Report No. 13132-TH

Thailand
Sector Report

Increasing Private Sector Participation and Improving Efficiency in State Enterprises

(In Three Volumes) Volume III—Annexes

October 11, 1994

Industry and Energy Operations Division
Country Department I
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Document of the World Bank

CURRENCY EQUIVALENTS

Average Jan-Jun 1994	=	US$1.00 = ฿ 25.30
Average 1993	=	US$1.00 = ฿ 25.32
Average 1992	=	US$1.00 = ฿ 25.40
Average 1991	=	US$1.00 = ฿ 25.52
Average 1990	=	US$1.00 = ฿ 25.59
Average 1989	=	US$1.00 = ฿ 25.70
Average 1988	=	US$1.00 = ฿ 25.29
Average 1987	=	US$1.00 = ฿ 25.72

ABBREVIATIONS AND ACRONYMS

AAT	Airport Authority of Thailand
ADB	Asian Development Bank
BMTA	Bangkok Mass Transit Authority
BOO	Build-Own-and-Operate
BOOT	Build-Own-Operate-Transfer
CAT	Communications Authority of Thailand
EGAT	Electricity Generating Authority of Thailand
ETO	Expressway Transportation Organization of Thailand
ERTA	Expressway and Rapid Transit Authority
GDP	Gross Domestic Product
IDF	Infrastructure Development Facility
MCOT	Mass Communication Organization of Thailand
MEA	Metropolitan Electricity Authority
MOF	Ministry of Finance
MWA	Metropolitan Water Authority
NEPO	National Energy Planning Office
NESDB	National Economic and Social Development Board
NHA	National Housing Authority
PAT	Port Authority of Thailand
PEA	Provincial Electricity Authority
PTT	Petroleum Authority of Thailand
PWA	Provincial Water Authority
RTG	Royal Thai Government
SE	State Enterprise
SED	State Enterprise Division
SEIC	State Enterprise Improvement Committee
SEID	State Enterprise Improvement Division
SRT	State Railway Authority
TOT	Telephone Organization of Thailand

FISCAL YEAR

October 1 to September 30

Thailand

Increasing Private Sector Participation and Improving Efficiency in State Enterprises

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The mission was led by Messrs. Claudio Fernandez and Ismail Dalla, and included Mrs. Fiona Woolf and Messrs. Bernard Tenenbaum, Peter Kyle, Ahmed Galal, John Arnold, Shyamadas Banerji and Hafeez Shaikh. Specific inputs for the report were received from Messrs. Jeremias Paul (power supply), Harvey Ludwig (water supply), Leroy Jones (performance indicators), Keat Tian (pension funds) and Martin Edmonds (state enterprises). Joost Polak edited the report.

Thailand

Private Sector Participation and Privatization Plans for State Enterprises

AIRPORT AUTHORITY OF THAILAND (AAT)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	10,173	11,551	12,958	14,071	14,824
Liabilities	6,036	5,867	6,558	6,411	6,864
Net Worth	4,137	5,684	6,400	7,660	7,960
Net Profit	2,004	2,541	2,780	2,690	2,688
Employees	2,584	2,652	2,875	3,128	2,365
Debt/Equity Ratio	1.46	1.03	1.03	0.84	0.86
Remittance to GOT(%)	50%	50%	47%	52%	50%
ROA	19.7%	22.0%	21.5%	19.1%	18.1%
Wage Component	36.9%	35.0%	33.2%	27.1%	
Productivity					

2. Main Objective:

Operate and manage airports and related businesses.

3. Recommendations of the White Paper:

(a) Corporatize and register with the SET to improve efficiency and develop the domestic stock market; (b) Achieve a broad ownership of shares.

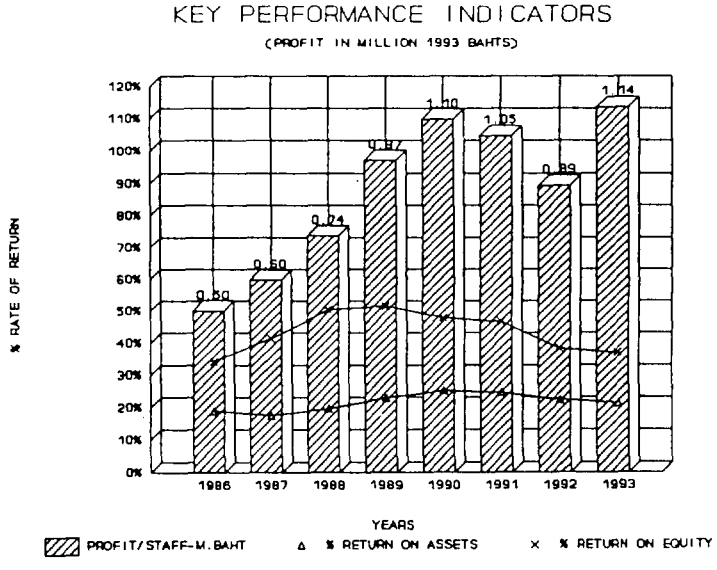

Figure 1

4. Actions taken by AAT:

(a) Hiring private sector to implement some services; (b) AAT has minority equity in many airport related businesses as follows: airport hotel 9% (฿10.8 million), catering 7% (฿5.6 million), ground services 28.5% (฿14.25 million), duty free 10% (฿20 million), pipeline 10% (฿20 million), transport 15% (฿45 million) and restaurants 5% (฿1 million).

5. AAT's Response.

(a) Plans to increase private participation as follows: (i) subcontract most commercial activities like cleaning, security, maintenance, etc. (ii) provide long-term franchises

for major commercial activities such as restaurants and duty free shops; (b) Upgrade the airport facilities to international standards; (c) For the new airport: (i) set up a committee to increase private sector participation both domestic and foreign; (ii) list the new airport on the SET; (iii) build a state-of-the-art airport that would become a regional hub.

6. Cabinet Decision. NA. SEID considers that AAT should be upgraded to Class A status to facilitate private financing and enable AAT to list on the stock exchange.

7. AAT's Status and Issues

7.1 Thailand has four international airports and a number of domestic airports. The largest airport, Don Muang, handles more than 12 million international passengers per year and nearly 5 million domestic passengers. These volumes are expected to more than double by the end of the decade, thus requiring additional capacity. Of the other international airports, Phuket has been the most successful, handling about 2 million passengers per year. Chiang Mai has experienced relatively slow growth and serves a little over 1 million passengers a year, while traffic at Hat Yai has declined to about 0.5million. The government has proposed that a fifth airport, Chiang Rai, be upgraded to an international airport to accommodate the growing tourist activity in the Golden Triangle.

7.2 Airport capacity will receive a major boost when the Second Bangkok International Airport (SBIA), now under design, becomes operational by the year 2000. The new airport will be a regional hub and will accommodate both international flights and connecting domestic flights. Don Muang will be left with high-density regional "shuttle" flights and unscheduled charter flights. The site for the new airport at Nong Ngu Hao has been under consideration for nearly a quarter century. It had originally been proposed as the site for the first Bangkok airport, but delays in its development resulted in the gradual expansion of commercial facilities on the site of the military airport at Don Muang. The second airport is estimated to cost $4 billion for the first phase, with a total investment of $13 billion. The first phase terminal, which is planned to be operational by 2000, will have a capacity of 30 million passengers.

7.3 Land access to the new airport remains uncertain, although a number of plans are under consideration. These include: (a) the proposed Bangkok-Chonburi Highway, which would cross over both the first and second expressways and pass to the north of the airport; (b) the extension of the outer ring road to the east of the airport; (c) the rail facilities at Lat Krabang located just north of the airport.

7.4 What is missing in these schemes is an effective connection between Don Muang and the SBIA for passenger transfers. A highway connection would be possible using the Don Muang Highway, the third expressway and the Bangkok-Chonburi Highway, assuming all of these are available; however, vehicles transferring passengers between the airports would have to pass through congested areas of Bangkok, which would adversely affect travel times. Coordinated planning of this interconnection must begin soon if the airport is to function effectively by the year 2000.

7.5 The airports in Thailand are developed by the Department of Civil Aviation within the Ministry of Transport and Communications. When converted to international airports, they are transferred to the Airport Authority of Thailand (AAT). The authority operates them in a commercial manner similar to that used throughout the world. Landing and takeoff slots are assigned by the AAT

in conjunction with Thai Airways.[1/] Gates are assigned on a flexible basis by the AAT because of the high level of utilization of the gates, but many of the gates are used on a regular basis by individual airlines.

7.6 Ticketing and other areas within the terminal for processing passengers are leased to the airlines or their agents. Retail space for restaurants and shops is leased to private companies for periods of three years. Terminal cleaning is performed by a private company. Airport parking is provided by private concessions. Ground services, including services to the airplanes and baggage handling, are provided by Thai Airways. In Don Muang, two other companies, TAGS and United Airlines, also provide these services. TAGS is a joint venture between the AAT and the airlines that use the service. United Airlines, which imported equipment duty-free under an earlier bilateral agreement, continues to handle its own aircraft and baggage, as well as that of some other airlines. All airlines may choose between these three companies.

7.7 Air traffic control and communications at the international airports are provided by the recently formed state enterprise Aero Thai. It was previously provided by the Civil Aviation Department. The runways are maintained by the AAT through contracts with the private sector. Fuel is provided by a private company that is granted a franchise by the AAT. Aircraft maintenance services are provided by the national carrier, Thai Airways, a relatively common arrangement. Thai Airways provides air cargo services at all airports. TAGS also provides these services at Don Muang.

7.8 AAT has been a profitable organization primarily because of the revenues generated by Don Muang. These revenues have provided a reasonable return on investment and generated the surplus needed to pay for the development of the other international airports, which were developed at the request of the government to promote tourism. At present, only Phuket has sufficient traffic to provide a reasonable return on its investment. The traffic through Chiang Mai is only marginally profitable, while that through Hat Yai is insufficient to cover costs.

8. Private Status and Recommendations

8.1 AAT is an effective SE, and one of the most profitable. It is equal in capabilities and experience to airport authorities in developed countries and has been successful in developing the international airports in Thailand. The principal airport, the Bangkok International Airport (BIA), is well run by international standards, and the involvement of the private sector in its operations is comparable to that of other developed countries. The government should strengthen AAT and improve its capability through consultancy support for management information systems, operating procedures and employee training.

8.2 With the gradual privatization of Thai Airways and the corporatization of Aero Thai, it can be argued that virtually the only option for increasing the role of the private sector is outright ownership of the airport. This could be accomplished in steps, by first corporatizing AAT, followed by the sale of shares to the public (as is being done in Malaysia), or by an outright sale to a private operating company (as was done in the UK). Since the land on which the BIA is located is owned by the Air Force, it can only be rented, not sold. Moreover, since the BIA is the only airport serving Bangkok, fees and access would have to be regulated if it were privatized. This regulation would be

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1/ At Don Muang there is relatively little competition for these slots since the bulk of the European flights arrive and depart at different times (early morning and late evening) from the bulk of the North American flights (late evening and early morning). Neither of these conflict with the midday arrivals and departures of regional flights.

limited because the BIA already competes for transit passengers with Singapore and other large regional airports. Since the domestic and non-transit international passengers and their airlines do not have any alternatives, regulation would be required to ensure that their charges are reasonable.

8.3 Improvements in overall management through an increased role by the private sector could also be achieved through a management contract with a private operator, as is used in the Lester Pearson Airport in Toronto. The strengthening of the AAT's technical capabilities could offer similar benefits.

8.4 The performance of the AAT could also be improved by unbundling and deregulating. In the past, the AAT has been able to cross-subsidize the development of the smaller international airports from the surplus generated by the BIA. Now that these airports are developed, their operation could be strengthened by making each airport an authority or a subsidiary company of the AAT. This would allow for more rigorous planning and evaluation of investments, more careful design of airport tariffs and stronger management control of activities within the airports. These subsidiaries could participate in joint ventures with the private sector or could be corporatized, and their expansion could be financed through the sale of shares. These companies would be given franchises to operate the airports and would contract with private companies for ground services and for the maintenance of the terminal and runways. Land ownership would remain with the Government. These changes would allow the AAT to focus on marketing the services of the BIA and in attracting additional demand to justify the construction of the SBIA.

8.5 With or without the creation of these subsidiaries, it is important that AAT be corporatized. Since its inception 14 years ago, AAT has targeted the reduction of its work force. It has accomplished this through attrition, contracting out services and using annual contracts for some employees. These efforts should continue and be strengthened by converting AAT to a publicly traded company. This will give AAT greater autonomy, particularly in the recruitment and remuneration of staff. The corporation would be responsible for the operation, maintenance, renewal and expansion of Don Muang and the SBIA. Aero Thai should also be corporatized and then converted into a private company.

8.6 The competition for the business already performed by the private sector could be increased. Ground services are typically provided by the airlines or designated companies. The airlines provide these services where they have a high level of activity, e.g., Narita and most large US airports. Smaller airports (as well as some larger airports such as Hong Kong and Singapore) grant concessions for these services to a private operator or to the domestic airline. With the development of a second airport and the projected growth in passenger traffic, it will be possible to allow the larger airline companies to provide their own ground services.

8.7 The air freight business should also be more competitive. Currently, this business is controlled by Thai Airways. All-freight operations such as Federal Express and DHL should be given the opportunity of establishing bonded freight terminals with direct access to their airplanes. Alternatively, freight forwarders should be able to own and operate these freight terminals and offer competing services with the airlines.

8.8 While the role of the private sector in the airport system could be greatly increased, there are certain functions that should remain with the government. These include the responsibility for contracting the construction of major expansions and new airports, developing the transport links to these airports and overseeing the competition for the use of Don Muang between the AAT and the Air

Force. In addition, all the regulatory activities related to safety of navigation will be under the government's Civil Aviation Department.

Second Bangkok International Airport (SBIA)

8.9 At present, it is proposed to allocate all international and feeder services to the SBIA and all non-scheduled and shuttle services to the BIA. There is considerable scope for involvement of the private sector in the development of the SBIA, particularly considering the large investments needed. Although a BOT contract is being considered, this is unlikely because the airport will not be financially viable for several years.[2/] Moreover, BOT arrangements in the sector are rare, and when these arrangements exist or are being negotiated (Prague or Antalya), they are limited to the passenger terminal. Management contracts are more common.

8.10 In lieu of a BOT arrangement, SBIA would be constructed by the Civil Aviation Department and turned over to AAT for operation. Since cross-subsidies would be needed for several years, it is recommended that AAT retain control of both Don Muang and SBIA for at least the first five years of operation. The management of SBIA's terminal could then be undertaken by a joint venture between AAT and a private company. This arrangement would not preclude private sector financing for the new airport, since Built-Lease-Transfer arrangement could be used, and would be compatible with AAT control of the airport, at least during its first five years of operation.

2/ Current estimates for the terms of financing required to make the terminal financially viable are a 7% loan with a grace period for repayment of principal combined with a 20% increase in the airport fees.

BANGKOK MASS TRANSIT AUTHORITY (BMTA)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	769	871	6,709	9,410	8,210
Liabilities	10,895	9,849	11,770	13,205	11,990
Net Worth	(10,025)	(9,080)	(5,061)	(3,796)	(3,780)
Net Profit	(884)	(969)	(262)	64	(591)
Employees	22,703	22,973	22,452	23,941	23,506
Debt/Equity Ratio	NA	NA	NA	NA	NA
Remittance to GOT(%)	0%	0%	0%	0%	0%
ROA	-115%	-111%	-3.9%	0.7%	-7.2%
Wage Component	25.8%	27.4%	41.1%	35.9%	
Productivity					

2. Main Objective:

Provide bus services in Bangkok Metropolitan region.

3. Recommendations of the White Paper:

(a) Increase private sector participation to reduce losses and increase efficiency through franchising selected routes; (b) Subcontract certain activities such as maintenance with the private sector. Allow private sector to compete on certain routes.

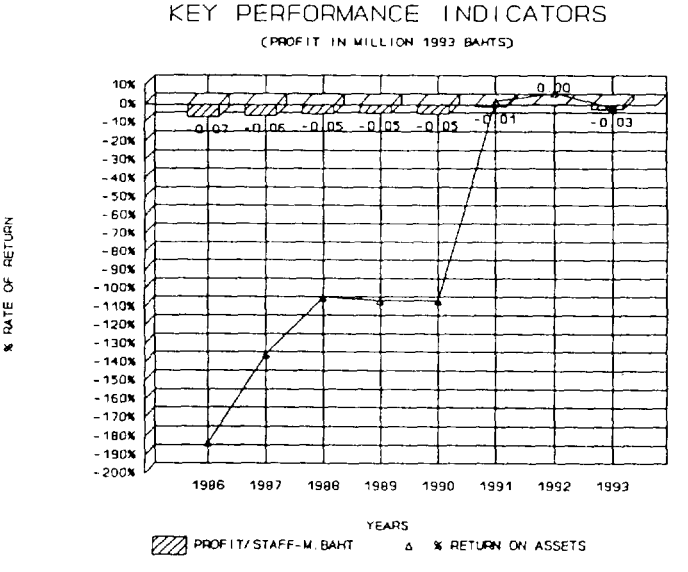


Figure 2

4. Actions taken by BMTA:

(a) Granted route concessions to the private sector, with BMTA-operated vs privately-operated routes already at a ratio of 55:45; (b) Proposed joint investment in some bus operations to private sector; (c) Contracted some bus maintenance with the private sector.

5. BMTA's Response:

(a) BMTA is further encouraging private sector participation to provide microbuses to suburban areas, with BMTA as a joint partner owning 20%, private sector 70% and Crown Property 10%; (b) BMTA has already franchised both standard and air-conditioned buses; (c) BMTA has created three separate units, each with 7,000 employees and 1,000 buses, to improve performance and create profit centers. The ultimate objective is to list the company on the stock exchange.

6. Cabinet Decision.

NA. SEID considering: (a) Accelerating private sector participation; (b) Limiting BMTA to no more than 20%-30% of the shares; (c) Corporatizing BMTA

and consider its listing to allow private participation; (d) Allow private microbuses in central Bangkok to reduce traffic problems.

7. BMTA Status and Issues

7.1 Bangkok intracity bus transportation is provided by a mix of public and private services. The principal supplier is the Bangkok Metropolitan Transit Authority (BMTA), which operates a variety of bus services throughout the metropolitan area. BMTA was established nearly a decade ago by nationalizing the private bus companies to improve the quality of service provided to the public. At that time, fierce competition among private bus companies had resulted in deteriorated equipment and services.

7.2 BMTA is a well-managed and innovative company with a fleet of about 4,425 buses. It operates three levels of services on routes throughout the city. These include the basic service (Blue-white) using the oldest buses, the standard service (Red-white) using slightly better buses and the air-conditioned service. In addition, it operates a fleet of 4,646 minibuses. The bus routes on the major streets include a large number of bus-only lanes, including some reverse bus lanes. Articulated buses have been introduced on the more heavily-traveled routes.

7.3 Because fares have been held at an artificially low level for a number of years, BMTA has been unable to invest in new buses. The result has been a slowdown in replacement of the fleet and a deterioration in the quality of service. Only recently has BMTA embarked on a large investment program to renew and expand the fleet. In 1992, it procured 2,464 buses, of which 560 were air-conditioned. Many of the remainder were designed to European standards. At the same time, BMTA decommissioned 1,887 older buses, about half of its fleet. A fleet of 80 buses fueled with natural gas has been introduced on an experimental basis.

7.4 BMTA operations are efficient by international standards. The drivers and fare collectors work relatively long hours and there are few restrictive work rules. The high ratio of employees to buses is the result of putting a fare collector on each bus. It is now proposed to begin retraining the fare collectors to be drivers and to introduce fare boxes on buses that have appropriate entry configurations. BMTA maintains only its oldest buses, while the rest are maintained through maintenance contracts with the suppliers. BMTA selects its new buses based on the purchase price for the buses plus the maintenance contract. These contracts are performance based, using the percentage of the fleet that leave the sheds each morning (about 95%) as the principal criteria, and assessing a penalty for buses that break down during operations.

7.5 The routes, fares, level of service and the extent of competition are regulated by the government. However, farebox revenues are not adequate to pay for operation (the operating ratio in 1992 was 115%), much less for fleet expansion. Even the private sector is unable to operate profitably at these fare levels. In order to be profitable, private operators have had to purchase inexpensive buses and restrict their operations to peak hours. Because of this, nearly half of their buses are out of service after two hours of operation.

7.6 The operating deficit of BMTA, which has reached ฿0.9 billion, is covered by other income and government subsidies. The inability of BMTA to cover its debt service resulted in the government assuming responsibility for all existing long-term debt in 1991. In addition, increased subsidies will now be required to pay the interest charges of ฿5.8 billion on 8% bonds issued to finance new bus purchases. In 1992, the total government subsidy amounted to about ฿1 billion. To improve

BMTA's financial performance, the Department of Land Transportation allowed an increase in fares, but only ฿0.5 on non-air-conditioned services and ฿1.0 on air-conditioned services. These increases were insufficient to produce a reasonable return on investment.

7.7 BMTA's expenses could be reduced by eliminating the fare collector positions and by restricting capital investments in office buildings and employee housing. However, these reductions would not allow BTMA to cover its debt service unless fares are further increased. As a result, the private sector could help in improving BMTA's efficiency, but could not assume its financial control.

7.8 **Improving BMTA's Operations**. The key problem for BMTA is that the government-set fares are insufficient to cover the costs of both operation and fleet renewal. BMTA is able to cover its operating and maintenance costs by using the surpluses from the air-conditioned services to cross-subside unprofitable basic services, but it is unable to cover overhead and capital costs. Although the government has allowed competition by the private sector, the fare levels do not allow the private sector to earn a profit and provide an acceptable quality of service. The government should consider improving the quality of BMTA's services — that is, travel time and comfort — rather than maintaining artificially low tariffs.

7.9 The second problem is a failure to integrate BMTA's operations with other mass transit services. The bus system in the metropolitan area should not only provide basic transportation, but should also encourage automobile drivers to switch to buses to reduce the extreme traffic congestion in Bangkok. To reduce door-to-door travel time, it is necessary to consider how the various parts of the transit system are integrated. Collection/distribution services that bring riders from low density routes should quickly and comfortably transfer them to the line haul services. A distribution/collection service in downtown, as provided by the minibus service, should also provide efficient transfer to the line haul services. Minimal waiting times are generally more important than comfort at the transfer points.

7.10 The third problem is that the government specifies the level of services. The government's objective is to ensure a seat for all bus riders, but it cannot achieve this objective during peak hours. Greater efficiency could be achieved if BMTA had greater freedom to adjust the headways of the buses to match the changing level of demand during the day. Private operators accomplish this by running their full fleet during peak hours and only a small portion of their fleet during off-peak hours.

7.11 The fourth problem is the general problem of Bangkok traffic and the lack of enforcement of the traffic laws. The average speed of buses is extremely low, even though Bangkok has one of the most extensive bus lane systems in the world. The density of buses on some routes, delays in crossing intersections, the frequency of stops, and interference from private cars and taxis using the bus lanes for turning have lead to severe congestion on many of the bus lanes. The failure to enforce traffic laws results in congested intersections and in opposing flows of traffic at the center of major roads.

7.12 The fifth problem is one of managing a system with both profitable and unprofitable routes. The government requires, through its regulation of tariffs and level of services, that many of the routes be operated as public service obligations — PSO's — rather than as commercial activities. At present, BMTA does not use its accounting data to differentiate these activities, but this should be possible.

7.13 A combination of policies is needed to provide better mass transit services, while increasing the costs for using private automobiles in the downtown area. The latter can be accomplished through a variety of strategies including:

(a) taxing passenger cars operating in the metropolitan area and parking lots within the downtown area;

(b) restricting the number of vehicles allowed to enter the downtown area; and

(c) increasing the travel time of vehicles by increasing the number of bus lanes.

7.14 **Recommended Changes in Sector Structure.** BMTA's financial position could be improved through the introduction of fare boxes. This would significantly reduce labor costs that represent about 40% of its operating costs. This would require modifications of existing buses to ensure a rapid flow of passengers on and off the buses and the enforcement of fare collection with minimal effort. Another option is converting buses into larger articulated buses, which is already being studied, and the introduction of fast-loading bus stops such as those being introduced in Brazil.

7.15 The current program to upgrade the quality of the fleet should give a balanced emphasis to improving the quality and reliability of the air-conditioned services, while providing European-standard buses on the standard and eventually the basic routes. The operation of the bus routes should be adjusted to allow full fleet operation during peak hours and reduced fleet operation during off-peak periods.

7.16 While it will be necessary to continue setting a maximum fare and minimum level of service for those routes that BMTA must operate as a public service obligation, the other routes should be deregulated. Specifically, BMTA should be allowed to adjust the tariff for air-conditioned services to increase ridership, improve the quality of the buses and recover the costs for the services. Where the private sector competes with BMTA, the tariff charged by the private sector should be regulated by establishing only the minimum tariff. Furthermore, to promote competition, the government should establish the minimum tariff at a level that allows the recovery of capital cost of the bus. For the PSO services, BMTA should be granted a subsidy that compensates for the losses attributable to those services.

8. Status of Private Sector Participation and Recommendations

8.1 In recent years, there has been a steady increase in the role of the private sector in the provision of public bus services. BMTA licenses private operators to provide competing services using smaller, non-air-conditioned buses (Green Buses) on certain routes, while competing with them at the same fares. The private sector also operates 1,729 buses (of which 260 are air-conditioned) in a joint venture with BMTA. Another joint venture provides a downtown circulation service with a new fleet of 400 minibuses.

8.2 Four approaches are available for restructuring BMTA and increasing the role of the private sector. These changes should target the reduction of BMTA's operating losses while maintaining an acceptable quality of service. The first approach is to corporatize BMTA, which would require the government to assume (as it actually doing) the responsibility for existing debt. The corporation would then be divided into a subsidiary that provides the basic PSO services and two or

more subsidiaries (possibly joint ventures with private companies) that provide the commercially viable services.

8.3 The PSO subsidiary would focus on providing a basic quality of service, as specified by the government, at minimum cost. This would require government compensation for the cost of these services. The objective of the commercial subsidiaries would be to increase ridership by providing new and/or better services. They would produce profits that could be shared with the loss-making subsidiary through agreed levels of cross-subsidy.

8.4 The planning and operation of the feeder routes for other mass transit modes would be coordinated by a joint committee of the BMA, MRTA, BMTA, and Land Transport Department. The same committee would identify new routes to be developed within the metropolitan area.

8.5 The second approach would be to break BMTA into two operating corporations. One of them would be assigned profitable routes and would eventually become a publicly held company. The other corporation, to be operated through a management contract, would be a PSO subsidiary providing services on unprofitable routes. This management contract should minimize the cost of providing PSO services. As proposed above, the government would provide subsidies to cover the losses on these routes. Since this service would reduce the number of cars on the streets and provide substantial benefits to those traveling by car, it would be logical to fund these services from fuel taxes collected on petrol and from vehicle licensing fees.

8.6 The third approach to be considered is to rationalize and downsize BMTA and give up market share to the private sector by offering concessions for all routes that could be profitably operated by the private sector. BMTA would use the revenues from these concessions to subsidize the operation of loss-making routes. Stringent cost-cutting measures would be adopted to reduce the operating deficits. Fares would be set in proportion to the actual cost of providing service, even though they might not cover the full cost of these services.

8.7 For routes and services that are commercially viable, regulation could be substantially reduced and improved by:

(a) allowing the private sector to provide the higher quality services, including air-conditioned, reserved-seat and door-to-door services without regulation;

(b) allowing open competition on air-conditioned routes that are commercially viable at current fares, and,

(c) providing franchises to private sector companies on those routes with standard and air-conditioned services that are marginally viable at the current tariff, and permitting fare escalations according to a fixed formula.

8.8 The fourth approach would be to fully deregulate the sector and to allow open competition on all routes. BMTA and its private sector competitors would differentiate the types of services provided and collect different fares for peak and off-peak fares and for express and local services. The operators would adjust their fares to ensure an acceptable level of ridership and would adjust the quality of the service to ensure that the revenues covered at least the capital and direct operating costs. A residual state enterprise would be maintained to operate the PSO routes at rates that the riders are willing to pay.

8.9 BMTA together with the Land Transport Department would then monitor the level of service, including the size and condition of the vehicles, and the operating headways both peak and off-peak, provided by the private operators. Tariffs would be regulated only for PSO services and for those marginal routes operated under franchises to the private sector. In all cases, the government would retain the responsibility for enforcing laws with regards to safe bus operation and annual vehicle inspections.

8.10 The analysis of potential efficiency improvements in BMTA, one of the largest bus companies in the world (23,000 employees and 5,300 vehicles) requires a detailed rationalization and privatization study, which should review BMTA's role in the context of the overall metropolitan transport requirements, and seek alternatives for private sector participation in the delivery of urban bus services. The study should examine ways to improve BMTA's service and workforce efficiency and productivity. The study should also provide recommendations on the following areas:

(a) Financing of public transportation and its development. The role of BMTA will be defined in light of the overall need for a transit system in Bangkok, particularly following the opening of future rail-based systems (Hopewell, Tanayong and MRTA). Consideration will have to be given to the environmental and social benefits (in terms of air pollution and transit time of an adequate public transportation system), taxes on automobiles/gas or other fiscal measures to discourage the use of individual vehicles, while providing additional support to the development of such a system;

(b) Increasing the competitive environment by enhancing delivery of private bus services and eliminating BMTA's current responsibility of controlling the entry of private operators;

(c) Coordinating the planning, policy making and budget allocation for the citywide transit services. This activity should be channelled through an independent agency at the local level; and

(d) Encouraging private sector entry into public transport, particularly for air-conditioned bus service. Measures to improve private sector participation could include not charging license fees and reducing revenue sharing arrangements with BMTA.

COMMUNICATION AUTHORITY OF THAILAND (CAT)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	12,558	15,602	19,109	22,413	24,737
Liabilities	1,910	2,342	2,500	2,842	3,566
Net Worth	10,648	13,259	16,609	19,571	21,172
Net Profit	3,659	4,634	6,043	5,996	5,469
Employees	21,964	22,852	23,679	24,752	25,107
Debt/Equity Ratio	0.18	0.18	0.15	0.15	0.17
Remittance to GOT(%)	50.0%	50.1%	50.1%	55.0%	50.0%
ROA	29.1%	29.7%	31.6%	26.8%	22.1%
Wage Component	42.1%	38.5%	37.0%	37.5%	38.3%
Productivity	31.5%	25.3%	12.7%	11.7%	10.3%

2. Main Objective: (a)

To provide telecommunication and postal services in an efficient manner; (b) To conduct other complementary services for the telecommunication business. CAT is an extremely profitable SE as it is the monopoly provider of international telecommunication services in Thailand. At the government's request, CAT has been involving the private sector in various value-added services in telecommunications such as radio paging, VSAT, and data transmission services. CAT also operates postal services, which have been loss-making. CAT has made considerable efforts to use private firms in the provision of postal services.

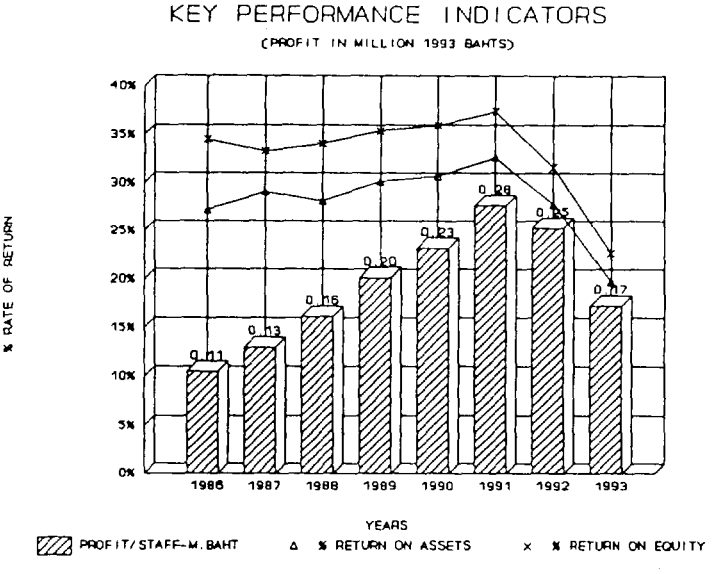


Figure 3

3. Recommendations of the White Paper: Telecommunications:

(a) Consider the merits of merging TOT and CAT. In this connection, the role of the private sector should be considered to improve the overall efficiency of the sector; (b) The following modes of privatization should be considered: (i) issuing of CAT's shares to the public; (ii) issuing shares of a combined company; (iii) establishing a joint venture between CAT and the private sector to increase competition; (iv) abolishing monopolies in the sector and allowing maximum competition; (c) Improve the overall structure of the sector, including amending the relevant laws to protect the interest of consumers and create an appropriate regulatory agency; (d) Expand the CAT policy encouraging private sector companies in paging services to cover other telecommunication services; (e) Separate the accounting of telecommunications and postal services since postal related activities are subsidized by

telecommunication services; (f) Create a regulatory system for the telecommunications that will coordinate between CAT and TOT.

3.1 **Post Office:** It is recommended that: (a) A study be conducted to analyze if postal services should be separated from telecommunications and if the postal saving and money transfer activities should be organized under a separate organization; (b) To reduce financial losses, private sector participation could be subcontracted for some activities; (c) Certain activities of the post office should be privatized, such as the printing of stamps and mail transportation.

4. **Actions taken by CAT:** (a) joint investments with the private sector; (b) private sector to take part in services.

5. **Cabinet Decision**. NA. SEID opinion: (a) Private participation should be encouraged; (b) CAT law should be amended to increase this participation; (c) Merger of CAT and TOT is not desirable since it will create a monopoly and reduce competition.

6. **CAT's Response**: A broad study of CAT's future strategy has been completed by TDRI.

7. World Bank Comments and Recommendations

(a) In other countries, postal services are generally separated from other activities; there are a few instances of private postal services, but private sector participation is mainly in express mail. Therefore, although there are substantial cross-subsidies, it would be desirable to separate these services in the future;

(b) A major problem affecting the separation of postal and telecommunication services in CAT is that postal workers fear loss of bonuses if the profitable telecom activities are separated. However, as recommended in this report, the performance evaluation and bonus system should be changed to reflect not simply financial profits but other criteria for physical and managerial performance and the improvement over time in financial performance rather than absolute results in a given year.

(c) CAT should compete with TOT in domestic long distance. Private operators should be allowed to provide international long distance services. This will help CAT face international competition after the GATS agreements are implemented.

(d) CAT should not be allowed to enter into equipment manufacturing.

(e) Sharing and resale of leased circuits may allow competition without wasteful duplication of facilities.

(f) CAT should reorganize itself only after taking into account long-term structural changes likely to result from competition in services.

(g) CAT needs to develop its privatization strategy taking account of competition.

(h) A regulatory body should be established soon to rule on tariffs and rates, interconnection charges, franchising and concessions arrangements, technical and network standards, and dispute resolution.

