary resources and assign available resources across different activities in light of their relative priorities, it must be now considered substituting ORRAF's current dependence on the volatile export price of rubber to finance its replanting program with a more stable funding method.

6.27 Similarly, revenues and expenditures now channeled through the Farmers' Aid Fund (FAF) would be more appropriately administered as an integral part of the Government's budgeting and planning.^{/1} Since 1975, the FAF has been the recipient of about Baht 9 billion from premiums imposed on rice and sugar exports. FAF outlays were directed, first, in the form of grants to finance special projects (e.g., a major groundwater irrigation scheme, small land improvement programs and artificial rain making units) and aid to disasterstricken farmers; and, second, to a revolving fund for crop purchase programs as part of price support schemes, and for fertilizer distribution programs (largely through the Marketing Organizations for Farmers). The procedures for allocation of FAF funds allow for greater flexibility in responding to unexpected developments than regular budgetary procedures, but they have also resulted in unsystematic allocations, ineffective administration and wasteful leakages. Since the source of FAF receipts are export duties on agricultural products which tend to lower farm incomes and provide disincentives to efficient production, there are further losses from the present financing arrangements not offset by any gains in income distribution. While some of the operations financed out of FAF resources should continue and some flexibility is desirable in responding to temporary changes in agricultural production and prices, other institutional and financing means would very likely provide a much more efficient and equitable solution.^{/2}

^{/1} The FAF is one of the extra-budgetary funds being reviewed, in the context of the Structural Adjustment Program, as part of an effort to devise ways of improving the management of public resources and expenditures.

^{/2} Another area of direct Government involvement in agriculture has been the provision of large volumes of heavily subsidized credit by the Bank for Agriculture and Cooperatives (BAAC). During the Fifth Plan period BAAC is projected to inject about Baht 1.2 billion p.a. of incremental lending into agriculture. BAAC's operations are extensively reviewed in the World Bank's report on Thailand financial sector (Report No. 4085-TH) which also makes recommendations for the reform of agricultural and rural credit systems.

6.28 Rural Development Programs. In addition to the programs directed specifically at agricultural growth and intensification, and the rural roads and electrification programs, the Government continues rural development efforts on a broader basis through three programs. The Rural Employment Generation Program has traditionally been the largest of the three with an emphasis on labor intensive public works projects, especially during the agricultural off-season. These projects have had some, albeit limited employment impact, as their administration and implementation was often dominated by vested interests at the provincial and local level.^{/1} What is more, they generally were not targetted directly towards the poorest areas, or towards the most pressing needs of the poverty districts. For these reasons, the Fifth Plan placed heavy emphasis on the new Poverty Districts Program. Based on a district-level survey, 286 "poverty subdistricts and districts" were selected and their priority needs identified, including specific agricultural production support needs, and social service requirements (including health, nutrition and water supply). Emphasis was also placed on involving all major line agencies in implementing the program and to rely to a large extent on redirecting existing line-agency programs towards the poverty districts rather than initiating special new projects. The incremental resources devoted to the Poverty Districts Program were originally set at Baht 8.6 billion in the Fifth Plan, but have now been increased to Baht 9.0 billion. Finally, the Rural Security Program which mostly emphasized the construction of roads in areas regarded subject to security risks, is expected to be phased back over the next few years in line with reduced security problems. Overall, this shift from welfare and security oriented programs - the Rural Employment Generation Program and the Rural Security Program - towards a well-targetted program designed to generate specific productive assets and meet well-defined basic needs of the rural population in the poorest areas, is very welcome. Questions remain regarding the effectiveness of the implementation of the broadly designed, multi-agency efforts of the Poverty District Program, the overall coordination between the three rural development programs, and the operational and maintenance requirements of the installations newly set up in the poverty districts; these questions are being addressed through the National Rural Development Committee and as the Program matures, it may be possible and desirable to direct more resources towards it and aim for a broader integration of rural development programs.

6.29 Investment Planning and Budgeting. Overall, public investment programming is particularly weak in the area of agriculture and rural development. This has been the result of the existence of a multiplicity of strong individual agencies and departments, each pursuing their own programs, generally in the context of specific projects supported in turn by a multiplicity of foreign lending institutions, without a sector-wide perspective or investment programming capacity vested either in the Ministry of Agriculture and Cooperatives or in NESDB. The current efforts in NESDB to develop a three year rolling investment and foreign borrowing program is, however, beginning to pay off by flushing out a number of issues which have not been addressed in

^{/1} See Report No. 3906-TH: "Growth and Employment in Rural Thailand".

the past. The large gap between some of the specific Fifth Plan targets and the details of the project investments has become clear, and specific questions have been raised by NESDB regarding the desirability of specific aspects of the program./1

6.30 In the context of the annual budgeting process, the initial steps which have been taken to introduce Program and Performance Budgeting, have had their impact on the allocation of resources within the Ministry of Agriculture and Cooperatives. In preparing the budget for FY 1983, the Minister of Agriculture for the first time used his new discretion to reallocate funds between departments, albeit to a limited extent, by shifting funds from the Irrigation and Extension Departments to the other departments. What is more, there is now greater and more direct ministerial and departmental accountability in defending the budget submissions before Parliament, which requires greater attention at the managerial level to be paid to the relationship between budgetary matters and program implementation. Furthermore, the "Pink Book" which was prepared by NESDB to identify priority projects for the budget of FY1983, for the first time aimed at, and to some extent achieved, an integration of budgeting efforts in the MOAC departments, in the Budget Bureau, and in NESDB. For MOAC, 150 new projects were listed of which 45 were selected as priority projects which could not be cut on budgetary grounds. The priority projects were identified on the basis of ease of implementation and relationship to Fifth Plan goals with the presumption that Departments would then be forced to cut out the fat in their ongoing projects in order to make room for the new projects.

6.31 These recent improvements in investment programming and budgeting are definitely a move in the right direction, although further strengthening of the procedures and planning capabilities is required and underway as part of the Government-wide reform of programming and budgeting. Particular attention should now focus on broadening the scope of the programming efforts to integrate all major agricultural and rural development programs; on improving the linkage between project-level and program-level plans; on a more comprehensive assessment of relative priorities between ongoing and new projects, between operations and maintenance improvements and new investments, and between different programs and projects; and on an integration of Plan goals, medium-term investment plans and annual budgets.

Agricultural Policies for the 1980s

6.32 The discussions in paras. 6.11-6.17 above indicated that extensive agricultural development, though less important than in the past, will continue to have a role to play during the 1980s. In effect, therefore, Thailand has some time yet available before it will have to rely exclusively

/1 Including the efficiency of small-scale irrigation projects and the balance between irrigation and nonirrigation investments.

on intensification in order to maintain its agricultural growth momentum. However, that time will inevitably come, albeit somewhat later than had been expected hitherto. Moreover, since measures towards increased intensification take considerable time to show their impacts, and since unfettered expansion of land utilization could be accompanied by potentially serious ecological consequences, an active agricultural policy stance is essential. The main elements are as follows:

- (a) The Fifth Plan objective of increasing agricultural productivity and improving the efficiency of use of natural resources remains a critical one for the long-term development of the sector, and its achievement will require expeditious implementation of measures envisaged in the Fifth Plan to provide the necessary support for making input use intensification a technically feasible and economically viable option for farmers throughout the country. A recent Bank review ^{/1} of the potential for productivity improvements emphasized the importance of improving institutional performance (particularly in research and extension) and coordination for short- and medium-term progress, identified priority areas for continued government action and cautioned about the lead time required for full effectiveness of the measures being undertaken.
- (b) To ensure that all those participating in agricultural activities take decisions that are in the interest of the country's development, market interventions and distortions should be minimized. This includes reducing export taxes, eliminating regulations constraining the growth of production, opening up the fertilizer supply system, and further deregulating livestock slaughter and meat production. For an agricultural economy as export-oriented as Thailand's, allowing the farmers to respond to undistorted economic incentives will more likely lead to better resource use and production decisions than ad hoc intervention by government agencies.
- (c) Land use and administration policies will play a very major role in agricultural development. The continued expansion of farmland should be supported, rather than impeded, by selectively but systematically permitting agricultural development of suitable forest areas not critical for watershed preservation; by providing land titles to farmers throughout the country and continuing with the reclassification of public land in private use; and by concentrating reforestation and forest preservation efforts in areas most critical for natural resources conservation. The

^{/1} Report No. 3705a-TH. "Thailand: Program and Policy Priorities for an Agricultural Economy in Transition".

continued expansion of upland crop cultivation (in particular of cassava) has resulted in increasing erosion problems. Land development and conservation practices need to be greatly enhanced to avoid rapid deterioration of the environment and of the productive potential of land.

- (d) Credit availability will be a necessary condition for rapid adoption of available techniques and intensification of input use. To maximize rural savings mobilization and to optimize the allocation of credit to agricultural activities, the financial system should be allowed to function unfettered.^{/1} While the drive to provide all farmers with land titles is underway, and while the private elements of the financial system increase their reach to cover rural areas comprehensively, BAAC will have to continue its developmental effort and ensure farmers' access to credit, albeit at unsubsidized interest rates.
- (e) Continued improvements in the rural irrigation, power, transport and communications infrastructure will have to be made with particular emphasis on operations and maintenance of existing productive assets especially in irrigation.
- (f) Due to the prevalence of poverty among the rural population, support for efficient agricultural growth and efforts to directly alleviate rural poverty have been emphasized for the Fifth Plan period, and should continue to be further developed. Besides providing appropriate incentives and infrastructure support for agriculture in general, specific public expenditure programs in support of rural poverty alleviation deserve the highest priority of the Government and foreign donors.
- (g) Continuation of the Government's efforts to improve investment planning and budgeting procedures in the sector is also essential, if the Government's priorities are to be effectively translated into expenditure programs. This involves further improvements in the scope, articulation and integration of a medium-term investment program, in its linkage with the annual budget, and in the monitoring of its implementation.

^{/1} See Report No. 4085-TH. "Thailand: Perspectives for Financial Reform".

7. INDUSTRIAL GROWTH AND POLICY

Trends, Structure and Recent Developments in Industry

7.01 The industrial sector in Thailand over the past two decades has contributed significantly to the country's rapid growth and diversification of economic activity.^{/1} The share of industry in GDP increased from 23% in 1973 to 28% in 1981, growing at an average annual rate of about 10% (Table 7.1). Industrial growth slowed between 1977 and 1981 compared with the earlier years, but remained respectable by international standards at 8.5% p.a. Construction and utilities have been the most rapidly growing sub-sectors in industry, but jointly account for only a quarter of the sector's value added. Mining and quarrying contributed less than 10% of industrial value added during the 1970s and grew at a relatively slow pace. Manufacturing is thus the most important industrial subsector, contributing about 70% of industrial value added in 1981 and about 25% of total incremental GDP in Thailand during the period 1973-81. The growth rate in manufacturing was generally somewhat below that of the industrial sector as a whole and dropped below that of the other three industrial subsectors for the period 1977-81.

7.02 Within manufacturing, a substantial portion of production is still closely linked to the primary producing sectors. Of total value added in manufacturing in 1980, 28% was attributable to processed food, beverages and tobacco, 8% to processed minerals, wood and rubber. Textiles, wearing apparel and leather products were the next most important group, accounting for 20% of manufacturing value added in 1980. Activity in this group has grown very rapidly over the past 10 years. Much of this growth was oriented towards exports, since local production capacity had already saturated the domestic market, and new export-oriented production capacity migrated to Thailand from nearby countries subject to textile quotas in OECD countries. Chemicals production in Thailand has been growing rapidly, albeit from a small base, and together with petroleum refining accounted for 17% of manufacturing value added in 1980. The transport equipment subsector contributed 8% of manufacturing value added and is devoted primarily to the assembly and repair of motor vehicles and cycles for domestic use, rather than for exports. The rapid growth of this subsector is largely due to the high protection which it receives in the form of import tariffs, quantitative restrictions, and domestic input requirements, resulting in negative value added at world market prices, particularly in the production of automobiles.

^{/1} See World Bank, "Industrial Development Strategy in Thailand." Report No. 2804a-TH, June 5, 1980.

Table 7.1: GROWTH AND STRUCTURE OF INDUSTRY, 1973-81

	Growth of value added (% p.a.) /a			Share of value added (%) /b					
	1973	1977	1973	1973	1977	1977	1981	1981	
GDP	7.1	7.4	7.2	100.0	100.0	100.0	100.0	100.0	
<u>Industry</u>	<u>11.4</u>	<u>7.6</u>	<u>9.5</u>	<u>22.9</u>	<u>(100.0)</u>	<u>27.4</u>	<u>(100.0)</u>	<u>28.5</u>	<u>(100.0)</u>
Mining & quarrying	6.7	7.1	6.9	1.3	(5.7)	2.1	(7.7)	1.7	(6.0)
Manufacturing	11.2	7.6	9.4	16.5	(72.1)	19.0	(69.3)	20.1	(70.5)
Construction	13.6	6.6	10.1	3.9	(17.0)	5.2	(19.0)	5.3	(18.6)
Electricity, water supply	12.1	11.3	11.7	1.2	(5.2)	1.1	(4.0)	1.4	(4.9)

/a Based on constant 1972 prices.

/b Based on current prices.

Sources: Statistical Appendix Tables 2.2, 2.4.

7.03 Data on the sectoral breakdown of investment are not available for Thailand; however, on the basis of sketchy evidence it appears that the manufacturing sector accounted for a considerable share of private investment growth during the 1970s. Data on the registration of new investments in industry collected by the Ministry of Industry on the basis of license requests indicate that industrial investment and its capital intensity peaked in 1976. According to these data, which do not, however, include information on investments in expansion of existing facilities, new industrial investment was concentrated in intermediate production, food processing and consumer durables.

7.04 The changing structure of Thailand's foreign trade reflects the changes in the country's productive structure. Exports comprise sizable shares of gross domestic manufacturing output in the categories of primary goods processing, including food, leather, wood, rubber and basic metals (tin) industries. The relatively high share of machinery exports in domestic production reflects mainly the exports of integrated circuits (Table 7.2). The structure of Thai manufacturing imports, on the other hand, reveals that capital and intermediate goods industries are still little developed, as shown by the high levels of imports relative to domestic production for chemicals and petroleum, basic metals and metal products, and, especially, machinery.

7.05 Exports of manufactured goods grew rapidly in the 1970s, from a share of 5.5% in total exports in 1970 to 30% in 1981 (Table 7.3). Textiles and garments contributed a substantial portion of this growth in the first half of the 1970s, accounting for close to half of all manufactured exports in 1977, but subsequently its share in total manufactured exports declined to below 30% in 1981. Other manufactured exports expanded rapidly during that period, including wood products (encouraged by the ban on exports of logs), nonmetallic minerals, electronic goods and electrical machinery (especially integrated circuits), jewelery and precious stones, and miscellaneous other manufactures. This recent experience, while manufactured exports worldwide suffered due to recession, indicates a potential for continued diversification in Thai manufactured exports and a capacity to produce a variety of manufactured goods competitive in the international markets. In most of these products, Thailand's export growth has been from a relatively low base, and its share in the world market is still small. Except for certain items subject to quotas (in particular, textiles), the lack of potential markets should not pose a serious constraint to continued growth of Thai manufactured exports, provided the domestic policy environment provides the necessary incentives.

Table 7.2: SHARE OF IMPORTS AND EXPORTS IN MANUFACTURING OUTPUT /a

Industry groups	Exports as % of domestic production			Imports as % of domestic production		
	1975	1978	1980	1975	1978	1980
Food processing	22.0	29.8	37.8	1.6	2.5	5.2
Beverages and tobacco	0	0	0.3	1.4	2.2	5.8
Textiles	10.0	17.6	13.6	12.7	10.2	5.0
Leather products	7.0	34.7	32.3	2.3	2.6	2.7
Wood products	13.8	12.3	10.5	1.4	6.5	5.5
Pulp, paper and paper products	1.5	1.5	15.3	24.8	26.5	15.7
Chemicals and petroleum	3.1	1.8	2.4	66.0	83.0	56.5
Rubber and plastic	79.2	60.7	85.1	13.2	6.9	7.8
Nonmetallic mineral products	10.5	3.7	3.6	9.5	10.7	15.4
Basic metals and metal products	21.9	30.2	32.8	59.9	54.5	43.6
Machinery	7.5	19.5	33.1	206.1	173.0	144.0
Transport equipment	0.2	0.4	0.9	49.4	35.2	38.0
Precision equipment and others	23.2	31.7	21.3	31.2	46.6	15.5
<u>Total</u>	<u>15.0</u>	<u>19.7</u>	<u>20.6</u>	<u>23.4</u>	<u>25.6</u>	<u>25.2</u>

/a As measured by gross production.

Source: NESDB, Ministry of Commerce. Classification based on 1975 Input-Output Table.

Table 7.3: CHANGES IN THE STRUCTURE OF EXPORTS, 1970-81
(in %)

	1970	1974	1977	1981
Total exports	100.0	100.0	100.0	100.0
Manufacturing exports	5.7	14.1	14.8	30.1
Textiles and garments <u>/a</u>	0.1	3.6	6.4	8.4

/a Includes spinning silk and silk fabrics.

Source: Statistical Appendix Tables 3.2 and 3.3.

7.06 The sources of growth in the manufacturing sector may be disaggregated according to growth from domestic demand, from import substitution, and from export demand./1 (Table 7.4) Domestic demand was the primary source

Table 7.4: SOURCES OF GROWTH OF MANUFACTURING OUTPUT, 1966-80
(% contribution to increase) /a

	1966-72	1972-75	1975-78	1978-80
Domestic demand	64.1	91.0	79.5	72.2
Import substitution	29.4	0.5	-7.7	-7.4
Export demand	6.5	8.5	28.2	35.2

/a Domestic demand effects greater than 100 indicate that domestic demand grew faster than production and either the import share increased (negative import substitution), or surpluses available for export were reduced (negative demand expansion), or both, to meet domestic demand in excess of domestic supply capacity.

Source: World Bank, Report No. 2804a-TH, and Mission estimates.

of growth in manufacturing output throughout the past 15 years. Import substitution was also important in the period 1966-72, when a number of consumer goods industries were established and expanded in Thailand, principally in consumer durables, transport equipment, textiles, and rubber and wood products. Overall, there was no net import substitution during 1972-75 and even some "negative substitution" in areas where demand outpaced the growth of domestic capacity and the import share grew. Exports, in contrast, made an increasing contribution to growth of output, particularly for textiles and rubber and wood products. In the period 1975-80, export demand further increased in its contribution to growth of manufacturing, including processed food, leather and rubber products, clothing, and selected machinery products. Import substitution on average showed a negative contribution, reflecting the high level of domestic demand since 1975 as a result of the rapid expansion of the domestic economy and an investment boom. While these calculations provide only a rough indication of the dynamics of change within the manufacturing sector, they show the overriding importance of domestic demand growth, the substantial and growing contribution from export demand, and a rapidly declining contribution from import substitution, despite increased average levels of effective protection accorded to import competing industries during

/1 The methodology of disaggregation into the three components is described in World Bank, Report No. 2804a-TH.

the 1970s. This apparently paradoxical development may in part reflect that industrial activity and exports respond with only a lag to changed incentives, but may also reflect Thailand's increased attractiveness during the second half of the 1970s to footlose export oriented industries searching for low-wage locations, as some of the traditional locations (Korea, Taiwan, Singapore) experienced rapidly rising labor costs relative to Thailand. This is an issue warranting further assessment, since it has a bearing on the future outlook for Thai industrial development.

Table 7.5: EMPLOYMENT IN MANUFACTURING SECTOR

Sector	Employment			Growth		Shares		
	1960	1970	1980	1960-70	1970-80	1960	1970	1980
	(in '000)			(% p.a.)		(%)		
Processed food, beverages and tobacco	126.3	145.7	356.0	1.4	9.3	26.8	21.3	19.9
Textile, apparel and leather	137.4	205.9	462.2	4.1	8.4	29.2	30.2	25.8
Wood, furniture and fixtures	89.8	90.2	282.0	0.0	12.1	19.1	13.2	15.8
Minerals, metals, and metal products	42.1	89.3	226.3	7.0	9.7	8.9	13.1	12.6
Transport equipment	26.3	59.3	152.4	8.5	9.9	5.6	8.7	8.5
Other	49.2	92.2	310.1	6.5	12.9	10.4	13.5	17.3
<u>Total</u>	<u>471.0</u>	<u>682.6</u>	<u>1,789.0</u>	<u>3.8</u>	<u>10.1</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Labor force	13,749	16,132	22,728	1.6	3.5	3.4/a	4.2/a	7.9/a

/a Percent of total labor force.

Sources: Census Reports, 1960, 1970; Labor Force Surveys, 1974/75 and 1979; NESDB and mission estimates.

7.07 Employment in the manufacturing sector grew rapidly over the past two decades and, especially during the 1970s, has outpaced the growth of the total labor force by substantial margins (Table 7.5)./1 The sector contributed 7.9% to total employment in 1980, but absorbed over 16% of the increment in the labor force between 1970 and 1980, most of it in the wood processing, beverages and tobacco industries, textile, apparel and

/1 Employment data in Thailand are not very reliable and must be interpreted with great caution.

leather branches, and transport equipment industry. Employment in the wood and cork industries slumped during the last two decades, but was offset during the 1970s by employment growth in furniture and fixtures production, illustrating the deepening of Thailand's industrial structure. Other industries, such as minerals, metals and metal products also rapidly expanded their share in employment over the past decade. The rapid growth in manufacturing employment resulted in part from the rapid growth of manufacturing activity and in part from an increase in the rate of labor absorption per unit increase in value added, which in turn was induced by the rapid growth of relatively labor intensive export-oriented industries. Estimates show that in 1978 the direct plus indirect labor inputs per value added into nonresource based export production was 1.8 times that of import competing industries.^{/1} Particularly for textiles the labor intensity as measured by the share of wages in value added and by the capital-labor ratio of new investment appears to have been high in Thailand in recent years.

7.08 Small and medium scale firms have contributed substantially to employment generation in Thailand. Firms with less than 10 employees are estimated to have employed 50% more workers in 1978 than did all larger firms (Table 7.6), and contributed about one-fifth of manufacturing value-added. Between 1970 and 1978, while Thailand's total employment grew by 3.4% p.a., employment in manufacturing firms with less than 10 employees grew at 10.3%, slightly higher than that in larger manufacturing firms (9.8%). According to survey data for 1976, investment per worker in small and medium scale industry (SMI) is only one-third the level in firms with more than 200 employees, and, except for firms under 10 employees, capital requirements per worker are smaller the smaller the firm (Table 7.7). Value added per worker is also lower in SMI, but value added per unit of fixed assets is higher for SMIs than for larger firms, except for the smallest firms. Survey data further show that SMIs are relatively more concentrated in the consumer goods and some capital goods sectors than are larger firms, and export at least as high a proportion of total sales as do their larger counterparts.^{/2} Overall, SMIs in Thailand are an active and vital part of the manufacturing sector, and their production has been expanding at least as rapidly as that of the rest of the industrial sector.

^{/1} Narongchai Akrasanee, "Trade, Domestic Production, and Employment in Thailand." Working Paper, June 1979.

^{/2} Saeng Sanguanraung et al., "Small and Medium Industrial Plants in Thailand," mimeo 1977, and "A Study of Entire preneurial Development Programs in Thailand," mimeo, April 1978. Similar patterns of SMI development have been observed in other countries, see, for example, World Bank, Trade and Employment Policies for Industrial Development. Washington, D.C. 1982.

Table 7.6: EMPLOYMENT IN INDUSTRY BY SIZE, 1970-78

	<u>Employment</u>		<u>Growth rate</u>
	<u>1970</u>	<u>1978</u>	<u>1970-78</u>
	----(in '000)----		(% p.a.)
<u>All Manufacturing</u>	<u>682.6</u>	<u>1,475.3</u>	<u>10.1</u>
Bangkok Metropolis	214.0	591.7	13.6
Other regions	468.6	883.6	8.3
<u>Small Scale Manufacturing</u> (less than 10 employees)	<u>388.0</u>	<u>850.8</u>	<u>10.3</u>
Bangkok Metropolis	95.1	408.7	20.0
Other regions	293.0	442.1	5.3
<u>Larger Scale Manufacturing</u> (10 or more employees)	<u>294.6</u>	<u>624.5</u>	<u>9.8</u>
Bangkok Metropolis	119.0	183.1	5.5
Other regions	175.6	441.4	12.2

Source: Labor force surveys (Department of Labor), 1969, 1975, 1978; Labor Force Surveys (National Statistical Office); NESDB and Mission estimates.

Note: Figures may not add due to rounding.

Table 7.7: CHARACTERISTICS OF FIRMS BY SIZE, 1976

Employment	Fixed assets per worker <u>/a</u> ----- (B'000)	Value added per worker -----	Value added to fixed assets (%)	Average compensation per employee (B'000) <u>/b</u>	Export to sales ratio (%)
Less than 10	85.6	22.5	28	12.9	19
10- 49	67.7	29.2	46	12.7	27
50- 99	77.6	46.6	66	15.3	21
100-199	87.6	51.9	61	15.7	34
200 or more	216.1	80.1	43	15.4	15
<u>Average</u>	<u>122.7</u>	<u>54.0</u>	<u>48</u>	<u>14.4</u>	<u>21</u>

/a On acquisition cost basis.

/b Including wages, bonuses and fringe benefits.

Source: See Saeng Sanguanraung et. al. (Footnote /2, page 180)

7.09 Manufacturing activity in Thailand has been heavily concentrated in and around Bangkok, reinforced in recent years particularly by the rapid growth of small scale firms in the Bangkok metropolis (Tables 7.6 and 7.8). For manufacturing, 52% of total value added and 35% of employment were concentrated in Bangkok in 1980, and another 36% and 30% respectively in the Central region. Industries outside Bangkok are predominantly agro-based, processing rubber, sugar, tapioca or milling rice, but also include the production and repair of agricultural implements. The rapid increase which has been observed in the 1970s for rural non-farm employment outside Bangkok can largely be attributed to these industries, but their growth in turn has been found to depend virtually entirely on the growth in agricultural activities./1 Consumption goods industries and import-dependent industries, have located near Bangkok, which is the country's leading port, largest consumption market, and the center of the country's distribution network. Export industries, except those which are primarily domestic resource based, have also concentrated in Bangkok due to its good access to port facilities, communications, and financial services.

/1 See World Bank, Report No. 3906-TH, for a in-depth review of rural nonfarm activities and employment in Thailand.

Table 7.8: REGIONAL ASPECTS OF MANUFACTURING, 1980

	Bangkok	Center/ <u>a</u>	North	North- east	South	Total
Value added (B mln)	69,539	48,465	5,443	6,137	4,931	134,515
Share (%)	51.7	36.0	4.0	4.6	3.7	100.0
Employment ('000)	628.8	538.5	178.3	220.0	217.7	1,783.3
Share (%)	35.3	30.2	10.0	12.3	12.2	100.0
Value added per employee (B '000/year)	110.6	90.0	30.5	27.9	22.7	75.4
Average wages (1980) (B/day)	42.3	34.4	29.6	28.0	35.8	34.0

/a Excluding Bangkok.

Source: NESDB, Bank of Thailand.

7.10 Overall, Thailand's rapid industrial development during the last decade has been similar to that of a group of other developing countries which have successfully shifted away from specialization in primary goods production, exports and employment. These countries include Malaysia, the Philippines, Colombia, Ivory Coast, Morocco and Tunisia.^{/1} In these countries, as in Thailand, rapid growth has taken place in incomes and employment, based on labor intensive industries such as clothing, textiles, footwear, electronic components and other light consumer goods. The development of Thailand's industrial sector was further characterised by its close linkage with rapid agricultural growth, its reliance on small scale firms, its relatively low labor costs,^{/2} successful adaptation of foreign

/1 For a comparative assessment of industrial development, including that of Thailand see World Bank, Trade and Employment Policies for Industrial Development, 1982.