ELECTRICITY GENERATION AUTHORITY OF THAILAND (EGAT)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	122,465	148,178	175,309	193,060	212,798
Liabilities	79,050	96,995	113,824	124,409	131,591
Net Worth	43,415	51,183	61,485	68,650	81,207
Net Profit	10,423	12,368	11,704	12,339	9,279
Employees	31,732	33,070	34,990	35,065	34,505
Debt/Equity Ratio	1.82	1.89	1.85	1.81	1.62
Remittance to GOT(%)	15.1%	15.0%	8.07%	21.2%	26.6%
ROA	8.51%	8.36%	6.68%	6.39%	4.36%
Wage Component	13.11%	13.18%	12.81%	12.57%	
Productivity	6.34%	3.57%	2.18%		

2. Main Objective: Generate and transmit electricity in Thailand.

3. Recommendations of the White Paper: (a) Amend appropriate laws and draft required regulations to enable private sector participation in power generation and sale to EGAT and reduce its foreign borrowing burden; (b) Set a fair power price among the electric utilities; (c) Promote joint ventures in the form of BOTs or BOOTs. The government should select one major power plant as a pilot; (d) When such bidding criteria are defined, open bids should take place for some of the attractive projects; (e) In the longer run, increase public participation through sale of EGAT's shares. However, this should be contemplated after a careful study of the power sector and regulatory framework for the sector; (f) Increasing private sector participation in lignite mining should be considered separately, including separating the lignite mining into an independent company and selling its shares to the public. The private sector will benefit from technology transfers from EGAT. However, this should be done in accordance with the government's lignite mining policy.

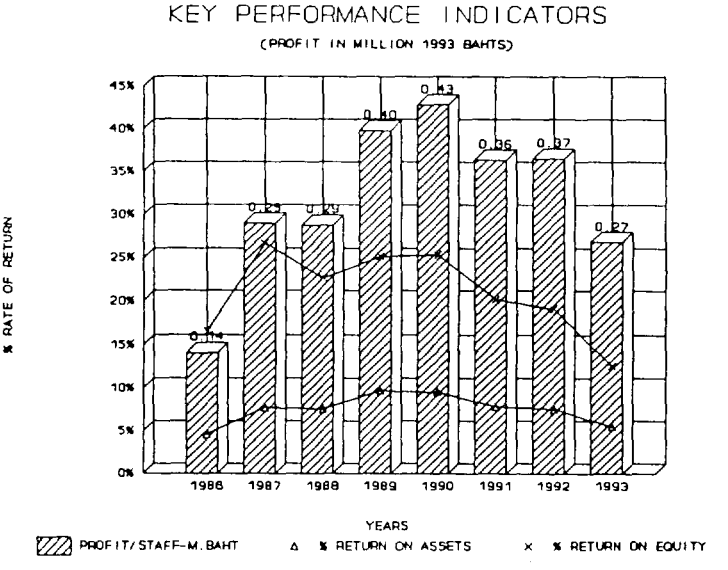


Figure 4

4. Actions taken by EGAT: (a) On March 13, 1992, EGAT set up a wholly owned subsidiary with the objective of transferring a plant to it from EGAT and, once the plant is operating, selling 51% of the shares to the public. A public offering is planned in late 1993; (b) EGAT already amended the EGAT Royal Act to enable private joint ventures; (c) Most of the lignite mining activities are operating as separate profit centers.

5. **EGAT's Response:** (a) EGAT is agreeable to the proposal to increase private sector participation in power generation provided that all the power will be sold to EGAT and that system security is protected; (b) BOO or BOOT projects should be included only gradually because: (i) Negotiations of such projects generally take a long time and could adversely affect production of power in the country; (ii) The cost of power will go up; (iii) Technology transfer is limited; (iv) Power production may not be responsive to the needs of the economy and may not optimize the benefits for the country; (c) EGAT recommends proceeding gradually due to the low reserve capacity (15%) being imposed by NESDB, which could create outages if the construction of any plant is delayed.

6. Cabinet Decisions

6.1 **1992/93:** (a) EGAT should improve its efficiency and become a Class A enterprise in order to have more flexibility, more efficiency and set its own salaries; (b) Establish a commercial base for purchase agreements with MEA and PEA; (c) Establish contracts for fuel purchase; (d) Adopt an automatic tariff adjustment mechanism; (e) Identify cross subsidies in tariffs and eliminate the uniform tariff policy and/or establishing transparent government's subsidies for PEA; (f) Create a subsidiary (EGCO) to purchase the Rayong combined cycle plant and issue shares to the public, with EGAT retaining not more than 49% ownership. EGCO may then bid for the Khanom thermal plant.

6.2 **1993/94:** (a) EGAT is to invite the private sector to submit proposals for independent power producers for the Khanom thermal plant; (b) Prepare notification to invite private sector participation in accordance with the Concession Law of 1992; (c) Reorganize EGAT by separating transmission and production and creating profit centers; (d) Set the percentile participation of the private sector in the 1995-2001 long-term plan; (e) Implement tariff charges based on marginal cost; (f) Restructure EGAT into business units; (g) Diversify MEA and PEA; (h) EGAT to achieve good SE status; (i) Restructure PEA into business units responsible for electricity sales in each region.

6.3 **1994/95:** (a) Convert EGAT, MEA and PEA into a public limited company by amending its law; (b) Register EGAT as a public company in the stock exchange; (c) Encourage independent power producer involvement in new power plants between 1995-2001.

6.4 **1995/96.** (a) EGAT to sell shares on SET, with government retaining a majority stake; (b) Diversify PEA into regional electricity companies; (c) Sell shares of the companies to obtain financing, while retaining majority ownership.

7. World Bank Comments and Recommendations

(a) EGAT's plan for gradual private sector participation — already approved by the Cabinet — is the most advanced and detailed of all the SEs. The plan is satisfactory. EGAT should prepare a detailed implementation program, including all critical activities, to ensure the milestones agreed are complied with.

(b) A regulatory system should be established as soon as possible. It should be noted that the viability and financial performance of each of the energy enterprises depend on their relative prices (gas from PTT to EGAT and electricity from EGAT to PEA and MEA).

(c) Due to the size of the investments needed and the importance of the energy sector to the Thai economy, it would be convenient to place the four energy enterprises (PTT, EGAT,

MEA and PEA) under the same supervising ministry. A separate Ministry of Energy deserves to be considered.

(d) The studies for corporatization, particularly the valuation and ownership certification of land, should be started soon.

(e) The automatic tariff increase is an excellent initiative; however, in case of errors, the forecasted costs may result in a shortage/surplus at the end of the year among EGAT, PEA and MEA. Therefore, it would be convenient to set an end-of-year adjustment to correct for such changes.

(f) BOO/BOOT financing has proven successful in other countries and EGAT's concerns (location, capacity of transmission lines, frequency control, etc) can be addressed in the bidding specifications. BOO/BOOTs should be able to finance an significant part of EGAT investments.

(g) The study of the avoided cost under commercial conditions should be accelerated to allow the comparison of proposals by independent producers.

(h) EGAT's planned reserve capacity seems very low (15%) and may result in outages if there are even minor delays in completing new plants. While maintaining NESDB/EGAT's plans, the reserve capacity could be increased by allowing BOO/BOOT projects to exceed this limit, as planned for the 300 MW Mae Kharon lignite plant.

(i) The sale of one or more plants to the private sector could be considered to provide funds more quickly to EGAT, while alleviating its concerns about the standards and location of private BOOT plants.

(j) Cogeneration could reduce the need for government investments, but its limit (50 MW) is low. This limit could be increased in areas where the transmission system is adequate.

EXPRESSWAY AND RAPID TRANSIT AUTHORITY OF THAILAND (ERTA)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	13,076	15,145	23,847	30,346	82,259
Liabilities	9,328	11,006	19,148	23,958	69,638
Net Worth	3,749	4,139	4,699	6,387	12,621
Net Profit	366	534	773	1,009	603
Employees	1,531	1,567	2,264	2,145	3,359
Debt/Equity Ratio	2.5	2.7	4.1	3.8	5.5
Remittance to GOT(%)	4.9%	35.0%	24.2%	50.1%	58.7%
ROA	2.8%	3.6%	3.2%	3.3%	0.7%
Wage Component	18.9%	23.6%	22.9%	30.2%	
Productivity	0.88%	1.05%	-38.0%		

2. Main Objective:

Build or cause to build or maintain expressways (in four stages) to relieve the serious traffic congestion problems in Bangkok.

3. Recommendations in the White Paper:

Endorsed the authority's plans to seek private sector involvement in building, financing and operating (i) the second stage of the Bangkok Expressway; (ii) a mass transit system for Bangkok.

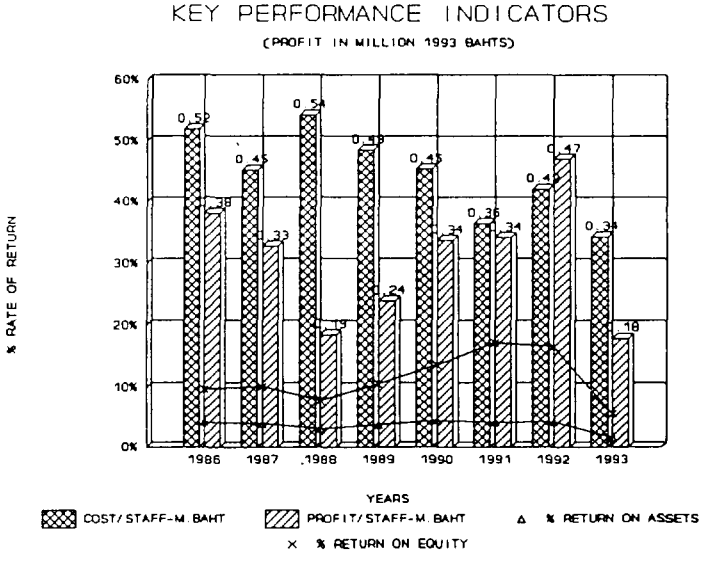


Figure 5

4. Status of Private Sector Participation and Recommendations

4.1 The first stage expressway was completed a number of years ago. The second stage system is being built by private firms on a concession basis. It is partially completed, but the remaining sections have been held up due to land disputes along the right-of-way. Under the terms of the concession, the private concessionaire builds and operates the system for 27 years and shares the revenues from the first and second expressways with ETA in a decreasing proportion over the life of the agreement. The third stage road system is not yet under construction.

4.2 The development of urban expressway systems in Bangkok is being accomplished by maximizing the participation of the private sector through the use of BOT agreements. A major

constraint to the development of the system is the high cost of acquiring land, which has to be financed by the government. To solve the issue of financing the high land costs in addition to existing payment systems, it may be useful to consider giving the displaced landowners securities in the concessionaire's company, i.e., the project company, in compensation for land. The landowner should be in a position to readily sell these shares to other investors if an immediate cash settlement is desired. This may facilitate the financing of land acquisition.

4.3 As with the rapid transit systems, the key concern is not how to expand the role of the private sector, but how to increase the economic and social benefits from their participation. The experience with the construction of the first and second expressways provides valuable lessons for structuring the relationship between the government and the private sector.

4.4 The difficulties experienced with the Second Expressway are shared by most urban highway construction projects. These include:

(a) These roads increase the volume of traffic entering the inner city without increasing the capacity of the city streets, thereby resulting in greater congestion at the points of access and egress.

(b) The roads require taking land supporting commercial and housing activities, whose owners are increasingly resistant to such expropriation.

(c) The initial reduction in traffic in other parts of the road network due to the diversion to the expressway are quickly lost, as additional land development increases the total volume of traffic.

(d) The environmental impact is negative because the total volume of traffic on city streets will not be reduced and the expressway acts as a source of air and noise pollution as well as an eyesore along the right-of-way.

4.5 The failure to consider the transport network as a whole has lead to investments in expressways that have not adequately increased network capacity. More importantly, these investments have ignored the relationship between urban transport and land use. In particular, the relentless increase in the density of office and retail space within the core area will lead to a continuing increase in traffic congestion. Consequently, any increase in capacity resulting from greater reliance on mass transit will be quickly utilized by additional development.

4.6 The use of BOT agreements has allowed ETA to develop these links without considering options for a more efficient allocation of network investments. Therefore, ETA is not focusing on broader urban transport problems and is not considering the use of alternative modes of transportation or demand side management to accommodate increasing demand. These results are consistent with experiences in other countries.

4.7 Additional problems have arisen from the allocation of risks to the private sector. The completion risk was partially transferred to the private sector, even though the government was responsible for acquiring the right-of-way (since it has expropriation rights). Difficulties in obtaining some rights-of-way for the Second Expressway required alignment changes as well as delays in completing core sections of the expressway, and contributed to the breakdown in the BOT agreement with a large foreign investor. The perception of country risk has increased because ETA entered into a

BOT contract with a foreign investor when it did not have the legal authority to make commitments regarding toll rates and land acquisition. (This also indicates a failure of the contractor's legal advisors to perform due diligence on these commitments.)

4.8 The BTO agreement transferred the commercial risk to the private sector, but also reduced this risk by including part of the revenues from the first expressway. Since the agreement specified the level of the tolls during the period of the agreement and the contractor's share of the revenues from these tolls, the investors assumed that the commercial risk was limited to the future volume of traffic. The BTO agreement could have been restructured with the government guaranteeing a certain revenue per vehicle regardless of the toll, but the lenders would have been concerned about the long-term viability of the concession. Alternatively, the government could have transferred the full commercial risk to the contractor by allowing him to set the tariff. However, this would have resulted in a tariff policy that maximized the contractor's net income rather than one that achieved the maximum utilization of the roadway.

4.9 Since the toll issue is critical to ensure that the roadway maximizes the general benefit to society, the government should assume this commercial risk. For this purpose, the government should use a build-lease-transfer (BLT) or similar arrangement rather than a BTO agreement. Although this may eventually require government subsidies (given the political pressure to maintain low tolls), it would allow the government to set tolls to achieve broader objectives with regard to the use of the transport network. Furthermore, land restrictions based on vehicle occupancy and other demand management techniques could be introduced to provide additional economic benefits.

4.10 As explained above, the key issue for urban transportation is how to obtain the greatest benefit from private sector involvement. ETA should improve its arrangements with the private sector to continue the expansion of the express system. The options should include loan financing, BLT and extended co-financing arrangements. Given proper supervision, the private sector can design, construct and maintain roads more efficiently than the public sector.

4.11 These roadways should be part of the public transport network, and their price and optimal utilization should be a public policy concern. This requires the government to regulate tolls based on economic costs. In the future, a better arrangement is needed for the allocation of completion and commercial risks. More importantly, the mechanism for choosing and coordinating alternative investments in the urban transport network needs to be improved.

4.12 There is no compelling reason to believe that privatizing ETA would increase the pace of private sector participation since it plays a management role in attracting private sector participation for the construction and operation of expressways.

EXPRESS TRANSPORT ORGANIZATION (ETO)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	471	480	458	448	445
Liabilities	763	699	755	911	1,002
Net Worth	(291)	(219)	(297)	(463)	(558)
Net Profit	44	72	-42	-166	-121
Employees	2,858	3,901	4,688	4,137	2,973
Debt/Equity Ratio	NA	NA	NA	NA	NA
Remittance to GOT(%)	NA	NA	NA	NA	NA
ROA	9.3%	15%	-9.1%	-37.0%	-27.1%
Wage Component	NA	NA	NA	27.3%	NA
Productivity	NA	NA	NA	NA	NA

2. Recommendations of the White Paper:

(a) Since the objectives of privatization are to increase efficiency and eliminate further losses, ETO will be divested; (b) The government might consider retaining a minority share in ETO.

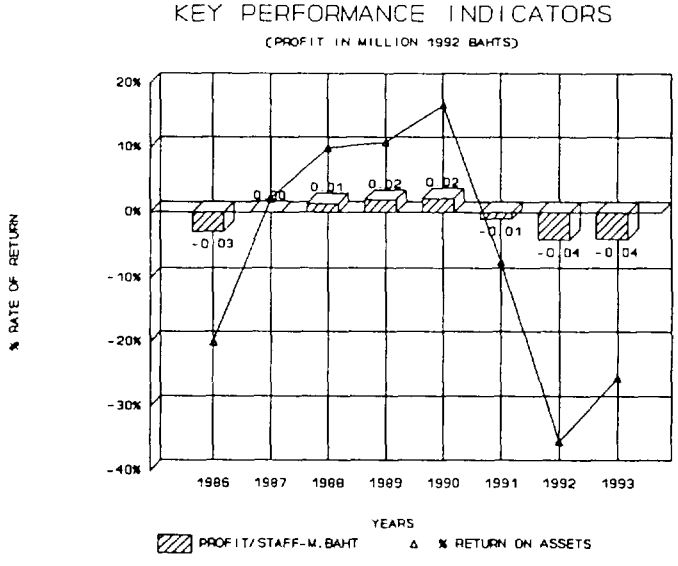


Figure 6

3. ETO's Status and Issues

3.1 ETO operates a large fleet, about 1,850 trucks of varying sizes, of which 1,100 are leased to private owners. ETO's franchise to handle cargo between Thailand and Laos has now been given to a private company, ThaiLaos trucking, but it still has the exclusive franchise to handle all inbound cargo being transported from Bangkok Port; however, this franchise is not rigorously enforced. Instead, about 15% of the inbound cargo is off-loaded overside to barges and moved by water to its destination, and about half of the remaining cargo is transported by private sector haulers contracted by the cargo owners. Of the remaining cargo, most is carried through single trip contracts between ETO and private haulers.

3.2 Compared to the private sector in Thailand, ETO handles relatively little freight traffic. Moreover, its fleet of trucks is in relatively poor condition since revenues have been too low to finance new equipment. As a result, ETO has had to hire private trucks at market rates. The rates paid by the users of ETO's service are set by the Department of Land Transport. Until recently, these rates were very low and ETO lost money because of the higher rates charged by private operators. ETO losses in 1992 were $4.6 million. Recently, the tariff applied to 6-10 wheelers was increased by 50%, which should allow ETO to become profitable in 1994. However, this move will not reduce ETO's

indebtedness nor its negative net worth of about one-half billion Baht, the result of accumulated past losses. ETO employs 4,754 persons, and so, by private sector standards may be overstaffed by about 30%. Freight haulage fees are fixed by the Board of Transportation at low levels.

3.3 ETO also operates freight forwarding services in competition with the private sector. Although its only market is ocean freight, it benefit from their nominal monopoly over inbound Bangkok Port cargo. ETO also operates a parcel delivery service that takes advantage of ETO's presence in three Thai regions (North, Northeast and South); it allows ETO to make region-to-region deliveries, whereas competitors tend to operate within a single region. At present, about 300 trucks in the ETO fleet are assigned to parcel delivery, many of which are smaller vans meant specifically for this service.

4. Status Private Sector Participation and Recommendations

4.1 There is no sound rationale for the operation of a freight forwarding/trucking company by the government, and ETO should be privatized as soon as possible. The trucking sector in Thailand is almost completely private, and quite efficient. There is no advantage accruing to the government from its involvement in trucking services; in fact, there are a number of negative examples associated with the impact of government involvement in the operation and licensing of trucking operations. Experience elsewhere shows that, due to inefficient operations and rent-seeking driver unions, restricting a major portion of trucking activities to SEs results in a poorly maintained fleet of trucks, a low quality of service, and relatively high, regulated prices. government involvement may also work to slow the development of the middle class by denying small scale entrepreneurs entry into trucking.

4.2 Even limited government involvement in trucking may be detrimental. For example, the Malaysian government has regulated the haulage of containers by franchising this activity, initially to an SE, and later to a limited number of competitors. The objectives were to ensure adequate capacity, provide safe transport and prevent destructive competition and over-investment. Actual results indicate that consumers pay relatively high prices for a low level of service in what would otherwise be a dynamic, market-driven sector of the economy.

4.3 The initial objectives for ETO were to improve the safety and quality of transport, but these are unobtainable given the condition of the ETO fleet. The imposition of a franchise for inbound cargo movements from Bangkok Port is also hard to understand given the considerable role already played by the private sector in this business. The only effect of the regulated rates for these services is to provide ETO a commission for subcontracting the private sector to haul the cargo at lower rates. In previous years, the situation was worse, since ETO rates were lower than market trucking rates and ETO suffered significant losses.

4.4 The options available for ending the government's involvement in trucking are limited by the financial and physical condition of ETO. ETO's liquidation would yield low values given the condition of the fleet, and would result in the need to redeploy a large work force. Similarly, a private company is unlikely to absorb the existing truck fleet and labor force unless it is given the monopoly over the Bangkok Port inbound traffic. Conversion of ETO into a corporation would require significant financial restructuring given its negative net worth. A restructuring of ETO, including its finances, would require several years in order to eliminate losses, reduce excessive labor and scrap obsolete vehicles. The success of this restructuring would determine how rapidly it could be converted into a publicly held company.

4.5 The above measures would allow ETO to be corporatized. Although it would lose its license, ETO would be free to pursue business activities where it can compete effectively with the private sector. The current management of ETO has already demonstrated a strong entrepreneurial spirit in looking for new businesses, but ETO's status as a SE creates competitive disadvantages, owing to its limited flexibility to make investments and reduce costs.

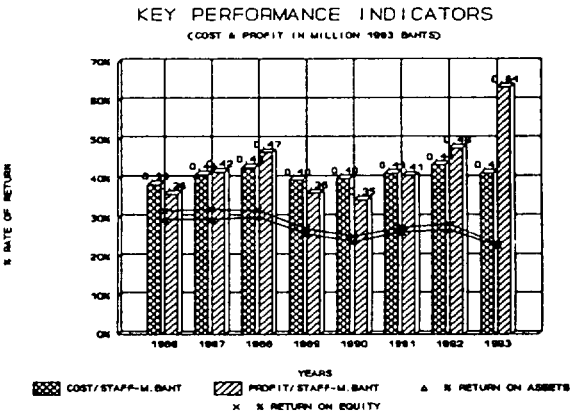
4.6 A better approach would be to divide ETO into a number of subsidiaries, each pursuing different services and markets. This alternative would also require financial and physical restructuring, as explained above, and the closing of unprofitable activities like freight forwarding. Other subsidiaries such as package delivery and freight haulage could be divested. This would be accomplished principally by selling them to ETO employees, who would be financed by severance payments and bank loans.

4.7 The government would be responsible for the safe operation of trucks carrying the country's imports and exports. It would enforce regulations on safety, axle loading and traffic management. This would require vehicle inspections and the enforcement of traffic laws. Once ETO is restructured, the government should abolish ETO's monopoly on handling imports at the port, lift price controls over freight charges and encourage free entry of trucking companies. The Department of Land Transportation should then only monitor freight rates to ensure that price fixing through cartels does not occur.

METROPOLITAN COMMUNICATIONS ORGANIZATION OF THAILAND (MCOT)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	955	1123	1348	1677	2846
Liabilities	46	59	62	91	61
Net Worth	909	1064	1286	1586	2785
Net Profit	239	259	343	437	623
Employees	798	857	911	949	980
Debt/Equity Ratio	5.0	5.5	4.8	5.7	2.2
Remittance to GOT(%)	98/239%	96/259	104/343	137/437	175/623
ROA	25.0%	23.1	25.5	26.1	21.9
Wage Component	%				
Productivity	%				



METROPOLITAN ELECTRICITY AUTHORITY (MEA)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	21,135	25,451	31,560	35,874	39,989
Liabilities	15,560	18,570	22,280	24,840	26,488
Net Worth	5,575	6,881	9,280	11,034	13,501
Net Profit	870	1,644	2,535	2,295	2,867
Employees	11,649	12,858	13,824	13,760	13,625
Debt/Equity Ratio	2.79	2.70	2.40	2.25	1.96
Remittance to GOT(%)	15.05%	15.06%	15.02%	16.60%	18.84%
ROA	4.12%	6.46%	8.03%	6.40%	7.17%
Wage Component	7.65%	7.65%	7.88%	8.38%	
Productivity	2.96%	3.00%	0.06%		

2. Main Objective: Distribute electricity in Bangkok metropolitan region.

3. Recommendations in the White Paper: (a) In the short run, private sector participation in MEA's operations is difficult, and the focus should be on trying to further increase its efficiency; (b) A share offering to the public is to be considered at a later stage; (c) MEA should subcontract certain activities with the private sector; (d) BOTs and BOOs should be considered.

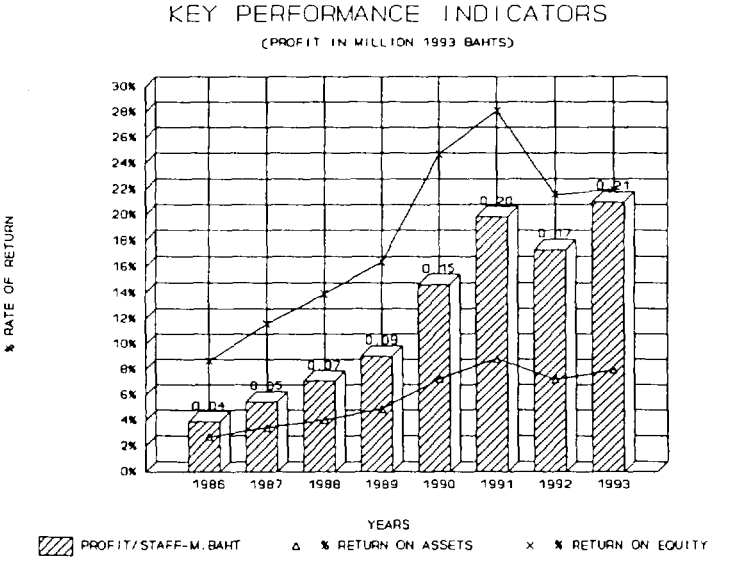


Figure 8

3.1 **Recommendation of KPMG Peat Marwick, New Zealand.** MEA hired Peat Marwick to conduct an audit of its operations. Peat Marwick recommended that MEA privatize certain non-related activities such as hospital, public relations, engineering and wiring, and improve efficiency in other areas (accounting, billing). These recommendations were endorsed by MOF, and MEA has been asked to implement them.

4. Actions taken by MEA: (a) MEA's main concern is to increase its efficiency, effectiveness and revenues; (b) MEA is already contracting several services with the private sector; (c) MEA is amending laws to enable joint ventures with other partners; (d) KPMG Peat Marwick (New Zealand) completed a study to increase private sector participation, including partial privatization.

5. **MEA's Response:** (a) Certain activities such as bus transport, cleaning and car maintenance are already subcontracted to the private sector; (b) BOOTs or BOOs are not feasible because of the monopolistic characteristics of MEA's primary service, but it will consider contracting out light transmission construction, metering and maintenance; (c) MEA would study the possibility of a share offering; (d) MEA has already amended its law to be able to set up joint ventures as needed to increase private sector participation; (e) MEA will raise more money locally through the issuance of bonds to reduce its reliance on external borrowing; (f) The maintenance workshop would be a profit center before deciding if its better to privatize; (g) The repair of motorcycles and cars would be transferred to the private sector, but it would retain the repair of heavy equipment, which is better done at MEA; (h) MEA plans to reduce management costs in the enterprise, which have increased recently.

6. Cabinet Decision.

6.1 **1992/93:** (a) Effectively implement the automatic tariff adjustment formula; (b) Abolish the uniform tariff for the entire country.

6.2 **1993/94:** (a) Implement efficiency improvements to be rated a Class A enterprise and operate on a fully commercial basis.

6.3 **1994/95:** (a) Convert MEA into a public limited company by amending its law; (b) Establish a subcommittee with the same composition and responsibilities as in the EGAT case.

7. World Bank Comments and Recommendations

7.1 MEA is an efficient and well run SE. However, the present evaluation system for productivity may not reflect this since wages are less than 20% of costs.

7.2 **Recommendations**

(a) The plans and actions approved by the Cabinet are feasible and satisfactory.

(b) MEA's planned separation of non-essential activities is good (concrete poles, engineering and wiring), but could be implemented sooner if adequate compensation is given to the affected staff. Given their low capital-to-staff ratio, these activities could be considered for privatization by an employee buy-out. If this is not done, MEA's option for a gradual absorption of these employees would be a second best alternative; given the high rates of MEA's growth, most of these jobs can be easily absorbed.

(c) Although MEA prefers to retain the hospital, the consultant's recommendation to sell or lease it seems preferable since it would both reduce costs and improve staff benefits.

(d) MEA is already using, and should further expand, contracts with the private sector to install transmission lines and meters, maintain some works and offices, and provide security and staff transportation.

(e) MEA should further expand collection of electricity bills through banks.

(f) Develop a detailed Gant analysis for steps needed to ensure commercialization by 1995.

METROPOLITAN WATER AUTHORITY (MWA)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	19,399	19,847	21,924	23,748	26,668
Liabilities	13,885	12,713	12,946	13,236	14,200
Net Worth	5,514	7,133	8,978	10,513	12,468
Net Profit	950	1,436	1,842	1,670	2,319
Employees	5,852	5,748	5,827	6,011	5,638
Debt/Equity Ratio	2.5	1.8	1.4	1.3	1.1
Remittance to GOT(%)	9.50%	9.93%	11.69%	16.55%	10.80%
ROA	0.48%	7.23%	8.4%	7.03%	8.69%
Wage Component	26.52%	28.0%	30.27%	27.62%	
Productivity					

2. Main Objective:

Production and distribution of potable water in the Bangkok Metropolitan Region, namely BMA (City of Bangkok) and Samutprakarn and Nonthaburi provinces.

3. Recommendations of the White Paper:

Private participation to be encouraged in all forms, including BOTs and subcontracting.

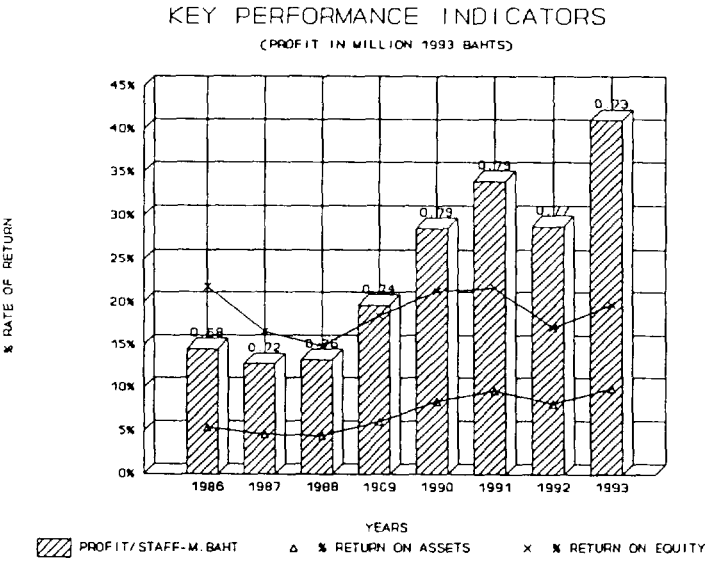


Figure 9

4. Actions taken by MWA:

(a) Both approaches recommended by the White Cover Book are being implemented; (b) Private sector may jointly invest or produce water for areas distant from production centers unable to be served by MWA, and one such system already implemented, namely Bang Phli; (c) MWA will contract and finance an in-depth study by consulting group beginning about April 1994 to explore further privatization potentials for MWA.

5. MWA's Response:

(a) MWA has so far subcontracted a water system for a new town system (Bang Phli 10,000 cubic meters), which has been operated by the private sector for two years (under a 15-year contract). However, results are discouraging because of an unanticipated shortage of raw water supply (the Chao Phya river basin is now in a drought period and the supply situation for the entire basin is critical); (b) More projects of this type could be considered if recommended by the study, including the Mahasawad water supply system (400,000 cmd, expandable to 3,200,000 cmd), for which construction has just begun (MWA financing); (c) MWA plans to continue funding its investment

programs for the next few years through internal cash generation, external and domestic borrowing; (d) At present, MWA is not considering becoming a public limited company.

6. Cabinet Decision. NA

7. MWA Status and Issues

7.1 Over the past decade, MWA has made substantial strides in improving its overall efficiency and performance, as reported in the 1982 post-audit evaluation of ADB's loans. This includes billing and collections, unaccounted-for-water and its planning capacities. However, MWA is seeking technical assistance for improving internal accounting operations.

7.2 MWA will require investments of about ฿30 billion between 1993and 1996. Most of the MWA service area is still unserved (partly because of low densities and isolated communities). The Bang Phli project (10,000 cmd per day) was intended to demonstrate the feasibility of private sector participation (BOO/BOOT) for water treatment projects; however, an unanticipated raw water shortage is causing serious financing difficulties.

7.3 A primary concern for MWA is over water shortages in the Chao Phya River Basin, especially in dry years (like 1993). These shortages result from continuing upstream and lowland development without any meaningful master plan for water utilization of the Chao Phya River. The problem is magnified for MWA, which is at the tail end of the basin, and it has already had to ration services. Moreover, in Thailand (unlike Western countries), urban/domestic water needs do not have the first priority.

7.4 Raw water shortages have become a major problem for the first private water company at Ban Phlii. Such raw water shortages, unanticipated two years ago when the company was established, have resulted in revenue losses and a deteriorated financial situation. MWA is exploring additional privatization opportunities (particularly for the Mahasawad water system), and will contract technical assistance (about $1 million) for this purpose by mid-1994.

Sewerage Systems

7.5 Sewerage systems (SSs) are the responsibility of the local governments but, given their limited resources, little has been accomplished and most communities do not have separate sanitary sewerage systems. PWA has the authority to undertake community SSs but, because of the priority given to water supply, PWA has yet to define its role in SSs, which are a major priority for the future. Several studies have been completed, but the lack of financing has resulted in minimum implementation. Since enactment of the new Environmental Quality Protection Act/1992 and the establishment of a Pollution Control Department (PCD) within the new Ministry of Science, Technology and Environment (MOSTE), this is changing rapidly. PCD has the authority and funds to undertake critical pollution control by declaring an area a special Pollution Control Zone. Accordingly, PCD now has prepared studies for four key urban centers (Pattaya, Phuket, Hat Yai, Songkhla) to be implemented in 1994, and a study for Samutprakarn Province is to be initiated soon. Moreover, PCD is now sponsoring regional (sub-river basin) water pollution control planning in several basins in the country, which will delineate priority SS needs and, with World Bank support, is defining optimal management arrangements for water pollution and for implementing a comprehensive SS for the Lower Chao Phya in the Bangkok region.

8. Status of Private Sector Participation and Recommendations

8.1 Since water supply is the most monopolist infrastructure service, it is still a SE in most countries (although it is private in France and partially private in USA). Recent efforts have given preference to the privatization of **new** water systems and the privatization of the management of water (Buenos Aires and a couple of cities in Africa) or sewerage (Malaysia) treatment plants. However, the Bang Phli project has demonstrated the feasibility of BOO/BOOT schemes for water treatment projects.

8.2 Land acquisition for the government is complex (because of the taxation situation), and is a bottleneck for projects (currently an issue for the treatment plants at Suksawat and Rangsit). These problems could be improved by private sector participation.

8.3 The privatization study for MWA should prepare standard specifications for BOO/BOOT tenders as well as management contracts for the operation of existing plants. BOT contracts may be for 25 years, in order to guarantee price, quality, and competent O&M. The initial documents should be prepared for the Mahasawad BOOT water treatment plant, and used as a model for the sector to ensure transparency in bidding and avoid prolonged negotiations. Other plants could then be contracted by BOOT.

8.4 At present, water and sewerage services are provided separately by MWA and the municipality. However, waterworks and sewerage (including sewage treatment) are components of the same service (water in and out), which would benefit from an integrated approach by keeping both services under the same agency, as is the present practice in many cities in other countries. This is especially important for revenue collection (which would be mainly through water usage charges), and there are further advantages in economies of scale in management. However, this option would not be feasible under the present narrow focus by the SEs on financial profits, since sewerage (and particularly sewage treatment) is unlikely to be highly profitable, and will cause a deterioration in the financial indicators of MWA. Moreover, MWA already has its hands full in coping with water supply problems.

8.5 **East Water Company (EW)**. The government made a critical and innovative move towards private sector participation in the sector by establishing the EW in 1992 to provide water services to the Eastern Seaboard area. EW is substantially free of the legal constraints applicable to SEs. EW stock is expected to be sold to the private sector in the future, with PWA retaining a minority stake. EW would maintain and expand raw water transmission lines (costing about ฿4 billion). EW is considering operating in other areas in the Eastern Seaboard, including Chachoengsao and Prachinburi, where EW's flexibility to develop area wide systems is desirable. However, this new company is still feeling its way and developing its role in the sector, and so will require technical assistance in engineering and financial areas.

8.6 Since 1992, MOSTE's Pollution Control Department (PCD) has underataken and impressive program that offers privatization potential, including the implementation of four major municipal SSs and a proposed industrial waste management operations in Samutprakarn. With World Bank support, PCD is studying the management of water pollution in the Bangkok region. This would offer numerous privatization opportunities, but will require technical assistance and advice in evaluating and promoting them.

8.7 **Regarding privatization, it is recommended to:**

(a) Privatization by management contracts, which offer particular advantages for water supply, needs to be explored.

(b) Revise the Ministry of Industry's procedures to enable the private sector to own/operate WSSs. Under existing constraints, the private sector could hardly own and operate WSSs, except on a joint venture basis with PWA.

(c) The East Water Company privatization deserves government support for its development and expansion, particularly for the success of its stock sale.

(d) The EW and the Ban Phlii privatization models could be expanded to other cities.

(e) The government is now evaluating the feasibility of establishing a new Lower Chao Phya Water Pollution Control Agency (with World Bank technical assistance). This regional approach has been found successful in UK and could provide a viable solution for pollution improvements.

(f) Bidding documents for the Mahasawad BOOT water treatment plants are likely to be a model for the sector and deserve special review to ensure transparency in bidding and to avoid prolonged negotiations. Other plants could also be contracted by BOOT.

(g) MWA should critically review contracting all services (security, billing and house connections), and particularly increase its billing through banks.

(h) Standard specifications for BOO/BOOT tenders should be prepared soon to implement a transparent tender system. MWA is planning a BTO contract (rather than BOOT), with the proponent operating the system for only two years. It seems preferable to seek a long-term BOT contract, which would guarantee the price, quality, maintenance and reliability of the equipment for, say, 25 years.

(i) At present, water and sewerage services are provided separately by MWA and the different municipalities. However, water, sewerage and sewage treatment are basically the same service (water in and out), and would benefit from an integrated approach by keeping these services under the same company, as is the present practice in most other countries. This is important not only for integrated planning (for example, for digging the streets and simultaneously installing water and sewerage pipes), but also for revenue collection (which would be mainly through water usage charges and, due to economies of scale, in using equipment, engineering and management). This option should be considered for the future. However, this would not be feasible under the present narrow focus by the SEs on financial profits, since sewerage (and particularly sewage treatment) is unlikely to be highly profitable, and will cause a deterioration in the financial indicators of MWA — even if such an approach would be preferable for the health and welfare of the people Bangkok.

PETROLEUM AUTHORITY OF THAILAND (PTT)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	37,649	44,349	45,604	51,958	63,969
Liabilities	24,399	28,432	25,731	27,635	35,370
Net Worth	13,250	15,917	19,873	24,323	28,599
Net Profit	1,747	3,080	6,100	7,143	7,413
Employees	3,718	3,728	3,813	3,662	3,900
Debt/Equity Ratio	1.84	1.79	1.29	1.14	1.24
Remittance to GOT(%)	41.6%	24.6%	26.3%	29.9%	29.8%
ROA	4.6%	6.9%	13.4%	13.8%	11.6%
Wage Component				11.6%	
Productivity					

2. Main Objective:

Production of energy and oil refining and retailing (Petroleum Act of 1978).

2.1 PTT is now a ฿248 billion company, employing 3,900 staff, with 1993 forecast revenues and profit before tax of ฿287 billion and ฿7.43 billion, respectively. Its profits per employee increased almost 3.5 times between 1988 and 1993, while its cost (and profit) per employee and return on assets doubled during the same period. It is the only SE ranked as Class A in Thailand, and its performance indicators compare favorably with similar institutions in other countries.

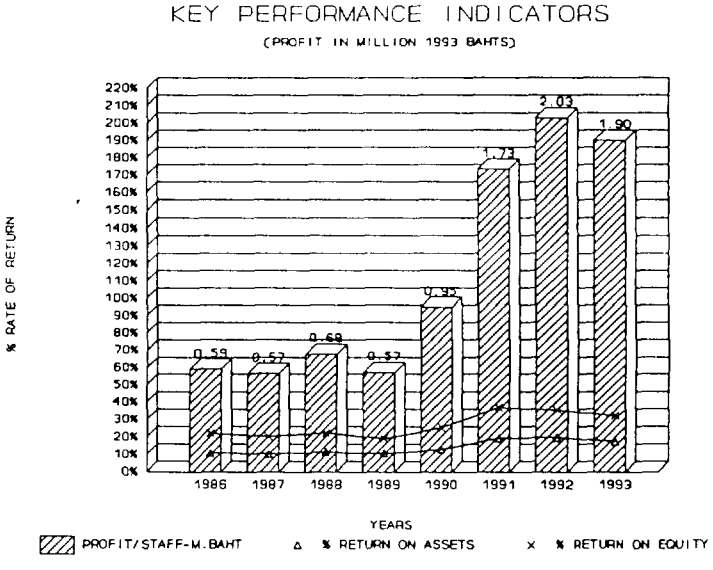


Figure 10

2.2 The normal reason for privatization — improvement of state enterprise efficiency — is not a compelling one for PTT. The major issue facing PTT is how to fund its investment program without government assistance in the form of loans or guarantees. PTT has an ambitious investment program of over $2.5 billion over the next five years as part of its corporate plan, of which 45% is for gas infrastructure projects, 25% for oil distribution and marketing, and the balance for other chemical and petrochemical projects. Internal cash generation is projected to provide a substantial part (about 40%-45%) of these investments. PTT has a prudent capital structure, maintaining a long-term debt/equity ratio of 60/40.

2.3 PTT reorganized itself in 1991 into four strategic business units — downstream oil, natural gas, petrochemicals and central services — each under its own president. PTT has 14 subsidiary companies, but owns less than 49% of the shares in 13, is the operator in none of them, and

owns only one company, PTTEP 100% (which was set up because PTT could not take concessions). Deregulation of the petroleum products distribution and marketing market in 1991 changed the environment of PTT, which increased its market share from 23% to 25%, in competition with Shell, Esso and Caltex. The 9.5% energy growth rates and paucity of investment funds are the main concerns for PTT's future.

3. **Recommendations of the White Paper:** (a) PTT/PTTEP are suitable for listing on the SET and for partial divestiture; (b) The primary step would be to restructure PTT; (c) After restructuring, the scale and timing of partial floatation will be determined; (d) Divestiture will not commence for at least two years, and is likely to be gradual.

4. **Actions taken by PTT:** (a) PTT has 13 subsidiaries with the private sector, in which PTT is a minority shareholder; (b) PTT is planning to sell shares of its PTT Petroleum Exploration (PTTEP) subsidiary to the private sector, public and employees. Shares of PTTEP would be sold in two steps, 15% starting in March 1993 and the balance by 1994; (c) PTT has commissioned an organization and privatization study to be completed by November, 1993.

5. **PTT's Response:** (a) PTT was restructured in 1991 into four business units, clearly divided into profit and cost centers; (b) PTT would like to maintain this organizational structure for at least two years (end of November, 1993) to evaluate the impact of this reorganization on its performance. PTT is also studying the option of making PTT a holding company; (c) PTT intends to dilute its share in its subsidiaries and other companies (PTTEP, Bangchak Refinery, NPC-I, TOC) when their shares are listed in the stock market.

6. **Cabinet Decision**: NA.

7. **World Bank Comments and Recommendations**

(a) PTT is an efficient, well-run SE. Its benefit to the country will be enhanced when PTT moves towards greater commercialization and corporatization, as envisaged in its corporate plan presently under implementation. This program includes converting its oil and gas units into independent subsidiaries.

(b) PTT commissioned a $450,000 detailed organization/ strategic planning options study (financed by ADB) with McKinsey and Goldman Sachs to be completed by November 1993. The study should provide detailed recommendations for PTT's privatization strategy and corporatization (including an analysis of the benefits of separating or not separating the oil and gas activities).

(c) The ADB study focuses primarily on PTT, but needs to be supplemented by a study on Thailand's petroleum laws and taxes, and the development of the petroleum market and regulatory system. The relationship of PTT with the government also needs to be clearly defined to separate policy making and monitoring from PTT operations.

(d) As recommended for other monopolistic services, it would be particularly important to establish an independent regulatory agency to set prices for gas, allow adequate financial returns for PTT, protect the consumer and ensure compliance with best industry practices in terms of safety, waste and environmental protection.

(e) The government should consider a dilution and divestment of PTT's shares in its 13 subsidiary companies, particularly those which are not in its core areas of operations (such as fertilizer and chemical companies) over a period of time, depending upon market conditions. This would, however, require cabinet approval.

(f) Dilution of 30% of PTTEP shares by 1994 has already been planned, with 15% being offered in March 1993. Divestment of a higher percentage has not been contemplated since the government cannot guarantee loans if its share in PTT falls below 70%, resulting in higher financial charges and shorter terms for loans. The government should reexamine this policy to avoid discouraging the further sale of shares.

(g) While PTT enjoys considerable freedom in its operations, the government continues to restrict access to loans and to approve loans/borrowing over B20 million (subject to a country-wide ceiling). If PTT is to implement an investment program of $2.5 billion over the next five years, this limit will have to be adjusted upwards.

PORT AUTHORITY OF THAILAND (PAT)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	6,712	8,773	11,465	12,159	13,614
Liabilities	1,952	3,021	3,021	3,537	3,719
Net Worth	6,821	8,443	8,443	8,622	9,895
Net Profit	2,177	2,580	3,028	2,429	2,490
Employees	6,134	6,260	6,688	6,642	6,796
Debt/Equity Ratio	0.22	0.28	0.36	0.41	0.38
Remittance to GOT(%)	60%	60%	60%	75%	59%
ROA	32.4%	29.4%	26.4%	20.0%	18.3%
Wage Component	73.4%	81.5%	72.2%	54.3%	
Productivity	0.4%	11.5%	3.4%		

2. Main Objective: To develop, manage and operate port facilities.

3. Recommendations of the White Paper: (a) Enable private sector to participate through subcontracts; (b) Allow private sector to undertake new activities such as warehousing; (c) Allow private sector to manage all new ports.

4. Actions taken by PAT: (a) Private sector to rent and operate most ports; (b) Hire private sector to implement some activities; (c) Amend setup laws to allow more private participation; (d) Future ports management policy to allow increased private operations.

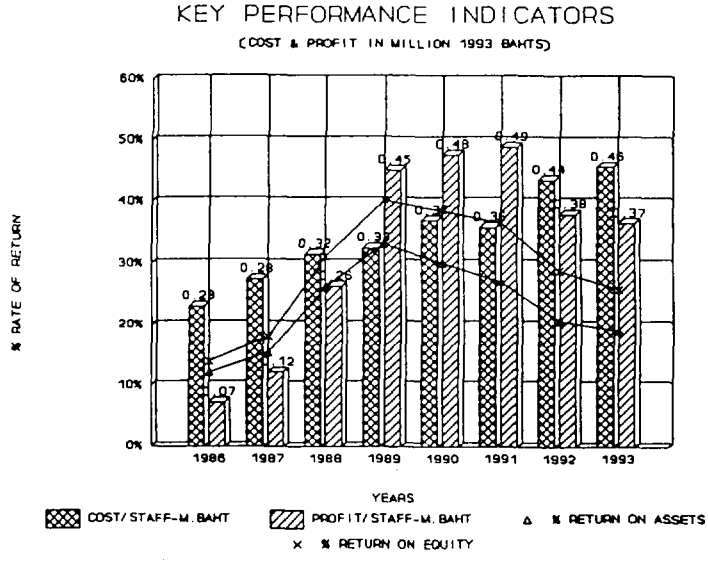


Figure 11

5. PAT's Response: (a) Two ports are managed by the private sector and two more would be managed similarly in the future; (b) The PAT law should be amended to enable full participation by the private sector.

6. Cabinet Decision. NA. SEID opinion: (a) PAT has made good progress in subcontracting ports, it should consider franchising additional activities like security, civil works, etc; (b) The amendment of the law would only apply to the existing facilities and therefore PAT should be able to establish joint ventures for new ports.

7. PAT's Status and Issues

7.1 The port system of Thailand has expanded rapidly over the last decade with the development of both the public and private ports. Laem Chabang has been developed as a deep water port to serve both line haul and feeder container traffic. Songkla and Phuket have been established to serve the exports produced in Southern Thailand, including rubber, seafood and tin. The increase in traffic has resulted in major private sector participation, both in container handling at the three private terminals on the Chao Phya near to Bangkok Port and in a number of private terminals constructed along the Eastern Seaboard. The largest of these is the port of Sri Racha, which is designed to have two deep water berths as well as two coastal berths for handling bulk and breakbulk cargoes.

7.2 Bangkok Port located at Klong Toey is the major port in Thailand, and handles the majority of cargo, including 80% of the containers. However, the port's draft is limited to 26 feet and the operation at the wharf is relatively inefficient.[3/] Although Laem Chabang has been in operation for only two years, it is projected to handle 300,000 TEUs in 1993 and to exceed 500,000 TEUs by 1995. This increase will be due not only to overall traffic increases, but also to a significant amount of cargo diverted from Bangkok Port. It is expected that before the end of the decade, Laem Chabang will be the major container port in the country and will receive calls from line-haul vessels (2000-3200 TEU), while Klong Toey will have been relegated to a feeder port with a volume of boxes less than half that of today.

Table 1 - Bangkok Port Throughput
(mm tons and 000's TEU)

	Inward Tonnage		Outward Tonnage Wharf	Containers in TEU	
	Wharf	Stream		Inward	Outward
1988	6,318	1,123	4,948	398	394
1989	6,400	1,233	5,778	453	471
1990	8,156	1,754	7,589	500	520
1991	7,987	1,823		546	625
1992	8,315	1,637	8,327	615	686

7.3 A variety of management systems, including substantial private sector involvement, have been established to operate these ports. The Port Authority of Thailand (PAT) manages Bangkok Port and Laem Chabang as departments within their organization. The former is managed as an operating port, while the latter is managed as a landlord port. Bangkok Port provides cargo-handling services at its common-user berths, but has also established a system of five preferential berths on the East Quay for container vessels. These berths are assigned to specific shipping lines on a preferential basis. PAT provides the gantry crane operators at the East Quay, but allows the shipping lines to provide container-handling equipment and labor for the movement of the cargo between vessels and the storage yard, and between the storage yard and the gate. The container lines have been allowed to establish private operating terminals along the Chao Phya River, but these are each limited to handling 50,000-75,000

3/ Box handling rates at the berth are about half those achieved by the private operators at Laem Chabang even with informal incentive payments to the gantry crane operators.

TEUs per year, and in 1992 handled about 150,000 TEU (versus 1,300,000 at Klong Toey). Although small, they provide more efficient service that the main port.

7.4 Breakbulk and bulk cargo vessels calling at Bangkok port transfer their cargo at the berths along the West Quay or in the stream. The berths continue to be operated as common-user facilities with PAT providing the cargo-handling services on the wharf and private stevedoring companies on the ship. The operations in the stream are provided by private barge operators and currently account for about one-sixth of the inbound cargo.

7.5 At Laem Chabang, PAT has leased out the three container berths and their backup areas to a consortia of ship operators. It continues to operate its multi-purpose berth as a common user facility for general cargo. PAT plans to establish a bulk-handling terminal and additional container facilities which will also be leased out to the private sector. The first two container berth leases were similar to management contracts in that PAT continued to collect the tariffs and to pay the terminal operators for the services provided. The third lease went to Evergreen Shipping Lines, which negotiated a flat annual rental to be paid to PAT for the use of the berth without having PAT continuing to collect tariffs from the vessel. Since this arrangement is less costly to the shipping lines and allows greater autonomy, it is likely that the other two consortia will seek a renegotiation to obtain similar terms. The construction of the berths required over the next five years will be accomplished either with PAT funding in return for a long-term lease agreement, or as a concession, with the concessionaire paying for the construction of the facility.

7.6 The ports of Songkla and Phuket are owned by MOF, but their operations have been turned over to the Chao Phya Port Operating Company under a concession agreement. The level of services provided and the tariffs charged by this company have been competitive with the other ports. The future growth of these ports is uncertain due to cargo imbalances, since very few imports are received at these ports. Penang offers the shipping lines a much better balance of cargo and offers shippers much more frequent departures. This competitive advantage is expected to continue at least through this decade. With substantial development of the growth triangle centered on Penang, it is likely that a majority of the southern cargoes will continue to be shipped through Penang and transferred by rail to/from Southern Thailand.

7.7 **System Improvements.** The rapid growth of the country's economy will require an increasingly efficient ocean transport system. While considerable improvements have been made in the efficiency of the intermodal transfer between water and land transport, additional improvements are needed to improve the logistics of movement between the inland origin/destination and ocean transport.

7.8 The problems of improving efficiency differ for each port. For Bangkok Port, the concern is with labor productivity and with the availability of space. PAT has excessive labor, including about 500 staff in the Marine Department (which is responsible for dredging some 8 million cubic yards per year), about 1,000 in its Engineering Department (which is responsible primarily for operation and maintenance of automobiles), and some 3,500 in the two departments of the Bangkok Port Division (which provide towage, pilotage and some of the cargo handling services on the wharf). In addition to the problem of excess labor, the port's backup area is small and difficult to work, and the landside access is congested.

7.9 For Laem Chabang, the major constraint on efficiency, the landside access, is being improved. The road connection to Bangkok is being widened. The rail connection to the inland container deport at Bang Su is being expanded to include a new facility at Lat Krabang. The remaining

problem is to establish efficient operation of the inland container depots serving both the road and rail links and to insure timely expansion of capacity. For Songkla and Phuket, inefficiency is due largely to the imbalance of import versus export cargoes.

8. Status and Recommendations for Private Sector Participation

8.1 The private sector has substantial involvement in the port sector of Thailand. This involvement is comparable to other countries, but PAT should continue with its efforts to amend its legislation and permit more port functions to be undertaken by private sector companies. Examples from other countries provide some useful insights as to the range of options available.

8.2 In Hong Kong, the port sector is entirely private. The Harbor Department has general responsibility for the development of the port, but all services are provided by private sector companies. Bids by competing companies for the operation of each new container terminal site are approved by the government.

8.3 In Malaysia, the ports were autonomous port commissions (SEs) for several decades. Recently, they were corporatized into port operating companies, while land ownership remains with a residual port commission. For Port Kelang, two different operating companies (joint ventures between the port commission and other state corporations) were created to operate most of the container and general cargo facilities, and another company will be established to operate the new West Port berths. In Penang and Johore, single operating companies were established by corporatizing the existing port management.

8.4 In Chile, all cargo operations are performed by private stevedoring companies that compete freely for the business of each shipping line. Existing facilities were developed by the government, except for some bulk facilities that were built as private concessions. All new facilities are to be built through private finance using concession arrangements. Once there is adequate competition, the ports are expected to become autonomous, with little or no government regulations.

8.5 The sale of waterfront land to the private sector is not recommended given the scarcity of land suitable for port operations. The existing landlord arrangements could be extended to provide the users with greater control over their operations and to allow them to increase efficiency and competitiveness. The leasing of individual berths would not create problems of access since there are sufficient facilities to guarantee competition among the users. The government should provide access for the smaller shipping lines, which might otherwise be at a competitive disadvantage, by maintaining common-user facilities. These could then be operated through management contracts with a private terminal operator.

8.6 An important change would be to convert Bangkok and Laem Chabang ports into separate corporations. These would act primarily as landlords. The two ports would compete for cargoes, but the overlap in the hinterlands would be limited by the natural split between deep draft, line haul vessels and shallower draft feeder services. The residual PAT organization would maintain ownership of the land. The non-cargo-handling services of PAT could also be transferred to the private sector through management contracts or other mechanisms. In this case, the organization of PAT could be similar to that shown in Chart 1.

Proposed Restructuring of the Port Authority of Thailand

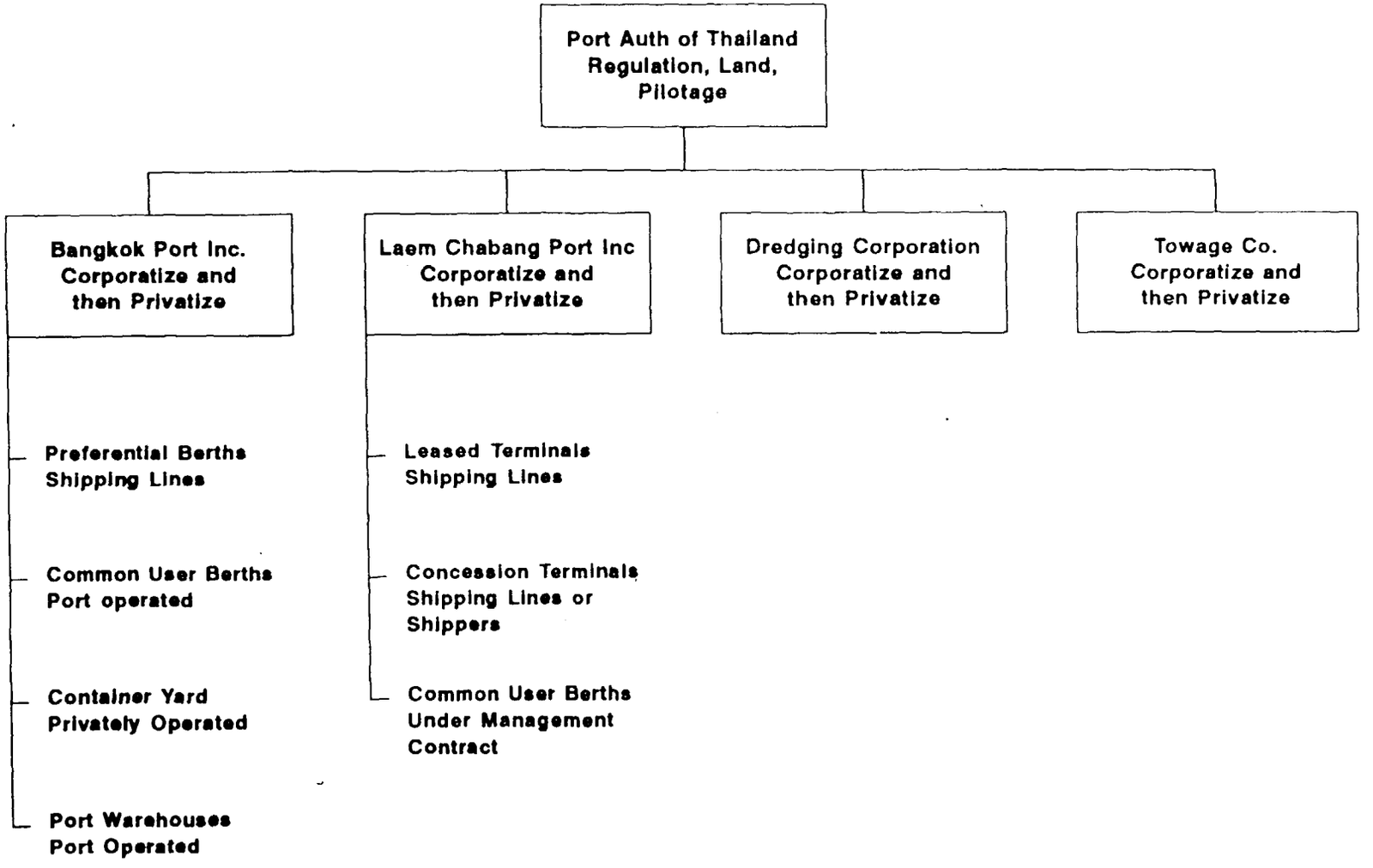


Chart 1

8.7 Additional capacity would be constructed by PAT or the port authorities. They would contract the design and construction of the basic infrastructure. The cost of the infrastructure would be recovered over the life of the facility through lease payments or through financing arranged through the terminal operator in exchange for payment of the rental for the facility. The development of the superstructure and the procurement of the cargo-handling equipment would be left to the terminal operating companies.

8.8 PAT is currently considering converting its dredging and towage functions into wholly-owned subsidiaries. This would provide better information on the costs and productivity of these activities. It allows the managers to formulate clearer objectives. Once the effectiveness of these subsidiaries is established, the private sector should be involved in these businesses.

8.9 Towage could be transferred to the private sector in a number of ways: (a) The towage business could be sold, but this would be advantageous only if there was adequate competition; (b) The tugboats could be sold to local entrepreneurs who would compete for business; (c) The business could be divided into a limited number of concessions to private companies. These concessions would then compete for the PAT tugboats.

8.10 The dredging activity could be sold to the private sector along with all dredging equipment for a 3-5 year concession for dredging the entrance to the Chao Phya and PAT port facilities along the river. Thereafter, the PAT should open up the contracting of these services to international competitive bidding.[4/] Although the local company would have some advantage in this tendering, international competition should bring prices down.

8.11 Once the operating divisions of PAT responsible for Bangkok Port, Laem Chabang, towage and dredging have been transferred to the private sector, the PAT residual authority should be downsized. Its responsibility would be limited to the ownership of the port land, provision of pilotage[5/] and any required residual regulatory functions (including the review of port tariffs but would only apply for the common-user facilities in Bangkok and Laem Chabang). PAT should reduce its manpower through a combination of attrition, labor buyouts and the transfer of staff to subsidiaries or private companies.

8.12 PAT has been a profitable state enterprise because of its monopolistic power to collect economic rents. Although most of its operational responsibilities have been transferred to the private sector, its tariffs have not been reduced to reflect such productivity gains. With the increased involvement of the private sector, the number of tariffs collected by the port should be reduced. Most of PAT's revenues would then be derived from lease payments by private sector operators. PAT's rates should be set according to its costs and the price and quality of services offered in competing ports. The published rates would be maximums and the ports could charge lower rates. The rates charged by the terminal operators would be a combination of the rates specified in the tariff or in the lease contract as well as rates negotiated directly with the user.

4/ The procedure as described represents a very cautious approach. It could be simplified and accelerated by starting with a joint venture rather than a wholly-owned subsidiary.

5/ While it is possible to privatize the pilotage service, this would create a private monopoly. Experience throughout the world indicates that monopolistic pricing results to the detriment of both trade and the growth in port activity.

PROVINCIAL ELECTRICITY AUTHORITY (PEA)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	43,416	51,215	58,395	69,904	80,315
Liabilities	35,249	39,036	40,578	44,867	39,607
Net Worth	8,167	12,179	17,818	25,037	40,708
Net Profit	2,462	3,849	5,809	7,661	9,030
Employees	43,738	45,213	28,244	29,733	30,847
Debt/Equity Ratio	4.32	3.21	2.28	1.79	0.97
Remittance to GOT(%)	15.0%	15.0%	15.0%	11.4%	18.5%
ROA	5.67%	7.52%	9.95%	10.96%	11.24%
Wage Component	10.5%	10.5%	10.5%	11.62%	
Productivity	10.2%	8.3%	9.4%		

2. Main Objective:

Provision of electricity nationwide, outside of Metropolitan Bangkok.

3. Recommendations of the White Paper:

(a) Privatization or public participation is difficult in the near term; (b) PEA should focus on improving its operating efficiency; (c) Issuance of shares to the public is to be considered later once a working regulatory framework for the power sector is in place.

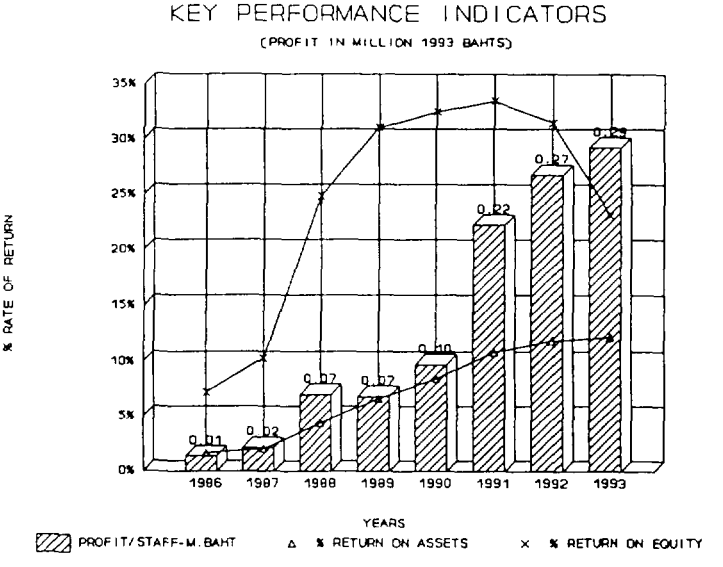


Figure 12

4. Actions taken by PEA:

(a) PEA is contracting services like maintenance, cleaning, feasibility studies, and the construction of 105 kV transmission lines; (b) Amending laws to enable joint investment with other partners to form a limited company and a public company to increase the possibility of distributing shares.

5. PEA's Response:

(a) PEA is basically in agreement with the approach recommended; (b) PEA has concerns about the impact of privatization on the cost of electricity to rural areas (54% of the population uses less than 35 kWh per month); (c) Certain services would be subcontracted to the private sector; (d) PEA is awaiting a decision on its upgrade to Class A status before deciding on privatization; (e) PEA does not agree with a uniform tariff or a reduction in subsidies to PEA's customers.

6. Cabinet Decision

6.1 **1992/93:** (a) Implement an effective automatic tariff adjustment formula to increase the confidence of potential investors; (b) The policy of a uniform tariff for the entire country should be abolished.

6.2 **1993/94:** (a) PEA is to operate on a more commercial basis, improve its efficiency and become a Class A enterprise (expected once the 1992 results are audited); (b) PEA should be reorganized to create a regional focus and improve efficiency.

6.3 **1994/95:** (a) Convert PEA into a public limited company by amending PEA's Law.

6.4 **1995/96:** (a) Separate PEA into four regional power companies; (b) Set up a subcommittee (similar to EGAT and MEA) to define regulatory matters.

7. World Bank Comments and Recommendations

(a) The plan approved by the Cabinet to convert PEA into a public limited company by 1994-95 is sound.

(b) The establishment of four separate units would allow better monitoring of costs and identify the need for subsidies in different regions. The establishment of separate corporations, however, deserves more analysis; although some countries have divided the sector into regional or even provincial corporations, it is not clear if the benefits of measuring their comparative performance and the decentralized management would compensate for the economies of scale and provide the adequate cash generation needed for investments. A consultant study should then be initiated soon to examine alternatives for private sector participation, take steps towards corporatization and analyze the benefits of establishing, for example, four subsidiaries.

(c) PEA should consider privatizing all services (security, cleaning, billing and collecting, construction of transmission lines, etc.).

(d) PEA expects to be graded a Class A enterprise after the 1992 audit. Soon after that, PEA could be corporatized. However, this will require a transparent system to define the government's subsidies that will replace the present cross-subsidies provided to PEA by MEA and, to a lesser degree, by EGAT.

(e) PEA is serving only about 80% of the population under its jurisdiction. Thus, targets to increase service coverage for 2000 and beyond should be proposed.

(f) As in the case of EGAT, the establishment of an adequate regulatory framework for the sector will be critical for the corporatization of PEA.

PROVINCIAL WATER AUTHORITY (PWA)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	6,902	7,491	8,237	8,656	11,440
Liabilities	1,814	1,837	1,857	1,696	3,043
Net Worth	5,087	5,655	6,380	6,960	8,397
Net Profit	368	459	473	219	95
Employees	5247	5,680	5,950	6,091	7,137
Debt/Equity Ratio	0.36	0.32	0.29	0.24	0.36
Remittance to GOT(%)	61.8%	40.0%	36.4%	86.5%	NA
ROA	5.3%	5.7%	5.7%	2.5%	0.8%
Wage Component	43.2%	44.9%	39.5%	33.5%	
Productivity					

2. Main Objective:

Produce and distribute potable water in all provinces of Thailand (excepting only the City of Bangkok and Samutprakarn Province), including source development, conveyance, pumping, treatment, storage, and distribution facilities, for all urban and rural communities in the provinces.

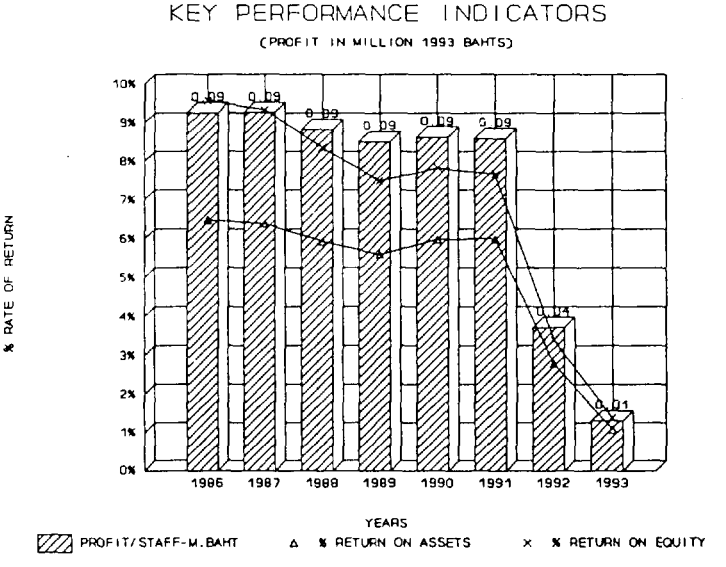


Figure 13

3. Recommendations of the White Paper:

(a) PWA should consider subcontracting services to the private sector, such as maintenance and revenue collection; (b) PWA's effort in planning future investments, both master planning by regions and feasibility studies for particular projects, is quite limited due to staffing constraints, and assistance for strengthening this effort is critically needed; (c) PWA should increase its effort for evaluation of the potential for private sector participation for joint investment/ownership/management of new systems.