/2 According to a recent study carried out by Coopers & Lybrand associates, Thailand had the lowest average labor costs in the manufacturing sector compared with Singapore, Hong Kong, Malaysia, the Philippines, and Korea (Coopers & Lybrand associates, "Eastern Seaboard: Industrial Opportunities Identification Study," Table 3.2., June 1982).

technology to local requirements and factor endowments (e.g, the indigenous development of farm machinery, and the relatively labor intensive techniques employed in some of the agro-processing activities). For much of the last two decades, Thailand's industrial development has been supported by a policy environment which on balance has favored private sector initiative, and did not discourage labor intensive, export oriented and small-scale production, although the second half of the 1970s saw an increasing degree of distortion in Thailand's incentive structure. The next section reviews the industrial policy framework in Thailand as it developed during the 1970s and the present direction pursued by the Government.

Industrial Development Policy

7.11 Only the more important instruments of industrial development policy, their use in the last decade, recent change, and intended directions in the Fifth Five-Year Plan period are discussed here.^{/1} After a brief review of the institutional framework, this section discusses the protective structure, the investment incentive regime, and export incentives.

7.12 The Institutional Framework. Seven major governmental agencies are in charge of various aspects of industrial policy: The Ministry of Finance (MOF) administers taxes and duties, and provides tax refunds on exports. MOF also is heavily involved in negotiations regarding large scale industrial projects since it plays a major role in decisions on government equity participation, public foreign borrowing to support such projects, natural resource input prices (especially natural gas), and the protection offered these industrial ventures through tariffs. The Board of Investment (BOI) is responsible for the administration of investment incentives and is entitled to provide tariff and income tax exemptions, and can apply tariff surcharges and import bans on competing imports. The Ministry of Commerce (MOC) controls imports and exports and prices of selected goods in Thailand, and maintains an Export Service Center (ESC) providing marketing assistance to Thai exporters and foreign buyers. The MOC has recently been empowered to levy a one percent surcharge on the value of imports and exports for financing the ESC, and has indeed imposed a one percent import tax during most of 1982.^{/2} The Ministry of Industry (MOI) issues factory licenses, draws up industrial regulations and enforces zoning laws. Various branches within MOI provide technical assistance, management training and finance for SMIs. The Industrial Finance

^{/1} See World Bank Report No. 2804a-TH, for a more extensive and complete treatment of industrial policy issues in Thailand. For an analysis of issues relating to industrial finance and credit, see World Bank Report No. 4085-TH.

^{/2} This tax was eliminated again in late 1982, after sufficient funds had been collected for the ESC.

Corporation of Thailand (IFCT) is a private development finance bank, which lends long-term funds to medium and large-scale enterprises. IFCT is financed largely from credits provided by other Government agencies and from multi-lateral foreign borrowing. The Bank of Thailand (BOT), besides control over general monetary, financial and foreign exchange policy, provides rediscount facilities to selected industries and exporters at concessionary terms. Finally, NESDB prepares the development plans, including policy guidelines and targets for the industrial sector, and advises the Prime Minister and the Cabinet on the implementation of the plan.

7.13 Coordination among these agencies has been weak in the past, leading at times to contradictory policy initiatives. Under the Fifth Plan, however, and as part of the structural adjustment program supported by World Bank loans, a high-level interministerial group, the Industrial Restructuring Committee, was set up in early 1982 and has been given responsibility to formulate detailed policy proposals in line with the Fifth Plan industrial development strategy and to coordinate its implementation through various line ministries. The Committee has actively pursued this task since its creation in all of the major areas of industrial policy, including the protective structure, investment incentives, and export incentives.

7.14 The Protective Structure. Tariffs are the most important protective device in Thailand. The current tariff structure has evolved as a result of numerous ad hoc changes, and over the years an escalating structure has emerged which provides the greatest protection to domestically produced finished consumer goods. During the 1960s, nominal tariffs were relatively low, ranging from 25-30% for most intermediate products and consumer goods, and 15-20% for machinery and equipment. In 1971, nominal rates for consumer goods were increased to range from 30-55% with rates on intermediate and capital goods remaining unchanged. After a selective downward revision of tariffs in 1974 aimed at reducing inflationary pressures, tariff rates on balance increased again, with 53 out of 93 industrial input/output categories experiencing tariff increases and only 19 categories facing reductions between 1974 and 1981 (Statistical Appendix Table 8.8). Thus, while in 1974 the nominal rates of protection were mostly between 20-50% they had risen to a range of 30-60% by 1978.^{/1} Increases in average nominal rates were especially large for domestic sales of export-oriented industries, which registered a reversal from -7% in 1974 to 14% in 1978, and for non-import competing industries, which saw an increase in average nominal protection from 35% in 1974 to 51% in 1978; for import competing industries the increase in average nominal rates was from 25% to 34% over the same period. In 1978 there were nine industries with nominal rates of protection above 90% (distilling and blending spirits, 100%; breweries,

^{/1} In addition to changes in tariff levels, higher rates of excise and business taxes on imported as compared with domestic products, raised nominal protection levels between 1974 and 1978.

100%; shoes, 100%; perfumes and cosmetics, 96%; and passenger cars, 150%). Generally, the highest nominal rates were in the consumer goods, beverages and tobacco, and transport industries.

7.15 As a result of these changes in the tariff structure the overall effective rate of protection on manufactured products declined from 87% in 1971 to 19% in 1974, followed by an increase to 70% in 1978. Excluding processed food, however, the average effective rate of protection remained virtually unchanged between 1971 and 1974 (44% and 46%, respectively), but had increased substantially by 1978 (to 90%). In 1978, effective protection was highest on consumer goods and transport equipment. Among trade categories, effective rates were highest on nonimport competing industries, increasing from 40% in 1974 to 100% in 1978; next highest on import competing industries, up from 45% in 1974 to 89% in 1978; finally, export-oriented industries received the lowest average effective protection, but saw a significant reversal from -40% in 1974 to 40% in 1978. According to the findings of a comparative international survey carried out in preparation for World Development Report, 1983, this escalation of tariff protection during the 1970s moved Thailand from a country with relatively low protection to a country with medium-to-high protection levels, marking a rather significant reversal in Thailand's trade policy.

7.16 Between 1978 and 1981, there were few major changes in tariffs, but, very significantly, in 1980 the work of the NESDB's subcommittee on the industrial sector provided a major turning point in favor of industrial reform, aiming towards reversing the trend towards increased distortions which had been introduced in the second half of the 1970s. As a result of this work, the Fifth Five-Year Plan embraced the idea of reforms in the industrial incentive structure, including the tariff system, aiming towards greater uniformity on nominal tariff levels and lower average effective tariffs. The implementation of the Fifth Plan goals was initiated in the context of the development of the Government's structural adjustment program. Specifically, during 1982 there were several changes in the import tariff structure, which reduced tariffs on 270 categories of imported commodities to the level of 60% in cases where it was higher; adjusted tariffs on 1970 categories to 30%;^{/1} and raised tariffs to 5% on items previously exempted, with the exception of certain commodities judged essential (e.g., skim milk, powdered milk for infant feeding, fiber used in textile production, oil and some oil products). These tariff changes affected about 40% of non-oil imports, and have left barely any items of consequence with import duties in excess of 60%, except for automobiles. Mission estimates indicate that the net effect of these tariff

^{/1} The most important changes were: for foodstuffs and fruits, tariffs were lowered from 80% to 58%; for electrical appliances and products tariffs were reduced from 60% to 38% in the case of hi-fi equipment, from 100% to 38% in the case of television sets, and from 80% to 39% for domestic appliances and parts; for chemicals and machinery, tariffs were reduced from 30% to 15%.

reforms represents a significant reversal of past trends and a major move towards more uniform and, on average, lower levels of tariffs, thus reducing distortions in Thailand's trade regime. Effective rates of protection in 1982 are estimated to have declined to 47% for nonimport competing commodities and 37% for import competing goods, with a slight increase to 43% for export commodities sold domestically. The overall rate of effective protection therefore declined to about 40%. A 10% surcharge on existing import duties, which was introduced in November 1982 to offset substantial tax revenue losses incurred during FY 1982 in part as a result of a significant drop in imports, is designed to be temporary, and should be removed at the earliest opportunity as imports recover and other revenue sources are mobilized to provide the required fiscal resources for the central government.

7.17 Other protective measures have included price controls, which were quite pervasive during the 1970s. But these were relaxed beginning in 1979, when 27 of 63 products were removed from the list of controlled products. In July 1981, controls were further relaxed, with only petroleum products, white sugar, and sweetened condensed milk remaining under price control. Price controls thus have largely been removed as an intervention in industrial activity in Thailand. Quantitative restrictions on imports, however, have increased in recent years, administered by MOC, and in part at the request of the BOI to ban the importation of certain products. As of March 1982 there were 46 products under import control. Similarly, controls on industries administered by MOI have increased during the 1970s. They have been designed ostensibly to provide protection against excessive competition and fragmentation of the market, with some 30 industrial branches subject to conditions on entry and expansion. Since 1970, 100% domestic content requirements have been in force for the principal inputs into milk products, steel wires, steel products made with concrete, and electric wire. Lower domestic content requirements apply to motorcycles and motor vehicles. The latter were introduced in 1973 and further increased since 1978, ranging in 1982 from 30-40% for commercial vehicles, 45% for passenger cars, and 70% motorcycles. A further 5% points increase in the domestic content requirement scheduled for 1983 for passenger cars was eliminated in August 1982, and the import ban on fully assembled cars lifted for vehicles not assembled in Thailand. This represents the first significant limitation on recent increases of quantitative restriction in this area. Since it has been observed elsewhere that production costs tend to rise with increases in domestic content requirements and reduced market competitiveness, this recent limitation on import content requirements represents a move in the right direction and should eventually be followed by a reversal of these restrictions. In any case, however, nontariff interventions on balance do not, with the exception of the automobile sector, represent a major source of distortion in Thailand./1

/1 The treatment of the automobile sector is currently under study in the context of the Government's structural adjustment program.

7.18 Investment Incentives. Investment incentives are administered by the BOI, an interministerial Board chaired by the Prime Minister, with an implementing office whose staff is headed by its Secretary General, who is directly responsible to the Prime Minister. BOI incentives commonly include: guarantees against government intervention (nationalization, price controls, etc.); tax incentives (reductions in import duties on imported machinery and raw materials, exemptions from corporate income taxation up to eight years, etc.); protective measures against competing imports (temporary tariff surcharges up to 50%, import bans, etc.); and permission to bring in expatriate personnel, and (for foreign firms) to own land and remit abroad foreign currency. The BOI has full discretion, within very broad guidelines regarding eligibility (such as employment creation, regional dispersal, promotion of agro-industries, etc.) to determine the nature and extent of incentives granted. In the absence of clear criteria and given shortages of staff to assess the applications for promotion, privileges granted by the BOI have often been ad hoc without determination of economic justification or monitoring of effects. The results of past promotional activity has thus not been in line with the broad objectives set in recent years for the BOI: fostering labor intensive, export oriented, regionally decentralized industrial activity in Thailand. Rather, an analysis of BOI supported investments leads to the following conclusions: BOI supported investments were on average only marginally profitable with financial rates of return only in the neighborhood of 10-12% (in current terms) despite the incentives offered; the share of exports in total sales of promoted projects was not significantly different from the manufacturing sector as a whole; the average capital-labor ratio of promoted investments was well above the average of new investments for the sector as a whole;^{/1} only 5.6% of all firms having received BOI support had fewer than 50 employees; and promoted investments were heavily concentrated in Bangkok. Finally, while a precise estimate of the fiscal cost of incentives is not available, estimates of the revenues foregone on account of duty and business tax exemptions on imports indicate that since 1973 the extent of exemptions has risen dramatically (Table 7.9). As a result, 90% of all assessed import duties and business taxes for promoted investments were exempted in 1981, amounting to 7.5% of total import duty and business tax collections during fiscal year 1981. Another way of putting the same figure is that these BOI granted tax exemptions amounted to almost 13% of the Central Government cash deficit in FY 1981 (compared with only 5.5% in FY 1973).^{/2}

^{/1} A recent IMF study of tax incentives in the ASEAN countries found, however, that compared to Indonesia, Malaysia, the Philippines and Singapore, Thailand had the lowest rate of capital subsidy, whether for regular or "pioneer" firms. See Nils J. Agell, "Subsidy to Capital Through Tax Incentives in the ASEAN Countries." IMF Report No. DM/82/73, November 10, 1982.

^{/2} To the extent that imports would have been lower had import duties not been waved, the estimate of tax revenue loss in the text is on the high side. A full study of the fiscal implications of BOI incentives has recently been initiated under the Government's structural adjustment program

Table 7.9: TARIFF AND BUSINESS TAX EXEMPTIONS GIVEN BY
THE BOARD OF INVESTMENT, 1973-81

	1973	1974	1975	1976	1977	1978	1979	1980	1981
<u>Duties and Taxes</u> (Baht million)									
Assessed	744	1,025	865	456	482	1,000	1,835	2,825	3,585
Exempted	266	389	318	428	452	842	1,611	2,686	3,221
<u>Memo Items</u>									
Ratio Assessed/ Exempted Duties and Taxes (%)	35.8	38.0	36.7	93.9	93.8	84.2	87.8	95.1	89.8
Ratio exempted duties and taxes/ total import duty and business tax revenue (%) /a	2.3	2.5	2.0	2.4	2.0	3.1	5.1	7.4	7.5

/a Total revenues are for fiscal years.

Source: BOI and Mission estimates.

7.19 Under the UNDP/IBRD technical assistance program to the BOI a study of the prevailing promotion practices was carried out leading to proposals for extensive reforms. The thrust of these reforms is to provide incentives with a greater degree of automaticity based on a sectoral guidelines rather than in a discretionary manner case by case. Moreover, the structure of incentives would be revised to lead to a more effective stimulus of labor intensive, export oriented, and regionally dispersed investment activity. The Government set up a subcommittee to study these reform proposals and to recommend a program for implementation consistent with the industrial development strategy of the Fifth Five-Year Plan. The Prime Minister further announced in April 1982 Cabinet-level acceptance of the broad criteria for reform proposed by the UNDP/IBRD study. Based on the report of the subcommittee on the BOI, the Government endorsed in August 1982 guidelines for revision in the investment incentive structure along these same lines, and the BOI prepared an action program by January 1983 spelling out some of the details of the proposed reform. Additional efforts are currently made to specify more fully the individual steps and their timing planned under the BOI reform. In the meantime,

the recently granted promotional privileges are already substantially in line with the broad objectives of BOI reforms. Moreover, the procedures of the BOI have begun to be streamlined, including the installation of a new Executive Board. This permits a more expeditious taking of decisions, cutting the time required to process requests for promotional privileges and thus facilitating new investment initiatives. As in the case of import protection, therefore, the Government has begun to introduce substantial reforms in the investment incentives system reversing past trends towards increased distortion.

7.20 Export Incentives. The BOI can, in principle, provide incentives to export oriented firms, and for some types of activities all or part of output must in fact be exported if a firm is to receive promotional privileges. However, despite these stipulations, promoted firms were on balance not more export oriented than the manufacturing sector as a whole. The reason is that promoted enterprises in the past could make higher profits in domestic markets, given that incentives were largely in the form of protection of domestic sales. More important for exporting industries were the exemption of duties and taxes paid on imported inputs granted by the Customs Department and the refund of taxes on domestic inputs granted by the Fiscal Policy Office. Recent reforms of these tax refund schemes, which previously were found to be cumbersome and resulted in only partial and delayed refunds, have streamlined the procedures and ensured sufficient financial resources to assure speedy and full compensation for exporters. These measures approximately eliminate any distortions in export prices. Of course, the protection accorded to import substituting activities implies a continuing bias in favor of production for import substitution rather than for export. Other export promotion activities include the rediscounting facilities administered by the Bank of Thailand, whose use, however, has been concentrated in traditional (agricultural) export commodities, while nontraditional manufactured exports have in the past only comprised a relatively small share.^{/1} An Export Development Fund was set up in February 1982 as part of the Government's restructuring program to provide marketing support to Thai exporters through export service centers in Thailand and overseas. An export credit guarantee scheme is to be set up under the Fifth Plan program, but no firm plans have so far been developed.

Large-Scale Industries and the Eastern Seaboard Program

7.21 A number of large-scale industrial projects have been proposed for Government participation or support, mainly related to the availability of natural gas and the development of port facilities on the Eastern Seaboard of Thailand. The most important of these industries are a natural gas-based petrochemicals complex, an ASEAN soda-ash project, a fertilizer plant, and an

^{/1} However, the rediscounts given to manufactured exports (excluding refined sugar) as a share of total rediscounts for exports have increased from 22% in 1978 to 34% in 1982, according to Bank of Thailand data. This reflects the increased emphasis placed by BOT on supporting nontraditional exports.

integrated steel complex. The Government has been cautiously evaluating the desirability of each of these industries, emphasizing the need for a careful assessment of their broader economic implications. Since there is currently only limited capability within the Government for an indepth review of each industrial project or complex, the Government has sought outside assistance on a broad front to evaluate the appropriate downstream utilization of its natural gas resources, the appropriate configuration of the proposed petrochemical complex, and the feasibility of a fertilizer project, to mention just a few. In addition, a major study was carried out to develop a broadly based development strategy for the Eastern Seaboard, integrating the gas-based large-scale industries with medium- and small-scale industrial development, urbanization and tourism development in this region. Finally, under its structural adjustment program, the Government has initiated a consultant study of large-scale industrial development in Thailand. A major purpose of this study is to strengthen the Government's own capability to design a strategy for large-scale industrial development and to develop criteria for public intervention and support in this area. This section reviews the findings of two major studies recently completed, the IFC-PTT assessment of the petrochemicals complex, and the Eastern Seaboard study carried out for the Government by Coopers & Lybrand Associates.

7.22 The Petrochemicals Complex. The petrochemical industries complex is to be developed in the Map Ta Phut area, located at the southeastern corner of the Eastern Seaboard Region. It was studied jointly by the Petroleum Authority of Thailand (PTT) and the International Finance Corporation (IFC) at the request of the Government. The study concluded that such a complex, with appropriate configuration, size and phasing would yield significant economic benefits for Thailand.^{/1} The complex is to include an olefins plant to process ethane and propane into ethylene and propylene. These in turn will supply the required inputs for a number of chemicals plants forming the remainder of the complex. The olefins plant is to be a joint-venture project with public and private participation while the downstream plants are to be entirely privately owned and operated. The complex as proposed in the IFC-PTT study differed significantly from earlier proposals, particularly as regards size and timing. The total program size was scaled back by some 50% to about US\$600 million (in constant 1981 prices), and the first year of full capacity operation is set for 1990, as compared with earlier estimates of 1988. The complex is designed to meet domestic demand in 1990. The projected market size was based on the assumption that only a small amount of import protection is provided (on the order of 10%) and on the basis of US market prices for feedstock. The importance of this set of assumptions lies in the fact that significant deviation (i.e., higher import protection or higher input prices) could seriously impede the economic and commercial viability of the complex. Higher tariffs and input prices would

^{/1} The economic rates of return for the various components varied from 17% to 30%, with a minimum estimated rate of return for the entire complex of 20%.

result in higher domestic chemicals product prices which in turn would reduce the demand for the downstream products, and would thus reduce the profitability of the complex as designed. Currently the duty rate on imported plastic resins is 40%, and thus a reduction in this rate will be appropriate by the time the complex begins operations in the late 1980s.^{/1} The adoption of the correct pricing and tariff policies will be particularly crucial for the success of the complex, if international oil prices and domestic GDP were to increase less rapidly than assumed by the study.^{/2} The Government has decided to go ahead with the complex and, with IFC, PTT and private sector participation, has set up a promotional committee to further prepare the project.

7.23 Eastern Seaboard Development Program. The Fifth Five Year Plan selected the Eastern Seaboard region of Thailand as a major new center for industrial development. The region extends South from Chachoengsao (just east of Bangkok) and east towards the Cambodian border (see Map). With a population of about 1.5 million in 1981, it was during the 1970s one of the most rapidly growing regions in Thailand in terms of population and economic activity. The Fifth Plan identifies its locational advantages - proximity to Bangkok, proximity to raw materials and labor supplies from the North East, direct access to the Gulf of Thailand with an existing deep sea port (Sattahip), existence of excellent road and communications infrastructure, and access to natural gas supplies from the Gulf of Thailand - as the main reasons for past rapid growth of the region, and for selecting it as a major new center for industrial development in Thailand. The region is to serve as a center for heavy and resource based industrial development, in particular industries utilizing natural gas, and is to attract light, medium, and export oriented industry so as to make a major contribution to employment and export growth in Thailand while decentralizing economic activity away from Bangkok, thus lessening congestion and related urban problems there. A major study was initiated in 1981 to assess the feasibility, implications and requirements of rapid industrial development of the Eastern Seaboard. This section draws largely on information contained in the study's interim report released in July 1982.^{/3}

7.24 The Eastern Seaboard Study (ESS) developed a strategy of multi-nodal development of the region focussing in essence on three major, and

^{/1} In December 1982, the Government issued a prospectus inviting detailed proposals from private investors. This prospectus states that "it is anticipated that under normal circumstances, once the complex has been established and reaches its full operating efficiency, the plants in the complex should be internationally competitive and should sell the products at prices close to those of imported products." This indicates the Government's intention to lower tariffs from their present levels.

^{/2} The study assumed that oil prices will increase by 2% p.a. in real terms into the 1990s, and that GDP in Thailand will increase by 6.6% p.a.

^{/3} NEDSB, "Eastern Seaboard Study: Interim Report," prepared by Coopers & Lybrand Associates, July 1982.

largely independent development nodes: First, basic large-scale industry development around Map Ta Phut-Rayong in the Southern part of the region;^{/1} second, export oriented and light-medium industrial development (including substantial agro-industries) around Siracha-Laem Chabang, about half-way between Chachoengsao and Sattahip; and third, further tourist development in and around Pattaya. Given the Government's decision not to provide exceptional subsidies or incentives for industrial development in the Eastern Seaboard region, and not to intervene directly in limiting the growth of the Bangkok metropolitan region, ESS projects the likely impacts of future Eastern Seaboard development in response to development of the basic industries around Map Ta Phut, standard investment incentives plus infrastructure provision (including port facilities and an industrial estate) at Laem Chabang, and improved urban infrastructure facilities elsewhere in the region, including Pattaya.

7.25 Since the completion of the ESS Interim Report the Government has moved to take a more cautious and flexible approach than that underlying the ESS planning assumptions. The Government has indicated that it will support only those projects which are economically viable on their own account, and that most projects are now envisaged to be implemented at a slower pace than assumed in ESS, or in successive phases, permitting frequent interim reviews and evaluation. However, as of May 1983 the Government had not redone the aggregate investment analysis carried out by ESS to assess the macroeconomic, fiscal and macrofinancial implications of the revised Eastern Seaboard program. Such an analysis would be useful to the Government in continuing to shape a realistic development program for the Eastern Seaboard. The following paragraphs briefly summarize the main findings of the ESS in terms of their implications for capital and financing requirements, public finance and foreign exchange impacts, economic rates of return, and employment and migration effects, given the magnitude and timing of development and investment originally postulated by ESS. While the underlying planning assumptions are thus no longer fully up to date, the ESS analysis provides a useful demonstration of the type of analysis which needs to be carried out for any major industrial development program supported by public intervention and serves as an indication for the types of difficulties which the original plan might have encountered if fully carried out, and which could still be encountered under the presently planned program, albeit at a smaller scale.

7.26 (a) Capital requirements: Total capital requirements of the program were forecast at about US\$4.5 billion (in constant 1981 prices), two thirds of which would be required for heavy industry development, about 20% for infrastructure, 7% for housing, industrial estates and urban services, and only about 4% for light industries. As programmed under the ESS, 60% of this capital requirement would fall in the period 1982-86, about 30% between 1987

^{/1} These industries involve a petrochemical complex, a chemical fertilizer project, and a soda ash project.

and 1991, and 10% between 1991 and 2001. For the period 1982-86, total capital requirements for the Eastern Seaboard program would amount to B 58.7 billion, which equals about 4% of total fixed capital investment in Thailand over the same period. Industrial investment requirements of the Eastern Seaboard program were estimated at B 47.2 billion during 1982-86, amounting to just under 30% of estimated private sector industrial investment during this period. Public investment in the Eastern Seaboard would amount B 26.4 billion, or 6.5% of total planned public investment during that period. In terms of capital requirements per job created, the following figures are indicative. The capital cost per job in heavy industry is about B 5.8 million, while it is B 137 thousand for light industry; for all industry in the Eastern Seaboard, it would be B 1.9 million (in 1981 prices).^{/1} This compares with an estimated average capital cost per job of B 187 thousand in new industrial investments in Thailand in 1981. For 1976, average fixed asset requirements per worker were B 372 thousand (in 1981 prices) for firms with 200 or more employees, and B 115 thousand for firms with 10-49 employees. Overall, therefore, the capital requirements of the Eastern Seaboard program as planned in ESS were very substantial, especially during the Fifth Plan period, and in particular for the heavy industry projects concentrated mainly around Map Ta Phut. By the same token, the capital costs per job in these projects were very high by comparison with average capital/ labor ratios in Thai industrial ventures. In contrast, the capital costs of light industrial development around Laem Chabang were relatively low with capital/labor ratios about equal to the typical Thai middle-size manufacturing firm.

7.27 (b) Financing requirements: The financing requirements of the Eastern Seaboard program as planned in ESS would accordingly have placed significant burdens on the Thai financial system.^{/2} Domestic equity requirements of the program were estimated to amount to about B 1.8 billion per annum, which is more than seven times the equity finance raised by the Stock Exchange of Thailand in 1980, and about one-third of the average net annual increase in the capitalization of Thai industry for the period 1978-80. This substantial requirement of equity financing would be in direct competition with equity needs of other Thai enterprises, including in particular the Thai banking system. The program would require about B 6.2 billion per annum in loan financing, of which B 5.5 billion could be derived from foreign sources. This amounts to about 10% of disbursements of medium and long-term foreign debt to Thailand in 1981. Domestic loan requirements would represent about 6% of total advances to the manufacturing sector in 1980, most of which was in the form of short-term overdrafts. This indicated therefore some risk that the Eastern Seaboard program, in addition to placing a significant burden on

^{/1} Computed from ESS, Vol. 1, Table 2.4 and Part II, Finance, Table 1.2.

^{/2} See World Bank Report No. 4085-TH.

Thailand's equity resources and contributing significantly to the country's international indebtedness, could absorb a considerable portion of long-term domestic credit resources available to industrial development in Thailand, thus potentially crowding out other borrowers.

7.28 (c) Fiscal implications: The ESS estimated substantial impacts on Thailand's public finances resulting from the Eastern Seaboard program, due to the capital costs of publicly financed industrial and infrastructure projects, the operating losses in public services, especially ports, railways, and water supply, and the reduced import duties resulting from import substitution only partially offset by increases in corporate and personal income taxes. The public capital cost of the Eastern Seaboard program would amount to about 6.5% of total planned public investments during the Fifth Plan period; and probably substantially less thereafter. For the large state enterprises providing power and telecommunications services, the resulting investment requirements would not be particularly burdensome. However, for less robust state enterprises, such as the State Railways of Thailand (SRT) or the National Housing Authority (NHA), a significant diversion in their capacity to provide services elsewhere could occur, if their involvement in the Eastern Seaboard were to be given first priority. The projected operating losses of state enterprises in the Eastern Seaboard Program reflect the broader problems of state enterprise finance and should be addressed through general reform of their pricing policies. The tax revenue losses from import substitution in 1986 would amount to about 5% of total projected Central Government revenues that year, rising to about 10% by 1990. This underscores the need identified in Chapter 4 above to ensure that with the prospective reduction in Thailand's ability to draw on tax revenues generated by international trade, the development of alternative tax sources becomes essential, all the more so since Thailand starts from a relatively low base in terms of taxation relative to its GDP. A phasing back of the Eastern Seaboard program would, of course, reduce the fiscal burdens imposed by the program.