4. Actions taken by PWA:

Over the past year, PWA has taken definitive steps regarding privatization, including (a) Establishing a PWA Steering Committee in June 1992 for exploring privatization potentials; (b) Implementing, beginning in December 1993, under an ADB technical assistance grant, evaluation of privatization opportunities for two selected water supply systems (WSSs); (c) Exploring the potential for private sector participation in PWA's new East Water Company subsidiary for serving the Eastern Seaboard regional development zone. A special sub-committee of the PWA Board visited France and England in October 1993 to explore privatization practices in Western Europe.

5. **PWA's Response:** PWA has expressed willingness to consider further options to increase private sector participation as recommended by technical assistance studies, and has agreed to increase private sector participation through BOO contracts.

6. **Cabinet Decision:** NA. SEID opinion: PWA should accelerate private sector participation through BOOTs to improve the sector.

7. PWA's Status and Issues

7.1 PWA is presently operating some 220 waterworks and supplying about 1.8 million cubic meters per day to about one million families. PWA has significantly improved its performance in recent years by a substantial decrease in unaccounted-for-water and by doubling the number of customers per employee. However, potable water is provided to less than one-third of the population under PWA's jurisdiction, which is much lower than countries with similar income levels (Brazil, Colombia and Korea have service levels between 80% and 90%). This requires further effort and huge investments estimated at almost ฿100 billion during the next decade.

7.2 Most of PWA's customers have low incomes and 80% of its sales are for domestic users. Further, existing cross-subsidization is opposed by the industrial and commercial users (20% of customers, but 40% of the water sold); reduced water charges would endanger PWA's financial performance and its capacity to undertake needed investment. In addition, water is extremely scarce and expensive in the north, and nationwide tariffs do not provide incentives to reduce water wastage in such areas. Under these conditions, the minimum monthly subsidized consumption level should be reduced (perhaps to 6 m^3 per month/connection), and since water is a local good that cannot be transported for long distances, differential and highly progressive rates should be applied for excessive consumption, particularly in water scarce areas.

7.3 **PWA's Developing Issues.** The combined industrial and population growth (particularly in urban areas) has resulted in greatly increased demands for WSSs, but PWA has been unable to keep up with these needs. Existing demand will require a dramatic expansion of about 20% p.a., compared with an actual growth of about 12%. PWA's major problem is the lack of adequate experienced/skilled technical staff throughout its organization, due to the relatively low salary levels, as compared with the private sector, which are two to three times higher. These deficiencies are especially critical for PWA's O&M, and even more important for its Planning Division (PD), responsible for PWA's expansion program. As a result, the PD's staff of 16 engineers one year ago has been eroded to 4 now, while 15 engineer positions remain vacant. PWA's most critical need at this time is for strengthening the PD (which is hampering its planning for the 10 regions), as well as the preparation of feasibility studies (of which 15 have been prepared, but another 30 are needed within a year for regions undergoing the fastest development).

7.4 **PWA's Strengthening**. The following actions are recommended to strengthen PWA by:

(a) Providing technical assistance (two waterworks experts in financial and engineer planning) for supporting the PD in carrying out a master plan for priority regions and required feasibility reports. Such plan will focus on: (i) rehabilitating existing systems; (ii) constructing new systems; (iii) improving rural WSSs; (iv) promoting water resources development. The PD should give priority to providing a counterpart for these studies.

(b) Providing on-the-job training for O&M, by furnishing a senior waterworks engineer to each regional office.

(c) Increasing PWA's 10 regions to include five rather than seven provinces by region. This request from PWA is justified, but efforts will be needed to restrain staff increases.

8. Private Sector Participation Status and Recommendations

8.1 A consultancy study on the privatization of PWA (financed by ADB) is to be completed by mid-1994 and will identify and evaluate privatization possibilities. PWA's planning for increased private sector participation is commendable and should be a major factor in increasing the present relatively low percentage of the population with potable water. These efforts deserve support. PWA plans to call for BOO proposals for five large water supply and distribution systems (Pathum Thani-Rangsit, Omn Noi, Omn Yai, Bang Pakong and Chachoeggao) that will cost about Baht 3,000 million each. However, BOO projects should not include investments that require a long time to achieve full utilization (like reservoirs or long transmission lines).

8.2 PWA lacks the experience to negotiate for BOO offers. Thus, transparent, standardized documents should be issued to avoid protracted negotiations. This would allow PWA to compare proposals based only on minimum costs. Further, water supply BOO contracts are complex due to the need to control water quality and to deal with the problems of payments during prolonged drought periods.

8.3 PWA's role in privatization should include: (a) Use of the private sector for management of systems (including O&M and revenue collection); (b) Joint sharing of investment in projects, especially new projects.

8.4 PWA's efforts on moving ahead with its national program could be greatly accelerated by strengthening PWA's PD, both for master planning and for project feasibility studies, and technical assistance is recommended for this purpose. This would include (a) Continuing evaluation of privatization projects in PWA, including the potential for participating in PWA's recently established East Water Company subsidiary for serving the Eastern Seaboard economic development zone; (b) Arranging for visits by PWA officials to evaluate privatization in other countries such as Malaysia and the United States.

8.5 To successfully implement the above plans, PWA should establish a Privatization Unit within PWA's Corporate Planning Department.

8.6 Many rural governments would like PWA to own and operate their water and sewerage systems. However, a better alternative would be to establish packages of several water and sewerage systems that would be suitable for privatization.

STATE RAILWAY OF THAILAND (SRT)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	20,762	21,449	22,666	24,709	27,845
Liabilities	13,287	14,345	15,380	18,091	19,641
Net Worth	7,475	7,103	7,286	6,618	8,204
Net Profit	(592)	(795)	(778)	(1,178)	(929)
Employees	25,019	25,769	25,864	25,284	21,004
Debt/Equity Ratio	1.78	2.02	2.1	2.7	2.4
Remittance to GOT(%)	0%	0%	0%	0%	0%
ROA	-2.9%	-3.7%	-3.4%	-4.8%	-3.3%
Wage Component	49.6%	49.6%	50.4%	51.1%	
Productivity					

2. Main Objective:

Operate railroad and related services.

3. Recommendations of the White Paper:

(a) Promote private investments in railroad cars and other equipment for railroads: (i) allow users to buy their own wagons for transportation; (ii) encourage private sector to develop cargo handling facilities. Subcontract some activities to reduce costs; (b) Amend the law enabling SRT to create limited companies as subsidiaries to develop business around train stations to increase revenues. The subsidiaries may be all kind of joint ventures. Decisions on this should be based on the BOT's Law.

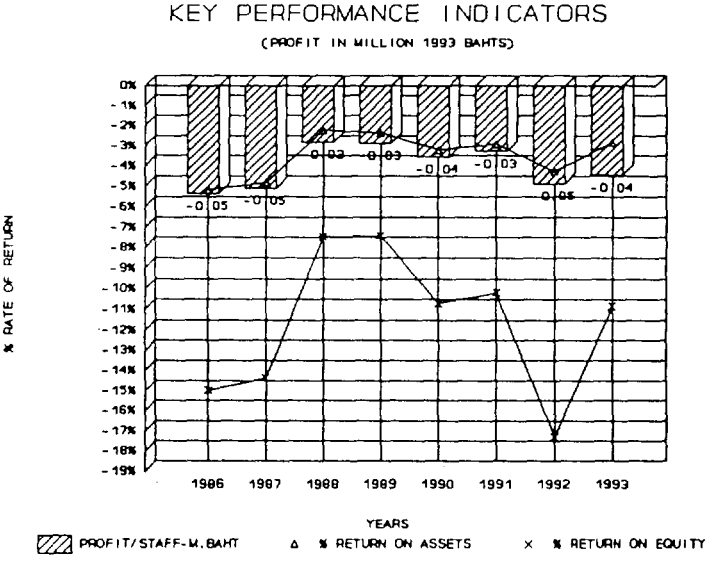


Figure 14

4. Actions taken by SRT:

(a) Joint investment in the project to install fiber optics on rails with Telephone Organization of Thailand and Com Link Co., Ltd., a private company; (b) Private sector to develop prime land for some projects; (c) Amending setup laws to permit joint venture with private sector; (d) Granting concession to construct elevated railways (Hopewell project); (e) Hiring private sector to implement some activities; (f) Customers to buy containers for transport of goods; (g) Devising a policy to encourage private operations of plants and locomotive shop to make wagons and some parts.

5. SRT's Response:

(a) SRT fully agrees with the recommendations; (b) SRT Law is being amended to enable the implementation of the above recommendations; (c) SRT has employed TDRI to study the role of the railroad in the next decade; (d) SRT has a joint venture with Fuel

Pipeline Transportation Company to transport oil through pipelines with a 5% equity participation (฿22 million).

6. Cabinet Decision. NA. SEID opinion: (a) SRT should accelerate private sector participation through joint ventures; (b) SRT should give franchises for high speed trains; (c) SRT should accelerate the construction of the Hopewell project; (d) Establish a joint venture with the private sector to produce railroad cars; (e) Conclude the TDRI study and develop a business plan as soon as possible.

7. SRT's Status and Issues

7.1 SRT provides a range of services, including inter-city passenger and freight rail trains, urban commuter trains, and a planned light rail system and urban expressway (through a concession). SRT's primary business is its inter-city rail service that operates on a single track network covering some 3,728 kilometers, and that connects to the Malaysia Railway and continues south to Singapore. The passenger traffic accounts for three-quarters of the train-kilometers and slightly less than two-thirds of SRT's revenues. The railroad had a relatively large workforce in 1990 of 26,500 persons, of which about 85% were permanent employees. This is equivalent to one employee per 1,300 train-kilometers. The rolling stock is relatively old; the diesel locomotives and passenger cars average about 22 years of age and the freight wagons over 30 years of age. The track is in fair-to-poor condition with failures occurring almost daily. The condition of the track and rolling stock, together with the single track configuration, limit train speeds to an average of about 50 kph for passenger trains and 30 kph for freight trains.

7.2 SRT has been operating at a loss for the last 20 years. During the last ten years, net losses averaged about ฿0.5 billion per year and the operating ratio has been about 110%. Labor accounts for nearly 60% of the direct operating cost of SRT, while fuel and material account for most of the remainder. The poor condition of the assets and the advanced age of the rolling stock result in relatively high maintenance costs, equal to about half of the total operating cost. A large proportion of these costs are assigned to infrastructure (track, signaling and stations), which, even at the current low level of maintenance, represent one-quarter of total operating costs.

7.3 SRT's consolidated losses require subsidies of nearly one billion Baht every year (for operating losses and debt service). If maintenance standards were raised, the amount of subsidies would increase to ฿4 billion per year[6/], which, if allocated in proportion to revenues, would be equal to ฿0.4 per ton-km of freight and ฿0.25 per passenger km.

7.4 Improvements to the System. The problems that the railroad faces are not unique to Thailand. The relatively short trip distances and low operating speeds put the railroad at a disadvantage relative to truck and bus transport, and limit the railroad to a relatively small share of the total freight transport market. The government regulates tariffs and the quality of passenger services. As a result of the artificially low fares, passenger traffic (including the inter-city and commuter train operations) constitutes the primary source of both revenues and losses. Moreover, losses are likely to increase as a result of decreasing market share due to diversions to inter-city bus services, which provide faster and more convenient service.

6/ Based on the TDRI projections for 1993 excluding the additional investments needed to meet the projected growth in demand.

7.5 A potential area of growth for freight services is the international haulage of freight. If unit train movements are permitted across Thailand and Malaysia uninterrupted, SRT could provide a non-water link for the international movement of freight. The railroad could carry containers directly to and from Singapore, thereby avoiding the double handling costs, and remaining competitive with the all-water route. At present, most of the waterborne container services are feeder services, transferring their cargo at Singapore, Hong Kong or Kaoshiung. A considerable amount of cargo from Southern Thailand is already moved across the border to Penang. With the expansion of the growth triangle of Southern Thailand, Northern Peninsular Malaysia and Northern Sumatra, these movements will become more important. Cooperation with the Malaysian railroads would also offer significant economies of scale in the form of joint ordering of rolling stock, supplies, locomotive maintenance and track maintenance.

7.6 The railroad also has the potential to play a major part in the development of Laem Chabang by providing efficient, large-volume transportation to inland container depots. This will require efficient transfer of boxes between rail and truck for a variety of carriers at the proposed ICD in Lat Krabang.[7/]

7.7 The priority given to passenger trains results in relatively long travel times for freight trains, which causes further erosion of their market share. The distances travelled by freight average a little more than 400 km. Trucks are cost competitive up to 100 to 200 kms but, when travel time is taken into account, this competitive distance is extended considerably. As the value of the cargo transported increases, the railroad's market share for medium value cargo movements will decrease dramatically. Even now, the principal cargoes carried by the railroad are low value bulk commodities such as cement, petroleum products and gypsum.

7.8 The recent Master Plan prepared by the Thailand Development Research Institute made a number of recommendations for improving the operation of the railroad. The principal recommendation was the establishment of a Public Sector Obligation (PSO) agreement with the government, which would contract for the unprofitable passenger services it requires, and compensate SRT for providing these services. Other recommendations include:

(a) Establishing commercially-oriented real estate activities along rights-of-way and other parcels owned by SRT.

(b) Developing these parcels and other complementary railroad business through joint ventures with the private sector.

(c) Increasing investment in trackage maintenance and in new locomotives.

(d) Improving coordination of SRT's Bangkok commuter services (especially the Hopewell project) with other rapid mass transit and urban expressway systems being developed.

(e) Extending the Hopewell network to provide service to the new airport and to new residential areas to the west of Bangkok.

7/ This suggests that a unified operation of the ICD would be more appropriate than the divided operation that is currently planned. It also suggests that the major shipping lines should be involved in both handling and storage of boxes.

7.9 SRT's proposed increase of the average operating speed and capacity by double tracking the network does not appear to be financially justified even with the high volume of traffic projected by TDRI. However, this may be justified for certain sections of the network (like the section from Chachoengsao to Laem Chabang).

8. Status Private Sector Participation and Recommendations

8.1 The private sector provides numerous services to SRT. Freight operations are primarily unit trains hauling the major cargoes (e.g., cement, petroleum products and containers), with the private shippers providing most of the wagons and the shunting locomotives. SRT provides the main locomotives and the engine crews. Private contractors also provide the materials and some of the labor for maintenance of the track. The catering and cleaning services on the passenger trains and in the stations are also private. Formerly, the private sector operated three of the commuter lines with considerable success, but this arrangement was discontinued.[8/]

8.2 Two models to be considered in increasing the role of the private sector are the rail systems in Chile and Malaysia. In Chile, the railroad system was subdivided into separate companies providing trackage and operating services. In addition, the private sector was allowed to own its own rolling stock and organize the movement of its own unit trains.

8.3 In Malaysia, efforts to fully privatize the railroad met with little interest from the private sector, so the government has converted the SE into a corporation with the objective of eventually selling shares to the public, with the government retaining a minimum percentage of the shares and a golden share, thereby giving it control over key policy matters. The government would also assume responsibility for the maintenance of the track.

8.4 An outright privatization of SRT is not possible given its financial condition. Three options (possible structures for each of these options are shown in Chart 2) available to SRT are to:

(a) Reorganize according to functional units that would be wholly-owned subsidiaries and could eventually be spun off into private companies.

(b) Reorganize into regional operating subsidiaries, each with profit and loss making activities.

(c) Transfer the profitable activities to joint ventures or separate corporations and reduce SRT to a core set of unprofitable activities that would require subsidies but could then be performed through management contracts.

8.5 If SRT were to be corporatized, it would first have to be re-capitalized so that future operations would be capable of servicing its future level of indebtedness. The SRT corporatization would also require converting existing government subsidies into a contractual relationship, with the

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8/ The private operators were able to integrate the train movements with the movements of the bus fleets that they also operated. This resulted in significant improvements in ridership, quality of service and profitability on these routes. These gains were lost when the SRT reasserted control over the commuter services. The reason for ending these contracts is obscure, but the reluctance of the labor unions and the government officials to allow this activity to be performed by the private sector are commonly mentioned reasons.

government covering the losses on services that it regulates. Under this arrangement, SRT would be able to operate other railroad services on a for-profit basis.

8.6 The issue of organizational restructuring is one of the most important issues facing SRT. Since the traditional monolithic organization for railroads is no longer effective, other railroads throughout the world have restructured their system accordingly, to enable them to operate in a more commercial environment. Therefore, it is important to hire experienced consultants to develop an organizational restructuring program for SRT that will enable SRT to effectively meet its future role in the Thai transportation system.

8.7 Separating the infrastructure and the operating equipment would allow the management of each company to focus on their own operations and investments. The infrastructure, which includes trackage, yards and stations, could be maintained and operated by separate companies, which would charge for their use. Charges for the use of the track should be set proportional to the estimated maintenance costs. Since the level to which the track has to be maintained depends on the desired operating speed, higher costs are incurred in maintaining tracks for passenger trains than for freight trains. In addition, to ensure acceptable maintenance levels, the SRT board of directors should include major users.

8.8 Alternatively, the infrastructure could remain under the control of an SE, which would then cover the costs of maintaining the network through a combination of user charges and government funding from earmarked general revenues.

8.9 The rolling stock could be managed by an operating company, which would be responsible for selling transport services. The company could have subsidiaries for freight, inter-city passenger and commuter services, and would contract with the trackage company for scheduling slots and yard space. Cross-leasing arrangements could be established for the locomotives in order to ensure efficient utilization.

8.10 Alternatively, private leasing companies could be allowed to purchase the rolling stock and then lease it back to SRT. These companies would also purchase additional equipment as required by SRT, again under long-term lease arrangements. This same concept could be applied to locomotives. This would allow the continuation of the current practice of having the major shippers provide their own wagons (a practice that should be extended to the haulage of containers). The role of the major shippers in the operation of unit train services could also be extended to marketing the extra capacity on those trains, especially for backhauls. The yard operations in the ICDs could be contracted to a terminal operator. Similar arrangements could then be established for other yard operations.

8.11 If SRT retains ownership of the rolling stock, the freight operations of SRT, which are potentially profitable, could be transferred to a joint venture subsidiary or fully privatized. The private operator would manage loading and unloading, and the train consist but SRT would provide the locomotives and crews according to a pre-arranged schedule. It does not appear feasible to have the private sector operate the locomotives because of the need to ensure high levels of utilization for this equipment. However, leaseback arrangements with the private sector could be used to provide newer and more reliable locomotives, thereby ending shortages due to the age, condition and size of the existing fleet.

8.12 A separate corporation could also be established to manage SRT's real estate under long-term concessions. Land ownership would remain with the government. Since much of the real estate

is associated with the right-of-way and has implications for changes in the amount of trackage, this company might also be responsible for the infrastructure. Professional management of these assets would ensure SRT acceptable profits, which should be used for maintaining and upgrading the network, instead of subsidizing existing operations.

8.13 The residual organization of the SRT would continue to provide PSO functions. It would also provide central scheduling of train movements and provide coordinated planning for expansion of the network. It might also have responsibility for track maintenance. The residual state enterprise would also include Hopewell until the conclusion of the BOT agreement. Thereafter, the light rail transit system and urban expressway should be transferred to the MRTA, or whatever agency is ultimately given responsibility for the rapid transit services in the metropolitan area.

8.14 Joint venture partners might include major suppliers for the infrastructure and major users of the transport services and real estate and land development firms for the real estate company. For the sale of shares, a decision would be needed on the pace of the sale and the residual amount to be held by the government. Finally, consideration should be given for concessions for specific services such as the commuter train operations.

8.15 It is important to choose among these options based on the clear objectives of improving the efficiency, reliability, utilization and productivity of the railroad, and increasing or at least maintaining market share. Objectives related to providing minimum levels of service or keeping rates affordable to the poor cannot be addressed directly by the private sector, which should be concerned with the efficient operation of these services. These concerns should be addressed by implementing SRT's proposal to establish a Public Service Obligation entity.

Proposed Restructuring of the SRT to Promote Efficiency and Private Sector Participation

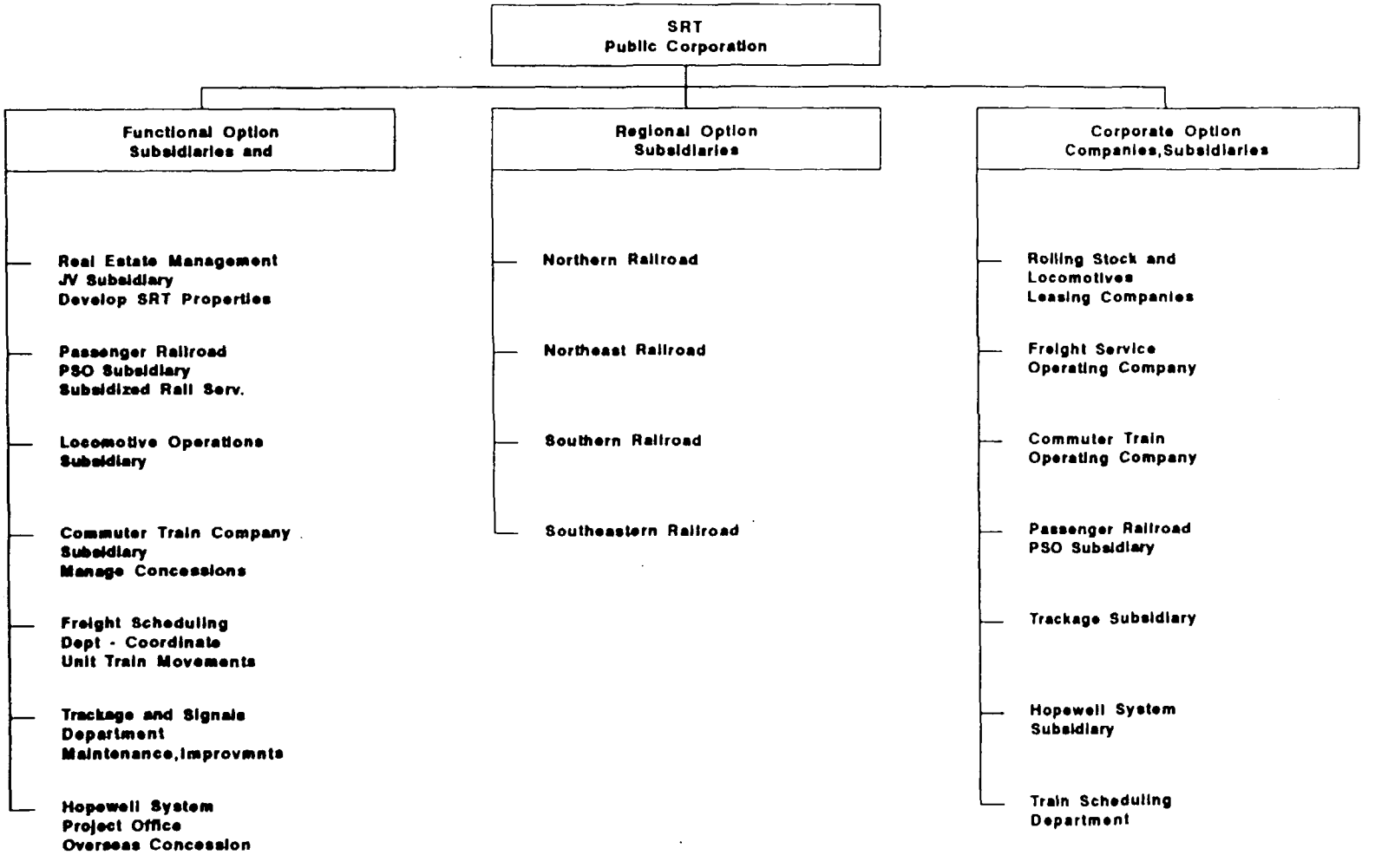

Chart 2

TELEPHONE ORGANIZATION OF THAILAND (TOT)

1. Financial Highlights

	1989	1990	1991	1992	1993
			(Million Baht)		
Assets	50,373	62,472	72,800	81,973	87,567
Liabilities	37,491	44,154	45,268	49,598	47,697
Net Worth	12,882	18,318	27,532	32,375	39,870
Net Profit	5,788	8,041	10,453	11,534	8,004
Employees	18,186	18,727	18,941	20,787	19,151
Debt/Equity Ratio	2.91	2.41	1.64	1.53	1.20
Remittance to GOT(%)	30.0%	30.0%	30.0%	36.3%	72.0%
ROA	11.5%	12.9%	14.4%	14.1%	9.1%
Wage Component	34.7%	35.1%	39.1%	34.6%	
Productivity	1.61%	1.85%	7.53%		

2. Main Objective:

Provide telephone and related services to support government and business activities. TOT is profitable with monopoly rights to provide basic telecommunication services to the public. International services are provided by sister SOE-CAT. Since 1989, TOT has been allowing private sector participation in basic and value added services — cellular telephones, paging services, portable telephones (CT-2) systems, magnetic phone cards, mobile trunk radio telephony, and video text. Private sector participation involve construction of assets by a private firm (as a BTO project) and subsequent transfer to TOT. The private firm operates the service and obtains a share of the revenues.

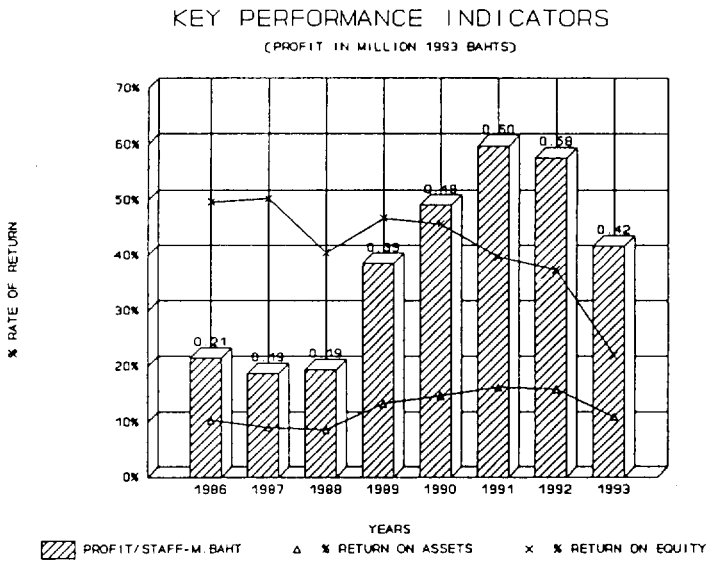

Figure 15

2.1 The larger BTO schemes include a fiber optic network along railway lines, a submarine cable and a network of three million lines involving a total investment of 120 million Baht. Future programs call for an additional six million lines between 1997-2001.

3. Recommendations of the White Paper: (a) Increase private sector participation to improve the availability and quality of services; (b) Reduce external borrowing; (c) Consider the merger of TOT and CAT to improve service efficiency. A detailed study would provide recommendations for this purpose; (d) Decide on the mechanism for increased private sector participation based on the following alternatives: (i) issuance of shares by TOT; (ii) issuance of shares of a combined organization (TOT and CAT); (iii) joint ventures; (iv) amendment of the Telecommunication Act to enable private sector participation; (e) Improve the organization of the telecommunication sector. Create a regulatory

framework for the sector to protect consumer interests; (f) Approve various joint ventures such as the three million lines contracted with the private sector.

4. Actions taken by TOT: (a) TOT cited various advantages, but mainly disadvantages, for merging TOT and CAT; (b) Private participation alternatives should be carefully considered by concerned agencies, given the impact of the alternatives and the time required for their approval, this would include: (i) Granting private concessions; (ii) Contracting activities; and (iii) Joint investments with the private sector.

5. TOT's Response. (a) TOT has hired an international consulting firm to undertake a review of its privatization strategy and how to deal with the issues posed by the large BTO contracts; and (b) TOT staff is being trained on development and implementing the privatization program.

6. Cabinet Decision. NA. SEID opinion: (a) Supports the contracting of three million lines; (b) Study is being conducted by the Ministry of Telecommunication to study the merger. The Committee does not think it is desirable because of the large size of the resulting company.

7. World Bank Comments and Recommendations

7.1 In recent years, telecommunications had been privatized successfully in many countries. It would be desirable to convert both TOT and CAT into public joint stock companies and list them on the stock exchange. Gradual privatization through the sale of new and existing shares in tranches of 10% may be appropriate. The transfer of control, even without transferring majority share ownership, may provide the dynamism required in this sector. This may include transferring a small block of shares to a foreign telephone company to obtain modern technology. A major step has been taken by awarding to the private sector 3 million lines that will more than double the existing capacity by 1993. This is an impressive achievement.

7.2 The privatization of TOT (and CAT) would require three stages:

(a) Enactment of changes to the Telegraph and Telephone Act (BE 2477), the Communication Authority Act of Thailand (BE 2519), and the Telephone Organization of Thailand Act (BE 2497).

(b) Corporatization of TOT and completion of a study of restructuring TOT's organization.

(c) A privatization study, including valuation of TOT (based on projections of earnings), preparation of prospectus, advertising, allocation of shares, etc. The terms of reference and a flow chart for this purpose were provided by the Bank to TOT.

7.3 **Recommendations**

(a) A regulatory body should be established soon to rule on tariffs, interconnection charges, franchising and concession agreements to be financed by a charge on telecommunication suppliers.

(b) In telecommunications, the legal framework is a major constraint to private sector participation, as it does not allow ownership of any assets by the private sector. However,

the explosive expansion of telephone services requires massive investments and further private sector involvement.

(c) It is recommended that a major revision of the Telecommunications Laws be set in motion to eliminate the state monopoly on telecommunications, implement the corporatization of the TOT and establish adequate regulatory mechanisms.

(d) policies should be adopted to enhance competition in long-distance and basic services and allowing CAT and TOT to broaden their service base. Greater competition should be fostered between private firms and between TOT and CAT in the provision of services and possibly network facilities. This will require changes in sector polices and a reduction or elimination of entry barriers.

TRANSPORT COMPANY LIMITED (TCL)

1. TCL's Status and Issues

1.1 The Transport Company Limited (TCL) was established as a private company in 1930. Its original mandate was the operation of the domestic commercial airways and inter-city bus services for Bangkok and the surrounding area. It was later transformed into an SE, and its domestic air operations were spun off into Thai Airways. In 1960, TCL was given the concession for the inter-city bus routes between Bangkok and 25 provinces with the mandate to invite private bus companies to participate in these routes. TCL then constructed three bus terminals in Bangkok to serve the routes to the North, South-East and South-West and, during the last 15 years, expanded its fleet of buses from 550 to 875 covering 315 routes.

1.2 Other companies operating on these routes are controlled by licenses issued by TCL and approved by a joint committee that includes the Ministry of Interior and the Land Transport Department. Each license specifies the number of buses and the level of service on a designated route. Licensees are selected by giving first preference to TCL, second preference to operators currently serving the same route, and third preference to operators on other routes. If none of these is interested, then a new company is selected. Although TCL is given first priority in the allocation of these routes, it has limited its market share, and most of the licenses are given to the private sector. TCL's market share, which was 25% initially, has declined, and has fluctuated between 14% and 8% during the last 15 years. TCL also operates on inter-provincial (not including Bangkok) and inter-district routes within these provincial areas, with market shares of 18.5% and 1.5%, respectively.

1.3 The bus fares are established by the same committee that issues licenses. Rates are set for each route and apply to all the buses operating on that route. The only differentiation is for the class of service that allows premiums for air-conditioned buses (40% for second class and 80% for first class). Since prices are fixed, the operators would normally compete on the basis of the quality of service; however, the licensing of the routes limits route capacity, thereby guaranteeing market share to the participants. Consequently, private operators maximize their profit by reducing the quality of their service, subject to TCL's regulated limits on quality. The result is a market that neither delivers the lowest price nor provides a range of services at different prices to meet the requirements of the market.

1.4 TCL is a profitable company. In 1992, it had an operating ratio of 85% and a net income of about ฿350 million. It derives about three-fourths of its revenues from fares and the remainder from licensing fees. TCL earns revenues from renting space in bus terminals, but the bus operators are not charged for slots, and the revenue from retail/commercial activities in the terminal are minor.

Deregulation

1.5 There is no longer a justification to regulate inter-city bus transportation. The original justification was the deterioration in quality and service that resulted from excessive competition. Regulation can further be justified in preventing monopoly pricing, guaranteeing access to small fleet operators and maintaining a certain quality of service. However, undue concern regarding monopolies is not warranted given the volume of traffic and the level of competition provided by the private sector. For some routes, demand is too low to sustain significant competition, in which case the operators could charge monopolist prices or significantly reduce the quality of service provided, requiring regulation to ensure an acceptable level of service and price. It is unclear whether the current system of licensing and rate setting is appropriate for this task.

1.6 The concern regarding the survival of the operators of small bus fleets in an unregulated market is very real, but unavoidable, since fleets lack economies of scale. With open competition, it is unusual to find owners with only a few buses operating on inter-city routes. They are competed out of business unless they provide specialty services, join with the larger operators or form cooperatives. Such consolidations occur throughout the world.

1.7 The concern for the quality standards of inter-city bus services does not justify regulation. The current requirements are to provide a seat for each passenger, maintain clean and comfortable buses and operate safely. The present system offers little incentive to private operators to improve the quality of their services. Instead, by protecting market share and regulating price, it provides incentives to reduce quality. If the fares were not regulated, then there would be a broader range of services offered.

1.8 The fare for services with quality similar to TCL could easily be increased if more basic services were provided at a lower fare. For the latter, the operators would compete solely on price. Since this competition would depress rates to a level that would not cover the cost of renewal of the buses at regular intervals, there would be a deterioration of the quality of service provided at this level. For the more expensive services, there would also be competition in terms of the quality of service at the higher price. In this market, TCL would be the natural price setter (not by regulation but by virtue of its size and capabilities). Improved services would be offered to attract additional riders diverted from automobiles.

1.9 The only area of inter-city bus transport in which government regulation might be appropriate is on those routes where traffic levels are so low as to permit a single operator to exercise monopoly power. However, the burden of proof for such an assertion must rest with the government rather than be based on current traffic levels. The government should continue bearing the responsibility for minimum standards of quality and safety; however, these regulations should be enforced by non-operating agencies. Traffic laws should be used to limit the occasions in which passengers must stand or sit in the aisles. Inspections should be conducted to ensure that the buses are not beyond a maximum age or below a minimum physical condition. The regulation of safety is best left to the traffic police or other agencies concerned with public safety.

2. Private Sector Participation Recommendations

2.1 In order to increase privatization, it is important to minimize the regulation of entry and pricing of services. Such deregulation would allow TCL to charge a higher rate for providing better quality services in competition with other operators. Other operators would provide a lower quality service at lower rates. As a result, the consumer would be better off. In most countries with private sector inter-city bus services, the allocation of routes is determined by market forces. One or two large operators tend to dominate each trunk route. These companies benefit from lower average costs and the ability to offer more frequent service. Small operators can survive by serving niche markets, including specialty services or direct services to specific towns. At least two types of service are commonly provided on the major routes, an air-conditioned service with "tourist quality" buses and a basic non-air-conditioned service. Bus terminals are typically located on land provided by the city or province. These are operated primarily by the private sector.

2.2 Since private bus operators already dominate the inter-city bus services, the transfer of TCL's bus operations to the private sector should be relatively simple. The most difficult task will be to eliminate the regulation of route licenses (except those with relatively low demand and no direct

competition). Prices for the different classes of service would be allowed to find their own level. The condition of the buses would be regulated through annual inspections. The safety of bus operations would be monitored directly by the traffic police. Two alternatives are available to effect this transition. The first is for TCL to liquidate its bus service and sell off the vehicles to private bus operators. The second and better alternative would be to become a provider of premier services by setting up a separate company under TCL that would own the buses and be responsible for bus operations. This company could be a joint venture with a private company or a wholly-owned subsidiary that would then be corporatized and finally converted into a private company through offering shares in the market. The conversion of the company to a corporation and then to a publicly held company should present little difficulty given the financial condition of the company, the effectiveness of the company in supplying quality service and the quality of its management. Deregulation would provide an opportunity for TLC to expand and rationalize its work force with little or no dislocations.

2.3 Currently, the various bus companies are allowed to use the loading gates at the bus terminals without paying a fee. In an unregulated environment with a privatized TCL, it would be necessary for the government to grant a concession to one or more private companies to operate the three inter-city bus terminals. These companies could be a consortium of the bus companies, a third party responsible to provide a common user facility or a subsidiary spun off from TCL. The ownership of the land on which the bus terminals are located would be transferred to the Department of Land Transport.

THAI AIRWAYS (TG) AND

1.1 Thai Airways and Thai Maritime Navigation are currently being transferred to the private sector. For Thai Airways, the principal objective is to acquire professional management familiar with commercial aviation to guide the development of routes and services during a period of increased competition and tighter margins. This objective should be achieved through a rapid transfer of ownership to the public and the elimination of the role of government and governmental appointees in its operations and marketing. Unfortunately, only 7% of the shares in Thai Airways have been offered so far to the public.

1.2 There is little justification for continued regulation of this activity. International competition has increased dramatically, bringing down the price for both passenger and freight transport. The liberalization of the domestic services in many countries has lead to improved services, lower prices and increased air travel. The results of this liberalization have been to provide more competitive services throughout Asia. This includes not only developed countries such as Taiwan, but also the larger developing countries of India and Indonesia.

1.3 The recent experience in India is particularly relevant. The Indian government recently opened the major air corridors to Delhi to domestic competition. Within a year, at least three companies had established operations to compete with Indian Airlines. The result has been a dramatic improvement in quality of services and a reduction in prices. Despite the continuing support of government regulators in favor of the traditional carrier, the new companies have prospered. Some of the state governments have now transferred their business to the private operators in order to ensure that their employees arrive on time for their appointments in Delhi. The only need for continued regulation of airline activities is to ensure safe operations. This function should be performed by the Civil Aviation Department.

THAI MARITIME NAVIGATION (TMN)

2.1 TMN was due to be privatized through a sale to the Jutha Maritime Co. However, the government changed its policy and is now considering a more gradual privatization, together with a plan to invest in vessels. This go-slow approach is unwarranted. The country already has a major flag carrier, RCL, and many smaller flag carriers. There is absolutely no need for a government-controlled fleet.

2.2 There are few successful national shipping corporations. A notable exception is the Malaysian Shipping Corporation, which has been allowed to compete with the private sector as a commercial company. More common are the experiences of the shipping corporations of India and Pakistan, which have relatively old ships that are over-manned and expensive to operate. These corporations have their governments reserve a share of the market for them. As in India, the Government of Thailand has allowed private operators to compete on both domestic and international routes, but has failed to divest itself completely of its fleet. The government should therefore accelerate the privatization of TMN and eliminate subsidies for this activity.

Thailand

Private Sector Participation and Increased State Enterprise Efficiency

The State Enterprise Sector

(A) State Enterprise Performance

1. As of early 1993, there were 63 state enterprises, including the recently established Rapid Transit Metro. Data available for the 55 main SEs are analyzed in this annex [1/]. Detailed tables for the SEs during the period 1989-93 are presented in Annex 9, with the SEs classified by major group (public utilities, financial commercial, etc).

2. **Classification of the SEs.** The SE Division categorizes the SEs into five groups, mainly by their legal status (Fiscal Monopolies, Public Utilities and Public Services, SEs Established under Government Policies, SEs Originally Established for National Security Purposes, and SEs Established for Other Purposes). However, for the purpose of conducting an analysis of these SEs, it is preferable to classify the SEs by their main functions and characteristics. Therefore, this study classifies the **55 state enterprises** for which data are readily available into five main groups based on their primary functions, including **6 financial SEs** (banks and insurance companies), **24 commercial SEs** (mainly commercial or manufacturing SEs, such as the Playing Cards Factory, Bangkok Dock etc.), **15 public utilities** that have been shortlisted for private sector private sector participation, **3 other public utilities** (National Housing Authority, Aeronautical Radio of Thailand and Industrial Authority of Thailand) and **7 other SEs** engaged in promotional and non-commercial activities (like the Tourism Authority of Thailand and the Sports Organization of Thailand).[2/]

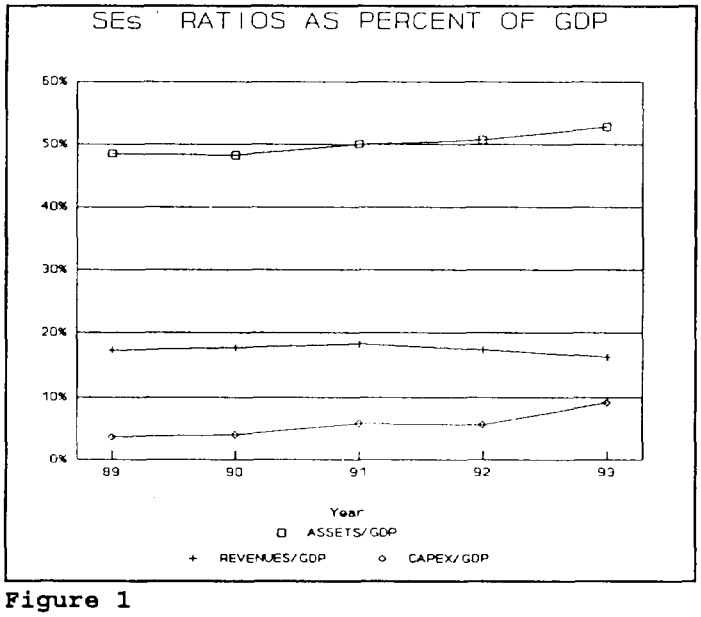

Figure 1

3. The data available from MOF for these SEs include total assets, liabilities, equity, revenue, costs, profit before tax, subsidies, remittances to government (in lieu of taxes), and the number of employees. More detailed accounts are available in their annual audit reports.

4. **Definitions**. Assets include total assets net of depreciation, but there has been no revaluation or adjustment made for replacement costs. Moreover, asset (and equity) figures are overstated, as the enterprises treat unrealized exchange losses as assets, rather than deducting from equity. Foreign debt is reported at the current exchange rate at the end of each year. Revenues and

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1/ Data was not collected for three extremely small provincial SEs; Bangchak Petroleum, PTTEP, Preserved Food Organization and United Hotel and Tourist Co. Ltd., for a number of different reasons.

2/ A list of SEs and their financial results and indicators are presented in Annex 9. Further details for the 15 public utilities are presented in Annex 10.

costs include all operating and non-operating revenues and expenditures. Profit before tax is the difference between all revenues and costs (excluding taxes). Remittances are payments to the RTG as a proxy for taxes. The number of employees include all full-time employees, casual workers and staff for construction activities.

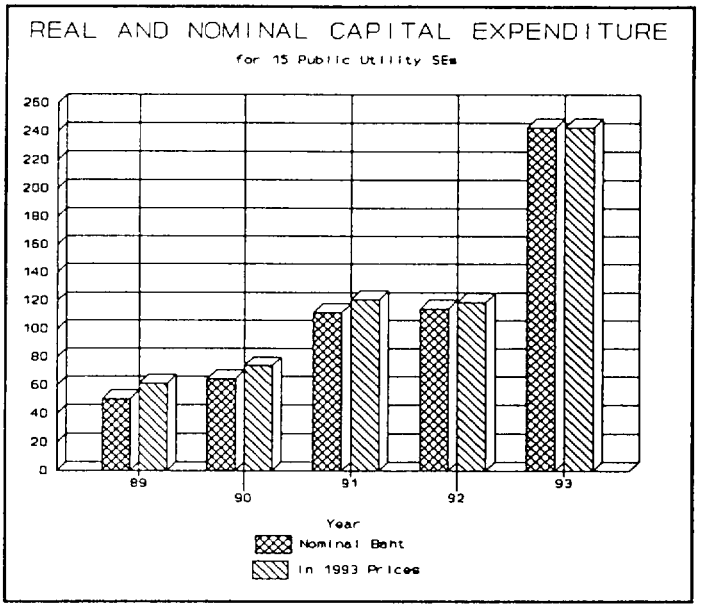

Figure 2

5. A series of financial and physical indicators has been computed for each of the SEs, but the need for compatible and comparable indicators greatly limits their number. These include the ratio of profits to assets (return on assets, ROA), to equity (return on equity ROE), to sales (return on sales, ROS) and the debt/equity ratio (computed as total liabilities to equity). The use of these global indicators has several limitations but, nevertheless, indicates the trends, problems and strengths of the SEs. Several other indicators of efficiency (in current and constant prices) were also computed, such as revenue per employee, cost per employee, profit per employee and the operating ratio (computed as total costs to total revenues). Some of the revenues and expenditures were converted into constant US dollars at average exchange rates for each year, or at constant prices using the consumer price index. The financial data and indicators for the 15 SEs for the period 1986-93 are presented in Annex 9.

Importance of the SEs to the Thai Economy

6. The state enterprise sector is very important in the economy (Table 1 and Figure 1). In 1993, the revenue of the sector was equal to 16.3% of the GDP, which has remained at about that level for the period 1989-93. The assets of all SEs (including the financial SEs) as a percentage of GDP, have been slowly increasing from 48.6% in 1989, and are expected to reach almost 52.9% in 1993.

7. Particularly important have been the SEs' capital expenditures (CAPEX), which stood at about 4% of GDP during 1989-90, increased to about 6% in 1991-92, and are expected to reach 9.1% in 1993, due primarily to the impact of the expressways and rapid transit systems. The fast pace of the Thai economy, growing at the rate of 8% per annum, has demanded an even faster growth in capital expenditures (due to increased unit costs and compensation for previous deficiencies). Therefore, capital expenditures have growing at extremely high rates (14% p.a. for power supply), and will require increased funding from the private sector, given limited government financing. Capital expenditures for all SEs almost quadrupled during the period 1989-93, from $2.7 billion to $11.4 billion. The total capital expenditures for the 15 SEs utilities tripled from B50.7 billion ($2.0 billion) in 1989 to B243.2 billion ($9.7 billion) in 1993 (Figure 2). Capital expenditures for these enterprises are expected to continue at rates of more than 10% p.a. in the immediate future. In relation to GDP, capital expenditures were about 23% of total investment in 1992.

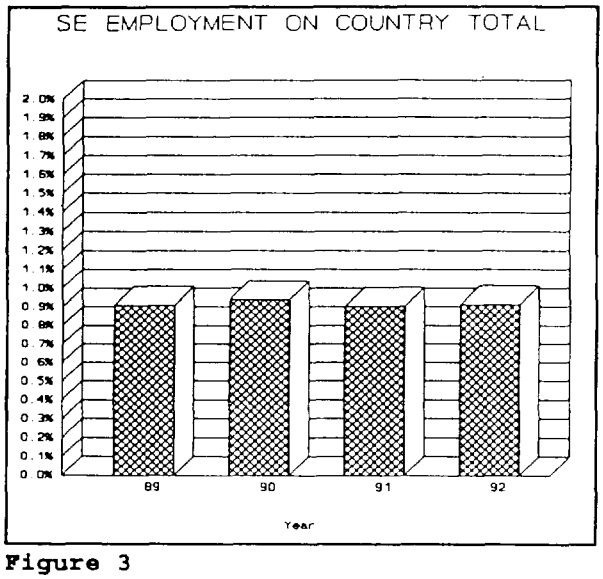

Figure 3

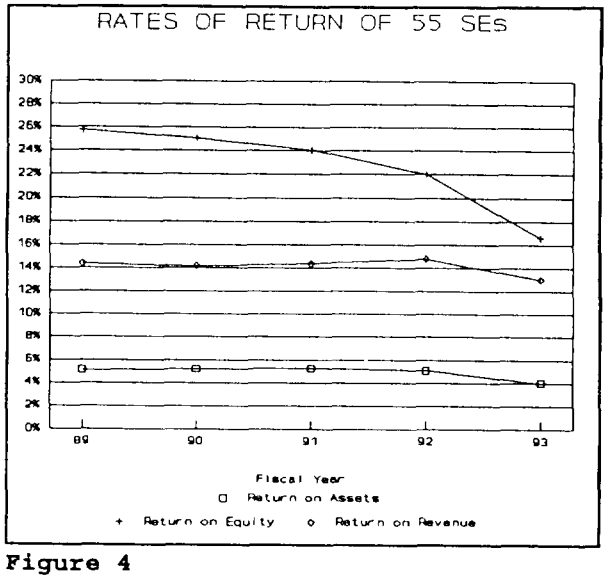

Figure 4

Table 1 - Importance of SEs to the Thai Economy				
Year	Assets/GDP	Revenues/GDP	CAPEX/GDP	% of Employ.
1989	48.6%	17.3%	3.7%	0.91%
1990	48.3%	17.7%	4.0%	0.94%
1991	50.1%	18.3%	5.8%	0.90%
1992	50.7%	17.4%	5.7%	0.91%
1993 Est.	52.9%	16.3%	9.3%	0.91%

8. On an aggregate level, some key indicators for the 55 SEs, although still quite satisfactory, declined somewhat between 1989-1993 (Figure 4). In particular:

(a) the return on assets, (ROA, defined as net profit on total assets) declined from 5.1% to 4.0%, mainly due to the substantial increase in new assets during recent years;

(b) the return on equity (ROE, defined as net profit on equity) continues to be high, although it declined from 25.7% to 16.6%; and

(c) the return on sales (ROS, defined as net profit on total revenues) experienced a net decline from 14.4% in 1989 to 13.0% in 1993.

9. The operating ratio, computed as total costs to total revenues, has been stable at about 86% between FY 1989-93, but this resulted from improvements in the 15 public utilities and the increase from 68% to 90% in the operating ratio of the other public utilities.

10. Particularly significant is the increase in profits before taxes (Figure 5) and productivity per employee, which increased from ฿0.20 million ($8,00) in 1989 to ฿0.22 million ($8,800) in 1993. There are, however, substantial differences among the SEs, and while as a group the 15 public utilities provided revenues of ฿0.24 million (about $9,600) per employee, the other SEs showed a loss of ฿0.03 million ($1,200) per employee.

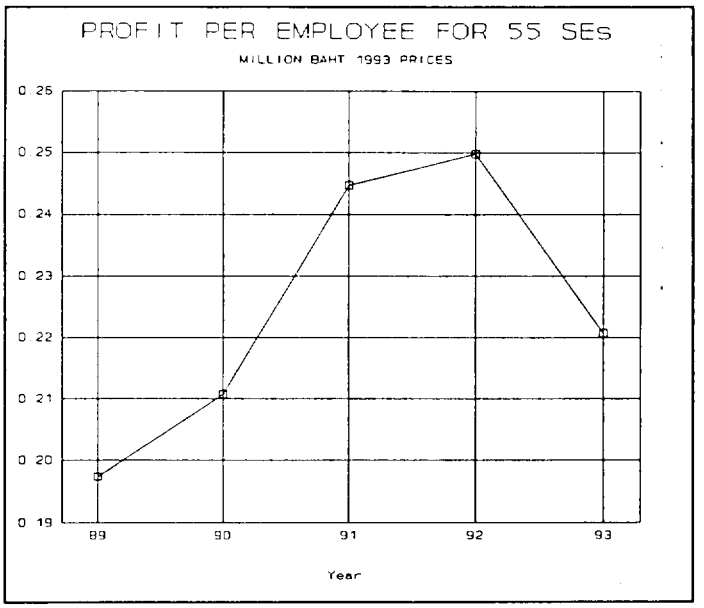

Figure 5

11. **Employment.** While SE revenues amounted to about 16% of GDP in 1993, the total employment of these 55 enterprises was about 300,000 persons in 1993. As shown in Figure 6, the largest employers are the 15 public utilities, which in 1993 employed 200,000 persons, two-thirds of total SEs. The commercial SEs were the second largest (about 50,000 or one-sixth of the total). The number of employees in the SEs as a percentage of total employment in the country (about 30 million in 1993) has remained practically constant at 0.9% during the last five years.

12. The employment opportunities generated by the SEs were very important in the 1970s. However, government policies to improve the efficiency of the SEs limited staff growth to only 5.6% for the period 1989-93. This is praiseworthy, considering the growth of the SEs in this period (319% in capital expenditures, 122% in equity, 108% in remittances to the RTG and 84% in assets). Less laudatory, however, was the deterioration in employment conditions in comparison with the private sector — salaries for technical staff are presently about half the levels of the private sector.

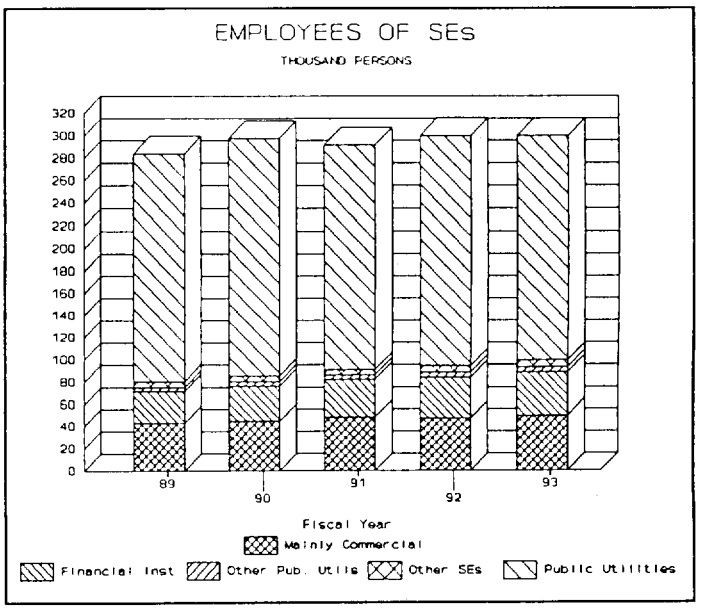

Figure 6

Table 2 - Percentage of Each Group on Total SEs

Year	Assets	Liabi-lities	Equity	Revenues	Costs	Profit Bef.Tax	Capital Expend.	Remit. to RTG	Subsidy	Number Employ.
15 PUBLIC UTILITIES										
1989	40.7%	34.6%	65.1%	59.0%	58.2%	64.1%	74.5%	47.3%	61.3%	71.6%
1990	41.1%	34.5%	66.4%	59.7%	57.6%	72.5%	74.8%	58.2%	58.6%	71.2%
1991	40.8%	32.7%	69.6%	60.5%	57.7%	77.0%	76.3%	62.1%	63.1%	68.8%
1992	40.9%	32.5%	68.7%	61.1%	58.6%	75.1%	72.4%	64.5%	65.4%	68.6%
1993	42.0%	32.9%	70.6%	58.3%	56.2%	72.5%	85.3%	67.7%	51.3%	66.8%
MAINLY COMMERCIAL SEs										
1989	10.4%	8.8%	16.9%	24.2%	24.2%	24.6%	8.5%	27.8%	10.8%	15.1%
1990	10.1%	8.5%	16.0%	23.2%	23.7%	20.2%	17.6%	19.4%	12.1%	15.0%
1991	9.2%	7.8%	14.3%	21.5%	22.5%	15.6%	17.3%	19.2%	8.2%	16.5%
1992	10.2%	8.9%	14.5%	20.5%	21.9%	12.6%	21.3%	17.9%	0.0%	15.7%
1993	9.2%	7.9%	13.3%	20.9%	21.3%	18.4%	8.7%	16.0%	9.8%	16.6%
FINANCIAL SEs										
1989	46.9%	55.1%	13.8%	12.1%	12.9%	7.1%	13.9%	5.1%	0.0%	10.2%
1990	46.7%	55.3%	13.8%	13.5%	14.5%	7.1%	0.6%	5.5%	0.0%	10.7%
1991	47.6%	57.3%	12.7%	14.5%	15.9%	6.6%	0.0%	0.6%	0.0%	11.6%
1992	46.3%	56.2%	13.4%	14.4%	14.9%	11.7%	1.3%	1.4%	0.0%	12.3%
1993	46.0%	56.3%	13.3%	16.5%	17.6%	8.9%	0.6%	1.8%	0.0%	13.0%
OTHER SEs										
1989	0.8%	0.2%	3.0%	4.1%	4.3%	2.9%	0.6%	19.7%	20.1%	1.9%
1990	0.7%	0.2%	2.4%	3.0%	3.7%	-0.9%	0.5%	16.7%	20.2%	1.9%
1991	0.6%	0.2%	2.0%	3.0%	3.5%	-0.2%	0.8%	17.7%	22.4%	1.7%
1992	0.6%	0.2%	1.8%	3.5%	4.1%	0.0%	0.5%	15.8%	25.9%	2.0%
1993	0.5%	0.2%	1.4%	3.5%	4.1%	-0.5%	1.0%	14.3%	17.5%	2.1%
OTHER PUBLIC ENTERPRISES										
1989	1.3%	1.3%	1.1%	0.6%	0.4%	1.2%	2.5%	0.1%	7.8%	1.2%
1990	1.4%	1.4%	1.4%	0.6%	0.5%	1.2%	6.6%	0.2%	9.1%	1.2%
1991	1.8%	1.9%	1.5%	0.5%	0.4%	0.9%	5.6%	0.4%	6.3%	1.3%
1992	2.1%	2.2%	1.6%	0.6%	0.6%	0.7%	4.5%	0.5%	8.7%	1.5%
1993	2.4%	2.7%	1.4%	0.7%	0.8%	0.6%	4.5%	0.2%	21.4%	1.6%

(B) Performance of the SEs by Categories

13. In order to compare the relative performance of the various groups, Table 2 shows a summary of SE financial data for 1989-93. In this table, key financial variables of these enterprises are presented as a percentage of the entire SE sector for 1989-93.

14. In terms of assets and liabilities, the five financial SEs have the largest share of the total (46% and 56, respectively) in 1993 (Figures 7 and 8). The relative importance of each group in terms of total assets is shown in Figure 7, with financial SEs representing about half of total assets (46%), followed by the 15 public utilities (42%). The financial SEs have 56% of all liabilities of the SEs, followed by the 15 SEs (33%). The commercial SEs, which are a priority for divestiture, follow with 9% and 8%, respectively. Therefore, these three groups collectively represented 97% of the assets and 97% of the liabilities of all SEs in 1993.

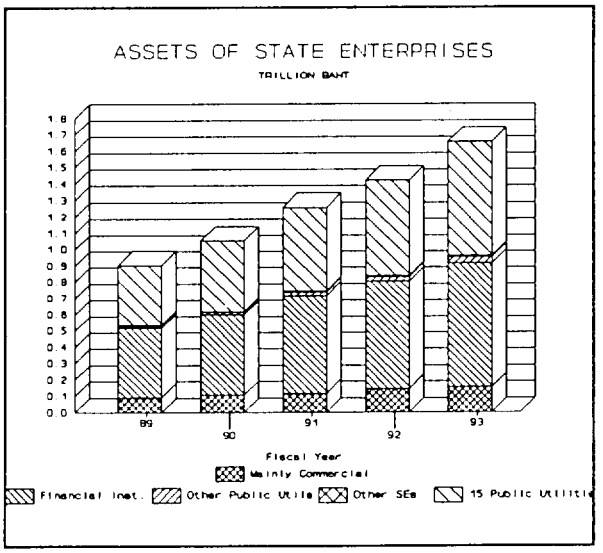

Figure 7

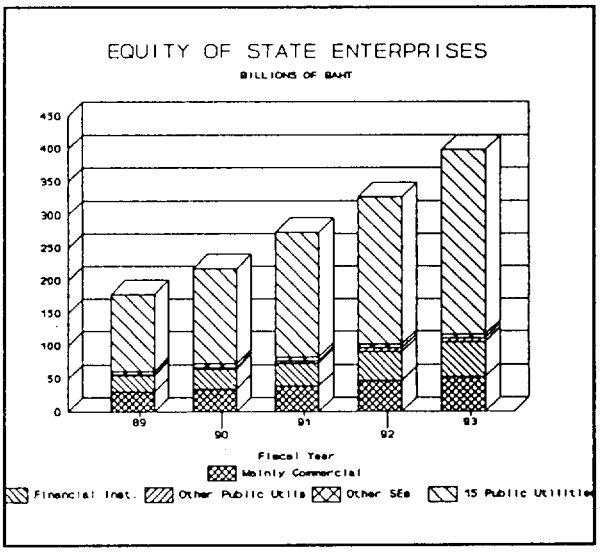

Figure 8

15. A major concern for the Government, and a key reason to seek private sector financing, is the extremely high growth of capital expenditures by the SEs. In particular, the investments of the 15 SEs are particularly important (and critical for the economy), and aggregated to about 85% of total SE investments, reaching almost $10 billion in 1993 (Figure 9).

16. The distribution of these capital investments is also heavily concentrated in a few of these 15 SEs. This can be seen in Table 2, which shows the 15 SEs sorted by the magnitude of relative capital expenditures. The group is dominated by four SEs: ERTA, EGAT, TOT and PTT (66.5% of the total).

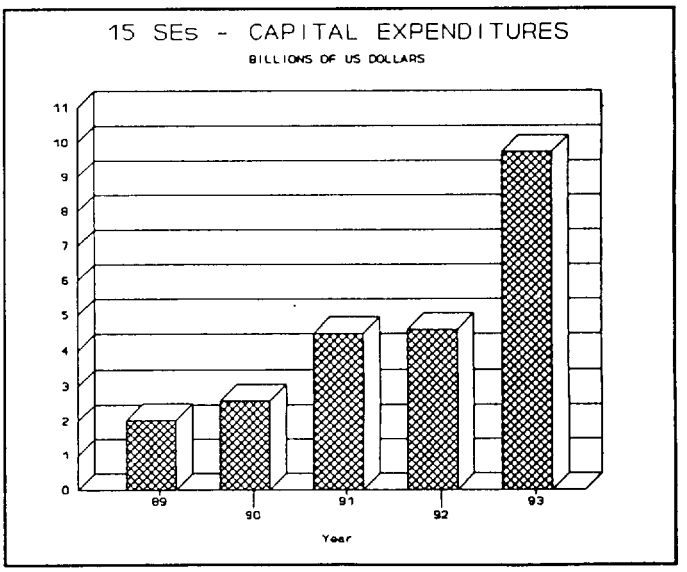

Figure 9

Table 3 - Financial Results of 15 SEs for 1993 (Sorted by Capital Expenditures)

Acronyms	Capex-B.Baht	% CAPEX	ROA	ROE	ROS	Debt/Equity
ERTA	58,503	24.1%	0.7%	4.8%	34.3%	551.8%
EGAT	54,167	22.3%	4.4%	11.4%	16.6%	162.0%
TOT	30,313	12.5%	9.1%	20.1%	53.2%	119.6%
PTT	18,520	7.6%	11.6%	25.9%	8.3%	123.7%
PEA	16,987	7.0%	11.2%	22.2%	19.7%	97.3%
CAT	11,446	4.7%	18.7%	21.6%	27.9%	15.4%
MEA	10,973	4.5%	7.2%	21.2%	7.2%	196.2%
SRT	10,943	4.5%	-3.3%	-11.3%	-19.8%	239.4%
PWA	8,312	3.4%	0.8%	1.1%	2.8%	36.2%
MWA	6,294	2.6%	8.7%	18.6%	36.0%	113.9%
PAT	6,037	2.5%	18.3%	25.2%	44.4%	37.6%
AAT	5,545	2.3%	18.1%	33.8%	54.2%	86.2%
BMTA	4,133	1.7%	-7.2%	NA	-9.3%	NA
MCOT	997	0.4%	21.9%	22.4%	60.6%	2.2%
ETO	45	0.0%	-27.1%	NA	-6.9%	NA

17. **Capital Expenditures.** In 1992, the capital expenditures of the SEs were essentially financed through internal cash generation (43.6%) and borrowing (41.6%), of which 17% was domestic and 24% was foreign. The budgetary contribution of the Government was 14%, but this was concentrated in a few SEs, which are kept unprofitable due to low tariffs on their respective services. Capital expenditures increased at an incredible annual rate of 39% over 1989-93 (the average yearly increase between 1989 and 1992 was 30%). It should be noted that this includes large BOT contracts for telephones and the rapid transit system. The capacity of the RTG to continue undertaking such huge investments, or even to maintain comparably sized BOTs, is critical to maintaining the accelerated growth being experienced by the economy. In any case, private sector participation will have to be further increased, and innovative ways will have to be found to ensure private sector participation and additional external financing for most SEs.

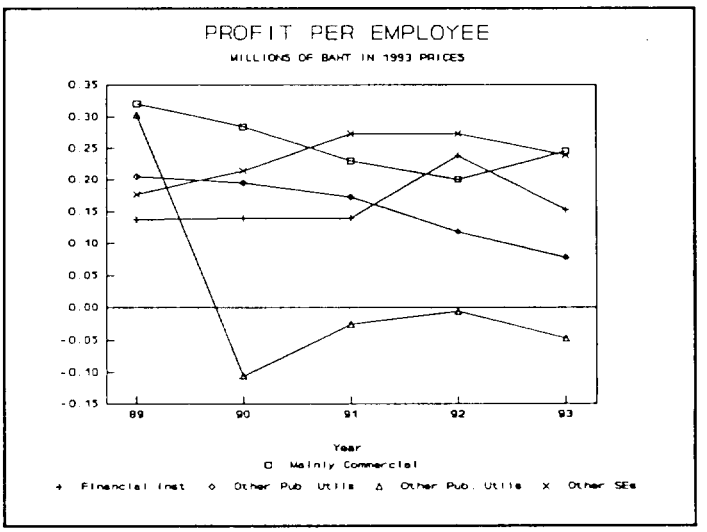

Figure 10

18. Annex 9 shows key financial ratios and efficiency and profitability indicators for the five groups of SEs during the period 1989-93. These indicators should be expanded and improved over time to better measure the financial performance of SEs (as recommended under the proposed performance evaluation system) and would require a more comprehensive database, which should be maintained by MOF.

19. Figure 10 shows the profit per employee in 1993 constant Baht, to estimate the profitability and efficiency of these groups. As shown in the graph, all groups show improvements in relation to 1990 (but there is a slight decrease in the profit/employee for other public utilities). All groups, except the Other SEs, show positive net profits per employee, with commercial and public utilities showing the best results. Figures 11 and 12 show the ROA and ROE for each group of SE, which highlight the good performance of the 15 public utilities.

(C) Trends

20. **Commercial SEs.** These SEs perform functions that are no longer needed to be undertaken by the Government. The profitability and efficiency of these SEs have improved during the last two years (Figures 10 and 11) after a decline of several years. In any case, these SEs have reasonable rates of return and could easily be sold at good prices and, given the lack of rationale for the Government to compete with the private sector in these commercial (or industrial) activities, these enterprises should be a priority for divestiture. Since they account for only 9.2% of total SE assets, 13.3% of total equity, and employ only 16.6% of total SE employment, the macroeconomic impact from privatization in terms of the resulting unemployment and the ability of the private sector to purchase these enterprises would be marginal. However, measures should be taken in advance to protect the employees concerned. There are clear indications of the potential for efficiency gains, given the declining efficiency of these SEs.

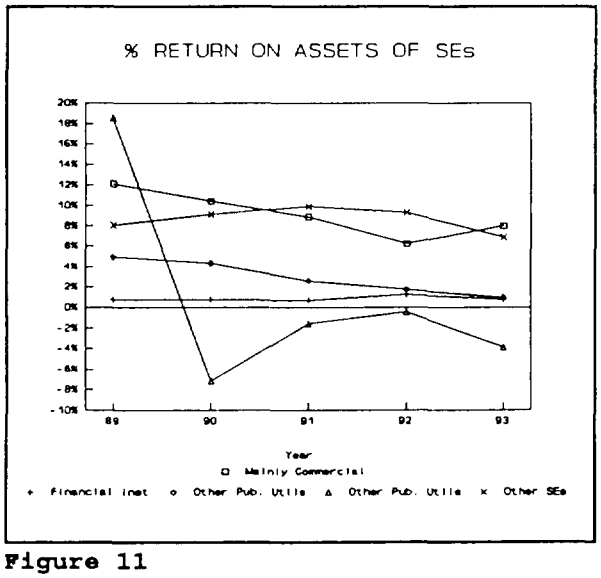

Figure 11

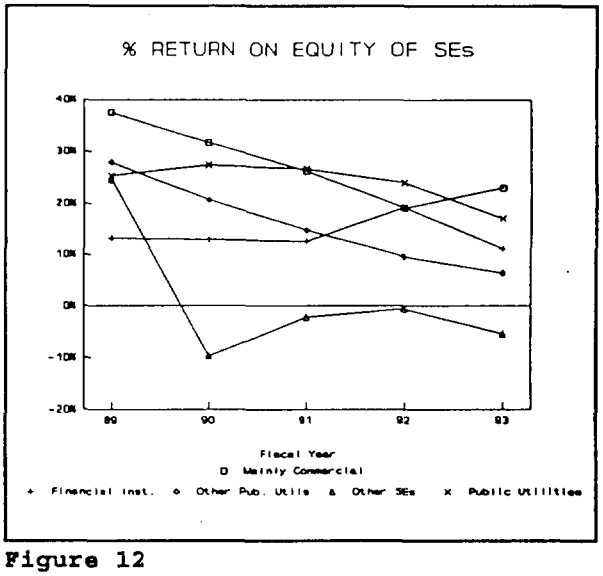

Figure 12

21. **Financial SEs.** These SEs had relatively low ROA and ROE levels (about 0.8% and 11.1%, respectively) in 1993, which are lower than the levels for other private sector financial institutions. This is partially the result of their development role through the provision of directed credits and some subsidized loans.

(D) The 15 Public Utilities SEs

22. The 15 SEs are generally profitable and efficient. In 1993, these SEs accounted for 42% of total SE assets, 71% of total SE equity, 73% of profits, and 85% of total capital expenditures. The employment in this group accounted for 67% of total SE employment. Since these SEs are capital intensive and capital expenditures are expected to grow at a rapid pace, these enterprises are the most likely candidates for private sector participation, opening the way for private financing to satisfy the explosive demand for infrastructure services. As shown in Table 4, the performance of each SE is quite different (for example, BMTA and ETO have negative equity as a result of the RTG maintaining low rates for transportation services).