7.29 (d) Foreign exchange impacts: The net foreign exchange impacts of the program would be substantial, mainly due to the foreign exchange savings generated by import substitution in heavy industry. The average annual impact in terms of foreign exchange gains would be about Baht 3-4 billion for 1981-85, Baht 17-22 billion for 1986-90, and Baht 30-35 billion thereafter (all in constant 1981 prices). For comparison, the 1981 current account deficit amounted to about Baht 56 billion. In the outer years, therefore, the foreign exchange impact of the Eastern Seaboard program could make a substantial contribution to closing Thailand's foreign exchange gap.

7.30 (e) Economic assessment: The ESS carried out a preliminary economic evaluation of the proposed program. For the entire program the overall economic rate of return is 9.7%, with therefore a negative net present value

using a 12% discount rate./¹ The heavy industry package at Map Ta Phut is estimated to have a rate of return of 13.1%, while the program of accelerated industrial development in the remainder of the region has a rate of return of 14%. The industrial estates and export processing zones, in particular, were found to have high rates of return (45% and 50% respectively). In contrast, the rates of return calculated for regional and national infrastructure (i.e., water, ports, rail, electricity, and roads) were found to be substantially negative, since no attempt was made in ESS to compute benefits from these investments, except for the very limited financial revenues generated from user charges./²

7.31 (f) Employment and migration impacts: The total employment growth for 1981-2001 in the Eastern Seaboard with the program as designed in ESS is projected to amount to about half a million jobs (Table 7.10). Of this, less than 30% is expected to be induced by the Eastern Seaboard program, and only about 8% by accelerated industrial development as such. More than half of this induced industrial employment would result from export oriented and light industry, mostly centered in the Siracha-Laem Chabang area. Heavy industry, including downstream uses of natural gas and polluting industries (mainly in the Map Ta Phut-Rayong area) are expected to contribute less than 10% of total employment induced by the Eastern Seaboard development program. The resulting induced increase in population in the region for the 1981-2001 period is about 200,000, or one third of total population growth expected for the Eastern Seaboard during the same period, and representing about a doubling of the additional urban population expected (Table 7.11). This total population increase induced by the effort to develop the Eastern Seaboard is about equal to the expected average annual increase in Bangkok's metropolitan population until the end of the century, even under fairly conservative assumptions regarding the size and rate of growth of the Bangkok metropolitan area. Thus the program's impact on decentralizing Thailand's economic development away from Bangkok is not likely to be very significant, at least for the next 20 years. Nonetheless, in terms of the region itself, major changes in its population and employment structure will occur, as a result of growth occurring even in the absence of any special development effort, and as a result of any additional growth generated by accelerated development efforts. These changes require the timely public response to ensure adequate planning of urban service facilities, both for the industrial activities likely to locate in the region and for the population which will be drawn into the region as a result. The ESS has provided a useful planning framework in support of such efforts.

¹ This is the discount rate judged appropriate for project appraisal in Thailand. See Annex 1.

² These benefits, however, accrue to economic activities in the Region to the extent that they draw on this regional infrastructure as intermediate inputs for production. The overall rate of return calculated for the program as a whole therefore reflects the costs and benefits generated by this infrastructure investment.

Table 7.10: PROJECTED EMPLOYMENT GROWTH IN EASTERN SEABOARD, 1981-2001

	Chonburi	Siracha- Laem Chabang	Pattaya	Map Ta Phut and Rayong	Chachoeng- sao	Sattahip	Rural and other urban areas/a	Total
<u>Induced Industrial Employment</u>	<u>2,500</u>	<u>23,050</u>	<u>-</u>	<u>10,250</u>	<u>2,000</u>	<u>1,200</u>	<u>-</u>	<u>39,000</u>
Heavy industry	-	-	-	4,000	-	-	-	4,000
Downstream industry	-	4,000	-	2,500	-	-	-	6,500
Polluting industry	-	-	-	1,500	-	-	-	1,500
Export processing	-	11,000	-	-	-	300	-	11,300
Light industry	1,500	7,800	-	1,250	-	-	-	10,550
Shipyard	-	-	-	-	-	900	-	900
Agroprocessing	1,000	250	-	1,000	2,000	-	-	4,250
<u>Total Induced Employment</u>	<u>5,200</u>	<u>47,750</u>	<u>19,450</u>	<u>26,300</u>	<u>3,600</u>	<u>1,600</u>	<u>26,900</u>	<u>130,200</u>
Of which:							(5,200)	
Direct employment	2,500	27,450	11,250	15,600	2,000	1,200	2,600	62,000
Multiplier of induced growth	2,700	20,300	8,200	10,700	1,600	400	(2,600)	68,200
							24,300	
							(2,600)	
<u>Natural Employment Growth</u>	<u>47,600</u>	<u>23,700</u>	<u>20,400</u>	<u>17,600</u>	<u>9,800</u>	<u>4,100</u>	<u>202,400</u>	<u>335,600</u>
							(25,500)	
<u>Total Employment Growth</u>	<u>52,800</u>	<u>71,500</u>	<u>39,800</u>	<u>43,900</u>	<u>13,400</u>	<u>5,700</u>	<u>239,300</u>	<u>466,400</u>
							(30,700)	

/a Figures in brackets indicate employment figures for other urban areas only.

Source: NEDSB, Eastern Seaboard Study, Interim Report, Volume 1, Tables 2.4 and 2.11.

Table 7.11: EASTERN SEABOARD POPULATION GROWTH, 1981-2001
(in '000)

	Population 1981	Population Increase (1981-2001)			Population 2001
		Natural growth	Induced growth	Total	
Urban	431.8	199.7	201.6	401.3	833.1
Rural	1,107.5	179.7	-	179.7	1,287.2
<u>Total</u>	<u>1,539.3</u>	<u>379.4</u>	<u>201.6</u>	<u>581.0</u>	<u>2,120.3</u>

Source: Eastern Seaboard Study, Interim Report, Volume 1, Table 4.1.

7.32 Summary Assessment of Large-Scale Industrial Development and the Eastern Seaboard Program. The development of Thailand's natural gas resources has opened up important opportunities for domestic resource based industrialization. The Government has taken a cautious approach in supporting this development given the many uncertainties in terms of gas supplies, market opportunities, and available technologies and given the substantial capital requirements and broader developmental impacts of a heavy-industry strategy. After a careful review, the decision was reached to proceed with a moderately sized, economically profitable petrochemicals complex, relying to a large extent on private sector initiative and resources operating in a largely undistorted, competitive international environment. Other large-scale industrial projects, including a major fertilizer project, a soda ash project, and a steel complex have been deferred pending further investigation and improved contracting opportunities with potential private participants. What is more, the Government has initiated a review of some of the major large-scale industrial investment opportunities in order to develop its own capabilities to formulate an overall approach towards these investments and to design appropriate measures for public participation or intervention.

7.33 Many of the proposed large-scale industrial projects would appropriately be located in the Eastern Seaboard region given the region's characteristics in terms of access to foreign and domestic markets, natural resources, and infrastructure. Opportunities have also been identified for medium and light industry and for tourism development, all of which will require public support in the form of industrial and residential urban infrastructure. The foreign exchange benefits of the Eastern Seaboard program, and the significant economic rates of return which have been calculated for selected program components, indicate that an appropriately designed Eastern Seaboard program will be a valuable part of Thailand's overall development efforts. Successful implementation requires, however, that the composition,

scale and timing of the program be carefully assessed, as was done in the case of the petrochemicals complex. The need to be selective in implementation is reflected in the low overall economic rate of return for the entire program as planned by ESS. Similarly, the heavy capital requirements of the original program are likely to impose a significant burden on Thailand's capital markets and foreign creditworthiness, and therefore argue for a phasing back or elimination of some of the program components. In any case, given their very small employment impact, the heavy industry projects must be justified on the basis of the direct economic benefits generated for Thailand, rather than by reference to general regional development criteria, such as decentralization away from Bangkok. For the light and medium industry development in the Siracha-Laem Chabang area, the projected employment and population impacts are more significant, but even here, major costly public investment initiatives, including the development of Laem Chabang port, should be designed and justified on their own economic merits, since the likely impact of this development on the growth of Bangkok will be low and it is difficult to assess the benefits of decentralization as such.

Industrial Development Policy for the 1980s

7.34 In 1980 the Government initiated a major reassessment of its industrial policy regime and under the Fifth Plan has initiated a broad industrial restructuring program involving the four major elements of (a) reform in the protective structure, (b) reform in the industrial investment incentives, (c) streamlining of export procedures and elimination of disincentives to exporting, and (d) systematic assessment of large-scale industrial schemes and of the Government's role in their support. As documented above substantial progress has already been made in all four areas in implementing the Fifth Plan's program for industrial restructuring. Of course, the reform program cannot be implemented overnight, given the complexity of the task, the vested interests in support of the status quo, and the uncertainties of the international and domestic economic environment. Thus continued efforts are essential in completing the task which has been initiated under the Fifth Plan. In essence, there are two broad types of policy suggestions which can be made. The first relates to the continued implementation of the main elements of the Fifth Plan industrial restructuring program; the second involves a number of complementary concerns which have been given somewhat less attention under the current industrial restructuring program, but to which attention should shift, as progress is made in implementation of the first set of reforms.

7.35 Among the areas where continued implementation of the Fifth Plan's broad program is appropriate are the following:/1

/1 In all four areas, the World Bank is providing support through its series of structural adjustment loans.

- (a) Continued reform of the protective structure: In view of the domestic economic slowdown and the worldwide increase in protectionism, the Government has for the time being opted to proceed further in a gradual and selective manner rather than through swift across-the-board reforms in the tariff structure. However, the broad aspects of rationalization of the tariff structure should remain in view, so as to ensure that issues which cut across sectors (e.g., the taxation of raw materials or capital imports), are not neglected, and that overall distortions are further reduced over time. Special efforts should continue to be made in assessing the options for reform and implementing such reform in the most distorted sectors, in particular the automotive sector, where substantial domestic resources are wasted because tariff and non-tariff interventions result in negative value added.
- (b) Implementation of investment incentive reforms: The major elements of this reform effort are well established and implementation, including legislative reform, should now be promoted vigorously, including the Government's efforts to speed up the procedures for review and approval of investment applications.
- (c) Export promotion: Besides continued elimination of biases against exporting in the tariff system and investment incentive structure, more explicit support for the production and marketing of potential Thai exportable commodities should be explored.
- (d) Large-scale industrial projects: While strengthening its capability for assessing the appropriate strategy for large-scale industrial ventures in Thailand, the Government should reserve direct intervention through joint ventures only for exceptional cases where a convincing case can be made that no other form of intervention (regulation, input or output pricing, taxation, etc.) can achieve whatever particular set of national goals is aimed for.

7.36 In relation to these policy prescriptions, the concern is frequently voiced in Thailand that increased protection and slower growth in the industrialized countries will limit the export potential for Thailand and require continued maintenance of Thai import barriers. However, openness of the Thai economy is essential for the development of a competitive and efficient industry serving domestic markets. Moreover, Thai export opportunities are still good in many areas, given the low share of Thai exports in total world exports. With appropriate policy support continued above-average Thai export performance should be possible and is, indeed, essential to Thailand's continued growth, employment absorption, balance of payments stability, and international creditworthiness. Finally, since import substitution in final products is largely complete, while further

import substitution could take place in intermediate products and capital goods, a narrowing of the tariff band (with higher rates than now for intermediate and capital goods) would assist in the deepening of the industrial structure in Thailand, while supporting increased export orientation for final goods production.

7.37 Additional areas of concern for industrial policy, which so far have not been central elements of the Government's restructuring effort, but should be part of the overall industrial development strategy in Thailand, include the following:

- (a) Reform of the financial system: Far reaching proposals for reform of the financial system in Thailand have been made in a recent World Bank report and are currently under consideration by the Government./1
- (b) Reform of the indirect tax system: Thailand's excise and business tax structure have long been recognized as unnecessarily cumbersome and inefficient. The Government has initiated a study of indirect tax reform, involving specific proposals for restructuring the current system to simplify its administration and compliance, and to reduce the present cascading effects of a turnover tax.
- (c) Eastern Seaboard Development Program: In furthering the development of the Eastern Seaboard, each major investment project should be assessed and justified on its own economic merits, and in terms of its feasibility and appropriate timing given overall public and private finance constraints. Regional development criteria should not be the decisive factor influencing their decisions, given the limited and uncertain impact which the Eastern Seaboard program is likely to have on the growth and development of Bangkok. However, the regional infrastructure and public service requirements should continue to be carefully assessed and planned, in order to ensure an orderly development of the region and to provide a supportive environment for domestic and foreign investors alike.
- (d) Efficient development of Bangkok: Greater Bangkok is, and will remain, the single most important center of industrial development in Thailand, even if industrial investment incentives are skewed to favor investment in the rest of the country. Improved efficiency in the functioning of Bangkok as a city (in terms of improved transport, drainage, land use, public service reliability, etc.) is therefore likely to be an important

/1 See Report No. 4085-TH. "Thailand: Perspectives for Financial Reform."

determinant of Thailand's ability to support continued rapid industrial growth, complemented by an efficient modern service sector. Measures to improve Bangkok's efficiency as an urban system do not necessarily require additional public resources over and above those planned anyway, but rather a more effective allocation and utilization of these resources through improved investment planning, service pricing, and regulation./1

- (e) Manpower development: Attention must finally be focussed on the manpower needs of a modern industrial and service economy and how Thailand's educational system can be developed to ensure that the required skills and training are made available. Efforts are currently underway in Thailand as part of the first steps of preparing the Sixth Five Year Plan, to identify the manpower requirements of Thai industrial development and to search for means of meeting them through appropriate educational and training policies.

/1 NESDB is currently initiating a set of research and policy studies in this area. For a general discussion of the scope for policy intervention, see Johannes F. Linn, Cities in the Developing World: Policies for the Equitable and Efficient Growth. New York: Oxford University Press, 1983.

9. ENERGY: TRENDS, ISSUES AND INVESTMENT REQUIREMENTS

8.01 Growth of energy consumption in Thailand was rapid in the 1960s and during much of the 1970s (Table 8.1), as a result of rapid growth in the economy, and because of the structural transformation of the economy. The latter included the extension of commercial agriculture with its reliance on a rapidly expanding road network and increasing farm mechanization; rapid growth in the industrial and service sectors; and higher personal incomes leading to higher private use of energy for automobiles, air conditioners, lighting and home appliances. During the 1970s the continued growth in energy consumption was also due to the fact that domestic energy prices were not adjusted in line with the jump in the international oil price which occurred in 1973. Since domestic energy resources remained of limited importance, most of the growth in energy demand spilled over into rapidly expanding energy imports, which by 1978 accounted for 21% of total imports and absorbed 28% of export earnings. After the second oil shock, the share of Thailand's energy imports in total imports increased to 31%, and 45% of the economy's export earnings were required to finance energy imports alone in 1980.

8.02 Against this background and the expectation of continued rapid increases in the real world price of energy and continued rapid growth of the Thai economy, began the preparation of the Fifth Five-Year Plan. The Plan addressed three interrelated basic energy sector issues: appropriate energy prices set to reflect opportunity costs; reduction in the growth of energy consumption and substitution of domestic resources for imported energy through appropriate pricing, conservation measures and domestic energy development; and improved energy sector management. Since the Plan was formulated, however, the outlook for international energy prices, for the Thai economy, and for Thai domestic energy development have rapidly changed and substantial advances have been made in some important areas of energy policy, especially pricing. This chapter considers the current outlook for the Thai energy sector in the light of these recent developments, reviews the major policy issues, and assesses the public expenditure programs for the sector.

Thailand's Domestic Energy Resources

8.03 In 1981, indigenous resources met 11% of Thailand's total commercial primary energy demand, with hydroelectric and coal/lignite energy accounting for three quarters of domestic supplies. According to current forecasts of Thailand's energy balance, this picture will have substantially changed by 1990, when domestic production is expected to account for almost two-thirds of domestic energy consumption, with newly developed natural gas and oil contributing 54% and 18%, respectively, to domestic supplies. Thailand's traditional indigenous commercial energy resources, hydropower and lignite, by contrast, will have seen reductions in their shares

Table 8.1: ENERGY CONSUMPTION INDICATORS, 1960-81 /a

	1960-69	1970-74	1975-78	1979-81
Growth of commercial primary energy consumption (% p.a.)	15.6	10.6	9.2	2.5
Elasticity of energy consumption with respect to GDP	1.8	1.9	1.0	0.5
Share of total commercial energy imported (% of energy equivalent)	86.2	88.2	81.1	85.0
Value of energy imports (B, billion)	1.5	5.1	18.0	52.0
Energy imports share of total imports (%)	9.0	13.4	21.1	28.0

/a Averages for the periods shown.

Source: NESDB, Bank of Thailand Statistical Bulletin, NEA.

in domestic energy resources, even as their absolute levels of supply and their share in total commercial energy consumption continue to grow (Table 8.2). The outlook for each of the major domestic sources of energy is briefly discussed in turn.^{/1}

8.04 Hydropower. The total hydropotential of Thailand's rivers is estimated at about 10,000 MW, not including the international rivers (Mekong and Salween), whose development of 10,176 MW is currently beyond reach due to major political and social obstacles. About 1,380 MW of hydropower are now in operation, 874 MW are under construction (excluding Nam Choan), and about 2,600 MW in 25 projects are at a stage of identification or feasibility study. Mini-hydro potential is estimated at about 800 MW at numerous sites. According to current plans, hydropower production will increase at an average annual rate of about 13% between 1981 and 1995. .

^{/1} The energy demand and supply projections reported in this chapter are subject to considerable uncertainty, since they rely on uncertain domestic demand and supply forecasts and on projections of international oil prices.

Table 8.2: FORECAST OF COMMERCIAL PRIMARY ENERGY BALANCE, 1981-1995 /a
(Million TOE)

	1981	1982	1983	1984	1985	1990	1995	<u>Growth Rate</u> 1981-90
<u>Consumption</u>	<u>12.0</u>	<u>12.8</u>	<u>13.2</u>	<u>14.3</u>	<u>15.6</u>	<u>22.9</u>	<u>29.6</u>	7.5
Oil	10.3	10.2	10.3	10.5	10.5	11.0	13.0	0.5
Hydroelectric	0.8	0.8	0.8	1.2	1.5	2.0	2.4	10.7
Lignite	0.6	0.6	0.7	1.0	1.0	2.3	4.2	16.0
Natural gas	0.3	1.2	1.4	1.6	2.6	7.6	10.0	43.2
<u>Domestic Production</u>	<u>1.3</u>	<u>2.2</u>	<u>3.1</u>	<u>4.3</u>	<u>5.9</u>	<u>14.2</u>	<u>18.9</u>	30.4
Oil	-	-	0.4	0.7	1.0	2.5	2.5	..
Hydroelectric	0.6	0.6	0.6	1.0	1.3	1.8	2.2	13.0
Lignite	0.6	0.6	0.7	1.0	1.0	2.3	4.2	16.0
Natural gas	0.3	1.2	1.4	1.6	2.6	7.6	10.0	43.2
<u>Net Imports</u>	<u>10.5</u>	<u>10.4</u>	<u>10.1</u>	<u>10.0</u>	<u>9.7</u>	<u>8.7</u>	<u>10.7</u>	-2.1
Oil	10.3	10.2	9.9	9.8	9.5	8.5	10.5	-2.1
Hydroelectric	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0

/a These forecasts are based on estimates for each type of energy source separately. Where appropriate, consumption figures were adjusted in line with domestic energy production prospects. Natural gas figures reflect recent estimates for production, taking the lower bound of projections contained in Table 8.3. For lignite and hydropower, projects under construction or planned for completion have been added to existing capacity to produce the estimates. Hydropower imports reflect current contractual arrangements. Oil consumption estimates take account of recent and projected performance in major consuming sectors of substitution of oil by gas, and the impact of energy conservation efforts. Oil production estimates are based on the findings of recent on-shore drillings. Oil imports are derived as a residual.

Source: Mission estimates.

8.05 Natural Gas. Natural gas reserves in Thailand are currently estimated to amount to 6 tcf /1 with an upper potential of about 35 tcf. Gas production began in September 1981 in the Erawan field at a rate of 70-80 MMCFD. During 1982-83 production gradually increased reaching about 150 MMCFD by mid-1983, but remained short of the 250 MMCFD which had originally been expected. The shortfall is attributable to technical difficulties and to the fact that the gas reserves are distributed over smaller than expected reservoirs. Proven reserves have recently been reassessed downwards. However, with the addition of further production capacity in other fields, production would increase to 450 MMCFD by 1987. Subject to bringing further gas fields on stream, supply would increase to about 1,000 MMCFD during the early 1990s (Table 8.3). These figures are not an upper bound, however; considerable possibilities exist for further discovery and development of domestic natural gas in Thailand./2

8.06 Oil. The exploration for oil in Thailand has recently led to improved expectations of domestic oil production beyond what was thought possible during the preparation of the Fifth Plan. Current finds are all in Northern Thailand. Three small oil fields in the Fang area currently yield about 400 bpd, while production at Sirikit began in 1983 at the rate of 5,000 bpd, increasing to 10,000 bpd by the end of 1983, and to 15,000 bpd by 1986. Subject to positive results elsewhere in the concession, production may reach 60,000 bpd by 1990. Finally, oil shale deposits have been found in Tak province near the Burmese border, which could yield an estimated 10 million tons of oil. The Department of Mineral Resources, with the assistance of the German Government, has initiated studies to determine the technical feasibility and economic viability of developing these oil shale resources. At present prices, however, oil shale development is unlikely to be economically viable.

8.07 Lignite. Lignite (low-grade coal) resources are currently estimated at around 765 million mt, located at Mae Moh (660 million mt), Krabi (60 million mt), and Li (30 million mt). Of the lignite reserves at Mae Moh, 350 million mt are proven and probable reserves, sufficient to maintain a power generating capacity of about 1,700 MW for 25 years. Generating capacity of 225 MW from lignite is currently installed, with an additional 600 MW under construction. Further capacity is to be developed during the 1980s and beyond, leading to an annual rate of growth of 15% for energy supply from lignite between 1981 and 1995.

/1 For a glossary of abbreviations and definitions, see inside front cover.

/2 There are indications, for example, of gas reserves in the Northeast currently being explored by Esso. For a more extensive discussion of the issues arising in Thailand's natural gas development and utilization program, see paras. 8.15 to 8.19 below.

**Table 8.3: PROJECTIONS FOR GAS SUPPLY AND DEMAND
(MMSCFD)**

Fiscal year /a	Supply				Demand					
	Union Erawan contract	Union second contract	Others/b	Total/b	Cement	Small users	Gas plant	Ferti- lizer	Soda ash	Balance EGAT
1982	120	-	-	120	-	-	-	-	-	120
1983	130	-	-	130	25	-	-	-	-	105
1984	150	30	-	180	30	-	-	-	-	150
1985	150	100	-	250	30	-	25	-	-	195
1986	150	262	-	412	40	-	65	-	-	307
1987	150	300	-	450	60	10	75	-	-	305
1988	120	300	200-350	620-770	80	20	75	40	15	390-540
1989	100	300	300-500	700-900	80	30	110	60	15	405-605
1990	80	300	400-650	780-1,030	100	40	140	60	15	425-675
1991	80	300	500-800	880-1,180	100	40	145	60	15	520-820
1992	80	300	500-850	880-1,230	100	40	170	60	15	495-845
1993	80	300	500-900	880-1,280	120	50	185	60	15	450-850
1994	80	300	500-950	880-1,330	120	50	185	60	15	450-900
1995	80	300	500-950	880-1,330	120	50	185	60	15	450-900

/a Supply quantities represent average for fiscal year.

/b The low case includes supplies from present discoveries including Esso gas-fields and/or offshore future Union Oil gas fields. However, this is a conservative scenario as it does not include gas supply possibilities from all Union Oil and Texas Pacific fields from already proven and probable reserves which could start producing in the late eighties or early nineties, or possible supplies from new discoveries onshore or offshore. The high case also includes Texas pacific's supplies. A pessimistic scenario where there are no further gas supply contracts and gas supply remains at 380 MMSCFD could also be envisaged.

Source: PTT; Mission estimates.

8.08 Noncommercial Energy. With an estimated total supply of 50 mcm in 1980, fuelwood still plays an important role as the principal cooking fuel, particularly in rural areas. However, due to the reduction in forest cover, the supply of fuelwood and charcoal is expected to dwindle to about 15 mcm by 1986. This reduction is expected to be offset by further increases in bagasse and paddy husk as energy sources.

8.09 Alternative Energy Sources. Alcohol production based on sugarcane, corn, molasses, cassava or sorghum is a possibility in Thailand, given the substantial agricultural production potential in excess of domestic food requirements. Recent studies indicate, however, that alcohol production in Thailand is economically viable only when the world oil price reaches \$40/bbl in 1980 prices. Other potential energy resources include geothermal, wind and solar energy. However, only a small share of domestic energy production, if any, is likely to be forthcoming from these alternative sources of energy before the turn of the decade.

Energy Demand and Imports: Trends and Outlook

8.10 Over the last two decades commercial energy consumption (petroleum, hydro and lignite) has increased at an average rate of 12% p.a. from 1.1 million TOE in 1960 to 11 million TOE in 1980. GDP growth during that period averaged 7.5% p.a., indicating an average energy demand elasticity with respect to GDP of about 1.6. However, this elasticity dropped substantially from a high value of 1.8 in the 1960s to 1.0 in the late 1970s (Table 8.1).^{/1} Energy consumption trends since 1980 have shown further weakening of the relationship between GDP and energy demand growth, as has been the case elsewhere in developing and industrialized countries alike. On the assumption that conservation measures are carried out effectively, including continued timely adjustments of domestic energy prices in line with any future increases in international prices, and that as a result the energy efficiency of the Thai economy will further improve, this elasticity is projected to fall slightly below unity in future. Accordingly, total energy consumption growth during 1980-85 (including noncommercial energy sources) is estimated to be about 5% p.a. (roughly in line with the Fifth Plan target of 4.6%).^{/2}

8.11 This relatively modest consumption growth is accompanied by a significant structural shift which is likely to occur during the 1980s in the composition of energy supply. The most significant change results from the expected availability of domestic natural gas and the resulting growth of gas consumption in the form of feedstock in heavy industry (petrochemicals,

^{/1} In computing these GDP elasticities of energy demand no allowance has been made for the impact of price changes.

^{/2} This is less than the growth rate shown for commercial primary energy demand because of the projected substitution of commercial for non-commercial energy sources. This projection also assumes no further reduction in domestic energy prices beyond those implemented in March 1983 in response to the reduction of official OPEC oil prices.

fertilizer), and fuel for cement and for electricity generation. There exist, however, considerable uncertainties regarding the composition, scale and timing of industrial projects utilizing natural gas (see paras. 7.21-7.32 above). Similarly, there is uncertainty regarding the likely growth in electricity demand and the extent of gas utilization in the power sector. For 1973-79 power demand increased at an average annual rate of some 12%, but then dropped to about 7% for 1980-82. Current projections for power demand growth during the 1980s range from a low of about 6% to about 10% on the high side. Much of this increased demand can be met by investments in gas, hydro and lignite based generation capacity as well as continued use of fuel oil (see below, paras. 8.31-8.41 for a further discussion of the power sector's development program). On the basis of reasonable assumptions regarding likely gas availability and utilization (Table 8.3 above) it appears that gas consumption will grow at a very rapid pace during the 1980s (43% p.a.), increasing its share in total commercial energy consumption from 2.5% in 1981 to 16.7% in 1985, 33.2% in 1990 and 33.8% in 1995 (Table 8.2 above).

8.12 Hydroelectric and lignite consumption are also expected to post rapid growth rates during the 1980s (11% and 16% p.a., respectively) in line with increases in domestic production capacity and power generation requirements. Oil consumption, in contrast, is projected to remain approximately unchanged between 1981 and 1990, increasing thereafter at the modest rate of about 3%. As a result, the share of oil in total primary commercial energy demand should drop from 89% in 1981 to 67% in 1985, 48% in 1990, and 44% by 1995. This dramatic transformation presupposes, however, significant efforts in two major areas: development of domestic non-oil energy resources and reduced energy intensity in the major activities using petroleum products heavily./1

8.13 According to current estimates, the transportation sector accounts for 40% of total petroleum product consumption, industry 20%, power generation 20%, households 10% and other uses 10% (especially agriculture). Petroleum product consumption in the manufacturing sector increased at an average annual rate of about 10% during the 1970s, but since 1979 it slightly declined in absolute terms as a result of a slowdown in industrial activity and improvements in the sector's energy efficiency. The sector so far relies most heavily on fuel oil (Table 8.4). Future growth in industry will in part draw on domestic gas resources to replace present fuel oil use (e.g., in cement production) and to support expansion of industrial development into new areas, especially petrochemicals. Petroleum product consumption in the transport

/1 For the immediate future, in particular, much also depends on the behavior of international oil prices and domestic energy pricing policies. It has been assumed here that international oil prices move in line with the projections in World Development Report, 1983 and that domestic energy prices will follow international prices as and when they increase after 1985.

sector developed similar to that in manufacturing, increasing at a rate of 8% per annum during the 1970s, but then witnessing a slight decline since 1979, partly in response to the economic slowdown and partly due to gains in fuel efficiency brought about by increased fuel prices, progressive taxation of engine capacity and fleet modification. The transport sector draws heavily on gasoline and diesel products, accounting in 1981 for about 91% of the total consumption for the former, and 52% for the latter. The other major sector using diesel products extensively is agriculture (including fisheries), accounting for 27% of total diesel oil consumption in Thailand in 1981. Between 1979 and 1981, diesel fuel consumption in agriculture dropped by nearly 20%. Thus, substantial reductions in petroleum product consumption could be observed since 1979 in all major sectors of the Thai economy. The scope for further reductions in petroleum product consumption across the sectors of the Thai economy depends on each sector's capability to (a) substitute gas for oil, especially in industry and power generation, (mainly oil) and (b) reduce energy intensity in the major petroleum products used: for transportation about equally gasoline and diesel, mostly diesel for agriculture, and mostly fuel oil in the manufacturing sector.

Table 8.4: DISTRIBUTION OF PETROLEUM PRODUCT CONSUMPTION
BY SECTOR AND PRODUCT, 1981

Type of petroleum product	Agriculture	Manufacturing	Electricity & water	Transport & Communication	Other	Total
Gasoline	0.0	2.4	0.0	91.6	6.0	100.0
Diesel oil	27.0	0.8	5.0	52.0	8.0	100.0
Fuel oil	0.0	42.2	54.6	1.0	2.2	100.0
Kerosene	0.0	20.9	0.0	0.9	78.2	100.0
Jet fuel	-	-	-	100.0	-	100.0
LPG	-	24.2	-	6.7	69.1	100.0

Source: Statistical Appendix Table 8.11.

8.14 Imports make up for the difference between energy demand and domestic supplies. In Thailand's case, energy imports have consisted primarily of oil and oil products and of small amounts of hydroelectricity from Laos. In recent years, Thailand imported on average about 10 million tons of oil and oil products, which in 1978 amounted to about \$1 billion. By 1981, the oil import bill had tripled to about \$3 billion primarily as a result of the second oil shock. For the future, however, projections of Thailand's energy balance (Table 8.2 above) indicate that between 1981 and 1990 the volume of oil imports will actually drop at an annual rate of about 2% per annum roughly in line with the target for oil imports set in the

Fifth Plan. By the mid-1990s, oil imports may increase again to their 1982 levels of some 10 million TOE. As a result, the import bill will resume the current level of about \$3 billion (in constant 1981 prices) by the mid-1990s./1 As a proportion of total primary commercial energy consumption, imports will therefore drop from the current level of about 90% to about 60% in 1985, and to 38% by 1990. Furthermore, oil imports, which accounted for some 30% of total import value in 1980, should drop to only about 25% in 1985.

Selected Energy Sector Issues in Thailand

8.15 Natural Gas Development and Utilization. The major factor in the Thai energy situation is natural gas. Gas supplies, currently 150 MMSCFD, are expected to rise to 250 MMSCFD by 1985 and could reach about 780-1,030 MMSCFD by 1990,/2 coming from both offshore supply contracts (two with Union Oil and others ready for negotiation) and onshore fields such as Esso's (see Table 8.3 above). The relatively low costs and high substitution values, when coupled with the discouraging prospects for gas exports, lead to major possibilities for gas use in Thailand, both for displacing other fuels and for new uses. Given recent complications with gas supplies from the Gulf of Thailand, however, a cautious approach to gas use is required and the bulk of gas development in Thailand may only start in the late 1980s. The following paragraphs highlight the major issues to be addressed.

8.16 First, the reliability of reserve estimates is a major issue. As indicated earlier, total natural gas reserves are estimated to be 6 tcf minimum, with an upper potential of about 35 tcf. At the lower end of the range 1990 production would be close to but a little less than the likely demand; possible production at the higher rates of extraction could be several times the maximum demand foreseeable. Although gas availability on this scale would have major implications for use and investment, its timing is unpredictable. Union Oil, the dominant group, has so far been unable to meet its first contract, and may never be able to do so. The first phase of the second Union Oil gas supply contract comes onstream late in 1983, and it is uncertain whether similar problems will arise there. Whether or not gas supply problems arise with the second contract, problems could arise in a third or subsequent Union supply. Likewise the gas reserves in the Texas Pacific area have not been tested over a prolonged period and must

/1 Due to the decline in international oil prices in early 1983, which were only partially matched by a reduction in domestic energy prices, a decline in Thailand's oil import bill is likely to occur in the short term.

/2 Gas demand and supply figures in this chapter exclude supply and use of associated gas from the Sirikit oil field.

be treated with some caution. So far Esso has only two discovery wells in its concession. The potential in the Esso concession seems to be very large. Before major commitments are appropriate, or fundamental policy changes are adopted in respect of gas, a firmer basis, if possible production experience, is needed for the additional offshore fields. The first reliable production levels for offshore gas can only be estimated once the second Union contract gas supply comes onstream and has been in production long enough to assess field performance. Many of the gas-based investments cannot economically operate on alternative fuels and must have a dependable supply at a reliable price. Feasibility studies and other preparatory work, however, need not wait for finalization of the supply estimates, so that when the gas is available it can be used without delay. In the medium term, to deal with the situation when surplus gas is available for use, the appropriate pricing, policies, incentives and investments will have to be implemented. Gas supply and demand forecasts are set out in Table 8.3. In particular it should be noted that the only demands which are fairly firm are those for power, cement and LPG, where plants capable of using gas are in operation, under construction, or could be readily converted, and together amount to about 750 MMSCFD in 1986 -- all other demands are yet to be committed. The only supplies which are contractually "guaranteed" are Erawan at about 150 MMSCFD and the first tranche (150 MMSCFD) of the second Union gas supply contract. Union was expected to supply 250 MMSCFD under the Erawan contract, and it has the right to make additional supplies beyond 150 MMSCFD under the second contract, although supplies beyond 300 MMSCFD from the second contract are subject to provisos on both sides. Both supply and demand are subject to considerable uncertainty. Nevertheless it is highly likely that sufficient gas will be available, after the late eighties, for supplies materially in excess of demands arising from currently known investments, such that within the next few years new uses will need to be sought, new pricing policies will need to be implemented, and new contractual relationships will be needed. At this stage, however, it is important to bear in mind that the major part of the gas is far offshore, it is not associated with oil production, and while cheap compared with oil imports, it is costly compared with gas in other countries.

8.17 A second major issue closely related to the first is the Liquefied Natural Gas (LNG) export scheme currently under investigation for the Texas Pacific reserves. On the basis of present information on Union gas and Texas Pacific reserves, and bearing in mind the current cost of liquifaction, there is no value in considering LNG exports at this time. When these prospects are coupled with weak LNG demand and low prices, there exists no sound economic or financial reason for an LNG scheme, at least during the 1980s. Continued investigation of the scheme will only delay the possibilities of domestic use, and may delay expected benefits from natural gas development in Thailand.

8.18 Third, the key to any gas program is the discovery and subsequent contracting of the supplies. As in many other countries, however, this process has met prolonged delays. The contracting problems lead to uncertainties in the sizing and timing of investments in pipelines and in downstream uses, a situation which inevitably leads to uncertainty in the gas portion of the investment program. The source of the gas supplies and their size are also significant factors in the investment programs. Since investments in substitution of oil by other fuels are almost always profitable, and the potential for other gas uses is large, delays can be very expensive. Hence the Thai task is to encourage supply and plan demand uses in such a way that flexibility is maintained to meet the uncertainties and yet the potential benefits from substitution are fully achieved. To encourage greater gas use when it becomes available, there is need for a new risk-sharing attitude by the gas suppliers, such that they participate in the downstream risk. In future contracts, the Government should seek the relaxation of take or pay provisions, at least on part of the quantity or a portion of the price, or for the supplier to take a share in the downstream investment. In addition, as the major customer, the role of EGAT in balancing supply and demand, and optimizing the overall take of gas, is critical. Consequently, to enable EGAT to continue to play such a role, sufficient flexibility needs to be built into its investment program.

8.19 In sum, uncertain but moderate gas supply and demand are foreseen for the short run. Major use of gas is envisaged, but Thailand should not be expected to compete with Malaysia and Indonesia for gas-based export markets, at least until the 1990s, nor is Thai gas likely ever to be competitive with the Middle East. Its value is in enabling Thai energy demands to be met less expensively; it is not a ticket to an export-led future. Although this is the role of gas implicit in the investment plans of PTT discussed below, the implications of its "high" cost and uncertainty have yet to be fully assimilated in the country's plans for the promotion of gas development. In particular, while uncertainties in gas supplies exist, a cautious attitude needs to be taken toward new uses, expectations should be brought close to likely reality and care will have to be taken to avoid losing potential benefits of the gas through low gas prices.

8.20 Energy Pricing. Through 1978, Thailand's domestic energy price increases were held substantially below those of the average import price of oil. While the import price of oil increased by more than sixfold between 1970 and 1978, the domestic prices of electricity and gasoline, for example, only about doubled, roughly in line with domestic inflation (Table 8.5). Since 1978, however, the Government has substantially increased the domestic prices of energy in response to international price developments during the 1970s. Between 1978 and 1982, domestic energy prices to final users increased between 160 and 180%, while average import prices increased by about 200%. The domestic price level during the same period rose by only 56%. In September 1982, gasoline prices were more than 100% above CIF import prices, and diesel and fuel oil prices about 15% and 3%, respectively. Kerosene was the only major petroleum product for which retail prices were

Table 8.5: ENERGY PRICE MOVEMENTS, 1970-83

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983 /g
Average import price of oil (B/bbl)	43.1	49.0	50.8	64.2	209.2	232.0	250.1	269.1	286.3	395.1	668.5	821.6	871.7	771.5
Index	100.0	113.7	117.9	149.0	485.4	538.3	580.3	624.4	664.3	916.7	1,551.1	1,906.3	2,022.6	1,790.0
Electricity /a (B/kwh)	0.28	0.28	0.28	0.28	0.37	0.46	0.48	0.50	0.61	0.61	0.87	1.49	1.56	1.53
Index	100.0	100.0	100.0	100.0	132.1	164.3	171.4	178.6	217.9	217.9	310.8	532.2	557.2	546.5
Premium gasoline /b (B/l)	2.10	2.10	2.10	2.30/c	3.62/d	3.62	3.62	4.22/e	4.85	6.72	9.80	12.03	13.45	12.60
Index	100.0	100.0	100.0	109.5	172.4	172.4	172.4	201.0	231.0	320.0	466.7	572.9	640.5	600.0
High speed diesel /b (B/l)	0.98	0.98	0.98	1.05/c	2.33/d	2.33	2.33	2.64/e	2.64	3.99	6.54	7.39	7.39	6.99
Index	100.0	100.0	100.0	107.1	237.8	237.8	237.8	269.4	269.4	404.1	667.4	754.1	754.1	713.3
Fuel oil /b (B/l)	/f	/f	/f	/f	1.44	1.44	1.44	1.61/e	1.61	2.35	3.61	4.47	4.47	4.09
Consumer Price Index	100.0	100.4	105.3	121.7	151.3	159.3	166.0	177.9	192.8	211.3	252.8	285.7	300.6	305.3 /h

/a EGAT price for bulk electricity to MEA.

/b Retail in Bangkok.

/c In July; gasoline raised to B 3.01 and diesel raised to B 1.60 in December.

/d Raised in February.

/e Raised in March.

/f Uncontrolled prior to October 1974.

/g April 1983.

/h March 1983

Source: World Bank, Thailand, Energy Issues and Prospects (Report No. 2813-TH, May 1980, Green cover); Bank of Thailand.

below CIF prices (Table 8.6). In the wake of the international oil price reduction during 1982, and in particular following the reduction in official OPEC prices in March 1983, domestic petroleum product prices were also reduced. However, the weighted average decrease in domestic petroleum product prices was only 5%, while imported crude oil prices declined by 10-12% so that the ratio of domestic retail prices to import prices increased for all petroleum products, with the exception of LPG. As a result, all petroleum product prices in Thailand now exceed import prices, including that of kerosene. Thailand now has domestic petroleum prices roughly comparable to those of its neighbors (Table 8.7) and an average level of taxation of petroleum products comparable to other oil-importing developing countries.^{/1} Electricity prices reflect the marginal cost of power generation, and are set at levels to generate a financial rate of return of about 8% on revalued assets.

8.21 The structure of petroleum product prices, however, has not reflected the structure of costs, since substantial taxes have been levied on gasoline products (about 105% for premium gasoline and 88% for regular gasoline in September 1982), while diesel products and fuel oil are hardly taxed at all (10% and 1%, respectively), and kerosene and LPG are subsidized at moderate rates (13% and 6%, respectively) (Table 8.6).^{/2} Considering the

^{/1} According to World Development Report, 1981, p. 46 the average ratio of domestic petroleum product prices to international prices was 1.4 for oil importing developing countries in 1980. The fact that domestic energy prices in Thailand rose less rapidly overall than did international oil prices indicates that taxes on energy products dropped as a proportion of cost. Given the rapid rise in relative energy prices such a drop in the ad valorem tax rates may be appropriate. In fact, from the point of view of economic efficiency, taxes may actually be too high. It has been estimated by the Transport Planning Unit in the Ministry of Communications that receipts from "excess" motor fuel taxation (over and above taxation of comparable business and transport sector activities) exceeded aggregate short-run (marginal) infrastructure cost in the road sector by about 170% during 1975-79. In terms of cost recovery, however, and thus from the broader point of view of benefit taxation, motor fuel and other automotive "excess" taxes combined accounted for about 94% of aggregate road sector expenditure during the same period, leading to the conclusion that from a broader fiscal perspective average automotive taxes are set at roughly appropriate levels, with the exception of heavy vehicles, which cause a large percentage of the cost and therefore are undercharged.

^{/2} In the wake of the international oil price changes in early 1983, domestic petroleum product prices were reduced; however, with the exception of LPG, tax rates on petroleum products effectively increased as shown by the figures in brackets in Table 8.6, but the differences among each other were narrowed.

Table 8.6: DOMESTIC PRICES AND TAXES FOR PETROLEUM PRODUCTS, SEPTEMBER 1982

	Retail price (June 1978 = 100)	Retail price as % of import price /a	Oil fund contribution (subsidy) as % of import prices	Total tax (subsidy) as % of cost /a /b	Total tax (subsidy) rate as % of tax (subsidy) rate on regular gasoline /a /c
Premium gasoline	270	222 [236]	49	105 [116]	119 [107]
Regular gasoline	243	204 [229]	28	88 [108]	100 [100]
Kerosene	228	93 [107]	(20)	(13) [0]	(15) [0]
High-speed diesel	280	117 [132]	(5)	10 [22]	11 [20]
Low-speed diesel	285	114 [128]	(6)	9 [22]	10 [20]
Fuel oil	280	103 [107]	1	1 [4]	1 [4]
LPG	185	116 [103]	(7)	(6) [(14)]	(7) [(13)]

/a Figures in brackets are for June 1983.

/b Cost is defined as import price plus marketing margin; total tax equals import or excise taxes plus Oil Fund contribution.

/c These columns demonstrates that (with the exception of LPG) the dispersion of tax rates as petroleum products has been reduced between September 1982 and June 1983.

Source: Ministry of Finance; Statistical Appendix Table 8.12.

Table 8.7: STRUCTURE OF DOMESTIC RETAIL PRICES FOR PETROLEUM PRODUCTS IN SELECTED COUNTRIES, MARCH 1982 (US\$/liter)

	Regular gasoline	Premium gasoline	Diesel fuel	Ratio Regular/Diesel
Thailand	0.50	0.58	0.32	1.56
Indonesia	0.38	0.56	0.13	2.92
Philippines	0.62	0.65	0.38	1.63
Malaysia	0.46	0.48	0.21	2.19
Korea /a	1.02	1.48	0.38	2.68
Singapore	0.48	0.52	0.34	1.41
Japan /a	0.75	0.79	0.56	1.34
West Germany	0.64	0.66	0.60	1.07

/a November 1981

Source: NEA, Oil and Thailand 1981-82, Bangkok 1982, page 42.

high degree of substitutability among different types of petroleum products, significant price differentials in excess of cost differences can lead to inefficient consumption patterns.^{/1} The relatively low prices of diesel fuel and kerosene in Thailand, as elsewhere, are the result of distributive and regional policy considerations. Diesel fuel is used mainly in agriculture (including fisheries) and in transport (in particular, trucking), while kerosene is used mainly by rural households. However, the benefits of such subsidization have to be measured against the efficiency losses inherent in substantial relative price distortions and the fiscal costs of the subsidies. In particular, a correction of the gasoline-diesel price discrepancy would result in a better balancing of the present refinery capacity in Thailand. At present, the Thai refinery balance is characterized by a scarcity of diesel production capacity, which, in the absence of prices designed to balance demand, would require costly investment in new refinery capacity or by imports. The Government has recently initiated an energy pricing study in the context of its structural adjustment program. This study will assess the present structure of retail prices of petroleum products in Thailand with the goal of developing recommendations for appropriate changes. The study will also cover the pricing of natural gas in its various uses with a view to encouraging the efficient utilization of this resource, and will be linked with a recently completed study of lignite pricing. The changes in domestic petroleum product prices introduced in March 1983 already reduced somewhat the dispersion of petroleum prices and tax rates. Effective tax rates on all petroleum products in June 1983 diverged less from that on regular gasoline than was the case in September 1982 (see the last two columns of Table 8.6). The only exception was LPG for which the effective subsidy in relation to the tax on regular gasoline actually increased. Despite this overall improvement in the petroleum price structure, the dispersion remains substantial and thus a matter of concern.

8.22 Fiscal Implications. Taxes on petroleum products have contributed significant and rising portions (some 10% in 1981 and 1982) of total revenues of Central Government (Table 8.8). The main taxes are excise taxes levied on domestically produced products at a rate of up to 41% for gasoline, and up to 15% for diesel. These rates are legally fixed ceilings which can be changed only by act of Parliament. For imported oil products import duties are levied at port of entry, and business and municipal taxes are assessed on imported and domestic fuels. The retail price is then determined by adding a standard

^{/1} The increase in price for premium gasoline from Baht 11.90 to Baht 13.45 on December 2, 1981, which was not matched by a commensurate increase in the price of regular gasoline (Baht 11.40), provided an extreme example of the scope for substitution: while prior to the increase, regular gasoline accounted for only 47% total gasoline consumption in Thailand, it jumped to 65% thereafter.

Table 8.8: PETROLEUM TAX REVENUES
(Million baht)

Fiscal year	Domestically refined products		Imported products		Total petroleum revenue /d	As % of Central Government revenue
	Excise tax	Other taxes /a	Import duty	Other taxes /a		
1970-73 /b	1,368	n.a.	346	n.a.	1,714	8.1
1974	2,496	n.a.	529	n.a.	3,025	8.0
1975	2,258	n.a.	374	n.a.	2,622	6.9
1976	2,204	n.a.	425	n.a.	2,629	6.9
1977	3,080	n.a.	509	190	3,779	7.3
1978	3,378	n.a.	734	236	4,348	7.0
1979	5,669	56	1,124	350	7,199	9.6
1980	9,246	92	2,565	781	12,684	13.8
1981	10,112	101	2,057	1,105	13,375	12.2
1982 /c	10,943	109	1,239	500	12,791	10.6

/a Business and municipal taxes.

/b Average for the period.

/c Estimated revenues.

/d For 1970-78, "Other taxes" are not included in total.

Source: Ministry of Finance; Bank of Thailand.

marketing margin and a contribution to (or from) the Oil Fund./1 The Oil Fund contribution varies over time, between products, and according to whether the product is imported or not. For gasoline and fuel oil a tax has recently been levied through the Oil Fund over and above the excise, import, business and municipal taxes (on the order of 50% of the import price in the case of premium gasoline, and 1% for fuel oil). Subsidies were provided for all other products, so as to partially (Diesel) or more than (kerosene and LPG) offset

/1 Statistical Appendix Table 8.12 summarizes the various elements of the petroleum product pricing and tax structure for selected products.

the taxes explicitly levied on these products. The Oil Fund is therefore a device designed to permit cross-subsidization among petroleum products without requiring direct transfers to and from the Central government budget. The Fund, however, also serves as a device to absorb changes over time in the CIF and ex-refinery prices of petroleum products while keeping domestic retail prices of petroleum products unchanged. As a result of past prevailing net subsidies in the overall operations of the Fund, a cumulative deficit of about B 4.4 billion had developed by December 1981. Given favorable international oil price movements, however, overall net contributions to the Fund turned positive during 1982, and thus the cumulative deficit dropped to B 2.1 billion by the end of May 1983./1

8.23 The functioning of the Oil Fund is under review in the context of the energy pricing study (see para. 8.21 above) and as part of the broad review of extra-budgetary funds currently carried out by the Government under its structural adjustment program. More effective financial operating criteria should be developed for the Fund, if it is not to be abolished altogether. The Fund is the result of a petroleum product pricing regime which embodied regulated retail prices involving substantial relative price distortions among products, in general, and net subsidies for some products in particular. In principle, it would be preferable to eliminate all net subsidies and to achieve the desired average level as well as the structure of petroleum taxation through appropriate ad valorem taxes, the rates of which can be adjusted over time as dictated by fiscal and other criteria, and whose revenues accrue directly to the Central Government's Treasury. This arrangement would have the benefit of avoiding the accumulation of deficits as has happened in the past, and thus the hidden costs of subsidization, and of cross-subsidization./2

8.24 Historically, oil and oil product consumption have grown at a rapid pace (the average annual rate of growth of consumption was 8.7% for 1970-80). Petroleum tax revenues have increased at an even more rapid rate (9.7% p.a. in constant 1981 prices for FY71-81, excluding business and municipal taxes). For the future, the growth of petroleum consumption in

/1 The deficits were in the past financed by overdrafts from banks and by borrowing from PTT. In 1982, the Ministry of Finance contracted for a syndicated loan of \$300 million of which part was used to finance the cumulative deficit. The loan will be serviced from the Central Government budget, thus imposing a direct drain on the budget until the loan is paid off.

/2 One practical reason, however, for retaining the Oil Fund is that it permits some flexibility in setting effective petroleum tax rates. Changes in the excise tax rate ceilings are subject to Parliamentary approval and are difficult to obtain. Changes in Oil Fund contributions do not require such approval.

Thailand is projected to remain roughly unchanged at its 1981 level and given that international oil prices are projected to increase only relatively slowly in real terms during the 1980s and early 1990s, domestic oil prices will also increase at only a moderate pace unless the average rate of domestic petroleum taxation were to be increased. Similarly, petroleum tax revenues would increase at a slower rate than has been the case in the past in the absence of rate increases.^{/1} The main factors arresting the growth of petroleum consumption are the increases in prices which occurred during the late 1970s, the relatively slower economic growth projected for the 1980s and the substitution of domestic natural gas for imported oil. The impact of natural gas development on Central Government revenues however is likely to be minor. To the extent that natural gas substitutes for fuel or diesel oil, which are presently taxed at only moderate rates, this impact will be negligible. Only if LPG were to develop into a major substitute for gasoline, would Central Government revenues be seriously affected. In fact, these losses are likely to be more than offset by the royalties and corporate income taxes paid by the concessionaires. The revenues from the sale of natural gas are shared between PTT and the Government under an agreement according to which PTT retains no less than 90% of its net profits, unless PTT can finance out of its surplus funds from operation 30% of its capital expenditure based on a forecast of average annual investment for the next three years.^{/2} Once PTT's gas production has been fully developed, the Central Government budget could derive a substantial share of the fiscal "bonanza" generated by natural gas, which could supplement the stagnating resources generated from petroleum products. However, this is not likely to occur until well into the second half of the 1980s.

8.25 Energy Conservation. A large measure of energy conservation in recent years has resulted from frequent and substantial increases in energy prices. In addition, the Government has implemented a number of direct measures to reduce energy consumption in transport, industry, and households. Investments are being planned by both the public and the private sector to increase the efficiency of energy utilization in the economy. Further work is being done to identify and realize the energy saving potential in various economic sectors and to rationalize the system of incentives for energy conservation. As part of its structural adjustment program, the Government

^{/1} An increase in taxes on diesel fuel alone could contribute significantly to petroleum tax revenues. Eliminating half of the current gap of Baht 3 per liter between gasoline and diesel taxes by increasing the excise tax on diesel by Baht 1.5/liter, would lead to an increase in revenues of up to Baht 6 billion, or about half of present petroleum tax revenues, on the basis of an annual consumption of 4 billion liters of diesel fuel in Thailand. The exact amount collectable depends on the cross price elasticity of diesel fuel relative to other petroleum products.

^{/2} See World Bank, Report No. 3868-TH. "Staff Appraisal Report Thailand: Liquefied Petroleum Gas Project." May 24, 1982.

is setting up a national energy conservation center in collaboration with the private sector, in addition to formulating the actions required to improve the efficiency of road transportation. Once the policy and institutional framework is in place, schemes for financing energy conservation are to be developed.

8.26 Institutional Issues. Numerous public agencies are involved in the energy sector in Thailand. For power three state enterprises are providing the overriding share of electric services. EGAT, under the direction of the Prime Minister's Office, is responsible for power generation, while MEA and PEA, under the direction of the Ministry of Interior, are respectively responsible for power distribution in Bangkok and the rest of the country. For petroleum and gas products, the private sector plays an important role in importing, producing, refining and marketing. The Petroleum Authority of Thailand (PTT), under the Ministry of Industry, has, however, taken on an increasing responsibility in all these areas. The Department of Mineral Resources in the Ministry of Industry, has the main regulatory functions for the oil and gas subsector. Energy sector policy and planning functions involve the Cabinet, NESDB and NEA. NEA, which is under the Ministry of Science, Technology and Energy has general responsibilities in the energy sector, but its role is ill-defined. Since it lacks sufficient technical capability and statutory authority to perform essential sector coordination and planning functions, the most important energy sector decisions are taken, frequently in an ad hoc fashion, by various Cabinet level committees and their numerous subcommittees.

8.27 For the preparation of the Fifth Plan an Energy Planning Committee was set up with NESDB as its secretariat and with representation of all relevant public agencies, including NEA. However, because of a lack of adequate and mutually consistent demand and supply projections in NEA, NESDB and the major implementing agencies, the intersectoral linkages and macro-economic implications of the energy sector's demand and supply outlook could not be fully addressed in the preparation of the Fifth Plan. As a result of this, and because of the lack of a fully articulated energy sector investment program for the Fifth Plan period, the linkage between the targets set forth in the Plan and the operational and policy prescriptions could not be clearly established and agreed upon among the major implementing agencies. The Plan document recommended, however, that responsibility for all energy come under one single command, and that NEA take on central responsibility for energy sector coordination, while shedding its current operational functions.