Table 4 - Financial Results of 15 SEs for 1993 (Sorted by Equity)

ACR	Equity	% Equity	% of Profit	ROA	ROE	Debt to Equity	Profit/ Employee	Operating Ratio
EGAT	81,207	28.9%	19.3%	4.4%	11.4%	162.0%	0.27	83.4%
PEA	40,708	14.5%	18.8%	11.2%	22.2%	97.3%	0.29	80.3%
TOT	39,870	14.2%	16.7%	9.1%	20.1%	119.6%	0.42	46.8%
PTT	28,599	10.2%	15.4%	11.6%	25.9%	123.7%	1.90	91.7%
CAT	19,582	7.0%	8.8%	18.7%	21.6%	15.4%	0.17	72.1%
MEA	13,501	4.8%	6.0%	7.2%	21.2%	196.2%	0.21	92.8%
ERTA	12,621	4.5%	1.3%	0.7%	4.8%	551.8%	0.18	65.7%
MWA	12,468	4.4%	4.8%	8.7%	18.6%	113.9%	0.41	64.0%
PAT	9,895	3.5%	5.2%	18.3%	25.2%	37.6%	0.37	55.6%
PWA	8,397	3.0%	0.2%	0.8%	1.1%	36.2%	0.01	97.2%
SRT	8,204	2.9%	-1.9%	-3.3%	-11.3%	239.4%	-0.04	119.8%
AAT	7,960	2.8%	5.6%	18.1%	33.8%	86.2%	1.14	45.8%
MCOT	2,785	1.0%	1.3%	21.9%	22.4%	2.2%	0.64	39.4%
ETO	-558	-0.2%	-0.3%	-27.1%	NA	NA	-0.04	106.9%
BMTA	-3,780	-1.3%	-1.2%	-7.2%	NA	NA	-0.03	109.3%

23. The total equity of the 15 public utilities totaled ฿281.5 billion ($11.3 billion) in 1993. (ETO and BMTA recorded negative equity of ฿-0.5 billion and ฿-3.8 billion, respectively.) However, 80% was represented by the six largest SEs, and the percentage of the total equity of these 15 SEs increases rapidly as follows: EGAT 29%, TOT 43% (cumulative of EGAT and TOT), MEA 57%, PTT 68%, CAT 75% and MEA 80%.

24. Similarly, the return on equity for the 15 SEs is uneven. Nine of the 15 SEs achieved large returns on equity between 18% and 35% (AAT, PTT, PAT, MCOT, PEA, CAT, MEA, TOT, and MWA), while one (SRT) had a negative return, see Table 5.

Table 5 - Financial Results of 15 SEs for 1993 (Sorted by Return on Equity)

Acronyms	ROE	ROA	Debt to Equity	Profit/ Employee	Operating Ratio	Equity Mill. B.	% Equity
AAT	33.8%	18.1%	86.2%	1.14	45.8%	7,960	2.8%
PTT	25.9%	11.6%	123.7%	1.90	91.7%	28,599	10.2%
PAT	25.2%	18.3%	37.6%	0.37	55.6%	9,895	3.5%
MCOT	22.4%	21.9%	2.2%	0.64	39.4%	2,785	1.0%
PEA	22.2%	11.2%	97.3%	0.29	80.3%	40,708	14.5%
CAT	21.6%	18.7%	15.4%	0.17	72.1%	19,582	7.0%
MEA	21.2%	7.2%	196.2%	0.21	92.8%	13,501	4.8%
TOT	20.1%	9.1%	119.6%	0.42	46.8%	39,870	14.2%
MWA	18.6%	8.7%	113.9%	0.41	64.0%	12,468	4.4%
EGAT	11.4%	4.4%	162.0%	0.27	83.4%	81,207	28.9%
ERTA	4.8%	0.7%	551.8%	0.18	65.7%	12,621	4.5%
PWA	1.1%	0.8%	36.2%	0.01	97.2%	8,397	3.0%
SRT	-11.3%	-3.3%	239.4%	-0.04	119.8%	8,204	2.9%
BMTA	NA	-7.2%	NA	-0.03	109.3%	-3,780	-1.3%
ETO	NA	-27.1%	NA	-0.04	106.9%	-558	-0.2%

25. As indicated earlier, the 15 Public Utilities are dominated by six large enterprises, which represent 80% of the group's equity, 77% of its capital expenditures (Figure 13), 78% of its assets (Figure 14) and 87% of its profits (Figure 15) (see also Figures 13 and 14). These six enterprises are therefore a priority for private sector participation. The relative importance and performance of these six SEs is presented below:

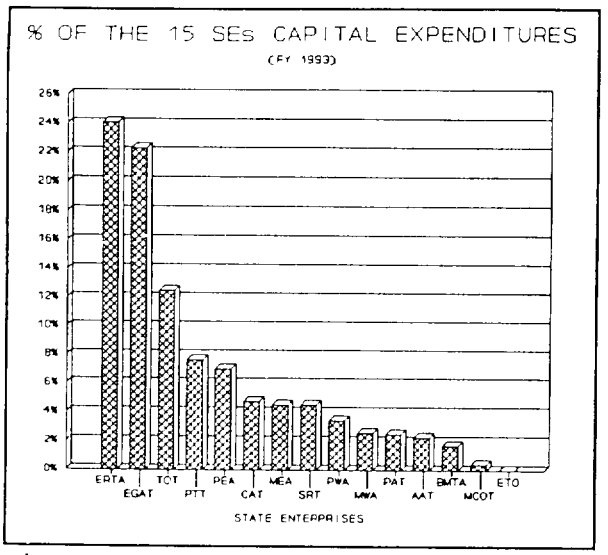

Figure 13

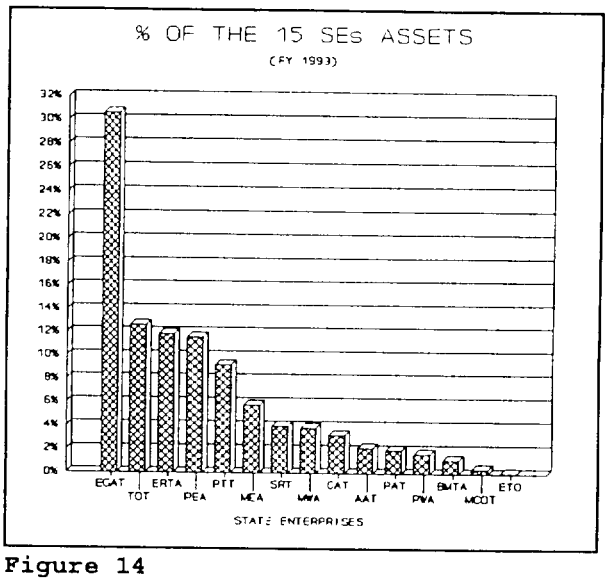

Figure 14

(i) EGAT accounts for 28.9% of the group's equity, 30.6% of the assets, 19.3% of the profits, and 22.3% of the CAPEX;

(ii) TOT represents 14.2% of the group's equity, 12.6% of the assets, 16.7% of the profits, and 12.5% of the CAPEX;

(iii) PEA accounts for 14.5% of the group's equity, 11.5% of the assets, 18.8% of the profits, and 7.0% of the CAPEX;

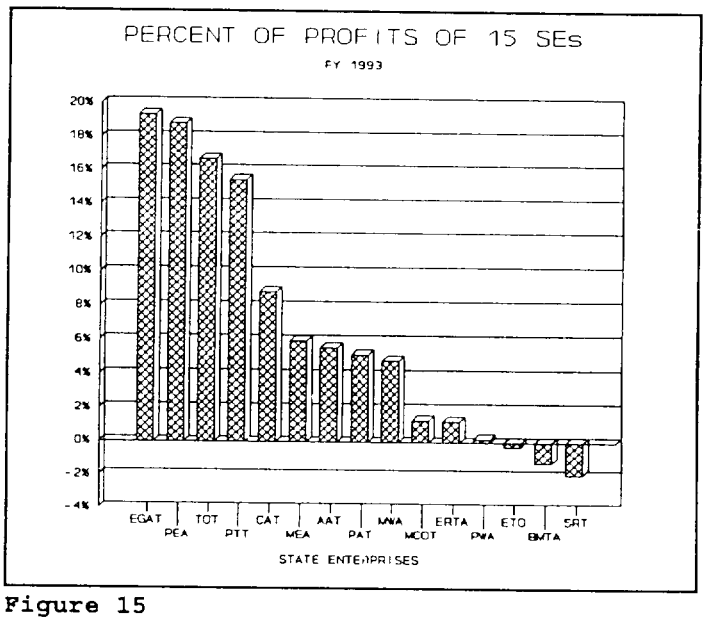

Figure 15

(iv) PTT represents 10.2% of the group's equity, 9.2% of its assets, 15.4% of the profits, and 7.6% of the CAPEX;

(v) CAT's equity as a percentage of the group's equity was 7.0%, its assets were 3.3%, profits were 8.8%, and CAPEX 4.7%; and

(vi) MEA represents 4.8% of the total equity, 5.8% of total assets, 6.0% of total profits, and 4.5% of the CAPEX.

26. A final but important aspect of the 15 public utilities is that they have consistently provided large remittances to the RTG and, in fact, the size of these remittances has been increasing rapidly (at a compound rate of about 30% p.a. during the period 1989-93), and reached almost $800 million in 1993 (Figure 16). Moreover, as a percentage of net profits, remittances increased from 22% in 1989 to 41% in 1993 — higher than the 35% tax on private enterprises (the net profits after

privatization are likely to be lower if legal devices for avoiding taxes are used, like accelerated depreciation). With the incentive to be declared a "good corporation", it is expected that several other SEs will start remitting at least 35% of their net profits, and so remittances to the RTG are likely to increase.

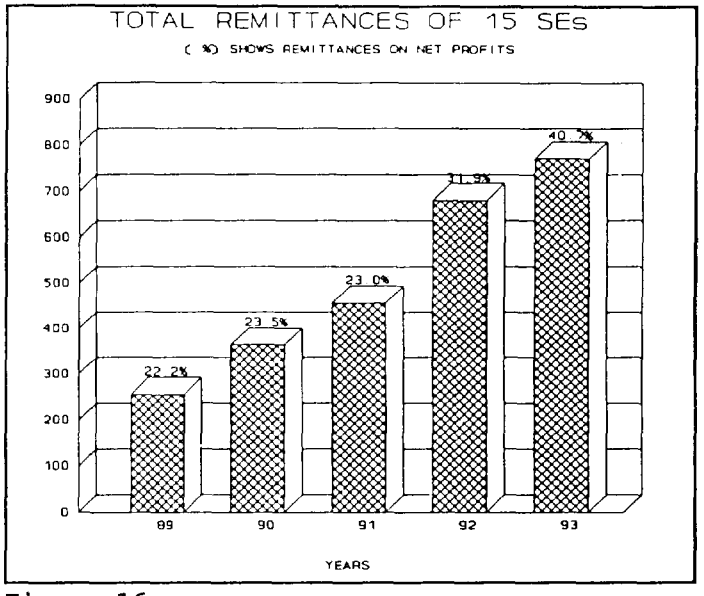

Figure 16

Thailand

Private Sector Participation and Improved Efficiency of SEs

Successfully Contracting Private Sector Infrastructure

Private Sector Contracting in Infrastructure

1. In developed as well as in developing countries, the public and the private sectors provide a broad range services, particularly for infrastructure (including highways, metro systems, railroads, communications, mail, electricity, water supply, etc). This mixture of public and private involvement is also prevalent in the education and health sectors. Political ideology and historical development generally dictate whether a sector is largely (or even exclusively) in public or private hands. To serve the public good, it may be desirable to access large financing sources, knowhow, training, new technologies and better prices by introducing competition by contracting separate packages of services with the private sector.

2. Private sector participation includes an almost infinite range of possibilities, from simply delegating some component services to the private sector (accounting, computers, billing, security, maintenance, etc.), to the commissioning and operation of large investments for power plants, telecommunications, highways or water supply systems. Private involvement in large-scale projects is becoming very important. For example, independent power producers are now generating much the new generation capacity in the United States, and have contracted new power plants equivalent to about 80% of existing capacity in the Philippines. The adequate use and optimization of private sector contracts (PSCs) is a major concern for many countries. Adequately used, PSCs are less controversial than privatization of existing assets, may increase private sector participation at different speeds, can free the government from substantial responsibilities in the investment and operation of different services, would promote additional competition, and would provide additional financial resources in the form of equity and of loans not directly guaranteed by the government. The key elements for the successful use of PSCs are explained below.

3. The success in attracting private capital at reasonable costs depends not only on the project itself, but also on the perceived business environment for the country. Key areas are: (a) the relative creditworthiness of the country (facilitating and defining the terms of loans); (b) the existence of clear legislation and guidelines allowing and regulating PSCs; (c) constraints on the private sector in carrying other activities (therefore a successful first project may greatly facilitate other projects); (d) restrictions on foreign ownership; (e) government willingness to provide guarantees for sovereign risk; (f) clear and transparent procedures for the evaluation and award of proposals; and (g) the existence of clear guidelines for the contracting utility in recovering the PSC from consumers. No withstanding of government guarantees there will be serious problems if the utility is unable to comply with its payment obligations.

4. Of these, perhaps the most critical factor is the existence of clear legislation for private sector participation that would: (a) promote private sector participation; (b) define the role of different government agencies in approving PSCs; (c) define ownership rights for the PSCs; and (d) establish the rights for easement of land (a critical component of power and transportation projects).

Comparison of PSCs

5. A common assumption of all PSCs is that the private sector will need to receive a financial return to compensate for any real or perceived risks on the project, while guaranteeing the desired return on equity. However, unless the bidding and awarding process is well-defined and allows for sufficient competition **and** a transparent system is used for evaluating proposals, the costs of PSCs may be quite higher than if the work had been done by the government. A system that fails to adequately compare PSCs could result in public opinion problems or the possibility that cost-recovery expenses of a PSC may be found to be lacking (and so dis-authorized by the regulator) — a move that could damage the prestige of the PSC. Since the PSCs have been used more frequently in power, some of the following comments are more applicable to that sector, but the basic principles are the same for other infrastructure sectors.

6. The main PSCs, in increasing order of private sector participation (based on length of contract or financial involvement) are:

(a) Turnkey Contracts. This is a construction contract with substantial penalties guaranteeing the timely completion of a fixed-cost contract. Both the utility and the BOT contractors can use turnkey contracts to be insured for these risks. The turnkey has a premium cost over normal construction contracts, but this cost is normally less than the administrative burden for managing different subcontracts and particularly the impact of any of them in the project completion and cost;

(b) Engineering, Procurement and Construction Contract (EPC). This is a turnkey contract where the engineering design and specifications are also the responsibility of the contractor. Although it requires low initial involvement by the utility, it will require very competent review to ensure functionality and operationality;

(c) Management Contract (MC). With an MC, the utility delegates the operation (but not the ownership) of some assets with a view towards increasing the efficiency of operation and the delivery of services;

(d) Build-Transfer-Operate (BTO). The contractor will obtain financing and construct the project facilities, will transfer the assets and liabilities to the government and will thereafter operate the project for several years. The key disadvantage is that there is no equity financing; therefore, if the contract were to fail, the government would be less protected than under a BOT. In Thailand, upon the completion of a BTO project, its assets are transferred to the government, which would pay the agreed fee, while the liabilities would be retained by the private sector;

(e) Build-Operate-Transfer (BOT). In a BOT, the contractor should provide about 15%-30% equity, obtain the remaining financing, construct the project facilities and operate the project for an agreed number of years; and

(f) Build-Own-Operate (BOO). In a BOO, the contractor should also provide about 15%-30% equity, obtain the remaining financing, construct the project facilities, but will own and operate thereafter the project facilities.

Risk Allocation

7. It is reasonable to assume risks provided that the expected return for assuming these risks is adequate. However, unless each risk is allocated to the party most able to manage it, the cost for assuming risk could be very large. However, a diversification strategy that allows risks to be shared or insured among several parties can mitigate the cost of assuming risk.

8. The risks that should normally be taken by a PSC include:

(a) Cost Overrun. This risk is often remedied by a *turnkey* or EPC contract, which, under severe penalties and guarantees, establishes a fixed price, completion time and operational performance. The impact of force majeure is insured. Increases in financing costs (due to changes in interest rates or exchange rates) would be covered by standby finance or a tariff reopened;

(b) Delay in Completion. The completion is ensured by daily penalties from the turnkey contractor;

(c) Failure to meet specifications is also guaranteed by a *turnkey* or EPC contract. The procedures for testing the works before their acceptance should be specified in the contract and would require a one-time penalty in case of non-compliance. This is assured by a performance bond (about 10% of the construction value);

(d) Operation and maintenance and compliance with minimum operating parameters and the guarantee availability are guaranteed by a subcontract with a proven operator. The contract would specify the spare parts and costs included, the procedures for additions or improvements, and the damages that a performance bond should cover in case of non-compliance; and

(e) Fuel supply and availability (covered by an implementation agreement).

9. The risks that normally are taken by the contracting utility are:

(a) Demand for services;

(b) Fuel and additives cost. This would specify very precisely fuel quality and efficiency. Particularly important would be the heat rate, sulphur and solid content; and

(c) Payment of charges for services.

10. Although some of the following risks may be negligible in some countries, they may be sufficiently important in others as to require a government guarantee:

(a) Access to foreign currency or currency convertibility, as needed to pay foreign financing and return on equity. This risk can be partially compensated by insurance;

(b) Changes in laws, regulations, taxes, duties and levies that can change over time and

will have to be passed on to consumers. In many countries, tax holidays are used to promote important infrastructure projects;

(c) Inflation, to be covered by charges adjusted by indexes;

(d) Land acquisition (only the government normally has the right to expropriate land);

(e) Compliance with contractual payments;

(f) Changes in environmental requirements; and

(g) Political turmoil and expropriation.

11. The force majeure risks are normally covered by the government, or added as an insurance cost.

12. In addition, the use of infrastructure capacity will be dependent on other complementary facilities. This includes power projects items like transmission lines (including wheeling charges), expansion of distribution systems, metering and interconnection points, communications and protection equipment. Similarly, for transportation systems, this would include feeder roads, interconnection with other transportation systems, tolls booths, etc. The responsibility for completing and operating such facilities should be clearly spelled out in the contract.

Contracting Conditions

13. The Purchase Agreement (PA) is the key contract setting all the obligations of the parties. It should ensure that, when the supplier of the service complies with its obligations, the respective payments, typically in foreign currency, would be paid in the agreed way. The draft PA should be included in the invitation for bids (IFB), and since the relationship between the utility and the supplier may last for 20 or more years, it requires very careful drafting. The assistance to the utility of specialists with ample legal and technical experience with such contracts would be highly desirable for the utility.

14. The PA is normally ten or more years. In the case of project finance, since the maturity of most loans would only be for 7-10 years after the grace period, the full cost and debt service would be recovered during the first ten years, and extending the contracting period may not result in better prices after that period. With these conditions, it would be preferable to include an option for extending the terms of the PA.

15. The PA should clearly specify the:

(a) Milestones for completing each of the facilities (and penalties for non-compliance);

(b) Responsibility for key project risks (as explained above) and the definition of force majeure;

(c) Operation and dispatch of power plants and the procedures for emergencies;

(d) Contractor's insurance and the guarantees and indemnities for each party;

(e) Payment system and its indexation over time;

(f) Provision, easement and use of land;

(g) Provision of other complementary services (fuel, utilities, interconnection);

(h) Governing laws to be used and the provision of a system for resolution of disputes (by discussion, referral to an expert or arbitration); and

(i) Transfer of ownership of the assets and the end of the agreement.

Project Preparation

16. Although a PSC requires a much lower level of engineering work than a turnkey or construction contract, it still requires considerable analysis, and experienced advice is highly important. The lack of adequate preparation and specifications have been the key factors for serious conflicts and even large overpayments in PSCs valued at billions of dollars — which could have been avoided by using a fraction of 1% of the project cost for adequate preparation of the specifications and the IFB. The key parameters that require defining are: (a) adequate location and land availability. This may involve complex environmental and social problems that can create substantial delays and would be desirable to solve in advance; (b) demand analysis: this would require, for example, a sound analysis of traffic and destination, power supply and demand, are optimal and feasible completion times, interconnection with other systems under construction or preparation, etc.; (c) technology required, including the number of lines, elevated vs ground level transportation, optimal fuel for power plants (based on the lead time available, a least-cost plan or a desire to establish a robust power system less vulnerable to increases or shortages of one fuel). However, care should be taken to avoid detailed technologies that may unnecessarily restrict competition.

Prequalification of Bidders

17. The success on PSCs is often dependent on the adequacy of equity contributions by project proponents. This is because these projects are generally financed on a project finance basis, and the loan repayments are guaranteed only by recourse to the project's assets (*non-recourse or limited recourse financing)*. However, many infrastructure assets are permanent, cannot be sold for other purposes, and typically do not include land ownership — so recourse may be more on paper than on the reality. The assessment of the bankability of such projects is not based on the strength of the balance sheet of the owner as in traditional loans (in fact, a new company without any previous financial history may be established for a PSC), but in the risks associated with the future cash flows.

18. A well-designed qualification process would substantially enhance the quality of proposals, since the bidders would be assured that the process would be thoughtful and that the cost associated with tendering a serious proposal would be worthwhile. A prequalification would require the proponents to detail their experience in constructing similar contracts, describe how the proposed system would be operated, and identify the proposed equity sources. The amount of equity should normally exceed 20%, but is larger (30%) for longer construction projects (given the need to pay interest during construction). However, the prequalification, being partially subjective, may require

the establishment of a multi-agency committee or the support of independent consultants.

Invitation for Bids

19. One of the major problems facing the government is the presentation of unsolicited proposals, which do not correspond to an official request. The primary concern in such cases revolves around their technical viability and the fairness of their price (which cannot be compared with other proposals). Such proposals should therefore be rejected and converted into a formal IFB.

20. A recent phenomenon in (for example, in the Philippines) has been the presentation of well-intentioned, low-price proposals from proponents that may have the technical capacity to do the works, but lack the required equity to obtain the additional financing. This can create serious problems to the utility because other proponents may be deterred by frivolous but low-cost proposals. These proposals are generally presented by promoters who hope that — once they obtain a signed contract — they will be able to extract rents and commitments from other interested parties. In addition, since it is impossible to get the financial package ready at the time of the contract award[1], it may take months to confirm the financing, resulting in substantial delays in the required projects.

21. Therefore, a prudent period (three to six months) will have to be given for the contract to become effective and for providing substantial guarantees and penalties (for example $15-20/kW for low-cost power generators or 10% of the value) in case the project is not completed in the agreed timetable. The contractor, however, will not provide these bonds until it is rather sure that it will be able to achieve a financial closing. As a result, there may be requests for postponement and, in case that the contractor is unable to provide the performance guarantee, another contractor would be needed. However, this may require another bid, and could result in a delay of more than one year in completing the project, with serious implications in the needed services. To further ensure that only serious bidders participate, a performance bond guaranteeing the proposal should be added to the conditions (0.5% to 2% of the estimated cost of the contract).

22. In the United States some utilities conduct consecutive negotiations with the three top proponents — a strategy designed to exact a better price and to facilitate changes that would be mutually beneficial. However, such negotiations do not necessarily yield the best proposal, could promote corruption, and would in most cases result in accusations of preferential treatment by the losing bidders. A more transparent strategy would be to conduct a question and answer period about one month before receiving the proposals. In such a forum, questions and suggestions from proposed bidders could be considered and, if convenient, used to clarify or modify the specifications.

Evaluation of Proposals

23. The most critical component of the IFP is the selection and evaluation criteria. If the bidding conditions are clear and the draft PSC contract has been prepared carefully, there is going to be little or no need for negotiations. The IFB should include a simple format for presentation of the proposals, which would allow their clear comparison and evaluation. It is therefore very important to establish an optimal payment system; otherwise, each bidder will request a different system, making comparisons impracticable. The requirement for using dollars for foreign expenditures and local

[1] In fact, the award and the conditions of the contract will become the major instrument in getting financing.

currency for local expenditures would largely reduce the uncertainty in comparing proposals in different currencies to be paid during a 10-30 year time frame. Typical systems include:

(a) For Power or Water Supply: (i) monthly capacity fee/kW covering the debt service and normally not indexed; (ii) monthly fixed O&M fee/kW; and (iii) variable cost per kWh delivered. Items (ii) and (iii) are normally indexed with consumer prices for local costs and with an international index for the foreign costs; and

(b) For Transportation: (i) fixed fee; and (ii) variable fee per passenger (or car) or passenger-km.

24. If the project requirements are clearly defined, the evaluation of proposals would simply require the comparison of the present value of the charges during the contract period as well as other separated operational expenses (for example fuel cost at the specified heat rate), using the discount rate used for project analysis in that country.

25. If the project requirements have not been defined clearly, and there has not been a prequalification, it may be necessary to complete a combined technical/economic evaluation, giving about 50% of the points to technical and financial matters and 50% to the present value of the payments. In any case, it is very important to ensure that critical specifications are complied with (for example minimum heat rate (a lower or higher performance will affect the cost and ranking of proposals), required insurance, performance bonds and guarantees). In this case, the evaluation would equal weighting to technical aspects (experience with the proposed equipment and in the operation and construction of similar plants) and financial aspects (financing capacity, proposed equity level, degree of financial commitment, credibility of proposed financial plan).

26. The minimum rate of return that a bidder will consider acceptable varies for each country, but will generally be higher (20%-30%) than the discount rate acceptable to the government. In addition, it is likely that the interest rate for project finance in a country is higher that the interest rate for the government. Therefore, unless the proposed efficiency of the PSC is much higher than the utility, the price for the PSC would be higher and, if competition is limited, it may be much higher that say a turn-key contract followed by a management contract for operation.

Thailand

Private Sector Participation and Improved Efficiency of SEs

Legal Issues

Legal Issues

1. There are a number of legal issues affecting the government's plans to promote greater private sector participation in the state enterprise sector. In this annex, attention is focussed on some key aspects of the macro legal framework for private sector participation and divestiture. Regulatory issues are treated in Section 6. This analysis is not intended to be exhaustive, and specific legal issues affecting individual enterprises will be analyzed in the respective privatization studies.

(A) Proposals for a Corporatization Law

2. Thailand's Seventh Plan includes plans to convert the state enterprises (SEs) into corporate forms. The conversion process is typically effected by means of a corporatization law. The rationale for and general principles upon which a corporatization law could be based are explained below.

3. **Rationale.** The fundamental purpose of a corporatization law is to provide the legal structure to convert the SEs from their current statutory form into a company constituted under Thailand's Civil and Commercial Code. The corporatization process is typically based on the following principles:

(a) Non-commercial responsibilities (i.e., policy, social and other non-profit oriented) should be separated from trading SEs;

(b) The principal objective of SE managers should be to operate them as successful business enterprises;

(c) Managers should be given responsibility and be kept accountable for decisions on the use of inputs and on the pricing and marketing of outputs within the performance objectives agreed with the Council of Ministers;

(d) The special advantages (or disadvantages) that SEs have, including unnecessary barriers to competition, should be removed so that commercial criteria may be used to provide a fair assessment of managerial performance; and

(e) Individual SEs should be reconstituted on a case-by-case basis in a form appropriate for their commercial purposes, under the guidance of boards of directors comprising, where possible, members appointed from the private sector.

4. On the basis of these principles, corporatization legislation should provide for:

(a) The establishment of SEs as separate legal entities constituted as ordinary companies under

Thai company law;

(b) Ownership of shares in these new entities to be held by the governement (including the right to subscribe for and hold new shares). The legislation may also need to incorporate restrictions on the power of the company or the directors to sell or dispose of the shares except with Cabinet approval;

(c) Transfer of assets, liabilities, contract rights, powers and privileges previously held by the state or the SE to the new state companies;

(d) Provisions relating to accountability;

(e) Provisions relating to the separation of social services (e.g., education and welfare) from business activities;

(f) Provisions relating to the state's power as owner of the business and its relationship with management; and

(g) In certain matters, effective discrimination against SEs (in contrast with the public sector) by subjecting them to audits by the government Audit Office (sometimes jointly with private sector auditing firms) and exposure to parliamentary questions and criticism.

Form and objectives of corporatization law

5. Corporatization legislation typically takes one or other of the following forms:

(a) Case-by-case corporatization in which the statute, decree or other founding document is individually amended so as to effect the conversion of that SE into company form; and

(b) Umbrella legislation in which a comprehensive legal framework for the conversion of SEs generally into corporate form is provided for.

6. In countries where there are a large number of SEs — such as Thailand — experience suggests that the umbrella approach is preferable. Its advantages are:

(a) It tends to reduce potential elements of controversy. Debate is issue, rather than enterprise, specific. Attention is focussed on what is essentially a technical framework for facilitating legal change rather than on the merits and demerits of corporatizing individual enterprises;

(b) The umbrella approach enables the government, at whatever time of its choosing, to bring a particular SE or group of SEs within the scope of the legislation. The corporatization law is a facilitating statute. It provides a mechanism for allowing corporatization to take place, but says nothing about the specific entities to be corporatized or when or how or why this process should occur; and

(c) The umbrella corporatization law approach encourages similar treatment for all SEs. It results in a harmonization of principles relating to objectives, directors and accountability across the state sector and, therefore, leads to efficiencies in public sector management.

It should also serve to create an expectation or a climate of opinion as to what a SE should be working towards.

7. Particular objectives that should be pursued in the corporatization process include:

(a) Labor reform, which is generally regarded as difficult if not impossible within existing general state employment structures, but is frequently made more achievable by the separation of the government itself from the decisions of the boards of directors and management of SEs as employers;

(b) The separation of employer functions into business units and the devolution of authority to boards of directors with full business responsibility helps to insulate politicians from the inevitable protests that will accompany the reform of labor practices and the elimination of excess employment situations. The corporatization process will also enable substantial internal level reorganizations to be carried out within SEs without turning each local or business dispute into a national political dispute;

(c) Removal of the government from the subsidy and capital injection requirements and exposure of the businesses formally carried out by placing those entities under the more independent legal and financial footing of a separate corporation. Subsidies will need to be specifically approved for mandated activities that are not profitable, and capital injections would, in time, be replaced by internal cash generation and loans;

(d) Improved scrutiny of returns on investment and requirements for new capital or subsidies is facilitated by the creation of normalized capital structures and management information systems, enabling analysis of business performance and justification for new investments;

(e) Introduction of new management information systems, management systems and accounting for assets;

(f) Additional expertise at the policy level through the appointment of boards of directors supported by the business community and senior management; and

(g) Establishment of enterprises or functions into discrete elements suitable for sale as business units.

A corporatization law is not a privatization law

8. It is important to note that privatization should not be viewed as an objective of corporatization. In fact, the corporatization law should specifically prohibit ministers as owners of the shares in the new state-owned companies and the company and its directors from selling such shares except on such terms as the government may determine. At the same time, the corporatization process should be implemented in a way that will not frustrate subsequent decisions to divest, either wholly or partially, a particular state entity if such divestiture is regarded as desirable. The corporatization law should also avoid undermining the regulatory regime — particularly any sector-specific regulation. Hence, the corporatization law should avoid undermining the fundamental principles of a divestiture program, which include:

8.1 an assessment on a case-by-case basis of the benefits and desirability of transferring government businesses and commercial assets to private ownership; and

8.2 as an overriding objective of business sales, the need to obtain the maximum contribution to the economic welfare of citizens by ensuring that any statutory restrictions on competition are removed and that sales revenue is maximized.

9. The three criteria against which the government might wish to measure any proposal to divest itself of an SE might be:

9.1 the government should receive or benefit more from the sale or disposal of the business than it would from retaining ownership, bearing in mind the risks attached to continued ownership;

9.2 the sale of a particular business should not impede the government's economic and policy goals, but should contribute to them; and

9.3 the sale of a particular business should not impede the government's social goals, but should contribute to them.

10. The framework against which the circumstances of individual sales should be assessed include:

10.1 all SE businesses after corporatization should be managed on the basis that they are to be made ready for the possibility of transfer to private ownership in due course;

10.2 where it is decided to transfer SE businesses and commercial assets to private ownership, a high degree of ownership and control (preferably majority ownership and control) should be transferred;

10.3 shares in any SE business sold to private owners should have full and normal shareholders rights attached to them;

10.4 competitive strengths imposed on, and advantages granted to, state-owned businesses should, as far as possible, be removed before they are sold to the private sector, unless they are necessary for the normal operation of the business. The nature and extent of any remaining constraints or advantages should be announced as part of the specifications for sale;

10.5 where commercial activities have not been formed into businesses, the transfer of individual assets should be considered so that the government may avoid the risks and costs associated with reconstruction of such commercial activities; and

10.6 the timing and method of the transfer of the state's interest in any business or commercial asset should be determined by the government, which will also undertake each sale. A competitive sales process should be employed in selling businesses or commercial assets.

Content of a Corporatization Law

11. The corporatization law should include at least the following four parts:

11.1 **Part I, Principles.** This includes the key objectives of a SE (other than its principle sectoral objective), the role and qualifications of directors, responsibility of share holding ministers, and provisions relating to the conduct of non-commercial activities;

11.2 **Part II, Formation and Ownership of New State Entities.** Provision should be made for the subscription of and the holding on behalf of the state entity by the Minister of Finance and/or other appropriate officials of shares in the new companies to be formed. It would also include a prohibition or restriction on the sale of the shares and powers of the new shareholders by the ministers or directors in relation to the corporatized state enterprises;

11.3 **Part III, Accountability.** This part would require the preparation of a statement of corporate intent or similar planning document setting forth the information required for a corporate business plan. In addition, provisions relating to the publication of annual reports and accounts, issue of dividends and the type of information that should be laid before Parliament; and

11.4 **Part IV, Miscellaneous Provisions.** Provision should be made for the formal transfer of assets and liabilities from existing SEs to the new state-owned companies and other miscellaneous consequential provisions. This includes a mechanism whereby the government can, by regulation or order, cause a SE to be brought under the scope of the law, and thereby be subjected to the process of corporatization.

(B) Amendment of SE Laws to Allow Private Sector Participation

12. One of the features of several of the laws governing individual SEs is the provision of monopolistic rights and the prohibition on private sector participation in the sectors in which such SEs presently operate. This required, for example, amending the EGAT law so as to permit private sector participation in the power sector under certain terms and conditions. With other SEs, other methods to avoid such restrictions have been adopted but, in the long-term, all SE sectors should be opened up to the private sector.

13. As in the case of corporatization, there is considerable merit in enacting a general law that would essentially provide that, notwithstanding any provision to the contrary in any law, the restrictions on private sector participation are repealed. Such a law could be drafted quickly and should be relatively non-controversial. It could also be drafted in such a way as to apply only to those SEs that the government from time to time considered appropriate for freeing up to the private sector.

(C) BOO and BOT Projects

14. In March 1992 the government passed the Royal Act on Private Participation in State Affairs. The effect of this legislation was to formalize the internal government approval process required for projects valued at one billion baht or more in which private sector participation was desired. In

essence, it regulated the approval of BOO- and BOT-type projects. The process appears satisfactory, but it is important to ensure that the approval procedures set out in this Act are applied efficiently and fairly so as not to discourage participation by the private sector.

15. It appears from Article 8 that the Act only applies to those projects in which the SE, Ministry, or other project owner/initiator desires private participation. The implication appears to be that if the concerned SE does not wish to involve the private sector in its operations, it need not do so. This assumption, if it is correct, is unfortunate. It should be the other way around. We recommend that **when projects are requested for NESDB approval, a justification should be given of why it may not be desirable to involve the private sector by joint venture, concession or other means**.

(D) Competition Law

16. A general competition law is an important element in the overall regulatory framework. A number of countries have adopted such laws recently (New Zealand, Mexico, Jamaica). Although Thailand has price-fixing and anti-monopoly legislation, the provisions of the relevant Acts do not apply to goods and services provided by the SE sector. As there was no competition within the SE sector, there was no need for legislation to protect the consumer from the excesses of competition. This state of affairs may change when competition between utilities or from the private sector begins. If the government's initiatives to free up the SE sector are successful, private independent operators will emerge and an element of competition will be introduced, requiring the enactment of a competition law. To some extent, existing and future regulatory controls will check anti-competitive behavior, but it may be necessary to go further. At this stage, it is not suggested that the government should take any particular steps, but it would be prudent to flag this issue for the future.

(E) Labor Issues

17. In many countries, the main resistance to privatization has come from SE employees. Their concern centers around the perceived risks of unemployment and to the threats to their salary levels, pension entitlements and severance payments. These issues would be very important for any substantial divestiture. We recommend a strategy that would identify and resolve such concerns before they become too divisive and intractable. Opposition by employees and trade unions to privatization can be significantly reduced if the government has the foresight to put in place, ahead of the privatization of a SE, measures that will ensure the fair treatment of employees and further ensure that displaced or transferred employees do not suffer financially from the process.

18. This is very important for designing severance packages, which should ensure that all employees whose employment is terminated receive fair and equal treatment, and that employees of one SE are not perceived to be treated more favorably than others. A policy that anticipates such difficulties, and provides appropriate solutions and that can be introduced well in advance, will be critical for the success of the government's strategy for increasing private sector participation. At present, upon termination of employment, all employees in the SE sector receive one month's salary for each year of service. In addition, where the termination results from retirement or occurs without fault on the part of the employee, a lump sum equal to six months salary is also payable. In this content, the government might consider a number of measures such as:

(a) Increasing the present severance pay basis from one month to, for example, one-and-one-half months per year of service;

(b) Guaranteeing retention of the bulk of SE employees (which should be easy in several cases given rapid SE expansion). Staff close to retirement may be given a "golden handshake"; and

(c) Grandfathering existing salaries and benefits.

19. **Pension Benefits.** At present, it appears that there is no right to transfer service among SEs. This is another issue that could be usefully explored with solutions proposed well in advance. The recent example of the creation of a provident fund scheme by Thai Airways and Krung Thai Bank is instructive. Existing employees of those institutions were given the option of remaining within the existing pension scheme or transferring to the new provident fund, while all new employees were required to join the fund. This seems applicable to other SEs. In this context, another issue that needs to be addressed concerns the funding of existing pension entitlements. It appears that SE pension obligations are not fully funded. This is not yet a problem since the government stands behind such obligations. Once the SEs become substantially privately-owned, however, it will be essential to ensure that the SE/company is able to meet its pension obligations. Given the financial implications and potential sums involved, it is highly desirable that this issue be addressed in the near future and that the financial statements of SEs obtain an actuarial analysis of these liabilities. This should be incorporated in the general accounting for all SEs. A detailed analysis of pension issues is provided as Annex 11.

Thailand

Private Sector Participation and Improved Efficiency of State Enterprises

Privatization - Capital Market Aspects

(A) Introduction

1. Thailand has one of the most dynamic stock exchanges in the Asia region. As of May 31, 1994, the total market capitalization of the Stock Exchange of Thailand (SET) amounted to Baht 3,063.5 billion, $121.1 billion, compared with $1.0 billion in 1980 (Figure 1). As of December 31, 1993, market capitalization stood at Baht 3,325.4 billion, more than double the market capitalization of a year earlier — Baht 1,485.0 billion. The dramatic growth of the Thai stock market is all the more remarkable given the fact that stock exchange was formed only in 1974. Not only is the SET one of the largest emerging markets, it is also the eighteenth largest market in the world when measured in terms of market capitalization, and seventeenth largest in terms of listed companies.

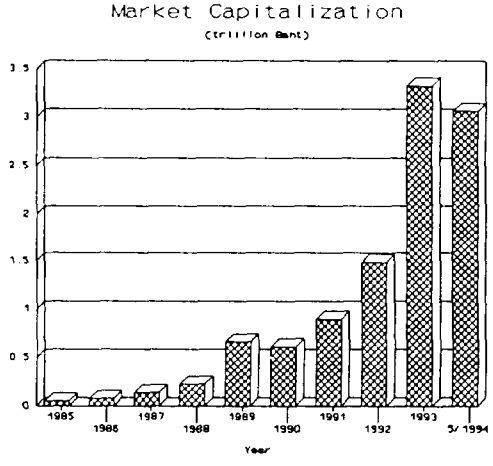

Figure 1

2. The dynamic growth of the stock market is due to several factors, including rapid economic growth during the 1980s, a favorable environment for foreign investment (both direct and portfolio), a relatively stable political climate for investment, prudent fiscal and monetary policies, and an open economy. The liberalization of the foreign exchange market in recent years has also played a key role in attracting foreign portfolio investment. Despite the recent sharp increase of share prices, future prospects for capital market in Thailand are bright. The Thai economy is projected to grow twice as fast as OECD economies, and Indo-China represents a new opportunity for further growth. In addition, the capital market has not yet fully realized its potential. Measured by a ratio of stock market capitalization/GNP, Thailand reached 100% — putting the country on a par with other developed markets such as the USA, Japan and the UK — only in 1993. A year earlier, this ratio in Thailand was only 56%. The bond market, contractual saving institutions (insurance, provident funds, and social securities), and mutual fund industry are still in the early stages of development. At the end of 1992, total assets of the insurance industry amounted to Baht 63.0 billion. Total assets managed by eight fund management companies stood at Baht 84.3 billion. Total assets of the 708 provident funds were Baht 20.6 billion (see para. 15). With

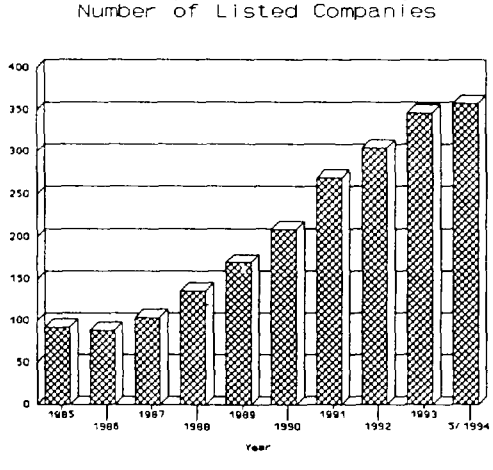

Figure 2

rising incomes and the appropriate policy changes, Thailand should be able to mobilize substantial long-term domestic resources through contractual savings institutions. A growing capital market and an increase in the number of institutional investors will facilitate the privatization of the major state enterprises (SEs). Because of the lack of government bonds (due to fiscal surplus), there is a demand for fixed income securities which can be tapped by the SEs.

(B) The Capital Market

3. The capital market in Thailand is robust and relatively broad based. The main segments of the capital market are the: (a) stock market, which is the largest and most developed segment; (b) mutual fund industry, which has become a major player with the licensing of new fund managers in early 1992; (c) bond market; and (d) contractual savings industry (provident funds and insurance companies). These are discussed below.

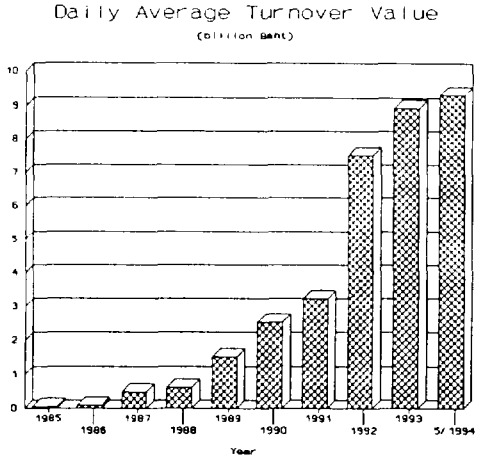

Figure 3

Stock Market

4. As of December 31, 1993, market capitalization stood at $130.5 billion. The number of listed companies on the SET rose from 77 in 1980 to 347 in 1993 (Figure 2). Eleven new companies were listed during January-May 1994, increasing the total number of listed companies to 358. The annual turnover on the SET in 1993 reached Baht 2,201 billion ($87 billion), and daily average turnover of over Baht 9,000 billion per day is quite common (Figure 3). The SET Index on May 31, 1994 stood at 1,356.9, which represents a slight fall from the end of 1993 (1,683), but a substantial increase over the end of 1992 (893) (Figure 4). The latest run-up in the index was due mainly to the influx in foreign portfolio investment from the USA, Japan, and European countries. Net foreign portfolio investment has increased dramatically from $118 million in 1992 to $2.2 billion in 1993. Foreign portfolio investment reportedly increased further during October 1993. It is estimated that about 25% of the shares of listed companies are held by foreign investors. The stock market has become a major source of investment capital for companies in Thailand. The capital mobilized by the listed companies in 1993 amounted to about $1.2 billion, compared with $25 million in 1980 (Figure 5).

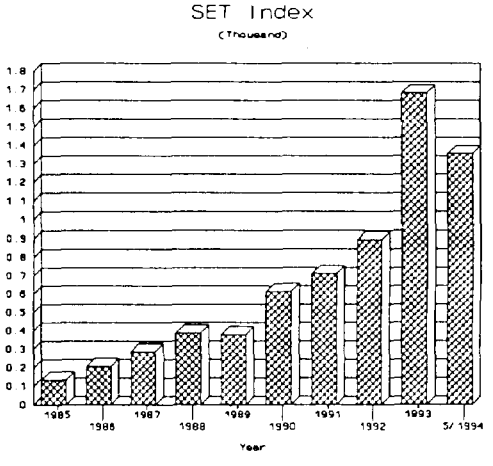

Figure 4

5. The following table compares the performance of Thai stock market with that of several neighboring countries as of December 31, 1993:

Table 1: Market Indicators

Country	Market Capitalization ($ bil)	Listed Companies	Valuation		
			P-E Ratio	P-BV Ratio	Div Yield
Thailand	130,510	347	27.5	4.7	1.5
Indonesia	32,953	147	28.9	3.1	1.3
Korea	139,420	593	25.1	1.4	0.6
Malaysia	220,328	410	43.5	5.4	1.0
Taiwan	195,198	285	34.7	3.9	0.8

Source: International Finance Corporation.

Bond Market

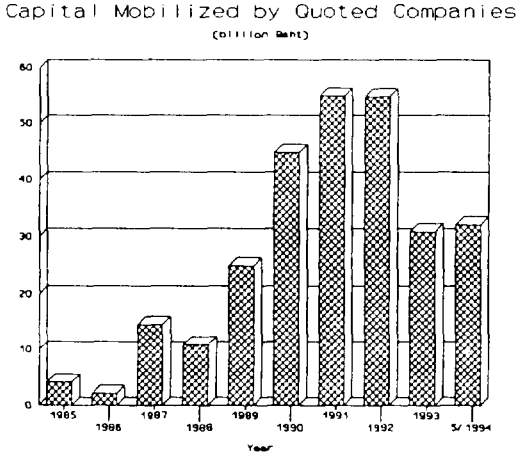

Figure 5

6. Unlike the stock market, the size of bond market in Thailand is small (Figure 6). This is due to several reasons. The main reason is that conservative fiscal policy management has resulted in a fiscal surplus amounting to $10 billion over the last five years. Robust economic growth has also contributed to a surge in government revenues. As a result, the government has not been issuing new securities, and has retired more than half of the outstanding issues (Figure 6). The outstanding debt of the central government (both domestic and external) has declined steadily. Until late 1992, the issuance of debt instruments by corporations listed on the stock exchange was restricted by the Public Company Law, and private companies were prohibited from issuing bonds to the public. As a result, the total volume of bonds outstanding has been declining since 1989.

7. The amendments to the Public Company Law and Commercial Codes in late 1992 enabling the corporate sector (both listed and private) to issue fixed income securities have led to an increase in the issuance of bonds and convertible bonds. In 1993, 16 firms issued debentures with warrants attached totalling Baht 21.8 billion to local investors. Another 23 firms have issued convertible debentures in the Euro-market totalling about Baht 69.3 billion. In addition to the regulatory changes, the other main factor contributing to the recent interest in the bond market has been the demand for fixed income securities by the mutual fund industry. Some of these funds have been set up as fixed income funds and therefore need to invest in either bank deposits or other fixed income securities. Furthermore, the overall decline in interest rates has made it more attractive for the corporate sector to issue straight bonds or convertible debentures rather than to borrow from domestic banks (Figure 6).

8. The market for the bonds of corporations and SEs in Thailand has good growth potential. In comparison with countries like Korea, Taiwan, and Singapore, the corporate bond market in Thailand is just beginning to gain momentum. Preliminary data indicate that corporate bonds account for about 50% of total bond issues in Korea and 20% in Taiwan. Recent trends indicate that the market is gaining momentum and that the policy measures undertaken by the Royal Thai Government — such as the establishment of the Thai Rating and Information Services, Co., Ltd. — will facilitate the appropriate

pricing of new issues in the future and contribute to the overall development of the bond market.

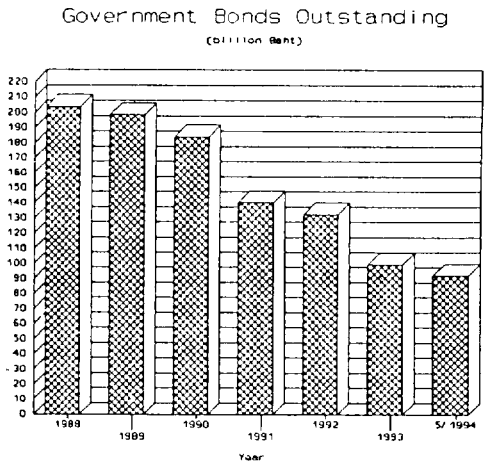

Figure 6

9. While the total bond market has shown little growth over the last few years, the composition of the bond market has changed dramatically (Figure 7). As recently as 1991, government bonds constituted the overwhelming majority of bonds outstanding. However, in that year, state enterprises issued bonds worth Baht 37.0 billion, and their share of the bond market began increasing. Consequently, by June 1994, state enterprise bonds outstanding amounted to Baht 171.2 billion, or 54% of the total outstanding of Baht 312.6 billion. By contrast, government bonds outstanding fell have been falling steadily and stood at Baht 92.3 billion in June 1994, or about 30% of total bonds outstanding. Domestic corporate bonds have become significant only in the last year or so, rising from almost nothing in 1992 to Baht 49.2 billion by June 1994, or 16% of total outstanding bonds.

10. By encouraging SEs to issue more bonds, the government can reduce its budgetary outlays required to finance the rapidly increasing capital expenditure of the SEs — particularly the public utility SEs — in the next few years. In addition to meeting the funding requirements of the above-mentioned SEs, the securitization of the debt of these SEs can enhance their market exposure (in the areas of accounting, auditing, and disclosure requirements) and prepare them for future privatization. An added benefit for accelerating the growth of the bond market through SE bonds would be the additional flexibility for the Bank of Thailand in conducting its monetary policy through open market operations.

11. Although the primary market for corporate bond market has begun to develop, there is practically no secondary market in these instruments. In order to fully develop the bond market, the government will need to create an active secondary market. This will include the creation of a broker/dealer network for SE securities. Consideration should be given to a mechanism for providing liquidity to market makers, as the amounts involved could become sizeable. The availability of timely market information will also be essential. Furthermore, a secondary market will require an efficient clearing and settlement system for trading securities. These are areas which require further study.

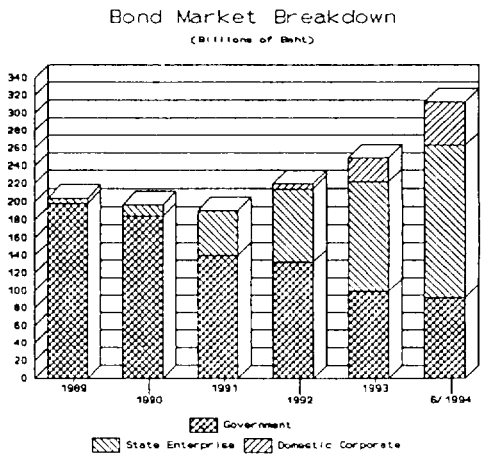

Figure 7

Mutual Fund Industry

12. As of October 30, 1993, total funds managed by the mutual fund industry in Thailand amounted to Baht 125 billion, consisting of 29 local funds (Baht 84.4 billion) and 14 foreign funds (Baht 41 billion). Until February 1992, the mutual fund industry consisted solely of the Mutual Fund Company of Thailand (MFCT), a subsidiary of the Industrial Finance Corporation of Thailand (IFCT). MFCT was established with the assistance of the International Finance Corporation (IFC) and has been a pioneer in

this industry, especially in the flotation of the foreign funds in the early years. In 1992, the mutual fund industry was deregulated and seven new fund managers were licensed under the following conditions: (a) the applicant must be a financial institution with a sound financial condition with joint ventures with other companies; (b) a minimum registered capital of Baht 100 million; (c) the funds must be of the closed-end type with a maturity of 5 years; and (d) the fund must be able to mobilize no less than Baht 1.0 billion. The mutual fund industry comes under the supervision of the SEC. Funds are also required to have Trustees and Custodians that are approved by the SEC.

13. Within a period of one year, seven new fund managers have been able to launch 20 new funds and to mobilize Baht 61.6 billion from the public. This success stems from the ownership structure, which comprises major commercial banks and international fund managers. The tax benefits for the mutual fund industry are probably the most generous in the world. Both dividend and capital gains are tax exempt and the mutual funds also pay a lower brokerage commission (0.3% vis-a-vis 0.5% for others). Initially, these funds were not popular with Thai investors and most of them sold at a discount as large as 20% below net asset value (NAV). However, these funds are considered local funds and are not subject to the 25% foreign ownership limit for most of the listed companies. The liberal ownership limits and deep discounts made mutual funds attractive to foreign portfolio investors. With the recent increase in stock market prices and greater public awareness about the advantages of mutual funds, the discount has narrowed and, in most cases, the funds are trading close to their NAVs. Given that only 400,000 Thais own securities, the potential growth for the mutual fund industry is tremendous, and it is likely to become the third largest type of financial segment after commercial banks and finance and securities companies.

Contractual Savings Industry

14. While the mutual fund industry has experienced dramatic growth, the growth of the contractual savings industry (pension funds, provident funds, and insurance companies) has been fairly modest and has thus far played only a modest role in capital market development. The mission was able to carry out an analysis of the pension and provident funds which is presented below. The coverage of the insurance industry is limited, and comments are based on the review of secondary information.

15. **Pension and Provident Funds**. Pension plans in Thailand consist of defined benefit plans (pension plans of the government and SEs which have not been corporatized) and defined contribution plans (the Provident Fund (PF) for the private sector and some SEs which have been corporatized or partially privatized). The government's pension plan is not funded and the annual pension payments have been met from the budget. The SEs are required to allocate 10% of their revenues and keep these funds in separate bank accounts for meeting pension liabilities. The investment of these funds is restricted to bank deposits in approved banks. The private sector pension plan is governed by the Provident Fund Act of 1987. Employers and employees are required to make contributions, with employers typically contributing 10% and employees 3.5%. Annex 6 discusses the pension plans in detail and makes specific recommendations for their improvement. In this Annex, we will discuss the role of the pension plans in developing capital markets and privatization.

16. As of September 30, 1993, there were 708 provident funds covering about 400,000 employees. Total assets of the funds amounted to Baht 20.6 billion. The size of the provident funds has increased 20 fold since 1985, reflecting growth in the number of plans and rising income. Contributions of up to Baht 10,000 are free from tax. Although the number of PFs and the size of their assets have increased dramatically, there is ample potential for further growth. At present, PFs cover only 400,000 Thai workers, or 3% of the active work force. By comparison, 10% of Filipino workers are covered — and the Philippines has only half the per capita income of Thailand. Therefore, the potential growth of PFs and the role which they can play in the equity market could be substantial if policy changes were made in the PF Act and in the number of fund managers.

17. The composition of assets as of September 30, 1993 was as follows: (i) bank deposits

and CDs issued by banks (60%); (ii) CDs of finance companies (25%); (iii) stocks (9.9%); and (iv) government securities (5.1%). The total amount invested in the stock market amounted to about Baht 2.0 billion ($800 million), or about 1% of the market capitalization. The Provident Fund Act allows for investment of up to 25% of the portfolio in equity, but plan sponsors and provident fund managers have opted for a more conservative allocation and for low risk instruments of financial institutions. Given the long-term requirements of the PFs, a higher allocation in equities (40-50%) would be more logical. It is recommended that asset allocation decisions be left to the plan sponsors and asset managers. The PFs are currently managed by 16 approved managers, but three managers account for about 75% of total assets. The rationale for limiting the number of fund managers is not very clear under present market conditions since other actors such as mutual fund managers, banks, and insurance companies are capable of performing this role. It is therefore recommended that the Ministry of Finance consider relaxing this regulation and allow other institutions which meet the stipulated criteria. There will be more incentives for new managers to promote PFs. Another operational matter which should also be left to the market participants is the level of fees for fund managers (currently stipulated at 10% of revenues of the funds). The setting of fees should be left completely to the market. One strong fiscal incentive is the amount of contribution that can be deducted by an employee. This amount is currently set at Baht 10,000 and is not indexed to inflation. If the objective of the government is to accelerate the increase of long-term savings, then it may wish to consider raising this limit to say 15% of earned income with a total ceiling of Baht 30,000. This threshold should be reviewed within the overall fiscal context.

(C) Regulatory Framework

18. The passage of the Securities and Stock Exchange Act (SEA) paved the way for fundamental changes in the way companies raise funds and in the way that the stock exchange is run. The SEA was enacted by the Thai government on March 16, 1992, and became effective on May 16, 1992. The Act provides for more transparent, efficient, and effective enforcement and supervision of the securities business in an effort to enhance investor protection. The SEA changes the securities environment in the following ways:

(i) The supervision of securities activity is now unified under one institution, the Securities and Exchange Commission (SEC). This provides for more effective and efficient supervision;

(ii) The SEC is now responsible for regulating and supervising the primary market, while the secondary market is left to the SET. All companies that offer shares to the public must file for and gain SEC approval before an issuance of securities and then must also disclose sufficient information;

(iii) The SEA recognizes instruments like convertibles and warrants. It further clarifies the definition of both short- and long-term debentures. Furthermore, the concepts of investor representatives and trustees are introduced. The SEA also recognizes the futures and options markets, but a separate bill will be required for the supervision and regulation of these activities;

(iv) The SEA lays the foundations for various securities related organizations;

(v) The mobilization of funds from the public by the issuance of equity instruments is limited to only public companies, while debt instruments can be issued by both public and private companies; and

(vi) The SEA has introduced the concept of private funds as a new type of securities business. It also allows non-securities companies, especially commercial banks, to conduct limited securities business. Commercial banks are allowed to underwrite debt instruments issued by both government and private corporations.

19. Public offerings may be made following approval from the SEC. Those wishing to make the offerings must disclose information as required by the SEC. Public offerings are supervised by using the "Approval and Filing System", as follows:

(i) Those wishing to make public offerings must submit an application form requesting permission to make public offerings;

(ii) A firm may proceed with a public offering if the SEC has not made an objection within 45 days of filing information regarding the reasons for offering new or existing shares;

(iii) A prospectus is needed for public offerings; and

(iv) The SEC has the authority to grant exemptions to certain rules. Issuers making private placements for institutional investors or for investors not exceeding 35 persons are exempted from an issuance of a prospectus.

20. **Private companies.** As for private companies, the regulations under the Civil and Commercial Code apply. In most cases, these require that all new shares of private companies are issued in the form of a rights issue. Shares are offered solely to the existing shareholders in accordance with the number of shares held, and the issue price must not be lower than the par value.

(D) Institutional Aspects

Organization and Administration

21. According to the SEA, the SET is a non-profit juristic organization under the supervision of the SEC. The SET is the only stock exchange in Thailand and has a single trading floor in Bangkok. It is composed of 40 securities companies. The SET's operation is chiefly financed by listing fees, member payments, and fees or charges for acting as the securities registrar of listed and other companies. In addition to administering the trading floors and monitoring the activities of all traded securities, the SET processes all listing applications, and can act as paying agent for dividends and issues, acting as registrar.

22. An 11-member Board of Governors presides over the SET. Five members are appointed by the SEC and another five are elected. The president of the SET is appointed by the Board and serves as an ex officio member of that body. The Board formulates policies and supervises the Exchange's operations. Certain rules and regulations prescribed by the Board have to be approved by the SEC. Only member companies of the SET are authorized to buy or sell securities on the SET. Membership is limited to securities companies licensed by the SEC to engage in the securities business as stock brokers, and membership must be approved by the Board of Governors of the SET. As of May 31, 1992, there were 40 members of the SET.

23. There are two types of companies that trade on the SET: listed and authorized. Listed shares are generally for larger and long established firms, while authorized shares are for relatively small companies. There are significant requirements both prior to and after listing. The SET replaced its floor trading system in April 1991 with a fully computerized trading system named ASSET in an effort to make trading more orderly, equitable, liquid and efficient. This has facilitated the rapid expansion of the trading volume of the SET. Stocks traded on the SET are cleared and settled by the SET. The SET has employed a multilateral netting system since 1982. For the settlement system, all traded securities in the SET are settled by a rolling settlement on T+3 days in accordance with the recommendations of the Group of Thirty, where T is the trading day.

(E) Foreign Portfolio Investment

24. Foreign portfolio investment has increased substantially since 1986, and accelerated during 1993. In 1993, net foreign portfolio investment increased to US$2.2 billion from $118 million in 1992 (Table 2). Thailand has been officially encouraging portfolio investment since 1988. Foreign investors may invest directly in the SET or invest through on-shore or off-shore funds. According to the SEA, on-shore funds are foreign funds registered abroad; however, their investment plans are registered and approved by the SEC. Fund managers of on-shore funds must be Thai companies. On-shore funds are not subject to foreign ownership restrictions. Off-shore funds are mainly foreign funds registered aborad and are treated as general foreign institutional investors and, therefore, are subject to foreign shareowner restrictions. However, due to restrictions on foreign ownership, foreign demand for certain Thai securities has far exceeded the shares available for foreign investors.

25. The placement of equities by Thai entities in industrial country financial markets has been limited. Although international equity placements by developing countries surged from $1.2 billion in 1990 to $9.4 billion in 1992, the issuances by Thai entities have remained at around $100-200 million in recent years. Selling a portion of the shares of the large public utility SEs in the American private placement market or listing them on several industrial country financial markets through Global Depository Receipts could reduce the burden on the domestic capital market. The growth of international placements has been greatly facilitated by rule 144A of the U.S. Securities and Exchange Commission (SEC) enacted in June 1990.

26. Direct foreign investment is permitted in most economic activities. Foreign portfolio investment is generally limited by a particular company's memorandum or articles of association. Consequently, foreign ownership is limited to 25% — the limit established for most listed companies — for almost every issue.

27. Foreign exchange controls have been liberalized since 1988. At present, foreign capital inflows need not be registered as previously required. Repatriation of investment funds, dividends and profits as well as loan repayments and interest payments thereon, net of all taxes, may be made freely. Commercial banks are authorized to approve the purchase of foreign exchange for remittance abroad without limit. Upon a sale of securities, the stockbroker or custodian bank will calculate the capital gains tax payable based upon the purchase information, debit and credit contract note, as specified in the BOT Notices to be announced.

28. Income from investing in the SET is subject to both capital gains and withholding tax. However, for individual investors (both domestic and foreign), capital gains from securities traded on the SET are exempt from income taxes. Foreign institutional investors, in general, are subject to withholding tax on the dividend and interest income earned from securities investment unless they are exempted under double taxation treaties. As of May 31, 1992, Thailand had tax treaties with 25 countries. Through the tax treaties, some foreign institutional investors can enjoy the privilege of tax-free capital gains. The United States does not have a tax treaty with Thailand. However, most country funds are registered in a country with a tax treaty.

Table 2: Foreign Investment in Financial Instruments (US$ million)

	1991	1992	1993	Jan-Jun 1994
Net foreign portfolio investment	22.8	117.6	2,245.0	657.2
Inflow	225.2	333.5	3,108.0	821.7
Outflow	202.5	215.9	863.0	164.5
Net private capital flow	9,920.3	7,607.9	12,562.9	112.6
Inflow	31,734.8	46,437.8	110,792.5	110,099.6
Outflow	21,814.5	38,829.9	98,229.6	109,987.0

Source: Bank of Thailand.

(F) Privatization

29. Although the government has selected 15 SEs for privatization, it probably would be more effective to start with four or five SEs which are efficient, profitable and attractive to both local and foreign investors. The potential candidates are EGAT, MEA, TOT, and PTT. As of September 30, 1993, the combined net worth of these four companies amounted to Baht 147.0 billion ($5.9 billion). Assuming a price/book value of 4, total market capitalization of these four companies would be roughly Baht 588.0 billion ($23.5 billion), or 19.2% of the capitalization of the stock market. The Thai Airways issue of 95 million shares in 1992 was offered at 2.9 times book value and a 16 times P/E ratio based on 1992 projected earnings. However, the market valuation has recently increased sharply, with average price/book value of 4.7 in 1993.

Table 3: Selected Indicators for 4 SEs

	Profit (mil Baht)	Net Worth (bil Baht)	Price /book	Market Value (bil Baht)
EGAT	12,412	68.7	4.0	274.8
MEA	2,041	19.1	4.0	76.4
PTT	6,824	24.1	4.0	96.4
TOT	11,254	35.1	4.0	140.4
Total		147.0		588.0
Market Cap (5/30/94)				3,063.5
Total as Percent of Market Capitalization				19.2%

Note: Financial information of the SEC as of September 30, 1993.

30. As the amount involved for the four SEs is very large, the market (notwithstanding its recent sharp increase) may not be able to absorb such a large amount of new securities in one go. However, it should be able to absorb 5-10% of the securities of the above companies with proper preparation of the

market and its participants. Consequently, an alternative approach such as the simultaneous offering of shares of these companies internationally and the issuance of bonds will ensure the success of such an offering and help expand the market for Thai securities. The offering of preferred shares and convertible securities should also be considered to attract foreign institutional investors. The 15 utilities should be encouraged to raise resources from the market through the issuance of bonds and reduce their reliance of commercial bank financing. The availability of the SE fixed income securities will facilitate indirect monetary policy management, i.e., open market operations.

(G) Conclusions and Recommendations

31. The mission carried out a review of potential problems in offering securities of these companies in the market. Since all four companies are operating profitably, they will most likely meet all the listing requirements of the SET and should have little difficulty in complying with the disclosure requirements stipulated by the SEC. The basic problem is that these enterprises have to be converted into corporate entities under the Public Company Act. This may take time, as all associated issues will need to be addressed. Some of the key issues are discussed here. First, these companies will have to be audited by independent auditors in accordance with generally accepted accounting standards. Most of these enterprises do not follow generally accepted accounting principles concerning the treatment of foreign exchange gains/losses. Unrealized foreign exchange losses are shown as other assets on the books of some enterprises. Accurate valuations by market participants without the benefit of independent audits of the SEs would be a difficult task. Second, the valuation of the underlying assets of these enterprises to reflect prevailing market prices may need to be considered to adequately reflect the value of the enterprises. Third, contingent liabilities related to pension obligations would need to be properly reflected. It is recommended that an actuarial analysis be carried out for each enterprise by qualified actuaries. Once the SEs are converted into public companies and, with proper audits carried out, the underwriters should be able to handle the offerings. Fourth, the treatment of present employees could be partly addressed in the offering of shares. The case of Thai International Airways and the Krung Thai Bank can be used as models with some modifications. Up to 5% of shares were offered to the employees at par. Such an arrangement appears reasonable provided that the employees are required to hold the shares for a certain period of time (two years).

32. EGAT has recently set up a subsidiary company, EGCO, to take over a 1,200 MW power plant in Rayong. Total investment is estimated $800 million. With a debt/equity ratio of 3:1, the equity base of the EGCO would be about $200 million. Fifty-one percent of the shares (about $100 million) will be offered to the public in late 1993. EGCO will be managed by ex-EGAT staff. The experience to be gained under the EGCO transaction will be useful for pricing future issues.

33. In order to meet the main objectives of its privatization effort, Thailand should take additional measures to accelerate the development of a domestic mutual fund industry, bond market, and contractual saving industry, especially a provident fund industry. There is also strong demand for fixed income and equity-linked securities of Thai companies in the international market. Therefore, a combination of domestic and international financing would enable the effective privatization of the SEs. Concerted efforts should be made to further develop the bond market.[1]

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[1] The Thai bond market is being studied as part of the Asian Bond Study expected to be completed in June 1995.

Thailand

Private Sector Participation and Improved Efficiency of SEs

Legislative Strategy for the Telecommunication Sector

1. There is a need to restructure the telecommunications sector and supersede the 1934, 1954, and 1976 acts to make the sector more competitive and efficient.

2. The 1934 act gives the government exclusive rights to provide telephone and telegraph services in Thailand. The need to provide adequate value-added services has led to the adoption of BTO (build-transfer-operate) contracts, which are of uncertain validity.

3. Legislation should be enacted to: (i) eliminate the reservation to the government. Sections 5 and 6 of the 1934 act should be superseded by a statutory provision making it illegal for any person to provide telecommunications services for hire within the territorial jurisdiction of the kingdom (land, water, and space) without a license from the government.[1] Government communications for the sole use of government entities would not be within this prohibition; (ii) centralize the enfranchising authority in that regulator; and (iii) supersede Chapter 5 of the 1934 act with a new statutory chapter establishing an independent regulator, who would succeed generally to the remaining powers of the Director-General (Governor) in Chapter 2 of the 1934 act.

4. **Regulation.** The independent regulator — whether an individual or a collegial body, i.e., a commission — should be so constituted as to have the attributes of: (a) independence; (b) objectivity; (c) stability; (d) finality; (e) transparency; (f) timely response to competitive forces; and (g) subject to judicial control.