8.28 So far, not much progress has been made in achieving a greater degree of coordination and consistency in overall sector planning and management, although the energy sector strategy study which is to be initiated under the general responsibility of NEA as part of the Government's structural adjustment program should provide the information base for a broader sectoral planning approach, as well as the policy framework which will assist in determining the appropriate institutional approach. While for the long term it is appropriate to explore the potential for developing a strong energy planning body, as an interim solution special efforts should be made to strengthen sectoral agencies and bilateral coordination, while improving the definition of a sectoral strategy within the existing institutional set up. This approach requires improvements in investment programming and planning in PTT, EGAT, and DMR, and promotion of direct collaboration between PTT and EGAT, PTT and the private sector, and both organizations with their potential customers. Likewise the DMR needs to participate in the energy planning efforts, and cooperation between DMR and PTT must be encouraged at the highest level.^{/1} These important steps can go a long way towards reducing the problems of planning and cooperation in the sector, while giving time to strengthen the technical capability of one central agency to integrate agency plans and projections into a consistent sectorwide strategy, and to ensure that the specifics of implementation of sectoral targets, policies and programs have been spelled out and agreed to by the implementing agencies.

Public Investment Programs and Requirements in the Energy Sector

8.29 The Thai Government reacted in recent years to the growing energy demands of the Thai economy, the increased cost of foreign supplies, and the discovery of domestic energy resources by rapidly expanding its expenditure, especially capital spending, in the energy sector. This expansion has been particularly rapid since 1980, with the result that energy is now the single most important sector for public spending, having increased its share of total public expenditure from 12.5% in 1977 to 22.1% in 1981 (Table 8.9). For the Fifth Plan period, NESDB projected that in mid-1982 the energy

^{/1} This is particularly important in relation to PTT's need to know the broad plans and the exploration results of the petroleum exploration companies, which directly affect its operations. The delays which were experienced in communicating to PTT the problems which Union Oil incurred during field development, are indicative of past lack of an effective coordination between DMR and PTT.

Table 8.9: PUBLIC EXPENDITURE IN THE ENERGY SECTOR
(in %)

	----- Fiscal Years -----							Fourth	Fifth
	1970	1977	1978	1979	1980	1981	1982/a	Plan 1977- 1981	Plan 1982- 1986
Share in total public capital expenditure	13.5	13.7	17.0	13.1	25.5	31.9	28.6	22.5	n.a.
Share in total state enter- prise capital expenditure	46.2	40.5	42.7	33.9	54.3	63.7	58.2	50.9	53.3
Share in capital expenditure of energy sector agencies	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
EGAT	56.3	65.5	75.9	57.6	56.4	58.2	57.7	60.5	58.9
MEA	24.0	9.2	8.1	14.4	6.4	5.0	5.8	7.1	4.2
PEA	13.7	23.7	15.5	25.2	9.7	12.5	19.3	14.1	15.1
PTT	6.0	1.6	0.6	2.7	27.5	24.3	17.3	18.3	21.8

/a Estimated.

Source: Table 8.5; Annex 5; Statistical Appendix Table 5.7.

sector will contribute about 26% to total governmental spending, up from the average of 18% during the Fourth Plan period. Energy sector spending weighs even more heavily in total public investment, reaching a share of 31.9% in 1981, up from 13.5% in 1970 and 13.7% in 1977. As a percent of state enterprise investment, the energy sector enterprises have in recent years accounted for more than 50% and are expected to do so during the Fifth Plan. Four agencies in particular have contributed the bulk of these investments: EGAT accounted for 55-75% of total public investment in the energy sector, MEA for 5-15%, and PEA for 10-25%. PTT's investments were very minor as recently as 1979, but were very sizable in 1980 and 1981, when they accounted for almost a quarter of total public investments in the energy sector in connection with the construction of the gas pipeline. For the Fifth Plan period, EGAT is expected to retain its dominant share in energy spending, with PTT continuing to grow in importance as it is involved in further gas and oil development projects. This section will therefore devote most attention to a discussion of the investment programs of these two agencies.

8.30 Overall energy sector investment planning and programming is currently not carried out in any systematic manner because of the traditionally inward looking planning practices among the major state enterprises and NEA's inability to develop an overall sector strategy (see para. 8.26). This lack of coordinated investment planning does not appear to have led to major imbalances in intra-sectoral development in the past, but may do so in the future as more agencies, including PTT, the Defense Energy Department and the Department of Mineral Resources have taken on greater responsibility for specific areas of energy sector development and are planning major investments in developing domestic energy resources. What is more, the broader intersectoral and macro-economic constraints and implications of energy agency investment programs which in the past have not been given much attention by any Government agency, including NESDB, will need to be carefully assessed for the future, as Thailand faces the need to control its internal and external imbalances, as well as to reduce the past rapid growth in foreign borrowing. The development of an energy sector strategy in the Government's structural adjustment program and its integration with NESDB's efforts to develop a public investment program therefore deserve high priority. This section pulls together the information available to the Mission in assessing the scale and composition of the energy sector investment program. However, this effort is only indicative of the kind of issues which need to be addressed by the Government in developing its own energy strategy.

8.31 Power Subsector. The power subsector has absorbed, and will continue to absorb, a very large share of public sector resources, not only as a share of energy sector investments, but as a share of overall public

investments. The following paragraphs first highlight some of the major issues and uncertainties arising in power subsector planning and investment decisions, including demand outlook and supply options. It is essential to plan explicitly with these uncertainties in mind and to build flexibility into the power system and related investments so that it can respond adequately to unforeseen events affecting in particular the demand for power and the supply of natural gas. In the light of these issues, the major options for power investments are then explored, and some conclusions drawn for power subsector investment planning.

8.32 (a) Demand growth: Between FY 1973 and FY 1979 power demand grew at an average annual rate of 12.5%, implying an elasticity of demand with respect to GDP of 1.7. Since FY 1979, however, demand growth has slowed dramatically to an average rate of 6.5% for the three-year period ending September 1982, dropping as low as 5.8% for the last of these three years. The overall GDP elasticity therefore fell to 1.1 given a real GDP growth rate of 5.9% for FY 1979-82.^{/1} This slowdown in demand growth occurred mainly in response to dramatic increases in power prices (131% for MEA's consumers and 111% for PEA's consumers between February 1980 and April 1981), and in response to slower economic growth during the same period when compared with the 1970s as a whole.

8.33 Official demand projections ^{/2} for the future, which as late as September 1981 assumed a continued 11% growth in power demand for the period 1980-86, have now been scaled back to 9.1% for the period 1982-91. However, unless economic growth in Thailand recovers to reach the level of about 7% experienced in the past, these projections are likely to be on the high side, especially for the years 1983-86, for which official forecasts still project an average annual rate of increase of 10.5% in power demand. Two factors argue for lower rates of growth in demand: First, while no further substantial price increases for power are likely to be required (see para. 8.35 below) the effects of the recent price increases are not likely to have fully worked themselves through the economy, as power using equipment is

^{/1} A drought in 1979 caused power supply shortages in 1980. However, this is not likely to have affected the average growth rate of power demand between 1979 and 1982, since supply returned to normal in 1981, thus permitting again unconstrained demand growth.

^{/2} The official forecasts are based on decisions of the Load Forecast Working Group, an interagency group meeting intermittently to review and revise power load forecasts.

only gradually replaced.^{/1} The income elasticity of power demand is therefore likely to remain below the levels experienced during the 1970s, and closer to those which were observed for the last three years. Second, the economic outlook for Thailand, as for the rest of the world, is likely to be less buoyant than in the past, with GDP growth rates for the 1980s probably of about 5.5-6.0%. Table 8.10 summarizes the likely range of demand growth scenarios for 1983-91, assuming different income elasticities and GDP growth rates. The most likely demand growth rate is about 8%, implying, in particular, lower growth rates for the next four years than assumed by the official forecasts. Demand growth, might, however, fall even below 7% on average for the period 1983-91, as indeed the official forecasts assumed for the period 1987-91, if either the economy grows less rapidly than assumed in the medium scenario, or if the income elasticity remains at about 1.2. EGAT revised its own power demand forecasts in February 1983 to an average demand growth rate of 8.3% p.a. for 1983-1991, roughly in line with the central demand growth rate projected in Table 8.10.

Table 8.10: ALTERNATIVE DEMAND SCENARIOS, 1983-91

GDP growth (in %)	Electricity demand growth rate 1983-91 for income elasticities of (in %)		
	1.2	1.4	1.6
Low (4.8)	5.8	6.8	7.7
Medium (5.5)	6.6	7.8	8.8
High (7.3)	8.8	10.0	11.8

Source: See text.

^{/1} World Development Report 1982 estimates that the full effect of energy price increases takes place only over 15 to 20 years.

8.34 Taking 7% to 9% as the most likely range for power demand growth during the 1980s the timing and magnitude of capacity addition required each year under different demand growth scenarios is shown in Table 8.11 assuming completion of projects already under construction.^{/1} Capacity additions would be required in 1989 if a 9% growth rate is used; delays up to 1991 are possible for demand growth of 7%. The magnitude of capacity additions required would be about 500 MW per year.

Table 8.11: TIMING OF CAPACITY REQUIREMENTS

Year	Capacity additions required (MW) assuming power demand growth rates of (in %)		
	9%	8%	7%
1988	-	-	-
1989	609	-	-
1990	668	548	-
1991	723	592	477
1992	788	639	510
1993	859	690	545
1994	937	745	583
<u>Total</u>	<u>4,584</u>	<u>3,214</u>	<u>2,115</u>

Source: World Bank Staff estimates.

/1 Parallel capacity additions are required to meet energy demand and to meet capacity requirements.

8.35 Demand projections are, of course, heavily dependent on assumptions for future prices. Overall, power prices for final consumers are at present at or above long run marginal cost (LRMC) for all industrial and commercial consumers,^{/1} and for most of MEA's residential consumers, but below LRMC for most of PEA's residential consumers. Assuming that no significant increases will occur in international oil prices there is thus, except for PEA residential users, no major economic reason for expecting increased real power tariffs in future. Financial requirements, tempered by equity considerations,^{/2} will, however, require minor real increase in MEA and PEA tariffs to final consumers in 1983 and 1984. Thereafter, tariff increases are expected only so as to maintain real tariff rates approximately unchanged in the face of expected inflation. These tariff changes are sufficient to maintain an 8% financial rate of return on revalued assets for the power sector as a whole. Overall, however, these price increases are small in comparison with past increases and are not likely to have a major impact on demand.

8.36 (b) Supply options: The main options available for EGAT include hydro plants, lignite fired plants, gas/oil fired thermal plants, and (combined cycle) gas plants. Thailand does not have any major hydro schemes suitable for base-load generation, apart from those involving international agreements. However, some 1,000 MW of peak load duty hydro schemes are still available of which the Nam Choan project is the largest (580 MW). Given Thailand's domestic natural gas and lignite resources, power generation plants using these resources are expected to play a major role as a source of additional base load capacity. The choice between gas and lignite generation

^{/1} One major anomaly in the power pricing structure was recently introduced when PEA granted a new joint-venture (public-private) zinc producer a promotional tariff of 1.00 Baht/kWh, compared with LRMC for continuous power supply of about 1.09-1.25 Baht/kWh, and compared with the normal rate of 1.7 Baht/kWh for large industries and 1.8-1.9 Baht/kWh for small industries. While special considerations may have governed this arrangement and, according to senior management of the zinc firm, the zinc plant would not have been financially profitable without such a special incentive, it would in general be preferable to provide subsidies -- if they are to be provided at all -- in the form of outright budgetary support.

^{/2} Equity considerations enter mainly through the structuring of residential tariffs so as to permit "lifeline" power prices for small residential consumers. Given the higher costs of supplying rural power users, as well as the preponderance of small users in rural areas, this in effect results in cross subsidization from urban to rural users.

plants involves three main factors: First, the availability of gas is at the moment highly uncertain (see para. 8.16 above). EGAT is presently the dominant user of natural gas, but industrial use of gas began in 1983 and should rise to about 355 MMSCFD by 1990 and 430 MMSCFD by 1995. With conservative estimates for gas availability, no additional gas fired power capacity could be utilized before the early 1990s, since EGAT has already built or under construction capacity designed to use gas, or readily convertible to use gas in quantities up to 650 MMSCFD. If, however, greater supplies of gas should become available as a result of timely and full production of all fields currently known, including Texas Pacific's fields, then additional gas fired plants for EGAT could be supplied with gas as of 1991. Additional gas using capacity could therefore be installed for operation as of 1991. The potential role of EGAT in providing the necessary flexibility for Thailand's energy sector in the take-up of gas as and when it is developed is a major factor which EGAT's investment planning needs to continue to take into account. Second, the relative attractiveness of gas versus lignite use for power generation depends to a considerable degree on the opportunity cost calculated for gas and lignite respectively. A major energy pricing study is currently underway as part of Thailand's structural adjustment program which will, among other topics, assess the relative costs of gas and lignite. The findings of this study should be utilized in further decisions about the design of Thailand's power investment program. Third, there is a difference in the lead time required for gas and lignite fired plants, with the former requiring only 4-5 years of preparation and construction, while the latter requires about 6 years. The lesser the lead time required, the more time is available to assess both the power demand and the gas supply outlook, providing, other things being equal, an argument in favor of gas-fired plants. These three issues have an important bearing on the appropriate development of domestic energy resources and are to be addressed in the Energy Strategy Study which the government is currently initiating under its structural adjustment program.

8.37 (c) Power sector investment planning: Power sector investment planning in the past has not sufficiently taken account of the two major uncertainties affecting its pace and pattern--power demand and gas supply outlook --nor has it been effectively imbedded in a development strategy for the energy sector as a whole or in an investment program for the entire public sector. The reasons for these shortcomings are two-fold. First, as major state enterprises with their own sources of internal finance and easy access to external sources of finance, EGAT, PEA, and MEA have in the past been mainly responsible for planning expansion in power generating capacity and transmission facilities. Outside the utility enterprises, power sector planning has involved a number of Government committees and agencies,^{/1} none

^{/1} Including the Load Forecast Working Group, the Committee on Power Policy and Development, the Ministry of Science, Technology and Energy, NESDB, the Ministry of Finance, and the Budget Bureau.

of which, however, had the staff capability independent of the utilities to review and assess the power generation and distribution expansion programs. While internal planning and power subsector coordination has generally been good, particularly in developing a consistent expansion program for the three power utilities (EGAT, MEA and PEA), the power utilities have not been under any pressure to consider the sector- and economy-wide implications of their investment activities. For PEA, system expansion in the past has been carried out on a piecemeal basis under different projects. PEA now intends to improve and systematize its distribution system planning in order to improve reliability, safety and economy. Finally, the Government's structural adjustment program includes efforts to strengthen overall energy sector planning, public investment programming and public foreign borrowing procedures, all of which will assist in placing the power subsector investment program into a broader context.

8.38 (d) The power investment program - EGAT: EGAT's investment program for the Fifth Plan period as of July 1982 includes ongoing projects which are designed largely to replace imported oil with domestic energy resources (hydro, gas, and lignite).^{/1} Economic considerations of fuel replacement and the fact that much of the investment cost is already sunk, argue for a timely completion of these projects. In addition, EGAT planned a number of new investments to be initiated during the Fifth Plan period, which initially (November 1981), when combined with ongoing projects, would have required a total capital outlay of Baht 89 billion for the period 1982-86. This investment program was later revised to conform with the revised load forecast of June 1982, reducing planned investments during the Fifth Plan period to Baht 78 billion. In line with its further downward revisions of power demand growth projections in February 1983, EGAT made another downward adjustment in its investments program to Baht 68 billion by postponing the construction of six major projects by one year each.

8.39 EGAT's investment programming thus has, during the last two years, shown considerable flexibility in adjusting to a changing demand outlook by gradually phasing back investments, amounting to a total reduction by 25% in planned capital outlays for the Fifth Plan period. Indeed, the program as currently designed for the remainder of the Fifth Plan is generally appropriate. However, questions remain for the program beyond 1986 which will need to be addressed in due time. First, the program as planned in May 1983 does not foresee any further investments in gas utilizing generating capacity through 1996. This strategy is based on a conservative outlook for gas availability, roughly equal to the low gas supply scenario shown above in Table 8.3. By 1985, the outlook for the availability of gas is likely to have

^{/1} See Annex 3 for a listing of projects currently under construction and planned for commissioning until 1996.

been significantly firmed up, providing a better basis for decision making as between gas and other supply options. EGAT should then stand ready to revise its investment program taking account of any improvements in the projections of gas supply which may have occurred by then. Second, and more generally, more explicit consideration of the various important elements of uncertainty should be introduced in EGAT's investment planning, particularly as regards the uncertainties in demand outlook and in gas supply prospects. No explicit assessment appears to have been made so far of the implications of possibly mistaken forecasts for alternative scenarios and thus it is not possible to compare the cost of forecasting errors which would assist significantly in guiding EGAT's investment decisions. Finally, questions have been raised regarding the desirability of proceeding with the construction of the Nam Choan hydroelectric dam. From a technical perspective, Nam Choan is among the least cost solutions for meeting additional demand; in addition, it has a number of advantages over non-hydro expansion options, including no air pollution, lower foreign exchange costs, more generating flexibility, no uncertainty about fuel prices or availability, and the renewability of hydro resources. Broader environmental considerations aside, which are currently being reviewed by the Government, the Nam Choan project is indeed warranted for inclusion in EGAT's investment program. As regards timing, the scheme should be initiated for start-up in 1989/90, irrespective of the specific demand outlook, since fuel oil replacement alone justifies its operation at that time./1

8.40 (e) The power investment program - MEA and PEA: Only 6% of total investment planned by the power utilities during the Fifth Plan period is scheduled for MEA, and 15% for PEA (See Annex 3). For PEA the total number of households with electricity is programmed to more than double from 2.2 million in 1981 to 4.5 million in 1986, resulting in an increase in electrification from 33% to 62%, with a goal of virtually full electrification by the late 1980s. This program serves clear priority needs since it aims at substantial increases in rural electrification with its attendant benefits in terms of cost savings compared to alternative lighting and commercial operating fuels in rural areas, increased opportunities for commercial and cottage industry activities in rural areas, and improved opportunity for leisure time activities, all resulting in improved rural development and welfare (See World Bank Report No. 4201-TH).

8.41 Oil and Gas Subsector. There are currently two public agencies with operational responsibility in the oil and gas subsector: The Defense Energy Department (DED), under the Ministry of Defense, and the Petroleum Authority of Thailand (PTT). The latter has undertaken almost all of the public investments in the subsector in recent years. DED's activities include oil

/1 This summary assessment of the Nam Choan project is based on an in-depth review by World Bank staff.

exploration and production (only 400 bpd), a major refinery (Bangchak Oil Refinery, BOR) and a mini refinery (in the North). DED is due to transfer BOR to PTT by December 1985, but PTT already carries out procurement of crude oil, the distribution of products and the provision of funds for all operating and administrative requirements of BOR.^{/1} PTT is involved in a full range of downstream oil and gas activities, including oil importing, refining and distribution, and processing and distribution of natural gas. The first project executed by PTT and completed by September 1981 was the construction of a 595 km gas pipeline from the Erawan gas field in the Gulf of Siam to two EGAT power plants. The pipeline has a design capacity of 700 MMSCFD and cost about \$500 million, partly financed by the World Bank. PTT also worked with the Siam Cement Company on the construction of a 170 km gas pipeline (94 MMSCFD), which was completed in early 1983 at a cost of \$57 million, all paid for by Siam Cement, but also serving other potential future industrial consumers.

8.42 (a) PTT investment planning: PTT's planning capabilities are strong as regards gas development and the preparations of individual projects. However, its planning, management and control systems could be strengthened in a number of respects. Broader national economic and financial considerations need to be introduced; an improved assessment of Thailand's petroleum refining and marketing and the related product storage and pipeline needs is required; the existing system of project monitoring and control should be broadened beyond the present scope dealing only with individual projects; a manpower development program needs to be carried out to support PTT's expanding scale of operations; and the effects of PTT's proposed investment program on its organizational structure need to be considered. Many of these issues will be addressed under the LPG project financed in part by the World Bank, and the broader questions of PTT's role in the overall energy sector strategy and overall investment program will be dealt with under the Government's structural adjustment program.

8.43 The strategy underlying PTT's investment program is consistent with the goals of the Fifth Plan. Its core components are the natural gas development investments, based on recommendations from a recently completed gas utilization study,^{/2} involving fuel substitution, mainly in power generation, and provision of feedstock for gas-based industrial development in the Eastern Seaboard (see Chapter 7 above). With the present uncertainties regarding gas supplies, however, PTT's program, even in its version of November 1982, needs substantial revision, with a shift of some of the new investments from the Fifth to the Sixth Plan period, and

^{/1} The financial ties between PTT, DED and BOR are complex and as a result substantial financial losses of BOR had to be financed by PTT. Under the LPG project financed by the World Bank, PTT agreed to propose a solution by June 1983 of BOR's financial difficulties.

^{/2} Davy McKee/Chem Systems, Gas Utilization Study, 1982.

beyond. /1 Part of the overprogramming for the early years results from the fact that the PTT program includes not only "firm" projects, for which detailed feasibility studies are available and whose priority is well established, /2 but also a whole range of tentative projects whose timing, cost and relative priority has not been well established, in part because of uncertainties beyond PTT's control. These include the uncertainties regarding the size and timing of available gas reserves, contract difficulties with gas suppliers, and changing plans of potential gas users. In most cases, furthermore, detailed analysis of economic viability is not available and the Government's priorities have not been fully defined. While these uncertainties will remain, PTT's investment program could be more explicitly formulated to reflect priorities assigned to each project and PTT should perform sensitivity analysis to show how existing uncertainties may affect the implementation schedule and economic viability of its proposed projects. This will give rise to a more realistic assessment of what are appropriate investment scenarios in a context of uncertainty and can assist in identifying ways to reduce the uncertainty. In the following paragraphs, PTT's current investment program will be briefly summarized, followed by suggested revisions.

8.44 (b) PTT's investment program: In November 1981 PTT prepared an investment program amounting to a total of Baht 55.7 billion for 1982-91, of which about Baht 40 billion were to be spent during the Fifth Plan period (Annex 3). Of this total, the natural gas component accounted for about 85%. In November 1982, PTT prepared a revised program reflecting changes in timing and costs of "firm" projects, as well as changes in project composition over the same period. The total program cost increased by about Baht 8 billion, with an additional Baht 1 billion during the Fifth Plan period. Due to uncertainties in gas supplies and because of PTT's increased awareness of the need for careful study of the viability of projects before their initiation, most projects or selected project components have been phased back by a year or two, while some new projects were added. Specifically, the scope of the LPG marketing and distribution project was reduced, giving a larger role to private companies and deferring the export component until it becomes viable. The design of the Union tie-in pipeline was changed following a pipeline optimization study. The project for strategic storage was dropped as not having sufficiently high priority, while the capacity of the TORC refinery expansion project was reduced and a hydrocracker substituted for a catalytic cracker, in line with World Bank advice.

/1 PTT prepared a revised investment program in June 1983 which was not yet available for review at the time of the May 1983 mission to discuss this report. However, the May discussions indicated substantial agreement between PTT and World Bank staff on the appropriate revisions as outlined below.

/2 Currently this category includes only the gas pipelines under construction and being designed and the first LPG plant with associated storage and distribution facilities.

Other changes include PTT's participation in the possible Bangchak refinery project, and three possible joint ventures (in Sirikit oil production, in a fertilizer project and in an LNG plant; no estimates were given on costs).

8.45 While the November 1982 program demonstrated PTT's flexibility in investment programming in response to new developments, the Mission findings indicate that even more caution is needed, in light of the uncertainties surrounding the availability of gas supplies. As a result, a shift in projects from the Fifth into the Sixth Plan period is appropriate, resulting in a reduction by Baht 9.1 billion in the planned investments for 1982-86, or by about 23% of PTT's 1982 program, even after a sizable allowance is made for possible additional, but as yet unspecified projects (Annex 3). Since the Mission believes that there remains still significant opportunity for project slippage in the Fifth Plan period, even this reduced program may be on the high side. The PTT's current (revised) program, however, has taken such slippage into account.

8.46 For the Sixth Plan period (1987-91) the proposed program is dominated by four energy projects and two industrial projects using gas as feedstock. While much work needs to be done to optimize the timing and size of the projects, preliminary analysis suggests that most of these could be economically and financially sound, meriting priority in investment. Depending on discoveries, this period may also see further PTT participation in oil or gas field development together with investments in the associated infrastructure. The total proposed investment program for PTT in the period 1982-1991 is therefore somewhat larger than envisaged in PTT's revised November 1982 projections.

Summary Assessment of Energy Sector Issues

8.47 Since the completion of the Bank's last Energy Sector Report and Country Economic Memorandum /1 and of the Fifth Five-Year Plan document, the outlook for the energy sector in Thailand has changed significantly. The average level of domestic energy prices has been adjusted to levels comparable to those in most other developing countries; the external environment has changed significantly leading to lower than expected economic growth in Thailand as elsewhere, and to real international oil price decline in the short term and an outlook for only moderate increases in the medium term; domestic offshore gas supplies which seemed assured at substantial levels now appear more uncertain, and the potential for their speedy development and utilization less evident, while at the same time the possibility

/1 Report No. 2813-TH, May 1980; and Report No. 3067a-TH, December 1980.

of onshore gas and oil development has emerged. As a net result of these changes, the energy targets of the Fifth Five-Year Plan regarding energy consumption and inputs which appeared ambitious at the time of their formulation are now clearly within reach, despite a less favorable outlook in domestic production.

8.48 While these developments may make further adjustment in the energy sector seem less urgent than was the case two years ago, they give rise to a number of important considerations regarding energy sector development strategy, energy pricing and energy conservation. First, the efficient development of Thailand's indigenous energy resources remains of primary importance for the realization of targets of reduced import dependence, foreign exchange savings, and gas based industrial development. An energy sector strategy must therefore be developed, taking full account of the increased costs of borrowing abroad, the scarcity of public sector resources, the uncertain availability and development costs of domestic energy resources, and the many other competing goals of public policy, including the need for employment generation and increased investments in human resources. While a rapid pace of development of domestic energy resources was clearly of overriding importance during the second half of the 1970s, the outlook for the 1980s is such that a careful assessment of energy development potential and intrasectoral balance, as well as an evaluation of what are the least costly ways of meeting Thailand's energy requirements in an inherently uncertain environment have now become essential. Since 1982, the public investment program in the energy sector, in particular, for the two major state enterprises, EGAT and PTT, has been adjusted in line with changing expectations, especially as regards lower demand forecasts for power, and the delayed availability of natural gas. Individual agencies have thus demonstrated considerable flexibility and realism in their investment planning. However, high priority should now be accorded to the development of an energy sector strategy and its subsequent implementation under the Government's structural adjustment program. Second, an appropriate energy pricing policy is an essential ingredient to an efficient and equitable development of the energy sector. The issues relating to the structure of petroleum prices and to the appropriate gas and lignite pricing policy, are currently being addressed by an important study, whose findings and recommendations should be quickly evaluated by the Government. The institutional steps required for their implementation should then be developed on a priority basis. Third, continued emphasis should be given to energy conservation by providing appropriate incentives and support for energy conservation in industry and in the transport sector.

9. TRANSPORT AND COMMUNICATIONS

9.01 The expansion of transport and communications infrastructure has played a major role in Thailand's rapid economic and social development during the last three decades. For the 1980s and beyond, continued expansion of this infrastructure and the effective maintenance and operation of the capital stock already in existence remain an important challenge. Efficient transport and communications services are essential ingredients for continued rapid growth of internal and international trade, for an efficient urbanization process as well as for continued rural development, for an efficient utilization of costly domestic and imported energy resources, and for an efficient utilization of a substantial portion of private and public, domestic and foreign capital, given the high capital intensity of these sectors.

9.02 This chapter briefly reviews the major planning objectives and issues in the transport and communication sectors and assesses the public investment programs and requirements. A currently ongoing World Bank review of the transport sector will provide a more extensive assessment of issues, policies and investment priorities in that sector. Ongoing World Bank operational involvement in the telecommunications subsector offers the opportunity of continuous Bank review of major issues in the communications sector.

Fifth Plan Objectives and Sectoral Planning Issues

9.03 The Transport Sector. The Plan's approach towards the transport sector is determined by two main considerations: the near completion of the national highway system during the Fourth Plan period, and the goal of energy conservation. The former consideration dictates a slowdown in highway spending and a shift within the road subsector towards concentration on provincial and rural roads, and to an improved maintenance and rehabilitation of the entire road system. On the other hand, energy efficiency in the transport sector, which accounts for about 40% of petroleum product consumption in Thailand, is to be improved by a shift in the intra-sectoral, intermodal balance from the road subsector to rail and water transport. This shift in inter-modal balance was favored on the premise that past heavy investments in roads were justified only by previously cheap oil, discouraging the development of alternative, more energy efficient modes of transport./1

/1 The network of paved roads expanded rapidly from an estimated 8,500 km in 1962 to 130,000 km in 1980, consisting of 14,000 km of national highways, 30,000 km of provincial roads and 85,000 km of rural roads. The vehicle fleet has also grown correspondingly from about 300,000 to about 2 million over the same period. By contrast, the railway network, totalling 3,800 route-km, hardly expanded during 1970s. The freight and passenger traffic growth rates were in the order of 7-9% p.a. on roads. On railways during the same period, passenger traffic grew by 8% p.a., and freight traffic by 4% supported by subsidized tariffs.

However, the Plan's argument for substantial expansion of public investments in the transport modes other than road transport, and in particular in railways, requires careful reassessment. Road transport currently accounts for 80-90% of total traffic in Thailand and consumes about 95% of total fuel used in the transport sector. Therefore, increased efficiency, improved maintenance, and gradual fleet modification on roads are likely to save more energy than large and costly expansions in railway service. For example, a doubling of railway traffic, requiring investments of about \$1 billion in addition to non-traffic investments, would reduce the transport sector's energy consumption by no more than 5%. In fact, it appears that for current levels of long run marginal costs and tariffs most traffic-related investments in railways are at present uneconomic, and thus modest energy saving would be more than wiped out by losses from uneconomic investments in subsidized services. Emphasis should be placed, instead, on improving the energy efficiency throughout the transport sector, especially through appropriate pricing, taxation and regulation of the road transport sector. Thus, overall system efficiency should be emphasized, investments in all modes should be economically viable, and subsidies should not become a source of traffic growth to justify higher investments, particularly in railways.

9.04 A number of studies have been completed or are underway to help develop appropriate policies and programs to achieve the transport sector objectives of the Fifth Plan. A "screening study" of national and provincial roads was completed in 1980 to review investment planning in the Department of Highways. A rural roads study completed in 1981, took stock of the rural roads network, identified road lengths in need of upgrading, and proposed an institutional framework for managing the construction and maintenance of rural roads. As a result, several rural roads projects are being prepared and the Government is reviewing the study's institutional recommendation to consolidate rural road construction and maintenance activities, which are now dispersed amongst various agencies such as ARD, PWD, RID, etc. A study of energy policies for the transport sector was completed in June 1982, and its recommendations are under consideration by the Government. A road user taxation study was completed in September 1982. A number of other policy-oriented studies are being initiated, addressing issues in the trucking industry, ports development, railway investments, regional transportation, and unit cost structure of transport modes. Sector knowledge and analyses thus accumulated will help develop policies and programs to increase the efficiency and rationalize the structure of the transportation system in Thailand. The impact of some of the recently initiated studies, however, is not likely to be significantly felt during the Fifth Plan period.

9.05 Investment planning in the transport sector begins with the preparation of subsector programs by the implementing agencies concerned. These individual programs are then consolidated by the Ministry of Communications, and subsequently submitted to NESDB for review. The NESDB review focuses on new investments, particularly large ones and, in theory at least, on "problem projects" in the ongoing program. This review process is often prolonged due to inadequate program preparation by implementing agencies. A lack of uniform criteria across subsectors also results in a variety of objectives, sometimes conflicting with each other, being pursued in the various subsectoral programs. Finally, the consolidated program is presented to Cabinet for approval, but large projects may also be submitted separately and independent of the program. The problem project review process is limited in effectiveness by the automatic budget allocation in support of the entire ongoing program. A special problem exists in the area of transport investment planning in Bangkok. Together with the functions of overall urban planning and of urban service provision, that of transport planning and investment is scattered over numerous agencies. Even if the technical capabilities of investment planning and implementation were enhanced for each of the agencies, it would remain difficult to implement a coordinated set of policies and programs for urban transportation under the existing institutional set up. Eventually, a central mechanism for transport planning and investment programming in Bangkok will become a necessity.

9.06 Telecommunications. The main agency in this sector is the Telephone Organization of Thailand (TOT), responsible for the domestic public telephone service, and for international telephone service to several neighboring countries. The other sizeable agency is the Communication Authority of Thailand (CAT), responsible for postal service, international telephone service to countries not served by TOT, and all telegraph and telex services. The coordination of subsector policies and investment programs between TOT and CAT formally takes place via the representation of each on the other's board of directors. In practice, however, there is considerable scope for improvements in coordination. A committee in the Ministry of Communications, where TOT and CAT are represented, ensures operational coordination between these entities. Although TOT's and CAT's services overlap marginally, their operations do not involve any significant duplication. Telephone density in Thailand as of January 1980 was 1.0 telephones per 100 inhabitants, which is about equal to that in the Philippines (1.1), but substantially below that of other countries in the region, e.g. Malaysia 3.3 and Republic of Korea 7.8. And even though telephone services are heavily concentrated in Bangkok (5.4 telephones per 100 inhabitants), other capital cities in the region have higher densities, e.g.,

Manila 7.9, Seoul 15.1, and Kuala Lumpur 32.1. There is, as a result, considerable excess demand for telephone services and the estimated rates of return to investment in telecommunication are high./1

9.07 In response to these telecommunications needs, TOT has prepared a five year program (1982-86) for development of telephone service in Thailand, over and above ongoing investment projects. In line with the Fifth Plan's objectives the program emphasizes telecommunications investment in the provinces, extension of service to most districts (amphoes), and more expeditious provision of services in main centers. The main targets of the program are to expand the telephone network by about 0.5 million lines in Bangkok and 0.4 million lines in provincial towns and rural areas, representing an increase of more than 100% over preexisting network capacity in provincial areas. The program would also aim at installing long distance public call offices in about 2,500 subdistricts (tambons), a four-fold increase in tambons served, but leaving still about half of all tambons without such service. While this expansion program would in principle represent an efficient expansion of telecommunications services in Thailand, in practice it is unlikely that TOT can complete the program during the period envisaged without jeopardizing the implementation of ongoing projects. These projects are likely to require implementation continuing well into FY 1985 and will already strain to the maximum TOT's capacity to carry out the commercial, administrative and technical tasks involved in connecting new subscribers and properly operating and maintaining the new facilities. Despite expected improvements in TOT's implementation capacity (including the use of private contractors for equipment installation, which TOT has already begun), a realistic schedule for the new program of investments described in para. 9.17 is therefore the period FY 1984-88.

9.08 Thus while the timing of TOT's investment program is likely to require some adjustment, it consists of a reasonable mix of investments addressed to improve and expand service across the country in response to forecast demand, broad regional priorities as expressed in the Plan, and sound engineering practices. However, the following areas of investment

/1 Unmet demand as a percent of total connections is estimated to have increased from 13% in 1977 to 49% in 1982, despite the expansion of the network from 260,000 connections to 430,000 connections over the same period (Report No. 3784-TH, p. 4). The recently approved Fourth World Bank Telecommunications Project in Thailand had a rate of return of 26% by conservative estimates (Report. No. 3784-TH).

planning have been identified in recent World Bank appraisal reports as requiring improved economic inputs in future: First, demand forecasting needs to be improved as TOT is expected to meet the current excess demand in the late 1980s. Second, pricing as an instrument for efficient resource allocation in the sector needs to be improved, even though the present level of average prices of TOT are high enough to maintain a rate of return on revalued capital of at least 10% through 1985 and to generate a minimum of 20% of finances required for its investment program from own resources.^{/1} Third, the design of a longer term program for the development of rural telephone services, and for the provision of public telephones in urban low income areas is required. For all three areas, technical assistance to TOT is being financed under ongoing World Bank projects which should go a long way towards improving TOT's long-range investment planning.

Public Investment Program in Transport and Communications

9.09 Until recently transport and communication represented the single most important category of public expenditure, accounting for about 18% of total consolidated public expenditure during the Fourth Plan period, and some 30% of total public investment expenditure (Table 9.1). This large weight in public spending reflects the heavy emphasis traditionally given by the Thai authorities to infrastructure development, although its share declined in recent years compared with the 1960s and early 1970s, mainly because of the much increased expenditure in the energy sector and the progress achieved in the construction of physical infrastructure. Among transport and communication activities, investment in highways, carried out principally by the Central Government, has generally contributed 50-60%, with this share being lower in recent years than during the first half of

^{/1} TOT also generates financial resources in two other ways: First, it is required to contribute 44% of its net surplus after interest to the Central Government budget. This amounted to Baht 0.56 billion in FY 1981 and is projected to grow to Baht 3.5 billion by FY 1986. Second, TOT receives only a small proportion (about 10%) of revenues on international service provided by CAT (using TOT equipment). CAT, as a result, derives a large surplus which it uses to meet the losses of the postal service. As was argued above, it is in principle appropriate for state enterprises to pay taxes like private firms; however, the specific nature of the explicit and implicit form of telephone taxation is worth careful study, particularly since by the late 1980s excess demand for telephone services is likely to have largely been satisfied.

**Table 9.1: PUBLIC EXPENDITURE IN TRANSPORT AND COMMUNICATIONS
(in %)**

	Fiscal Years							Fourth plan	Fifth plan
	1970	1977	1978	1979	1980	1981	1982/a	1977- 1981	1982- 1986
Share in total public capital expenditure	37.4	31.1	30.2	34.4	31.5	28.1	25.8	30.7	n.a.
Share in capital spending for transport and communications sector:	<u>100.0</u>	<u>100.0</u>	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Highways (Central Government)	63.9	60.1	45.6	40.5	45.4	53.8	53.0	48.5	36.6/d
Rail (SRT)	7.8	2.2	1.0	6.4	2.1	4.4	5.6	3.3	9.3
Air transport/b	2.3	18.6	31.1	29.8	32.4	20.8	10.5	27.0	12.8
Urban transit/c	-	5.1	8.5	4.3	4.5	4.9	6.7	5.3	7.1
Ports (PAT)	3.5	1.2	0.6	1.0	2.2	1.7	1.3	1.5	3.4
Telecomm. (TOT,CAT)	14.6	8.9	11.4	14.0	9.1	10.4	18.8	10.7	29.6
Other	8.0	3.9	1.8	4.0	4.3	4.0	4.1	3.7	1.2

/a Estimate

/b Airport Authority of Thailand, Thai Airways International, Thai Airways Ltd.

/c BMTA, Expressway and Rapid Transit Authority.

/d Central Government development expenditures for transport and communications.

Source: Annex 3; mission estimates.

the 1970s. Air transport investment, mainly in Thailand's international and domestic airlines and for airport facilities, have increased substantially in importance in the second half of the 1970s and contributed 27% during the Fourth Plan period to the sector's investment, although subject to considerable fluctuations. Similarly, telecommunications investment has fluctuated over recent years, averaging at 10% of total sector investment during the Fourth Plan period. Investment in railways, ports, urban transit, and other sectoral activities added up to just under 15% during the same period. The Fifth Plan expenditure program of NESDB as of mid-1982 projected an overall decline in the share of the sector in total public spending when compared with the Fourth Plan period, and envisaged substantial shifts within the sector: Highways investments are to drop from almost 50% of total sectoral investment to only some 35%; the share of air transport investment similarly is expected to drop from 27% to 13%. These declines are to be offset by substantial increases in investments in railways, telecommunications, and, to a lesser extent, in ports and urban transit. The following paragraphs review the planned investments in the various subsectors.

9.10 Roads. During the Fifth Plan period total planned investments of Baht 58 billion consist of Baht 43 billion for construction and rehabilitation, of which more than three quarters are to be devoted to provincial and rural road construction; Baht 14 billion for the maintenance of the existing network; and Baht 1 billion for the construction of bus and truck terminals. This program is based on the assumption of 6-8% p.a. traffic growth. Although traffic growth since 1980 has been slightly lower than expected, this is not likely to reflect a reversal in long-term trends, but the slowdown in economic activity particularly in 1982. In any case, much of the planned road investments can be justified on the basis of existing traffic and is based on feasibility studies already completed. The program is well designed, reflecting the Plans' appropriate priorities in terms of increased emphasis on provincial and rural road construction and on rehabilitation and maintenance. Considering the economic justification of the underlying projects and the fact that the overall program has already been cut back as compared with earlier Plan periods, the road subsector investment program's size and distribution is appropriate.

9.11 Related to and supported by rapid road sector development has been the development of the trucking industry, which has grown rapidly over the last two decades. In view of the inherent flexibility, low cost, and convenience of trucking services, this transport mode has generally been preferred to railways and is likely to capture the greater part of future traffic growth. A study has recently been initiated to assess the Government's concerns of excessive competitiveness in the trucking industry, underutilization of vehicle capacity, noncompliance with traffic and load regulations and its effects on road maintenance requirements, and inefficiencies

in the Government's trucking company (ETO). It is important, however, to bear in mind that, on balance, private trucking in Thailand is a very dynamic, and mostly efficiently operated service sector. Public intervention and regulation, while possibly appropriate on a selective basis, should therefore be designed with great care so as not to restrict unnecessarily the effective and essential operations of this sector.

9.12 Railways. The investments originally proposed for railways in support of the Fifth Plan objectives were Baht 23 billion. They were based on projections of traffic growth of 10% p.a., twice the recent trends, and substantially above the growth rate of 3-5% projected by the World Bank. Short of mandatory restrictions on road use, which are not the Government's intention, the increase in rail traffic is not likely to occur, particularly as the Government intends to reduce the operational deficits of the State Railways of Thailand (SRT) over the coming years by raising tariffs to cost-covering levels. Considering, moreover, that rail capacity use is low, with a 60% passenger occupancy ratio and a 44% load factor for freight, the existing rail system is capable of accommodating a large part of any likely increase in passenger and freight traffic, including that generated by the potential oil shipment from Lan Krabu to the Eastern Seaboard. Fifth Plan investments in the rail system should therefore be designed to rehabilitate and upgrade existing components, many of which are appropriate and economic even in the absence of traffic growth, but do not require more than about Baht 8 billion over the period 1982-86, implying a reduction of Baht 15 billion in the original investment program. After an intensive review, the Government has recently decided to scale down the railway investment program to the level of about Baht 9 billion.

9.13 Urban Transit. The problems of traffic congestion in Bangkok have been worsening in recent decades with rapid increases in population and vehicle ownership. Improvements of existing transport capacity and investment in additional capacity in Bangkok has therefore been generally thought essential. NESDB is currently initiating studies to assess the transport situation of Bangkok and to develop appropriate approaches for certain transport policies and investments. However, three major elements are certain to make up the appropriate urban transport strategy: First, continued improvements in traffic management and regulation; second, increase in the use of high-occupancy vehicles, mainly by strengthening existing public transport in buses and mini-buses;^{/1} and third, selected improvements in existing roads and construction of new peripheral road

^{/1} This will require a serious effort in efficiency improvements in the operations of the Bangkok's public bus company (BMTA), including its possible reprivatization. Furthermore, public policy should support, rather than limit the development of privately-operated public transport modes, including Bangkok's various types of mini-buses.

systems,^{/1} including the completion of the already planned expressways. These investments, which would represent an extension and intensification of past efforts supported in part by World Bank lending, will require some Baht 10 billion during the Fifth Plan period, and should be given priority over the construction of a rapid rail transit system which is currently under consideration for Bangkok. The system would not solve much of the transit problem for a majority of Bangkok residents, since it would tend to switch passengers from bus to rail, but would still leave the most needy sections of the city unserved by any transport facilities. Given the magnitude of the investments required and the substantial financial requirements of operating such a system, the economic and financial viability of a rapid rail system must be assessed carefully before initiating the project.

9.14 Water Transport. Water transport investments originally planned for the Fifth Plan period amounted to about Baht 10 billion, including Baht 1.2 billion for inland waterways, Baht 1.4 billion for coastal ports, Baht 4 billion for deepsea ports, and Baht 3.4 billion for merchant marine promotion. These investments are in line with appropriate Plan projections for water transport demand growth and largely involve completion of ongoing projects or are based on existing feasibility studies indicating their economic viability. The only component which may deserve reconsideration is the substantial support for the development of the merchant marine, which may be unnecessary and involve unwarranted subsidization of international shipping.

9.15 Not included in the original investment program was construction of a major deepsea port at Laem Chabang with an estimated total cost of Baht 10 billion, designed to support industrial and regional development of the Eastern Seaboard area. Its inclusion in the program now is based on the Government's perception that the originally planned rehabilitation of Sattahip deepsea port would not attract private industry and thus serve one of the main goals of the Eastern Seaboard Program. The major question relates to the appropriate timing of the construction of this port. An economic feasibility study is under preparation, which should provide a basis for the appropriate size, timing, and phasing of Laem Chabang port construction. Considering the relatively low growth in port demand in recent years, it may be desirable to stretch the execution of the Laem Chabang project well into the Sixth Plan period.

^{/1} Less than 10% of Bangkok's land space is devoted to roads, a very low proportion by international standards, reflecting the fact that many portions of the city are not served by arterial or feeder roads.

9.16 Aviation. Baht 23 billion of investments are currently planned by the aviation agencies during 1982-86. They include Baht 5.7 billion in aircraft procurement, Baht 5.1 billion for the expansion of Don Muang international airport, Baht 8.6 billion for a new international airport at Nong Ngu Hao, Baht 2.6 billion for an aircraft maintenance center, and Baht 1 billion in miscellaneous airport improvements and air safety and training expenditures. Almost 90% would be financed from external loans, including aircraft procurement, the maintenance center, and the new airport. Aircraft acquisition plans are based on current forecasts of air traffic demand and, given past patterns of flexible airline management, are likely to be quickly adapted if the demand outlook should change. However, the possibility should be explored of leasing, rather than purchasing the aircraft during the Fifth Plan period. This would reduce the investment and foreign borrowing requirements and could represent the most economical solutions to Thailand's aviation needs given the substantial excess capacity presently existing in international aviation. The airport expansion program can be adjusted to concentrate on the completion of the upgrading program at Don Muang airport, while indefinitely postponing construction of a new airport. The Aviation Authority of Thailand (AAT) itself views this airport as not required for another 20-25 years, as the expansion at Don Muang will be sufficient to handle expected traffic growth. A decision regarding Nong Ngu Hao should be postponed for 5-10 years at which time its viability can be reassessed.

9.17 Telecommunications. The investment program for the telecommunications sector for the Fifth Plan as compiled tentatively by NESDB in June 1982 staff amounts to about Baht 57 billion, of which 97% would be carried out by TOT. For TOT much of this investment would be heavily bunched in FY 1984 and FY 1985, due to the overlapping of ongoing projects and work on new projects to be initiated. This would likely strain TOT implementation capacity beyond the maximum feasible limit, and therefore a phasing back of the program is appropriate particularly for the new projects (see para. 9.07 above). The details of investments under a revised schedule have not yet been developed, but it is likely that some 30% of the originally programmed new investments or 20% of total TOT investments can be deferred until the Sixth Plan period. This would reduce total TOT investments by about Baht 11 billion from Baht 55.4 billion to Baht 44.3 billion. This is about Baht 10 billion above the investments included for TOT in NESDB's overall public investment program as of August 1982, which appears quite restrictive given the sectoral targets for the Fifth Plan period. It would imply shifting some 50% of the originally planned expenditure under new projects from the Fifth to the Sixth Plan. TOT plans to finance about half of its capital investment from foreign borrowing, while the remainder would be raised from internal cash generation and subscriber bonds.

Summary Assessment

9.18 The transport and communication sectors will remain important areas for public policy and investment in the 1980s. Aside from the issue of

appropriate pricing and taxation of public infrastructure and services provided in these sectors, the major issues arise in terms of the overall size and distribution of public investments in this sector. Of a total investment program of Baht 154 billion tentatively planned by transport sector agencies for the Fifth Plan period the Mission's assessment indicates that approximately Baht 100 billion appear to deserve priority. The major projects which would be dropped or substantially phased back beyond the Fifth Plan period are railway expansion, Laem Chabang port construction, the new Nong Ngu Hao airport, and the Bangkok rapid rail transit project. Further economies may be feasible, for example in the aviation subsector, depending on air travel demand. Comparing the Mission's program with the overall investment program developed by NESDB in August 1982, the latter is about 10% larger for nonroad transport sector expenditures.^{/1} The NESDB program is roughly comparable to the Mission's program for urban transit, substantially larger for railways and aviation, but smaller for water transport. In any case, the bulk of the savings proposed by the Mission and by NESDB involves savings in planned state enterprise investments, and could result in substantial reductions in foreign borrowing, which would have been required to finance the investments proposed by the agencies.^{/2} In telecommunications, the limitations of the institutional capabilities of public agencies involved in this sector require a more conservative investment program than was originally planned, or than might be appropriate in terms of service demand and narrow economic rate of return considerations.

^{/1} The NESDB program includes all development expenditures for the road subsector, not only capital expenditures.

^{/2} According to NESDB estimates, 48% of the nonroad transport investments (Baht 44 billion) would be financed by foreign borrowing, 18% by domestic borrowing, 24% from self-financing, and 10% from budgetary contributions.

10. HUMAN RESOURCE DEVELOPMENT: POPULATION, HEALTH AND EDUCATION

10.01 Structural adjustment in developing countries, as commonly defined in recent years, has been understood to refer primarily to the changes required to bring about adjustment in the medium term in response to the external economic shocks of the 1970s, in particular the energy price increases of 1974 and 1979. Structural adjustment programs have therefore in general been designed to provide the public policy framework (appropriate incentives, public investments, resource mobilization and regulations) in the areas of agriculture, industry, energy and fiscal policy necessary to achieve external and domestic economic stability while maintaining economic growth momentum. Human resource development in the areas of population growth, health and education were generally not included under this narrow definition of (medium term) structural adjustment.

10.02 A cogent case can, however, be made that public policies and investments affecting human resource development are crucial determinants for a country's ability to transform itself efficiently and equitably from a traditional agrarian society into a modern agricultural and industrial economy, without unduly straining the country's economic stability or social fabric. This case has recently been made for the developing world in general in the World Development Report, 1980, and for Thailand in particular in the last Basic Economic Report.^{/1} Therefore, taking a broad perspective of structural adjustment this Report concludes by reviewing the major current issues in the areas of human resource development and by assessing the public investment requirements in the areas of population, health and education.

Policy Issues and Priorities for Human Resource Development

10.03 This section discusses the policy issues and priorities separately for population planning, health and education. This should not detract attention from the important interrelationships between these three areas of human resource development.^{/2} Where appropriate, the most important of these interrelationships will be stressed in the paragraphs below. Particular attention is given to the area of population policy, since it is in this area that the Fifth Plan may have been overly sanguine about the ease with which continued progress can be achieved.

^{/1} World Bank, Report No. 2059-TH, "Thailand: Toward a Development Strategy of Full Participation," September 1978.

^{/2} See World Development Report, 1980 for an extensive discussion of these interrelationships.

10.04 Population Growth and Policy. The population growth rate has crucial implications for Thailand's economic development and social welfare. This has been recognized in past development plans and strongly reaffirmed in the new Fifth National Economic and Social Development Plan (1982-1986). The main demographic goal of the Fifth Plan is to reduce the population growth rate per annum to 1.5% by 1986. Based on the major decline in fertility in the 1970s, much of which can be attributed to the National Family Planning Program (NFPP), many Royal Thai Government (RTG) officials have anticipated that this new target can also be readily achieved.

10.05 Recent evidence calls this assumption into question. The data suggest that for structural and other reasons, further reductions in fertility will be considerably more difficult to achieve than in the past. Family planning practice is beginning to reach the saturation point in some areas. Concentration on the family planning services side alone may not produce the target growth rate. Further increase in demand for family planning through reduction in desired family size from three to two children is also required. The Fifth Plan recognizes this, spelling out a number of potential "beyond family planning" measures. No focal point has been established, however, for sorting through these proposals, establishing new policies, and setting needed new activities into motion. Other issues associated with making the NFPP even more effective and simultaneously developing a strong demand creation effort through a broad gauged population program have been identified and are spelled out in this section.

Table 10.1: ESTIMATES OF CRUDE BIRTH RATES, 1920-81
(per thousand)

Year	CBR <u>/a</u>	Year	CBR <u>/b</u>
1920	48.8		
1940	42.4	1975	35.6
1950	44.0	1978	30.4
1960	44.3	1979	30.7
1965	41.2	1980	30.1
1968	42.5	1981	29.1
1970	39.4		

/a UN estimates.

/b Estimates based on registration and census data.

Source: Statistical Appendix, Table 1.3.

10.06 (a) Trends in fertility and contraceptive use between 1968-78: Deficiencies in the vital registration system and the absence of any national large-scale fertility survey prior to the mid-1960s make it difficult to assess with any accuracy the exact timing of the turning point in Thailand's fertility. However, as Table 10.1 shows, while there may have been decline in the crude birth rate (CBR) in the 1940s, a sustained decline at the national level was not evident till the mid-1960s. Concomitant with the decline in the CBR, the level of fertility as measured by the total fertility rate ^{/1} (TFR) also declined by 35-40% from 6.3 in 1964-65 to 3.8-4.1 in 1978. This is one of the most rapid fertility declines on record. In addition, in spite of declining mortality, the rate of natural increase is estimated to have declined from 3.1% in 1970 to 2.2% in 1978.

10.07 The factors that contributed to the observed fertility decline can be highlighted by decomposing the change in the CBR to changes in age-structure of the female population, changes in age at marriage and changes in marital fertility. According to the estimates available between 1965 and 1975 the age-structure of the female population changed in a manner that would have led to an increase in the CBR even if fertility had remained constant at 1965 levels. This increase however was more than offset by a substantial decline in marital fertility, with changes in marital structure remaining uncertain, although changes in the proportions single between 1960 and 1975 indicate that changes in the marital structure may have contributed to the decline in the CBR. Marital fertility at the national level declined by almost 40.0% between 1969/70 and 1978, with the most substantial declines taking place in the fertility of married women over 25 years of age. Declines in fertility were larger among rural than urban women, thereby eliminating the pronounced rural-urban differentials that existed at earlier periods. Between the mid-1960s and mid-1970s the most dramatic decline was in the North, where fertility, as measured by the TFR, fell by over 40% from 6.47 to 3.74. In the Central Region, the TFR declined from 5.90 to 4.11, but it remained over 6.0 in the Northeast and the South, with the latter region experiencing a very slight increase.

10.08 This substantial decline in marital fertility can be attributed to the increase in the share of married women aged 15-44 using contraception, which rose from 14.0% in 1969/70 to 53.0% in 1978. In 1978, the highest rates

^{/1} The total fertility rate is the average number of children that would be born to a woman during her lifetime if she were to pass through all her childbearing years conforming to the age-specific fertility rates of a given year. The TFR is the most basic fertility indicator.

of use were found in urban areas (63.0%), and in the North (59.0%) and Central (60.0%) regions; the lowest prevalence rate was in the South (36.0%).

10.09 (b) Trends between 1978-81: Since 1978, developments in both fertility and in contraceptive use are cause for concern, since fertility declines and increases in contraceptive use appear to be levelling off. For fertility, registration records indicate a continued decline in both the CBR and the TFR, albeit at a slower rate. Between 1978 and 1981, the CBR declined by 0.4% p. a. compared to 3.4% p. a. in the previous decade (1968-1978). The rate of decline in the TFR, which was 4.0% p. a. between 1965 and 1978, dropped to 3.7% p.a. between 1978-81.

10.10 Survey data, in contrast, indicate a reversal in the trend in fertility. The CBR is estimated to have increased from 28.4 per thousand in 1978 to 31.4 in 1981. Corresponding to this increase in the CBR is the increase in the TFR, which rose from 3.75 in 1978 to 3.95 in 1981. The available information on age and marital structure and marital fertility is examined below in an attempt to clarify the direction of the trend in fertility.

10.11 Available evidence shows that the proportion of the population comprising of women in the reproductive ages has increased since 1976, indicating an age-sex distribution conducive to a higher CBR. Therefore, the two trends in birth rates suggested by registration and survey data indicate different interpretations. Based on the assumption that there has been no deterioration in the registration of births between 1978 and 1981, the decline in the CBR based on registration data not only compensated for changes in the age-structure, but also reflects a real decline in fertility. In contrast, the CBRs calculated from survey data indicate some actual increase in fertility, since the rise in the CBRs between 1979 and 1981 (3 points) was much larger than that expected due to change in the age-sex structure (1.2 points). The evidence on age at marriage from survey data shows that the mean age at marriage for respondents 25 years and older has remained relatively constant for the past 20 years, indicating that any increase in fertility cannot be attributable to changes in nuptiality patterns. Finally, evidence from the surveys on marital fertility shows that with the exception of the South, marital fertility increased in all the other regions between 1978 and 1981. The overall increase is reflected in the marital fertility of women aged 20-34, which represent the prime child-bearing age groups.

10.12 Summarizing the evidence presented above, the increase in fertility indicated by the Contraceptive Prevalence Survey (CPS) data resulted from increases in marital fertility and in the proportion of women in the child-bearing ages, while age at marriage appears to have remained relatively constant. On balance, the trends in fertility derived from registration records appear to be more reliable than those derived from survey data because there is no substantive evidence for a decline in the effectiveness of the registration process, whereas sampling errors and differences in methodologies, questions, coding and analytical approaches used for the two

surveys may account for the apparent rise in fertility. A final conclusion on the actual trend in fertility will have to await further analysis, but this will not reverse the finding that there has been at best a slowdown in the pace of decline of fertility since 1978, and at worst a reversal of earlier trends./1

10.13 Data on contraceptive use confirm slowing down or levelling off of fertility decline./2 The rate of increase in new acceptors of family planning methods reached a peak in 1978, and has since declined, with an absolute decrease taking place since 1981. Pill and sterilization acceptors as a proportion of all acceptors declined steadily after 1978 with increases in acceptors of the IUD and injectables not being enough to offset the declines in pill and sterilization acceptors (Statistical Appendix, Table 1.6). Similarly, although the proportion of the women practising contraception has been increasing, the rate of increase has slowed down. For example, between 1975 and 1978, the proportion of current users increased from 37% to 53%, an increase of 16 percentage points. Between 1978 and 1981 the increase was only 5.0 percentage points, representing only one-third of the increase in the preceding three-year period.

10.14 While some of this slowdown in the growth of contraceptive is to be expected after the tremendous surge in family planning in 1975-78 and as family planning is becoming more widely spread, the extent of the slowdown since 1978 is cause for concern, particularly as regards the scope for future increase in the coverage of family planning. In addition, there was also a decrease in the effectiveness of contraceptive use in reducing fertility. For example, between 1975 and 1978, a ten percentage point increase in contraceptive use was associated with a decline of 3.3 per thousand in the CBR; between 1978 and 1981, it was associated with a decline of only 2.6 per thousand.

10.15 This reduced effectiveness of contraceptive use in controlling fertility may be related to the fact that desired family size in Thailand (3 children) is still relatively high. According to the results of the National Survey of Fertility, Mortality and Family Planning (NS) conducted in 1979, economic factors were predominant in attitudes towards large families, with nearly 50% of rural women and 33% of urban women giving help in work and support in old age as the advantages of large families. Anxiety about child mortality was also mentioned by over 10% of the women as a disadvantage of having a small family. While infant and child mortality has

/1 Similar slowdowns, or reversals, in the decline of fertility have been encountered in other developing countries with similar earlier successes in reducing fertility. Mauritius, for example, experienced an increase in the CBR from 23 to 27 between 1973 and 1980, because a substantial increase in proportion of women in the childbearing age coincided with only a small decline in fertility (adjusted for changes in age structure).

/2 The data do not however confirm the reversal in the fertility rate observed in the CPS surveys.

been declining in Thailand, it nevertheless remains at a moderate level (in 1980, the infant mortality was 55 per 1,000 live births); moreover, it is quite likely that the extent of this decline may not be fully realized by all women.^{/1} Preliminary analyses of the 1978 CPS data indicate that child mortality, level of education of the couple, age at marriage and women's participation in the labor force are all factors strongly influencing desired family size. If further decreases in fertility are to be realized, concerted efforts will have to be made to influence these variables in conjunction with continued expansion of family planning services.

10.16 (c) Fifth plan population and family planning targets: There are indications that Thailand may be approaching a saturation point in both contraceptive prevalence and in the impact of contraceptive use on fertility. In conjunction with an age structure that is conducive to increases in the CBR, these indications raise some concerns about the feasibility of the ambitious target established by the Fifth Plan to reduce the population growth rate from 2.1% in 1981 to 1.5% in 1986. Two issues need to be examined: (1) Given the current demographic situation, is the target rate of population growth feasible? (2) Can the NFPP be relied upon to achieve the population goals, as has been done in the past?

10.17 Given the current age-sex composition, a growth rate of 1.5% in 1986 would imply a decline in the TFR from an estimated 3.7%^{/2} in 1981 to 2.6 in 1986. This represents a reduction of 1.1 in the TFR in five years. The realization of this goal is problematic due to the limited scope for further increasing contraceptive use. Between 1981 and 1982, current use of contraception decreased slightly from 59% to 58.7%, representing an annual rate of decline of 0.5%. This compares very unfavourably with the annual average rate of growth in prevalence of almost 8.0% between 1975 and 1981, during which time the TFR decreased by 1.3 points.

10.18 In view of this, a reduction of TFR much below present levels will require an effort which goes beyond the traditional programs of the NFPP, since it will require a reduction in the desired family size in Thailand. As stated earlier, reduced child mortality, increased couples' education and age at marriage and a higher labor force participation rate among women can be expected to contribute to a reduced demand for children, but will require specially designed development programs, focusing in particular on the regions outside Bangkok. Given the lag in the effect of development on reducing demand for children, and the limited scope for further impacts of contraceptive use on fertility, the population growth target of the Fifth

^{/1} "A Preliminary Report of the National Survey of Fertility, Mortality and Family Planning in Thailand, 1979." Paper No. 39, The Institute of Population Studies, Chulalongkorn University, Bangkok, Thailand, 1981.

^{/2} Using the estimated 1980 population of Thailand given in the World Development Indicators, 1982, this is the TFR that would yield a growth rate of 2.1% in 1981. this rate is similar to that estimated from registration of births for 1981.

Plan will be difficult to meet under the best of circumstances./¹ The Government has already responded to this recent evidence by setting up an interagency group involving MOPH and NESDB to review and assess the implications of the data in fertility decline and to develop appropriate policy responses.

10.19 (d) Implications for population policy. The Fifth Plan proposes a number of important policy and program initiatives, designed to respond to several constraints in the provision of family planning services, including pronatalist laws and regulations, major gaps in population education and communication programs, and weak program coordination. The proposed policy changes and measures are designed to (a) strengthen the family planning program by targetting it more effectively on groups with low acceptance rates; (b) revise laws and regulations to permit easier access to sterilization and abortion, and to lower income tax rates on unmarried individuals so as to encourage later marriages; (c) provide incentives for sterilization and limitation of family size; and (d) expand and intensify population information/education/communication (IEC) and training activities. The Plan has thus identified a number of important areas in the Thai population program requiring strengthening, and others have emerged in the course of the Bank's recent work in this area. When these are combined they fall into two main clusters: gaps and constraints in the present family planning effort, and various aspects of demand creation that require further attention.

10.20 Four main gaps and constraints have been identified in the present family planning effort:

- (1) Reliance on a single model. Basically a single approach was used in the past in delivery of public family planning services and IEC, and it proved effective in reaching those in the mainstream of Thai life and culture. Some important groups were neglected, however, including unmarried women, ethnic and religious minorities, low-income groups, and slum dwellers. Appropriate variations in service delivery strategy and content of IEC messages are beginning to be implemented to make the program more responsive to these groups' needs. It was agreed recently that the IEC program would orient more of its activities to specific audiences, but further efforts in this direction are still needed.

¹ The experience in other countries also shows that it is considerably more difficult to move from a 2.0% to a 1.5% population growth rate than is a decrease from 2.5% to 2.0%.

- (ii) Organizational constraints in MOPH. Several constraints make it unlikely that the Ministry of Public Health (MOPH) will be able to increase yet further its emphasis on family planning. During the 1970s the ready availability of external resources for family planning permitted strong central and regional family planning units to develop. This led to some inevitable rivalries on the part of less well-endowed units and eventually generated serious concerns about balance between units in MOPH. With the growing national commitment to a strong community-based primary health care program and a decline in resources for family planning, it seems inevitable that the amount of time devoted to family planning by field staff - and perhaps their commitment, too - is going to decline and that MOPH is going to strive for more balance in its programs by building up other activities. (Some of these activities may indirectly influence fertility, however; see para. 10.21(iv).)
- (iii) Limited involvement of other agencies. MOPH has provided training in family planning to the staff of other government agencies involved in delivery of health services such as the Border Patrol Police. Some of these agencies do not appear, however, to have set up systematic family planning service programs as follow-up to this training. Similarly, no concerted effort has been made to involve grass roots organizations in promoting family planning, such as those working in the slums of Bangkok.
- (iv) Restricted availability of the injectable contraceptive. There is considerable unmet demand for the injectable contraceptive (DMPA), which is a very popular form of contraception. Program managers have been hesitant to make DMPA more widely available, however, due to its somewhat greater cost in comparison with the pill and also, perhaps, because of political considerations since DMPA has not been approved for contraceptive purposes in the United States. (Drug regulatory agencies in Sweden and many other countries, along with WHO, have approved its use, however.)

10.21 Another set of major issues associated with the Thai population program relates to the need for greater emphasis on demand creation. Due to widespread public interest in family planning, the population effort has thus far focused largely on the provision of family planning services. This strong emphasis on provision of services and related information has served Thailand very well as indicated by the remarkable decline in fertility experienced over the past decade. However, a second major approach is now called for, namely, one that can stimulate a reduction in desired family size from three to two children. This is a difficult area for implementation, but four main constraints have been identified which inhibit the strengthening of the demand creation side of the program:

- (i) Absence of a focal point for a broad population program. MOPH has provided a strong focal point for the Government's successful family planning activities. Also needed, however, is an institutional focal point for a broad population program that goes beyond family planning and carries out the Fifth Plan recommendations. Among the tasks it could help perform are to identify needed policies and interventions, coordinate program design and implementation, monitor program impact, and mobilize needed resources. Clearly an inter-agency/inter-sectoral effort is required and hence an agency without direct implementation authority would be the most appropriate institutional home for this unit, e.g. the NESDB.
- (ii) Lack of overall monitoring of current population activities. A number of population activities have been launched in different sectors, but outside of the family planning program itself very little continuing monitoring of these efforts is underway. In particular, no comparative data are available to enable the Government to make decisions regarding which efforts to alter or curtail and which to expand.
- (iii) Limited adoption of important pilot experiences. A number of innovative approaches to motivating family planning acceptance and reducing family size aspirations have been piloted by a prominent NGO, Community-based Family Planning Services. While many of these ideas are mentioned in the Fifth Plan, very few have yet been picked up and adopted for nationwide application by the Government. In part, this may be due to a lack of data on the cost-effectiveness of these schemes.
- (iv) Insufficient emphasis on maternal and child health services. It is likely that further reductions in fertility will depend in part upon parents' becoming more confident that their children have a high chance of surviving. While MOPH is developing many of the elements of a strong maternal and child health (MCH) program, this area requires further attention, including development of stronger and more systematic planning and implementation arrangements.

10.22 In conclusion, the RTG must now take urgent steps to operationalize the population section of the Fifth Plan, which correctly identifies the need for new strategies and a broader gauge population program. Based on the above reviews of demographic and institutional issues associated with the Fifth Plan target of achieving 1.5% population growth, several suggestions can be made regarding next steps:

- (1) Further analysis of available data is required to confirm and sharpen the preliminary findings summarized above regarding the apparent leveling of fertility decline and its causes.

- (ii) A review of the national population program should be carried out to determine the need for more effective interventions. Taking into account the various reviews of the NFPP carried out in recent years, it should focus on the institutional framework required for formulating demand creation policies and coordinating their implementation.
- (iii) The Government should strengthen efforts, perhaps building on the growing capacity in NESDB's Manpower and Population Division, to design and coordinate the broader, inter-sectoral population program that is required to lower family size norms and generate adequate demand for family planning.

10.23 Health. Government involvement in the health sector in Thailand is relatively low, and much less extensive and pervasive than for education. This is reflected in the relatively high proportion of health and related services provided by the private sector and in the relatively small share of health expenditures in total government spending. Nevertheless, the Government's role in the sector is essential, given its power to regulate and complement private activities in many important ways, especially through promotion of preventive measures, and since it can convey major potential benefits particularly for the poorer regions and population groups. What is more, there are important synergistic interactions and complementarities among the various social services, including education, health, nutrition and family planning, which involve extensive externalities to which only public intervention can respond, often without substantial public expenditure.^{/1} The Thai authorities have, of course, been well aware of the importance of health and related services as reflected in the prominence which the health sector has been given in successive national development plans. This section highlights some of the major issues in health service provision in Thailand.

10.24 (a) Health conditions: General health conditions in Thailand have significantly improved over the last two decades, but in terms of some important health and nutrition indicators (in particular infant mortality rate and caloric intake) Thailand does not perform well by international standards (see Chapter 2 above). What is more, there is evidence that the rate at which improvements take place has been slowing down in recent years. For example,

^{/1} For a full assessment of these interventions and externalities, as well as a wide ranging discussion of social service provision and policies, see World Development Report, 1980.

infant mortality has hardly declined between 1975 and 1980.^{/1} In addition, the Fifth Plan document states that mortality rates may have been rising in recent years in Thailand, particularly in rural areas. The major diseases are still those that can relatively easily be prevented, including diarrheal diseases, neonatal tetanus, other communicable diseases and, as a reemerging problem, malaria. Serious malnutrition among 10-15% of Thailand's children, and very poor access to clean water and sanitation and to preventive and promotive health services are major contributing causes. Estimates indicate that only about 20% of the Thai population have continuous access to safe water and only 40% access to safe excreta disposal. Particularly the former is very low by international standards. What is more, health conditions, and access to health and sanitation services are very unequal across regions and within (Table 10.2). Even within Bangkok, which has the best average service levels, there are serious shortcomings in health and nutrition conditions and in health service availability for slum areas. In sum, there are serious shortfalls in health, nutrition and sanitation in Thailand requiring major efforts by the public sector. Some of the main issues in health and related services arise in the provision of services to disadvantaged regions and population groups, the population and nutrition programs, the provision and availability of pharmaceuticals, financing and cost recovery, and institutional issues. These concerns are briefly discussed in turn, since they have a bearing on the design and priorities for public health sector programs and expenditures.

10.25 (b) Access to health services: Given the nature of Thailand's health problems, one of the major issues is how to provide readily available, widely distributed access to low-cost health services for the poor regions and population groups. Since the Fourth Plan, the Thai government has endorsed the Primary Health Care (PHC) approach in an attempt to extend the range and quality of services received by the rural population, and has begun to focus on the most vulnerable groups through its Maternal and Child Health (MCH) services. However, these efforts are still insufficiently developed. The provincial health services program supports predominantly expensive curative services provided by the large regional and provincial hospitals. The small district hospitals and local health centers and midwifery clinics have only had limited success in developing the MCH approach and have not been very successful in their outreach programs to supervise the work of primary health care volunteers in nearby villages. This limited performance is more a reflection of the difficulties involved in setting up a program of this type (because of inadequate management capacity and poor supervision) and the lack of resources to pay for essential inputs, such as transport, fuel or per

^{/1} In this, as well as in other areas of health statistics in Thailand, there are serious problems regarding the reliability of data, making hard and fast assessment and interpretation of trends difficult. Nevertheless, the information available indicates that there is reason for concern about continued improvements in health sector conditions in Thailand.

Table 10.2: REGIONAL HEALTH AND HEALTH SERVICE INDICATORS

**A. Crude Death Rate (CDR) and Infant Mortality Rate (IMR)
1965 and 1975 by Region
(per thousand)**

	CDR		IMR	
	1965	1975	1965	1975
North	12.4	10.3	96.5	96.0
Northeast	11.4	10.0	83.4	54.4
Center	10.4	6.8	94.0	49.5
South	8.6	10.3	48.5	60.4
Bangkok	n.a.	4.3	n.a.	31.0

Source: National Statistical Office. Cited in Medhi Kronhaew, "The Distribution of and Access to Basic Health Services in Thailand." In Basic Needs and Government Policies in Thailand. Edited by Peter Richards. Singapore: ILO, 1982.

B. Number of Health Personnel per Thousand of Population, 1977

Major types of health personnel	Bangkok Metropolitan Area	Rest of country
Physician	0.78	0.06
Nurse	1.77	0.18
Pharmacist	0.42	0.01
Dentist	0.12	0.01
Nurse aid	0.89	0.24
Health worker	0.23	0.15
Midwife	0.12	0.18

Source: Health Planning Division, MOPH. Cited in M. Krongkaew, op. cit.

diems, rather than the lack of effort or commitment to the programs by the relevant agencies. To overcome some of the difficulties in these programs, the Ministry of Public Health (MOPH) has recently developed several schemes to increase community involvement, but a shift in emphasis in budgetary allocations is also required. In Bangkok, the Bangkok Metropolitan Administration (BMA) has failed to tailor its services to the needs of the urban poor, by not adequately integrating hospital and health center networks and by giving disproportionate priority to the former in the allocation of financial and staff resources.

10.26 (c) Nutrition programs: In the nutrition area, Government actions in the past have mostly focussed on interventions through the health delivery system, albeit on a very limited basis geographically. There need to be expanded outlays for nutritional programs and a broader approach is required, linking nutritional considerations with agricultural and food policies. Further study and development of policy programs is needed in this area.

10.27 (d) Medical drug production and marketing: Closer review of the public sector role in drug production and distribution is warranted because of the large expenditures involved with a high foreign exchange component. This is compounded by the mismatch between needs and expenditures and by various inefficiencies in the system. Means to reduce these inefficiencies and to contain costs must be found. At present, around Baht 10 billion worth of drugs are consumed in Thailand per annum, 10% of which goes through the public sector. Because of Government's commitment to launch primary health care nationwide, including rapid development of village drug cooperatives, it is almost certain that public expenditure for drugs will increase rapidly in the next few years. Especially close attention should be paid to the village drug cooperatives, which may stimulate excessive drug consumption leading to various adverse effects -- side effects, drug induced resistances, and needless expenses on the part of the public. The function and scope of the Government Pharmaceutical Organization (GPO), which is the major public sector drug procurement and distribution agency, need to be reassessed. The current list of over 400 essential drugs should be reviewed to assess whether it is a manageable number of essential drugs that can be produced efficiently for the use of MOPH facilities and village drug cooperatives. The current heavy GPO involvement in manufacture of nonessential drugs should also be reviewed, possibly phasing out this operation or transferring it to the private sector. Hospitals are spending a significant amount of their discretionary funds (obtained through fees and donations) to purchase expensive branded drugs. It is estimated that savings of 20-30% would be achieved by bulk procurement of generic drugs. Recent steps by MOPH to limit use of drugs not on an essential drug list is a useful step in the right direction. The present public sector distribution system for drugs and vaccines needs to be rationalized. In many cases, drug deliveries are delayed due to management and transportation problems. A significant bottleneck is the lack of regional, provincial or district level warehousing, compounded by inadequate transportation. While more analysis is required to determine the most efficient relationship between public and private sector, it is obvious that the public sector role in some

areas must be strengthened. Among them are regulation of abuses, such as excessive use of antibiotics, and consumer education.

10.28 (e) Cost recovery and financing of health services: Some cost recovery currently takes place for public health sector services, including fees for in-hospital care, for certain out-patient health and family planning services, and for drugs. Considering the amounts which households in Thailand spend on health (an estimated 7.4% of household income for rural households, and 3.4% for urban families), there exists considerable ability and willingness to pay for health services. A more systematic policy toward health cost recovery, as well as the development of an insurance system or of community group health plans, should therefore be given considerably more attention than has been the case so far in Thailand.

10.29 (f) Scope for improved efficiency in the health sector: While various MOPH programs are under-funded and critical support costs neglected (e.g., fuel and per diems for supervision and extension of services), in view of the present fiscal stringencies, it is not very likely that the health budget can be increased much if at all in real terms over the levels already planned. Hence it is important that MOPH review the opportunities for improving the efficiency of its programs in order to assure that the maximum health benefit is being realized through its use of scarce domestic resources and foreign borrowing. Among the possible steps toward increasing the efficiency of the sector are the following:

- (i) examining the trade-offs between increasing staffing levels and associated salaries, on one hand, and providing existing staff with more operating funds. This is a particularly important consideration at this time since the Civil Service Commission has recently approved much higher standard staffing patterns for two basic categories of health institutions: small (10-bed) district hospitals and tambol health centers. The long-range cost implications of these staffing patterns have not yet been seriously analyzed;
- (ii) reviewing existing and proposed programs with an eye to their cost-effectiveness and shifting funds to those -- often preventive activities -- that are going to have a greater impact on health for a given investment. This would help determine a small set of priority activities on which MOPH could concentrate much more of its resources;
- (iii) eliminating costly and duplicative support structures at the central and regional levels that design and conduct in many different divisions training, health education, logistical support, data collection and other activities in support of field staff with, at present, almost no coordination. In

many cases, collaborative planning and implementation of activities would simultaneously reduce costs and increase quality;

- (iv) re-examining the relationship between the public and private sector, which is currently seen by MOPH more in competitive than in complementary terms. Both commercial organizations and non-profit agencies are active in health matters in Thailand and more effort should be devoted to working out a productive division of labor among them. While MOPH's desire to compete with the private sector is basically well motivated, the attempt to drive out questionable private sector activities through competition is very costly and distracts the public sector from doing those things it is uniquely qualified to do.

10.30 (g) Institutional issues in health administration: Linkages and coordination between the main providers of health and related services are minimal. For example, while the main center of public sector health care is MOPH, the Ministry of Interior maintains a nationwide network of paramedics, called "tambol doctors", unrelated to MOPH efforts. In addition, a large proportion of services are provided by private sources with little consideration of the potential for increased linkage or collaboration between the various systems and types of services, or an assessment of how Government intervention ought to be focussed to provide specifically those types of services which the private sector is not likely to offer even though required. Furthermore, within MOPH activities are often fragmented, duplicative or lacking sufficient prioritization. MOPH has been very progressive in bringing together its provincial level activities under the umbrella of provincial health offices, but it has not developed adequately overall planning and coordination mechanisms at the central level. Particularly serious in Thailand, as elsewhere, has been the traditional neglect among health administrators of financial resource planning, including the link of program targets with budget allocation decisions. This has led to imbalances between different system inputs (e.g., inadequate transport fuel for village level services) and overall neglect of some activities (e.g., maternal and child care). An assessment of overall health system requirements and priorities and the strengthening of financial planning tools is an urgent task for institutional reform in Thailand's health sector. As a result of the lack of attention given to financial planning in Thailand's health sector and the resulting serious limitations on available financial data, the scope for analysis of past health sector expenditures and of planned future expenditures is severely constrained.

10.31 (h) Fifth Plan priorities for health: The Fifth Plan's broad assessment of health sector problems and issues leads to very similar conclusions as those drawn above, since it noted the following priority areas for improvement: (a) continuing high levels of preventable illnesses; (b) continued health service disparities between urban and rural areas; (c) inadequate distribution of health personnel; (d) need for greater community participation in solving community health problems; (e) the need for greater decentralization of decision making and resource allocation in health programs; and (d) the need for better health data collection and analysis. In response to the special health needs in rural poverty areas, MOPH has been given the responsibility to develop, as part of the Fifth Plan's Poverty Eradication Program, plans to strengthen health, water and sanitation, maternal and child health, family planning and nutrition services in the 286 designated "poverty districts." MOPH has initiated this effort with an emphasis on the construction of rural health facilities and expansion of a network of voluntary village-level health workers with strong relationships to the formal health service delivery network. A number of community-based programs are then to be built on or extended from this infrastructure (nutrition, family planning, communicable disease control, water supply and sanitation).

10.32 Education.^{/1} In quantitative terms, educational service provision in Thailand is doing quite well. Participation rates in primary schools are high, having reached some 96% of the primary school age group in 1979. For secondary schools, the participation ratio was 39% in 1980. But these ratios are hiding a number of problems in Thailand's education system: (a) Declining enrollment in primary education: while some decline is to be expected as a result of the slowdown in population growth, the recent UNESCO sector survey concluded that the actual decline in primary school enrollments has been much more rapid than can be explained by demographic factors alone;^{/2} (b) Regional disparities in educational opportunities: while reliable statistics on educational opportunities and achievement are scant, the available data indicate substantially lower enrollment ratios for primary and secondary education, significantly lower transition ratios from fourth to fifth grade, higher dropout rates, and higher percentages of repeaters in the poorer rural areas of the country and the slums of Bangkok;^{/3} (c) General problems of

^{/1} This section draws on UNESCO, "Thailand: Education Sector Survey," Paris, October 1982, Draft.

^{/2} UNESCO, op. cit. The survey also concludes that because of data weaknesses it is currently impossible to verify the causes for this slow down and recommends further analysis of the enrollment trends.

^{/3} UNESCO, op. cit., Annex 3.

educational quality: the UNESCO study identified quality problems in education which apply across regions, including an apparent decline in transition rates between grades, insufficient teaching materials and equipment for all grades, weak links between secondary and higher education, poorly coordinated curriculum development, and lack of linkage between vocational education and manpower needs. In assessing these problem areas a number of issues need to be addressed regarding education policy and public spending in the sector. These include the setting of educational priorities across types of education; quality improvements versus quantitative expansion in services; broader access to educational opportunities for those currently most disadvantaged; and the institutional framework of public education planning and management.

10.33 (a) Educational priorities: Estimates of the rates of return to education in Thailand, as elsewhere, indicate that (a) educational investments on average have high social rates of return; (b) rates of return are higher for primary than for secondary education and lowest for higher (university) education (Table 10.3); and (c) rates of return to educational investments are likely to be even higher than the average rates if expenditures and complementary policies are carefully targetted to high return activities and quality improvements within each level of education. From these findings one can in broad terms conclude that education should overall retain a high priority in public sector spending; that primary education continues to deserve high emphasis; and that careful assessment and targetting of improvements at all levels is essential.

Table 10.3: ESTIMATED SOCIAL RATES OF RETURN ON EDUCATION

Source	Primary	Secondary	Higher education
Sethasathien (Thailand)	63.0	31.0	18.0
Psacharopoulos (Thailand)	30.5	15.0	11.0
Psacharopoulos (Asian average)	16.0	12.0	11.0

Source: K. Sethasathien, Thailand: Using Cost Benefit Analysis to Derive the Rate of Return in Different Levels of Education. Unpublished Phd. Dissertation, Florida State University, 1977.
G. Psacharopoulos, Returns to Education: An Updated International Comparison. Comparative Education, Volume 17, No. 3, 1981.

Note: The Sethasathien estimates may be biased upward due to a lack of shadow pricing of some important parameters. The rate of return data shown are based on information dated ten or more years. However, rates of return to education are not likely to have fallen sharply over time in Thailand according to a recent survey of evidence (Psacharopoulos, 1981).

10.34 (b) Quality vs. Quantity. Expansion of education services in quantitative terms is not the major issue for most broad categories of education in Thailand. In fact, for primary education drops in school enrollments as a result of declining population growth rates in recent years are expected to lead to a reduction in total new enrollments from 7.3 million in 1979 to about 6.5 million in 1986, and thus to fewer required primary school places, school rooms and teachers. The UNESCO study has, however, identified an urgent need for improvement in the quality of primary schools, with a major focus on improved materials and equipment, linked to less passive teaching methods, which in turn require extensive in-service teacher training, and improved monitoring and assessment of primary teaching quality. For secondary schools, the main concerns are a continued expansion and upgrading of facilities and quality improvements related to improved basic science teaching, expanded and upgraded availability of teaching materials and equipment, and related improvements in teacher training, emphasizing in-service training of existing teachers, rather than the further expansion of already overexpanded teacher-training institutions.

10.35 For vocational training, again a mere quantitative expansion of services would be inappropriate and probably wasteful. Although vocational training can generally be regarded as yielding high benefits since it provides the potential labor market entrant with specific and readily applicable skills, two considerations are important in Thailand. First, currently the highest unemployment rates for any type of educational level are found among those with vocational training. This, in connection with other evidence indicates that investment in vocational training in Thailand has not been linked sufficiently with analyses of manpower and skill requirements. The UNESCO study concludes that short, but intensive and job-related vocational courses would be more appropriate than the extended, generalized vocational training currently offered in many cases. Second, the recent diversification of the secondary schools into vocational training and education areas probably has lessened the need for separate vocational school facilities, particularly those of the more traditional type, and requires a more effective overall organization and administration of technical skills training in Thailand. Again, improved and modernized training materials and equipment are important elements of a vocational training strategy. Higher education, which in relation to the number of students served has absorbed a high share of public expenditures, requires relatively less emphasis in terms of public expenditures than do other educational services, first, because of the consistently lower estimates of rates of return to university education, and second, because of a higher potential for self-financing in higher as compared with primary or secondary education. However, in line with Thailand's projected economic and social development, there is a need for selective financing of the development of high-level technological and scientific (including agricultural) manpower as part of a long-term program to improve relevance, efficiency and quality in higher education. Quality improvements should also be aimed for, particularly in terms of improved linkage between secondary and higher education,

by bringing the university entrance requirements in line with the new secondary school curricula which have a broader, more practical skills-oriented, rather than academic emphasis.

10.36 (c) Broader access to educational opportunities: Besides these general improvements in educational services, especially in their quality, the restricted access to education by important segments of the rural and poor urban population must be specifically addressed. Recent studies have demonstrated that the returns to primary education in farming in Thailand are high (between 18 and 29%)/1 because of the significant impact which improved educational levels of farm households have on farmer efficiency for a given technology, and on the probability of adopting a new technology (especially fertilizer use). The evidence also indicates that this return is significantly higher than for urban education or than that found on average for similar investments in other countries, making a particularly cogent case for broader and intensified efforts in improved basic education for rural areas in Thailand. Increased educational efforts outside the major cities also are likely to be important for the development of nonagricultural activities in the rural areas, and even where the labor force eventually migrates to the cities, improved educational levels will make the migrants that much more productive in their urban environment. In addition to these efficiency arguments there are, of course, important equity considerations in fostering rural educational opportunities, not only because the poor are predominantly found in these areas, but also because urban/rural income differentials are highest for those with low levels or no education, while they are virtually nonexistent for the population with an educational level of grade 10 or higher./2

10.37 The difficulty in improving educational access and opportunities among the rural population and urban poor is that the costs of providing standard educational services for these groups are often high, because of their wide dispersion, language barriers, and higher incentives required for teachers to move to the rural areas, or because of the special incentives required to draw in children of urban slums. The lowering of standard

/1 Jamison and Lau, Farmer Education and Farmer Efficiency, Baltimore, Johns Hopkins Press, 1982.

/2 Ch. Pichai, "The Rate of Return to Investment in Thai Education," The Philippine Economic Journal, Volume 18, No. 3, 1979.

educational regulations may therefore be required to permit multigrade teaching (i.e., one teacher for more than one class), provision of transportation for children, more extended use of radio and eventually of television programs. Short-term, informal teaching methods should also be developed since children in these groups are often important secondary income earners for their low-income households, and may not find it possible to attend regular school hours throughout the year. Improved and amended teaching materials would again be highly desirable, linked with on-site teacher training related to these special and flexible programs.

10.38 (d) Institutional issues: The educational sector in Thailand lacks a strong central agency to direct and coordinate educational planning and administration, both across the Ministry of Education (MOE) and other agencies and within MOE. For example, the administration of primary education is largely separate from that of secondary or post-secondary education. The planning division in MOE is currently frequently by-passed. As a result, it is difficult to translate national educational policy into viable programs and projects, especially since a management information, monitoring and evaluation system is also largely missing. At the regional and subregional level, there is currently a lack of integration of educational administration at the various jurisdictional levels and types of education, and in many cases the precise functions of each administrative body are only poorly defined. The Government, with Bank assistance, is currently aiming at strengthening the central planning as well as the regional and subregional administration capabilities which will be an important component of any program to implement the Government's educational strategy. Moreover, as part of the general improvements in the Central Government programming and budgeting capabilities it is also intended to strengthen educational expenditure programming and budgeting.

10.39 The priorities for educational policy and investments can therefore be summarized as follows: (a) continued efforts to extend coverage and access to primary education in specific rural areas and in urban slums, and improvements in primary education quality; (b) increased coverage of lower secondary education, particularly in the North, Northeast and South and upgrading particularly of basic science teaching in secondary schools; (c) selective improvements and extension of vocational programs in line with specific manpower needs assessments and in areas not covered by vocational training programs in secondary schools; (d) reduction in the share of public expenditure going into higher education and increased reliance on self-financing with selective Government financing of technological and scientific education; /1 (e) increase in the share of overall expenditures

/1 While on balance increased self-financing is likely to have beneficial equity implications, since the substantial subsidies currently offered to university students accrue mainly to upper-income groups, safeguards must be introduced to permit access to university training by low income students (fellowships, loans, etc.)

directed to educational supplies, material and equipment, particularly for primary and secondary education; (f) upgrading of teacher qualifications, rather than increased numbers of teachers, so as to permit an adaptation to the changing balance in school enrollment between primary and secondary levels, and to permit the improvements in educational quality aimed for in primary, secondary and vocational education and in the education for disadvantaged population groups; and (g) strengthening of education planning, administration and evaluation. These specific priorities are consistent with the broad goals and objectives set forth in the Fifth Plan for the education sector, which emphasized the improvement of educational quality especially for primary education, the expansion of secondary education, universal access to primary education and improved educational services for those groups currently not fully benefitting from public education, and limitation of further public support for higher education.

Public Expenditures in the Population, Health and Education Sectors

10.40 Health and Population Planning. Historically the share of public expenditures in total health care expenditures has been low. In 1970, almost 87% of total health expenditures were incurred by households, a share which dropped to 82% by 1975, as a result of increased public outlays, accompanied by a drop in private spending (Table 10.4). While this suggests a substantial increase in access to free or low cost Governmental health services, a disaggregation indicates that households in the North and Northeast and rural households in general, benefitted much less from this shift than did households in the rest of the country.^{/1} Rural households in fact had to spend substantial shares of household income on health, because of the high cost of drugs and private health services and the lack of access to free or low cost public services. In sum, while growing public spending for health has led to significant improvements in service availability, especially in Bangkok, in other urban areas and in the Central Plain, most rural households in the North, Northeast and South have not benefitted from significant improvements in either private or public health care.

^{/1} M. Krongkaew, op. cit.

Table 10.4: ESTIMATED HEALTH EXPENDITURES PER HOUSEHOLD, 1970, 1975
(Baht per month, 1970 prices)

	1970		1975	
	Amount	Share (%)	Amount	Share (%)
Private	62.0	86.6	50.0	82.0
Public	9.6	13.4	11.0	18.0
Total	71.6	100.0	61.0	100.0

Source: Mission estimates based on data provided by: MOPH, Health Planning Division, Bank of Thailand, and World Development Report 1979.

10.41 (a) Trends in public expenditures on health: Public spending for health in Thailand has been low, whether measured by international standards of public health spending, or in terms of other public expenditure functions in Thailand. Table 10.5 indicates the low per capita level of health expenditures in Thailand when compared with average spending levels in other middle income countries, or even with a group of lower-middle income countries whose per capita income levels are more similar to that of Thailand. This finding is confirmed by a recent comparative international study of government spending, which shows that for health, Thailand spends 45% below what would be expected in terms of its level of development and other relevant characteristics given the public spending patterns throughout

Table 10.5: CENTRAL GOVERNMENT PER CAPITA EXPENDITURES ON HEALTH:
AN INTERNATIONAL COMPARISON

	GNP per capita (1980 dollars)	Per capita expenditures (1975 dollars)	
		1972	1979
Thailand	670	2	3
Lower middle income countries <u>/a</u>	670	5	7
Middle-income countries	1,400	9	15

/a The 19 poorest middle income countries for which health expenditure data are available and for which Thailand's per capita income is the median.

Source: World Development Reports 1979, 1982.

the developing world./1 Compared with other public expenditure functions, spending on health has been low and declining during the Fourth Plan Period, particularly if actual spending is considered, rather than merely budget figures, and allowance is made for spending by state enterprises./2 (Table 10.6). When deflated by the consumer price index, health expenditures actually declined between 1979 and 1981 and for the Fourth Plan period as a whole remained approximately constant in real per capita terms at about Baht 57, or about US\$3 in constant 1976 prices. Under the Fifth Plan, the intention is to raise the level of public expenditure on health in relation to GDP and its share in total public spending from the low levels at the end of the Fourth Plan period. The FY 1982 and FY 1983 budgets reflect this tendency (Table 10.6), but both in relation to the health sector needs in Thailand and to comparative spending levels elsewhere, Thailand's public expenditure on health will remain small.

Table 10.6: PUBLIC EXPENDITURE ON HEALTH

	1977	1978	1979	1980	1981	1982/a	1983/b	Fourth Plan 1977-81	Fifth Plan 1982-86
<u>Health expenditure as % of:</u>									
GDP	0.7	0.7	0.7	0.7	0.6	0.7	0.8	0.7	0.9
Central Government Expenditure /c	4.1	3.9	4.1	3.6	3.3	3.5	3.7	3.7	4.3
Central Government Budget /d	4.8	4.0	4.2	4.2	3.8	4.0	4.5	4.2	4.5

/a Estimated

/b Projected.

/c Actual total expenditure including foreign financed expenditures.

/d Budget appropriations, not including foreign financed component.

/e Transfers to local governments have not been netted out.

Source: Annex 3, mission estimates.

/1 P. Heller and A. Tait, "International Comparison of Government Expenditure". IMF Occasional Paper No. 10, 1982.

/2 The following factors account for the lower shares of health in actual Central Government spending, and for even lower shares in total public spending: First, actual health spending usually falls short of appropriations by some 15%. Second, budget appropriations do not include expenditure financed from foreign borrowing, and since health spending has not substantially drawn on external funds, inclusion of foreign financed expenditures for other functions will lower the health sector's share. Third, state enterprises are not involved in the health sector to any substantial extent, thus further reducing the share of health in total public expenditure.

10.42 (b) Alternative health sector programs: As part of the Fifth Plan preparation MOPH prepared the health development expenditure program (Annex 3). If implemented, this program would have implied a doubling in real terms of health expenditures in the Fifth Plan period compared with the Fourth Plan period, and by 1986 an increase in per capita health expenditures to about Baht 120 (or US\$5) in constant 1976 prices, compared with Baht 57 in 1981 (or US\$3). While this program was not overly ambitious by international standards (see Table 10.5 above), MOPH revised it downwards in April 1982, apparently as a result of budgetary pressures. In real terms, the reduction amounted to 25% of the original programs, and resulted in a program leading to a per capita expenditure of about Baht 91 in 1986 in constant 1976 prices (or US\$4). This still represents a substantial increase over the spending levels during the Fourth Plan period, but considering the stagnation in real health spending during that period, is very likely the minimum required to begin to address the Fifth Plan health sector goals. Health sector expenditure programs prepared subsequently by NESDB in May and August 1982 roughly equalled the revised MOPH program, as did the program agreed to by NESDB, BOB and MOPH by December 1982 (Annex 3). The budget appropriations for FY 1982 (Baht 6.4 billion) and FY 1983 (Baht 7.9) were also roughly comparable to the revised MOPH program, but estimated and projected actual expenditures for FY 1982 (Baht 5.7 billion) and for FY 1983 (Baht 6.4 billion) indicate a likely 10-15% shortfall below the budgetary targets. While such shortfalls are customary, they reflect the difficulties which health sector agencies have in fully spending their budgetary allocation during a given fiscal year, largely as a result of poor Government-wide budget implementation procedures that are currently being reformed as part of the Government's structural adjustment program. Considering the priority needs of the sector, it appears inappropriate to attempt further retrenchments in planned health spending. In fact, a more systematic effort should be made to disburse the budget allocations speedily and to ensure an appropriate intrasectoral allocation of funds./1

10.43 A full assessment of the intra-sectoral distribution of health expenditures programmed for the Fifth Plan period is not possible here, since only broad categories of comparable information are available for the different health programs executed by MOPH. Starting from the June 1981 MOPH program, some two-thirds of all MOPH operating expenditures were programmed for the broad category called "Health Services," of which three-quarters actually was to be devoted to the provincial health services program (Annex 3). This supports primarily provincial and district hospitals and health centers, with many of these hospitals expending a very high portion of their resources on costly, curative and urban oriented health service provision. Explicit rural or poverty group oriented program

/1 Within MOPH, a study has recently been launched with IDA project funds (Credit No. 767-TH) to determine the sources of constraints in the flow of funds from headquarters to the field.

components, as far as can be learned from summary financial data, were to account for only 17.3%, including 9.6% to be devoted to the control of communicable diseases./1 Other areas that were identified as priority areas above were to receive only very small shares: pharmaceutical drug production and distribution 0.7%, nutrition 0.4%, and family planning 2.2%. The revised MOPH program of April 1982 concentrated the budget cuts mostly in the area of provincial health services, which was reduced from Baht 31.8 billion to Baht 18.1 billion, or a reduction from 53.5% to 41.1% of the total program. At the same time, the priority areas (rural and poverty oriented programs) were either left unchanged in absolute terms, or increased, thus increasing their shares somewhat. Particularly noteworthy is the specific inclusion of a Mother-and-Child-Health subprogram, which had not been included in the earlier program. This shift in relative emphasis appears to reflect a move in the right direction by limiting low priority spending in the provincial health services area, while increasing or leaving unaffected high priority program allocations./2

10.44 Education. Although education remains one of the largest single areas of public spending, it has lost in relative importance between 1977 and 1982 (Table 10.7). As a share of GDP, education spending dropped from 3.8% to 3.0%; as a share of total public spending from 13.2% to 9.2%; and as a share of Central Government expenditure from 23.4% to 19.5%./3 The decline in the relative importance of educational spending was particularly pronounced during the first three years of the Fourth Plan period, as a result of two factors: a shift away from education within the Central Government budget, and a shift from Central Government to state enterprise spending. Between 1980 and 1982 the former trend was reversed, but this reversal was not sufficient to maintain education's share in total public spending or return it to its 1977 levels as a percent of GDP, since the budgetary stringency during these years was particularly binding on the Central Government, but much less so for state enterprises.

/1 The rural health centers are, however, subsumed under the provincial health services program in the expenditure data, making a full analysis of rural and poverty oriented expenditures impossible on the basis of data available to the Mission.

/2 However, this presupposes that the cuts which were made in the provincial health services program were not at the expense of rural health centers, but instead in the funding of provincial and district hospitals.

/3 Expenditures in private schools amount to only about 10% of public sector (recurrent) expenditure on education, according to estimates in the UNESCO study.

Table 10.7: PUBLIC EDUCATION EXPENDITURE, 1977-80

	Fiscal Years						Fourth plan	Fifth plan
	1977	1978	1979	1980	1981	1982/c	1977-81	1982-86
<u>Education expenditure as % of /a</u>								
GDP	3.8	3.5	3.3	3.3	3.5	3.4	3.4	3.0
Share of Central Gov't exp.	23.4	20.3	19.3	18.4	19.6	18.3	20.3	19.6
<u>Distribution of education expenditure (%) /b</u>								
Preprimary and primary	58.5	55.6	55.2	55.3	56.0	n.a.	56.2	48.7
Secondary	14.0	17.1	16.0	16.1	16.5	n.a.	16.0	23.2
Vocational	6.0	6.0	6.6	6.4	6.6	n.a.	6.4	9.3
University	12.5	12.3	13.2	13.3	12.5	n.a.	12.8	10.5
Other /d	9.0	9.0	9.0	8.9	8.4	n.a.	8.6	8.3
Recurrent	68.3	69.4	71.0	71.1	76.0	78.6	71.8	76.2
Capital	31.7	30.6	29.0	28.9	24.0	21.4	28.2	23.8

Sources: See notes /a and /b.

/a BOT: 1977-82; Annex 3: 1982-86

/b BOT: 1977-81; NEC: 1982-86

/c Estimated

/d Including teacher training, non-formal education and educational promotion.

10.45 For the Fifth Plan period, according to NESDB's overall expenditure program, educational spending will remain roughly constant at 3.0% as a proportion of GDP and recover some of the losses which it experienced relative to total public spending and to central government expenditure (Table 10.7). The National Education Commission (NEC) which is responsible for overall education sector planning and programming had put together a more ambitious program for the Fifth Plan period than either the NESDB program or the BOB/MOF expenditure forecasts assuming Fifth Plan goals.^{/1} While the reductions in the NEC program are appropriate in light of the overall fiscal stringency of the public sector and the fact that education as a share of public sector spending will actually increase somewhat even after these reductions, it is important that : (a) further overall cutbacks in the educational sector be limited given the overall priority attached to this sector; and (b) the reductions in NEC's program are in line with the policy priorities outlined in para. 10.53 above, rather than ad hoc measures in areas that are most readily adjusted.

10.46 Within the education sector, primary education accounted for about 56% during the Fourth Plan period, secondary education for 16%, vocational training for 6% and university education for 13% (Table 10.7). These shares did not vary much between 1977 and 1981, but were programmed to change quite substantially during the Fifth Plan period according to NEC's educational expenditure program. Primary education and university education were to drop in relative terms, while secondary and vocational training were programmed to increase. The drop in the role of primary education spending is appropriate and could in principle have gone even further considering that NEC forecasts of primary school enrollments for the Fifth Plan period were probably on the high side.^{/2} On the other hand, considering the improvements required in the quality of primary education and the special efforts necessary to reach marginal population groups, real unit costs of primary education are likely to increase above the levels prevailing in 1981, on which NEC's expenditure projections were based. Therefore, further retrenchment in primary school education spending, beyond the levels envisaged in the NEC program should be avoided. In contrast it might be possible to reduce the increase in allocations to vocational training, considering the expanded role of secondary schools in this area, and to make further savings in university level spending.

^{/1} The NEC program projects total education expenditures during the Fifth Plan period of Baht 237 billion, compared with NESDB's program of Baht 217 billion. The BOB/MOF forecasts of recurrent expenditures are Baht 144 billion, compared with the NEF program of Baht 165 billion for the same period.

^{/2} UNESCO, "Thailand: Education Sector Survey." Annex IV.

10.47 During the Fourth Plan period, recurrent expenditure became increasingly important, particularly for primary and secondary education, increasing from an average share in total education spending of 68% in 1977 to 76% in 1986. By far the largest share of recurrent expenditure were devoted to salaries, amounting to 86% of total recurrent spending in primary, and 95% in secondary education. Supplies of educational material accounted for only 1-2% of recurrent spending for primary and secondary education, confirming the earlier conclusion that Thailand needs to expand significantly this area of education spending.^{/1} For the Fifth Plan period, the NEC program envisages a stabilization of recurrent and capital spending shares at the 1981 levels, which is appropriate, provided that supplies, materials and equipment are given a larger share of recurrent expenditure than in the past and that the cuts in the NEC program are not made at the expense of these items. The difficulty in this area has been traditionally that the salary component of education spending has its own momentum and is difficult to control. Existing teaching personnel should be retrained and relocated from primary to secondary grades as far as possible, capital expenditures for primary education should be limited, especially in areas already well-served, and increased emphasis should be given to educational material and equipment. Unfortunately, the data available to the Mission do not allow an assessment of past or future planned distribution of educational spending between geographical areas or income groups. However, in planning educational expenditures, emphasis must be given to carefully targeting primary school improvement programs for the rural areas and urban slums.

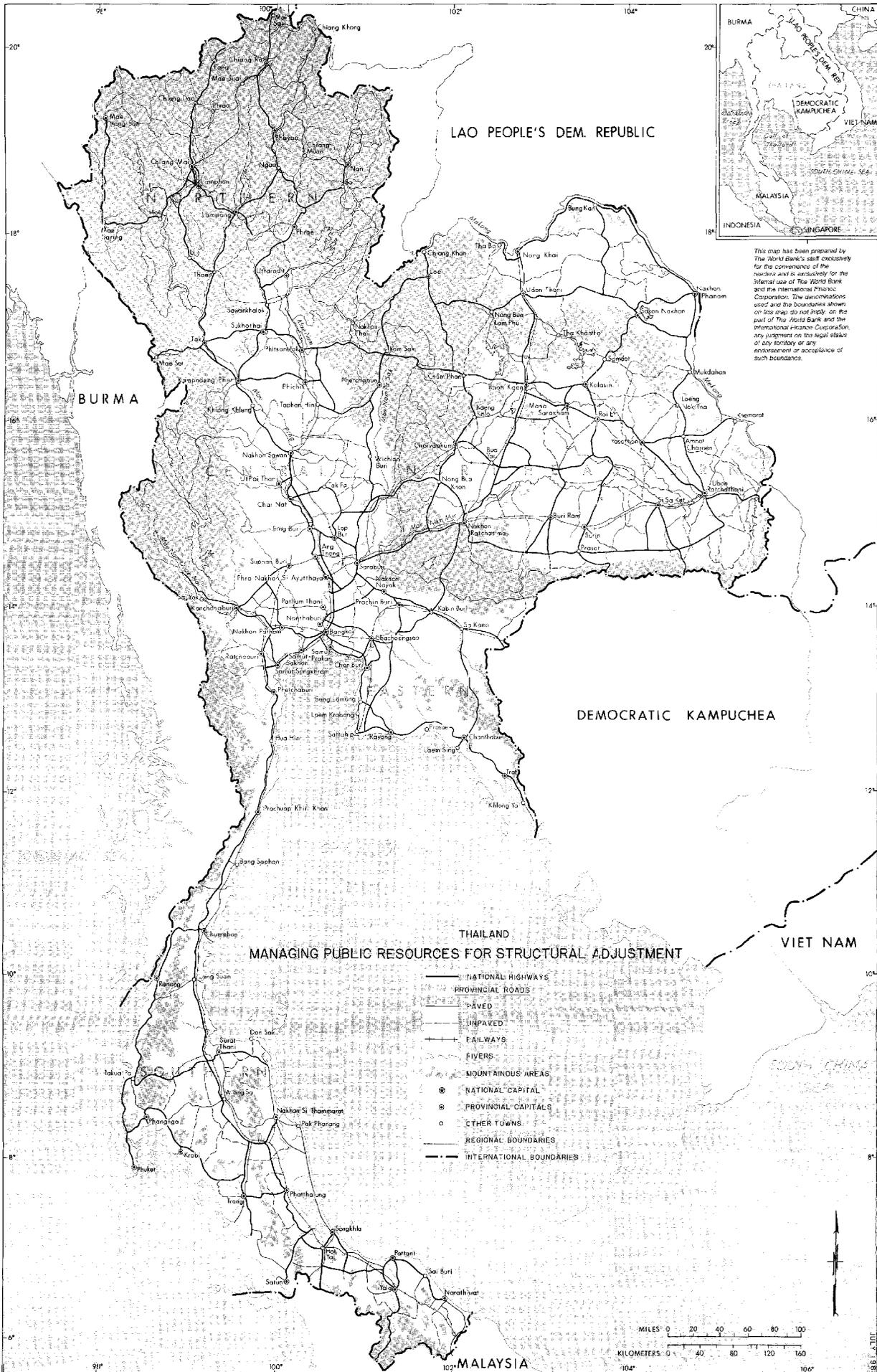
10.48 For the 1982 and 1983 budgets there is not yet much evidence of the shifts envisaged in educational priorities between the Fourth and the Fifth Plans. According to estimated and projected expenditures for FY 1982 and FY 1983, education dropped to 18.7% of Central Government spending in FY 1982, increasing to 19.8% in FY 1983, about equal to the 19.6 average envisaged in NESDB's expenditure program for the Fifth Plan period. The share of capital in total education spending dropped substantially, to 21.4% in FY 1982 and 19.2% in FY 1983, as compared with the 24% envisaged by the NEC program. This indicates that with the current fiscal crunch capital spending is likely to fall short considerably of NEC plans, reflecting the relative ease with which capital programs are cut or delayed as compared with the difficulty of slowing down recurrent spending, especially teacher salaries. While it is appropriate, as argued above, that some reduction in capital spending for education takes place compared to NEC plans, care must nevertheless be taken that this slowdown is not excessive lest it should undermine the broader objectives of the education program.

^{/1} Total spending on supplies is understated by these data, since they do not include supplies bought by individual schools from student fees which accrue directly to the schools without entering the Central Government budget. But their inclusion would not change the overall findings.

10.49 Summary Assessment of Public Expenditures on Human Resource Development. Health sector development was given a relatively low priority and a declining share of public sector resources in Thailand during the Fourth Plan period, despite the fact that Thailand's health problems have remained serious by international standards during the 1970s. There also are indications that earlier improvements in mortality rates and fertility decline are tapering off and that Thailand's public expenditures in the health sector have also been low by international standards. The Fifth Plan expenditure program proposes to reverse the expenditure trends, albeit quite cautiously, with MOPH having scaled down its initially very ambitious health expenditure program in support of Fifth Plan goals. As far as can be discerned from available data, the reduction in the MOPH program appears to have been made in line with appropriate priorities, emphasizing the increased importance given to basic health services in rural areas, to maternal and child health care programs, the continued emphasis on family planning, and the maintenance of small programs in the nutrition and pharmaceutical drugs subsectors. Further reductions in the health sector programs would undermine the increased emphasis which the sector was to be given quite appropriately in the Fifth Plan, and endanger the substance of some of the small but important programs in the priority areas within the sector. Of particular importance under the prevailing fiscal stringency is that every effort is made to utilize what scope there is for improvements in the efficiency of health service provision, as regards staffing policies, intra-sectoral priorities as between preventive and curative activities, emphasis on non-personnel recurrent expenditures, and elimination of duplicative support structures within the public sector and between private and public sectors.

10.50 Much the same conclusion applies to the past and projected future trends of public expenditure for education. Having declined in relative importance during the Fourth Plan period, the Fifth Plan expenditure program, which projected a more stable growth in education spending, represents a conservative estimate of expenditure requirements despite expected drops in primary school enrollments. Requirements of improved quality and access especially in the disadvantaged areas imply higher unit costs than in the past. Increased emphasis on spending for educational materials and retraining of teachers, rather than employment of new teaching personnel represent the highest priorities in the allocation of educational expenditures.

10.51 The maintenance of growth in public expenditures for human resource development remains therefore of high urgency in Thailand. This does not rule out that efficiency improvements should be made in these areas, as more generally in all Central Government operations, through improved planning, management and monitoring of programs under the Government's institutional reform program. Moreover, fiscal and macro-financial stability require that these expenditure programs for human resource development, and for other Central Government expenditure functions, be matched by increased resource mobilization through higher Central Government tax revenues. Improved public resource mobilization, adequate allocation of budgetary resources for human resource development, and greater efficiency in the use of these resources would contribute very importantly to the long-term development of Thailand and the alleviation of poverty and regional inequities.



LAO PEOPLE'S DEM. REPUBLIC

BURMA

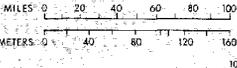
DEMOCRATIC KAMPUCHEA

THAILAND
MANAGING PUBLIC RESOURCES FOR STRUCTURAL ADJUSTMENT

VIET NAM

- NATIONAL HIGHWAYS
- PROVINCIAL ROADS
- PAVED
- UNPAVED
- RAILWAYS
- RIVERS
- MOUNTAINOUS AREAS
- ⊗ NATIONAL CAPITAL
- ⊙ PROVINCIAL CAPITALS
- OTHER TOWNS
- REGIONAL BOUNDARIES
- INTERNATIONAL BOUNDARIES

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