5. To assure independence from political influence, the commission should be composed of individuals appointed for fixed, staggered terms from outside the government. They should be removable from office only for cause, and their salaries should be protected from diminution or curtailment during their respective terms of office. As a transitional measure, it might be deemed politically desirable to have a minority of commissioners from the government serving *ex officio*. This transitional device should terminate no later than the privatization of TOT and CAT, and preferably should terminate no later than their corporatization. The non-governmental members should be nominated by the government and approved (confirmed) by the parliament or an appropriate body thereof.

6. The commission should be empowered to hire staff experts at pay levels competitive with private industry. The commission's budget would be approved by the government, and its operations would be financed by a charge fixed annually, for say, 0.05%, against the annual gross revenues of

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1/ Section 7 should be amended to require a license from the regulatory authority for telephone or telegraph service not for hire only beyond the operator's own premises.

licensed providers of telecommunications services for hire and by any fees for processing applications charged by the commission.

7. Transparency would be effected by applying the principles of "government in the sunshine" to the commission's operations. These principles imply that the commission would act only after notice to the public, for example, in the Royal Gazette, giving interested parties an opportunity to offer their views orally and/or in writing, as determined by the commission. The commission would be required to decide questions and adopt regulations based on the public record and to disclose the reasons for its decisions, and parties with financial interests in adjudicatory decisions of the commission would be barred from attempting to influence the commissioners "off the record," i.e., in private. The commission would be precluded from enforcing unpublished procedures, policies, orders, or rules. government policies would be conveyed to the commission only on the record, and the legislation might provide for a designated individual, viz., a public advocate, to argue or otherwise advance the government's policies before the commission.

8. Actions of the commission would not be limited to orders affecting single parties. The commission should have the option of proceeding by regulation or by order on any given issue, whichever it deems more efficient and effective. Commission regulations would become effective upon adoption by the commission and their resultant publication in the Royal Gazette.

9. Decisions of the commission would be final, except in instances where the statute provided otherwise. As an example, it might be deemed politically necessary for the statute to provide that certain evolutions in sectoral structure or manner of regulation — prior to privatization — be a recommendation of the commission to the government, with the Cabinet having the power to approve or to reject, but not to modify the commission's recommendation. Any decision or rule of the commission could be appealed to the courts by a person with a legally cognizable interest therein. Upon such an appeal, the court would be limited to determining whether the procedure and decision of the commission was not arbitrary and conformed to the law. The court could dispose of the appeal only by affirming or reversing the commission's decision and not by modifying it. The taking of an appeal would not delay implementation of the commission's order or rule, unless the commission or the court so ordered in a specific appeal.

10. **Franchises.** The commission would have the power to issue and enforce franchises or licenses for all telecommunications services. Assignment or transfer of control of these authorizations would be subject to prior approval by the commission. In consonance with the spirit of Section 77 of the 1991 Constitution, the commission would not issue exclusive concessions, although it might defer the issuing of multiple franchises in certain sub-sectors in accordance with a planned progression toward open competition throughout the sector. The matter of a staged progression is discussed more fully below.

11. TOT and CAT would also require franchises from the new commission, since their existing authority derived from Section 5 of the 1934 act would be invalidated by its supersession. TOT and CAT would be required to apply for franchises from the new commission, but their existing operations would be grand-fathered, i.e., they would hold continued interim authority until the commission had acted on their applications for new franchises. In any event, they would require new franchises as part of corporatization.

12. The rights of value-added providers now in operation under existing BTO agreements would be preserved until their expiration, but the statute would give such providers the right to elect to substitute a franchise from the new commission. Since it is contemplated that the franchises issued by the commission would have no revenue-sharing requirement, the existing operators would presumably elect to take new franchises from the commission. The commission would succeed, in any event, to the regulatory powers of TOT and CAT under the BTO agreements.

13. **Rules of Competition.** A principal duty of the new commission would be to adopt rules of competition. The most important of these rules of competition would be for non-discriminatory interconnection of networks. While providers would be encouraged to negotiate appropriate terms and conditions of interconnection, the commission would have the ultimate power to prescribe terms and conditions to foster expansion of competition and to protect the public interest in widely available telecommunications services at reasonable prices. This power is particularly necessary in the absence of a well-formed body of antitrust law. Where necessary to enforce the non-discrimination requirement, the commission should have the power to require that the terms and conditions of sales of services be published.

14. To further aid competition, the commission would have the power to adopt structural regulations to prevent cross-subsidization of competitive services by dominant providers such as TOT, to prescribe accounting safeguards, and to prohibit or regulate transactions with affiliates of dominant providers.

15. To implement its strategy for, and the progression toward, open competition, the commission should have the power to modify from time-to-time the restrictions on the use of leased lines, e.g., to allow resale and sharing, to prescribe charges for access by providers to the switched public network (PSTN), to advance public purposes, and to adjust restrictions on the interconnection of leased lines to the PSTN. The commission would also have the power to adjudicate complaints and disputes involving service providers and to issue judicially enforceable orders to its franchisees or licensees to implement such orders. The commission should be given the power to prescribe operational standards for telecommunications. The commission may also be given the power to promulgate and enforce technical standards with respect to equipment to be connected to the PSTN, although, alternatively, this power could be left with the Ministry's Post and Telegraph Department. The legislation should empower whichever agency has the power to enforce equipment standards to call upon other agencies of the government, e.g., the customs service, for aid in enforcement. The legislation would endorse international homologation of equipment standards. The telecommunications legislation should provide for transfer to the commission, or coordination with the commission, of pertinent frequency management responsibilities under the 1955 Radio Act.

16. The provisions of the 1954 and 1976 acts concerning tariff approval should be superseded by legislation giving the commission the power to regulate the prices for non-competitive services. Otherwise, the commission's only power to force reductions in, or rebalancing of, tariffs would be through the issuance of additional franchises. The transfer of authority should occur no later than the commission's issuance of franchises to TOT and CAT.

17. The intention would be for the commission to establish a track record in responsibly, stability, and predictably, exercising its full range of powers prior to privatization. In that way, upon

reaching the privatization stage, prospective strategic investors would have confidence in the operation of the regulatory scheme and would not be deterred from investing or would not discount their bids due to uncertain political risk.

18. **Corporatization.** The 1954 and 1976 acts should be *repealed* to effectuate corporatization in the near-term and ultimately privatization. Corporatization of TOT and CAT should be accomplished by reincorporation under the general law of civil corporations. These corporatizations would not necessarily be accomplished simultaneously, since CAT is likely to encounter competitive challenges sooner than TOT. The assets of TOT and CAT would be transferred to the respective successor corporations. It is the view of the mission that CAT cannot be successfully privatized with the postal operation attached, and it is recommended that the new telecommunications legislation provide that CAT's operations and assets under the 1934 Postal Act be separated out before or upon corporatization.

19. The stock of each corporation would be held by the Ministry of Finance as an investor. The new telecommunications statute, however, would provide for independent boards of directors — appointed to fixed, staggered terms, subject to removal only for cause — charged with preparation for privatization, and independent of micro-management by the Ministry. Privatization would be accomplished by amendments of the respective certificates or articles of incorporation in accordance with privatization plans prepared by the government according to the new telecommunications law in light of each corporation's need for a strategic investor at the time. Considerable flexibility would be retained as to how each certificate of incorporation should be amended with respect to the sale of additional shares to raise additional capital and with respect to the transfer of control de facto and de jure. The commission would be required to approve any transfer of control of a franchise to any qualified operator pursuant to such a privatization plan.

20. The new legislation should contain specific provisions for the regulation of cable television, recognizing (i) the medium's emerging dual nature as both communications (mass media) and telecommunications; and (ii) the perception of a growing competitive convergence between cable and telecommunications services.

21. With the corporatization of TOT and CAT, some provision for their exercise of the power of eminent domain to obtain rights-of-way, etc., as now provided for in Chapter 3 of the 1934 act, would have to be transferred to TOT and CAT. The government might conclude that such power should be exercisable only on certificate of necessity from the new commission or from the PTD. New definitions and penalties would supersede those in Chapters 1 and 4 of the 1934 act.[2]

22. The mission strongly urges that *a single legislative bill with provisions sufficient to enable the phased implementation of a comprehensive plan for sectoral restructuring and privatization* be promptly enacted. While it might be theoretically possible to implement comprehensive sectoral restructuring and privatization through a succession of incremental legislative enactments, the mission perceives this approach as a highly risky one. The on-set of competition will likely follow an essentially pre-ordained progression of liberalization, which will result in liberalization of value-added

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2/ The draftsman might resort to the ITU regulations and to paragraph 3 of the GATT annex on telecommunications for suggestive definitions.

services (VSATs), use of leased lines, and international services. These changes will come about through irresistible changes in technology in Thailand, in the international telecommunications market, and needs for private investment in the sector. The government of Thailand will not be in control of the timing of the extrinsic events.

23. The danger in enacting a limited "fix" of only the acute legal problems of the present moment is that, later on, further legislation to deal with the on-rushing changes in the sector will become delayed in parliament, with the result that the government loses control of the situation or that the sectoral structure fails to adapt to market forces, to the detriment of the telecommunications infrastructure needed to achieve the nation's strategic objectives at the time. Psychologically, the contingency of future legislation will cause the state entities, that must be changing their organizations and operations in order to adapt to competition, to be distracted from the objective onslaught of competition, and will drag their feet in preparing for the inevitable changes until each successive legislative stage is passed.

24. The mission firmly believes that the only way to prepare for competition is by competing. Prices must be aligned with costs, and enterprise efficiency will increase only through competitive impetus. We reject as misconceived the proposition advanced in some quarters that strengthening state enterprises for competition can be predicated on an aggregation of market share through joint ventures.

25. The political objections to comprehensive legislation can be somewhat relieved, we suggest, by providing in the bill for a staged progression toward the inevitable endpoint of competition. Such staging is legitimately the subject of political control. It is important, however, that such political control respond to objective reality. One device that might be employed to achieve these ends is to provide legislatively at the outset for the entire progression of stages up to and including open competition, but provide that each phase become effective only upon decisions of the commission based on objective criteria or upon recommendations of the commission to the Cabinet. Objectivity might be enhanced in the latter case, as previously suggested, by narrowing the Cabinet's response to such recommendations to approval or rejection but not modification thereof.

Checklist of Legislative Elements

Article 1 - Purposes of Act
Article 2 - Definitions
Article 3 - Creation of independent regulatory commission
Article 4 - Powers and duties of commission re-licensing, tariff review, equipment approval, frequency management, right to gather information
Article 5 - Appointment of commissioners, management, and staff compensation
Article 6 - Funding of commission, e.g., by license fees
Article 7 - All telecommunications services to be licensed; types of licenses; exemptions
Article 8 - Application for licenses; processing; public notice and comment
Article 9 - License terms and conditions
Article 10 - Modification of licenses; assignment, suspension, revocation, and renewal
Article 11 - Transfer of rights and liabilities of government operators to new companies; share issues; employee shares
Article 12 - Licenses to be granted basic service providers; price control
Article 13 - Transfers of employees to corporatized companies; condition of service; price control
Article 14 - Rights-of-way; access to private property
Article 15 - International agreements; non-discrimination; overriding national security interests
Article 16 - Enforcement of act; violations; criminal and civil penalties; forfeitures and seizures; cooperation from other governmental departments
Article 17 - Jurisdiction of courts
Article 18 - Repeals of and amendments to existing laws; other transitional provisions.

Source: Adapted from World Bank Discussion Paper, *Telecommunications Sector Reform in Asia: Toward a New Pragmatism*, by Peter Smith and Gregory Staple (1993 draft)

Thailand

Private Sector Participation and Improved Efficiency of State Enterprises

Privatization Studies

1. The government has undertaken several privatization studies for SEs (generally supported by ADB's grants). The status of these studies is summarized below. In general, these studies have looked at some privatization possibilities, but have not started by defining an appropriate sector structure or the interaction with the privatization plans for other SEs closely related to each other.

Table 1: Status of Privatization Studies

Name of State Enterprise	Not Yet Started	Being Contracted	Ongoing	Completed
1. Airport Authority of Thailand (AAT)	x			
2. Bangkok Mass Transit Authority of Thailand (BMTA)	x			
3. Communications Authority of Thailand (CAT)				x
4. Electricity Generating Authority of Thailand (EGAT)			x	x
5. Express Transport Organization (ETO)	x			
6. Expressway and Rapid Transit Authority (ERTA)	x			
7. Mass Communications Organization of Thailand (MCOT)	x			
8. Metropolitan Electricity Authority (MEA)				x
9. Metropolitan Waterworks Authority (MWA)		x		
10. Petroleum Authority of Thailand (PTT)			x	
11. Port Authority of Thailand (PAT)	x			
12. Provincial Electricity Authority (PEA)		x		
13. Provincial Waterworks Authority (PWA)		x		
14. State Railway of Thailand (SRT)	x			
15. Telephone Organization of Thailand (TOT)		x		

2. Privatization studies should be conducted for each of the SEs. It is intended that most of the studies with regard to privatization or SE performance be completed by consultants hired by the respective SEs, in several cases financed by foreign grants. However, this may result in a conflict of interest (particularly when the SEs oppose the reforms) if the consultants are to be supervised and receive their instructions **only** from the SEs. It would be highly desirable that these studies be executed by the SEs in close collaboration with the respective ministry and MOF. Without such participation, the studies

may reflect only the views of the SEs and may not incorporate other macro considerations. In particular, there are three critical levels of participation: (a) reviewing the terms of reference to ensure that the required sectoral structure analysis is included; (b) reviewing the consultants' draft final report; and (c) participating in all meetings discussing the consultants' recommendations. For this purpose, it would be important that MOF contract two or three high-level specialists in the sector and its privatization to provide a review and comments on the consultant's studies. To assume this function, the SEID would require adequate staff. To date, only three studies (CAT, EGAT and MEA) have been completed, which are summarized below.

(A) Communications Authority of Thailand

3. **Key Findings.** The Thailand Development Research Institute (TDRI) completed a privatization study in September 1993. The main findings are: (a) the present laws are not supportive of private sector participation in the sector; (b) the present build-transfer-operate (BTO) schemes are not efficient, resulting in higher costs to consumers; (c) CAT's tariff structure is not related to its cost structure and should therefore be rationalized; (d) CAT investments in advanced technology, especially those relating to its postal equipment, are low compared to investments in developed countries; (e) CAT's development planning capabilities are inadequate and should be strengthened; (f) CAT's main strengths are its good image in postal services, loyal, honest and competent staff and a strong financial position; and (g) CAT's main weaknesses are its bureaucratic rules and regulations, its lack of marketing skills, and inappropriate and obsolete technology.

4. **Key Recommendations to CAT.** The recommendations to CAT management are: (a) strengthen CAT's marketing capability; (b) increase profitability by instituting financial management and accounting reform; (c) strengthen development planning by restructuring CAT's corporate planning, developing a comprehensive Master Plan, improving human resource quality, introducing automation and streamlining the organizational structure; (d) motivate CAT employees through an appropriate incentive structure; (e) invest in state-of-the-art technology where economically justifiable; and (f) restructure CAT's tariff structure to reflect true costs.

5. **Key Recommendations to the Government.** The study's recommendations to the government are as follows: (a) develop a comprehensive long-term plan for the communications sector with a fixed time frame and clear targets; (b) the government should review its criteria for evaluating state enterprise performance. It should not tie CAT's bonus system to its profit making, but should re-establish the performance criteria of each SOE based principally on service quality; (c) establish a regulatory body to oversee competition and liberalize the telecommunications sector; (d) modernize the laws governing CAT to foster competition.

6. **Schedule of Implementation.** Within one year, CAT has to: (a) agree with MOF on an improved performance evaluation system and employee incentives; (b) strengthen marketing capabilities; and (c) hire consultants to advise CAT on cash management, financial planning and tariff structure review.

7. Within the next three years, CAT has to: (a) institute changes in its organizational structure to make it more competitive; (b) draw up a comprehensive Master Plan; and (c) restructure its tariff structure.

8. Within the next five years, CAT has to: (a) make its human resource development more proactive and businesslike; (b) improve its level of technology; and (c) reorient its management practice to accommodate private sector practices.

9. **Pending Issues.** Some major issues in the restructuring of CAT are:

(a) Separation of postal and telecommunications services. This will likely to require some subsidies for postal services until sufficient investments are made in advanced technology, human resources are improved and tariffs are adjusted;

(b) Relations between CAT and TOT. A new law should clarify the responsibilities of CAT and TOT and establish a regulatory body. Merger of CAT and TOT is not recommended; and

(c) Corporatization of CAT. CAT should be corporatized as soon as possible to provide more flexibility to its management.

(B) Electricity Generating Authority of Thailand

10. **Key Findings.** Ernst and Young completed an initial report in September 1991 that provided background information and recommended commercializing EGAT. The main findings of the report were: (a) the existing industry structure in Thailand is reasonable and there is no need to restructure the industry; and (b) however, three alternative organizational models were analyzed: (i) maintaining the status quo; (ii) establishing a corporate subsidiary. This was a transitional step to establish a basis for contracting power purchases from independent suppliers; and (iii) corporatizing EGAT, which was recommended as the most appropriate model in the long-run.

11. **Issues for Implementation.** An additional report by Ernst and Young provided recommendations for the implementation of the commercialization of EGAT. Key issues identified (some of which had already been addressed) include:

(a) Legal requirements: (i) repeal of the EGAT Act; (ii) ownership, transfer of assets and finances of the successor company; and (iii) legal framework for the successor company;

(b) Regulatory issues include: (i) mode and objectives of the regulation; (ii) balance between simplicity, regulatory burden, clarity of objectives and economic incentives; (iii) adequate price restraint; (iv) rules to ensure fair competition in generation; and (vii) responsibilities of the regulator;

(c) Contractual Issues and Agreements. The form and conditions for new key agreements have to be defined, as follows: (i) bulk power supply; (ii) power sales/purchase (with the utilities); (iii) energy exchange; (iv) large power sales; (v) gas purchase; (vi) coal purchase; (vii) heavy fuel oil agreement; (viii) HV connection agreement; and (ix) power purchase agreement (generators). These agreements include the sharing of risks regarding fuel needs, costs and supplies, environmental requirements and technological changes;

(d) Financial Issues. EGAT has to ensure that the finances of the EGCO subsidiary would allow raising the necessary non-recourse debt, while maintaining EGAT's financial viability; and

(e) Organizational Issues. Changes in the unyielding employment conditions, functions of the Board of Directors in a commercialized EGAT, and potential revisions to EGAT's organizational structure.

12. **Phase II Study.** Two ongoing studies are dealing with increased private sector participation in EGAT: (a) an Operational Efficiency Study, in which Swedpower will provide recommendations for improvements in: (i) corporate planning; (ii) systems dispatch; (iii) organization; (iv) economic and financial systems; (v) human resources; and (vi) power system planning in the overall context of privatization; and (b) a study by Ernst and Young to prepare EGAT for conversion to a share-owned company and privatize it by floating its shares on the stock exchange, including: (i) improving EGAT's core organization structure; (ii) identifying subsidiaries to take over EGAT's non-core business activities; (iii) reviewing staffing requirements; (iv) analyzing financial implications of different of planned actions; and (v) assisting in contractual arrangement and implementation.

(C) Metropolitan Electricity Authority

13. MEA commissioned KPMG Peat Marwick to conduct a privatization strategy study. The study, completed in December 1992, sought to examine MEA's operational efficiency and performance to: (a) provide recommendations for its total or partial privatization; (b) establish parts of MEA as joint public/private companies listed on the Stock Exchange of Thailand; (c) provide recommendations for increasing efficiency, productivity and revenues; and (d) identify areas where the private sector has lower cost structures or better incentive systems.

14. **Key Recommendations.** The recommendations of KPMG Peat Marwick are to: (a) divest the MEA Hospital; (b) establish a joint venture with the private sector for concrete pole production; (c) establish a subsidiary company for electrical design and contract wiring; (d) establish profit centers and cost centers with the support of a management organization; (e) rationalize billing and collection procedures; (f) reduce administrative staff; and (g) contract out services such as transport, security, cleaning, legal, public relations and building maintenance.

15. **Schedule for Privatization.** The timetable for the recommended changes was as follows: (a) Hospital - Divest operations in six months; (b) Concrete Products - Establish joint venture in 12 months; and (c) Commercial Department - Establish joint venture and list on the SET in 36 months. However, MEA has not been fully agreeable to the recommendations and this has delayed the implementation.

Thailand

Private Sector Participation and Improved Efficiency of SEs

Performance Evaluation and Incentive Determination

1. The criteria established for a performance evaluation system (PES) are critical to its success. Thailand has three performance evaluation and incentive determination systems: the **basic bonus**, **good enterprise**, and **CEO base pay determination** systems.

2. **Basic Bonus System.** The basic bonus system for Thai public enterprises, provides a maximum of 5 months salary as a bonus for all employees. For most enterprises the criterion is a very simple single-indicator system, with the bonus pool set at a maximum of 9% of accounting profit. That is, if 9% of profit is equal to 1/12 of the wage pool, employees receive a one month bonus; if 4/12 then they get 3 months; if 5/12 or greater, then they get 5 month. Six enterprises, however, are on a negotiated fixed bonus scheme, and two enterprises — The Bank of Agriculture and Agricultural Cooperatives and the Bangkok Mass Transit Authority — are evaluated under a multiple-indicator system (Figure 1).

Figure 1: Variants of Basic Bonus System

Fixed Bonus System	Months of Salaries
1. Government Lottery Bureau	3.75
2. Metropolitan Electricity Authority	2.00
3. Krung Thai Bank	4.00
4. Thai Airways International	3.00
5. Dhipaya Insurance Co.	3.00
6. Aeronautical Radio of Thailand	3.00

Multiple Indicator System

1. Bank of Agriculture and Agricultural Cooperatives

a. The number of small and poor farmer customers
b. The number of normal farmer customers
c. The amount of loans given to customers
d. Ratio of interest received to loans outstanding for each year
e. Ratio of total cost (excluding interest paid) to average loans outstanding
f. Net profits

2. Bangkok Mass Transit Authority of Thailand

a. Target for revenue per bus per day for red buses
b. Target for revenue per bus per day for air-conditioned buses
c. Target for reduction of expenses per bus per day for operating buses
d. Target for reduction of the number of operating buses (including reserves)
e. Target for operational employees and non-operational employees
f. Target for overall reduction of employees.

3. Figure 2 gives the bonuses earned by all enterprises for the four latest fiscal years.[1] There is high variance across companies and bonuses range from zero to five months; there is also low variance across time for most companies.[2] That is, year after year, companies tend to earn very much the same bonus, be it low or high. These properties suggest a weak evaluation system. The high variance across companies — which is generally desirable — may be bad if it merely reflects differences in the external environments (technology, markets, prices faced by the enterprises). The stability of the company bonuses over time suggests a system that does not have strong incentive properties, as employees get the same bonus year-in and year-out.

[1] Shaikh notes problems with this list.

[2] The mean of the standard deviations by company is only .54, but the mean of the standard deviations by year is 1.63.

Figure 2: Performance Bonuses Earned

(months)

	Enterprise	1989	1990	1991	1992
1.	The Electricity Generating Authority of Thailand	5.0	5.0	4.0	3.5
2.	The Mass Communication Organization of Thailand	3.0	2.7	2.9	3.0
3.	The Textile Organization	1.0	0.0	0.0	
4.	The Glass Organization	0.9	1.0	0.7	
5.	Bangkok Dockyard Co., Ltd.	1.0	1.9	1.9	1.0
6.	Krung Thai Bank Ltd.	4.0	4.0	4.0	4.0
7.	The Government Savings Bank	3.3	2.3		1.9
8.	Bank for Agriculture and Agricultural Cooperatives	2.0	2.7	3.1	3.9
9.	The Government Housing Bank	5.0	5.0	5.0	5.0
10.	Liquor Distillery Organization, Excise Department	5.0	5.0	0.0	5.0
11.	Thailand Tobacco Monopoly	3.2	3.2	4.4	3.5
12.	Playing Cards Organization, Excise Department	0.0	1.0	0.0	1.3
13.	The Dhipaya Insurance Co., Ltd.	3.0	3.0	3.0	3.0
14.	The Port Authority of Thailand	3.7	3.8	1.0	2.7
15.	The Airports Authority of Thailand	5.0	5.0	5.0	
16.	The Communications Authority of Thailand	1.1	1.8	5.0	1.7
17.	The Telephone Organization of Thailand	4.1	4.7	5.0	4.7
18.	The Express Transportation Organization of Thailand	1.0	1.0	2.1	
19.	Thai Airways International Ltd.	3.0	3.0	3.0	3.0
20.	The Transport Company Limited	2.2	1.6	1.0	1.0
21.	Thai Maritime Navigation Co., Ltd.	5.0	5.0	5.0	5.0
22.	Aeronautical Radio of Thailand Ltd.	2.3	2.3	2.3	
23.	The Forest Industry Organization	1.2	1.0	0.0	
24.	The Fish Marketing Organization	1.0	1.0	0.0	
25.	The Thai Plywood Company Limited	1.4	1.4	1.0	1.0
26.	The Metropolitan Electricity Authority	2.0	2.0	2.0	2.1
27.	The Provincial Electricity Authority	1.7	2.1	2.7	2.9
28.	The Metropolitan Waterworks Authority	2.2	2.6	2.8	2.1
29.	The Provincial Waterworks Authority	1.0	1.0	1.0	1.0
30.	The National Housing Authority	2.5	1.8	0.0	1.5
31.	The Expressway & Rapid Transit Authority of Thailand	5.0	5.0	5.0	5.0
32.	The Marketing Organization	1.3	1.1	1.5	
33.	The Police Printing Press	1.2	3.2	1.1	1.0
34.	The Public Warehouse Organization	1.0	0.0	0.0	
35.	The Industrial Estate Authority of Thailand	3.4	5.0	0.0	
36.	The Petroleum Authority of Thailand	5.0	5.0	0.0	
37.	Sugar Factories Inc., Department of Industrial Works	1.6	2.2	0.0	1.4
38.	The Government Pharmaceutical Organization	1.9	1.8	1.6	1.4

4. **"Good Enterprise" System.** The second performance evaluation system was designed to assist transition to privatization by giving the best performing enterprises the incentives of additional autonomy and prestige. The key dimension of autonomy is the authority granted to the managements to set the salaries of the staff. To qualify for "Good" or "Class A" status, the criteria are:

(a) Remittances to the government in lieu of dividends of at least thirty percent of net profit for

public corporations[3] and 40% for limited liability companies.[4] Since the latter also pay corporate taxes, while the former do not, the asymmetry is even greater.

(b) Return on investment (net profit over total assets at replacement cost) greater than six percent for other state enterprises and greater than 0.8 percent for financial institutions.

(c) Labor's share of total costs (total costs include labor costs plus intermediate inputs plus depreciation) no more than: 10% for financial institutions; 15% for service and miscellaneous institutions; 20% for capital intensive firms; and 30% for promotional agencies such as the Tourism Authority.

(d) Annual productivity increments greater than two percent. This is calculated as: (percentage change in output) - ((percentage change in number of employees) x (share of labor in total cost of labor, depreciation and long-term interest)) - ((percentage change in total assets) x (share of capital in total costs as above)).

(e) Steps taken towards privatization.

5. **System for Determining Base Salary of CEOs.** The final evaluation system is that used to determine the base salary of chief executive officers. this again is a multiple indicator system, with the criteria and weights displayed in Figure 3.

Improving the Performance Evaluation System

6. The key elements for improving Thailand's state enterprise performance evaluation system include unifying the existing systems, overcoming potential resistance by managers who may view the proposed changes as welfare reducing, changing the structure of incentives and the principles for selecting indicators for enterprises, and giving greater autonomy to better performing managers to set wage levels.

7. **Strengths of the Existing Systems.** Foreign observers are generally impressed with the performance of Thai public enterprises. There are many reasons for this performance, including: pricing policies, the quality of the people in the enterprises and the government, and the rapid growth of the economy as a whole. There is reason to believe, however, that the evaluation systems also play a role. Because of the Basic Bonus System, workers and managers in many companies have a pecuniary incentive to show a profit and it is not surprising that one results.

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[3] Those organized under a special law.

[4] Those organized under the general commercial law like any other company, except that the government is the shareholder.

Figure 3: Criteria Determining Base Pay for Chief Executive Officers

Criteria	Weights (%)
Financial Factors	
- Assets	10
- Revenue	10
- Net Profits	5
Sub-total	25
Non-financial Factors	
- Employees	10
- Monopoly/Competition/Semi	10
- Promotional/Non-promotional/Semi	5
- Area of Service Coverage	10
- Importance and Impact on Society	10
- Technology Intensity	10
- Rate of Expansion	10
- Number of Managed Subsidiaries	5
- Quality of Corporate Plan	5
Sub-total	75
Total	100

8. The "Good Enterprise" System is too new to have had an impact on the accounts, but it is clearly an intelligent and innovative step. It further sharpens the linkage between performance and incentives, particularly the grant of additional autonomy to the better performing managers. For years, students of performance contracting have been recommending that non-pecuniary incentives should be offered in addition to pecuniary ones, but Thailand is one of the very few countries to actually implement this idea.

9. **Problems with Existing Systems.** The present systems, though they represent a good start have certain weaknesses. The main limitations are explained below.

10. **Indicators**. (i) The same indicators are used for all PEs, (generally not a major problem, so long as the criterion values reflect different circumstances; however having five common indicators may be too rigid). Thus firm-specific issues are not reflected. (ii) Certain key indicators are excluded, particularly those related to quality of service, which is very important in monopolistic utilities. (iii) Certain indicators are duplicative: here the problem is compounded because the indicators are not weighted, which would reduce the negative behavioral implications of duplicative indicators.

11. The establishment of financial indicators is a critical component of any PES. Thus, it is important to apply generally accepted accounting principles (particularly for the valuation of existing assets, to reflect losses in foreign exchange and account for pension liabilities); also, with regard to SEs for which some divestiture is considered, it would be important to involve the private sector for audit purposes. It is important that the initial financial indicators be improved and revised over time: For example, total assets include current assets, but they may be financed by current liabilities. In addition, the return on assets is calculated after interest payments are made, which already include the interest remuneration for loans, and may be widely different because of government policies to force indebtedness instead of raising user charges.

12. Other indicators may also be reviewed: The return on assets is also highly dependent on the type of business and may not be meaningful for all SEs. For this reason, it is preferable to improve the profitability analysis by eliminating non-operational revenues (interest on unused cash deposits could distort the SEs profitability), and interest payments (which may be out of management's control and reflect excessive debts in lieu of subsidies or adequate fares). Similarly, investments and their depreciation are decided by the Government and cannot be controlled by management (this would also avoid penalizing new plants, with high depreciation or creating incentives for longer depreciation periods). If the opportunity cost of capital is then added to overall costs and results are divided by the fixed assets in operation, this would provide the **public profitability** and a better indication of SEs' performance. It may also be necessary to analyze the profitability by main subsidiaries or separate business units (PTT gas or EGAT lignite mining), to examine whether it is desirable to privatize separately. Therefore, the public profitability will require to add to the private profits the taxes, interest and depreciation, and to deduct non-operating income (interest, capital gains, foreign exchange losses) and an estimated opportunity cost of working capital. If inflation is relatively high (above 10%), it would be preferable to show profits in constant prices. As an alternative, it would be useful to use the rate of return on fixed assets used by public utilities. In this case, the rate of return is found by dividing the difference between **operational** revenues and costs (including depreciation) by the rate base. The rate base is the average of net fixed assets at the beginning and at the end of the year (gross fixed assets less accumulated depreciation). Typically the rate of return (using revalued assets) would be around 6%-9%.

13. Similarly, the wages-ratio component should be measured in relation to **operational costs** to avoid including non-operational and extraordinary expenses that may be beyond the control of SEs. The ratio of wages to operational expenses depends highly on the type of business and, while it may be lower than 10% for very capital intensive SEs (such as oil and power generation), it may be impossible to reduce them below, say, 40% for those that are more labor intensive such as water supply and telecommunications, or below 60% for the postal office. Further, the return on equity and the debt-equity ratio would be substantially affected if the unrealized portion of exchange losses is included as an asset, rather than deducted from equity, and it would be useful to separate long-term debt from current liabilities in computing the debt-equity ratio. In addition, the productivity index only measures labor, depreciation and interest (but the last two are almost beyond the control of management) and disregards other more important inputs for some SEs such as the cost of fuel (which may account for half of EGAT expenses) or purchased energy (which is three-quarters of MEA or PEA expenses). All these improvements are simple, but require additional data.

14. A main concern is that the proposed PES focuses only on **financial** indicators, which are

the key variables for private, profit-oriented enterprises, but are somewhat less justifiable for SEs, which should achieve other important objectives (which may constitute the only reason for the Government retaining them). For example, although the water, telephone and power companies should be financially viable, they should also provide reasonable services to the general public. While providing water or power to low income or rural areas is not profitable, it may be desirable for social reasons. Similarly, the housing authority may have an objective to make housing available to the low-income population and the bus company may have to accept lower fares in order to promote higher use of mass transportation and reduce air pollution. In other cases, lower levels of investments may reduce operational and capital expenditures and improve the financial indicators at the cost of system reliability. For example, a lower power reserve resulting from lower capital expenditures would improve financial results, but may cause power outages that could cost the economy many times the value of the forgone investments.

15. **Measurement of Indicators:** In some instances the manner in which the indicators are being measured is problematic. As currently measured there is not necessarily a link between the changes in the indicators and the underlying changes in efficiency, the ultimate objective of the scheme. For example, the indicators also hold managers accountable for events beyond their control e.g. net profitability (because based on purely accounting ways of measuring) and productivity (because includes long term interest and depreciation). On the other hand, managers can increase some indicators without actually increasing efficiency e.g. productivity can be increased by excessive use of inputs excluded from calculation.

16. **Weights**. No explicit weights are attached to distinguish the relative importance of the fine criteria for graduating into category A. All five criteria are "minimum conditions" and need to be fulfilled absolutely. Once inside the system the implicit weights are equal as the bonus is reduced by 1/3 for non fulfillment of any of the indicators.

17. **Targets (Criterion Values)**. Target setting is the scheme's key problem of the scheme. By fixing the Return on Assets (ROA) at 6 percent % there is no incentive for improvement once a company is ranked grade A. A firm with a ROA of 12% can decrease its performance and continue to remain in the A category. Similarly, by excluding firms that do not fulfill these requirements from the "Good Enterprise" system, there is limited incentive for turnaround.

Typical Indicators

18. Although the evaluation of commercial SEs should rely mainly on financial indicators, a more comprehensive PES should be established for the SE utilities, based on four factors explained below for which typical indicators are listed:

(a) **Achievement of the Government Goals for the Enterprise.** Typical indicators include: the percentage of the population receiving services (water, power, telephones), number of houses built, percent of capital investment targets met, production of key services (water, number of passengers, number of lines and cargo, etc.), passenger-kilometers, kilometers per vehicle, percentage of the fleet availability, tons of cargo-kilometers. Other indicators are number of outages, percent of water samples passing sanitary criteria, percent of pending requests for connections on present customers, and percent power reserve capacity.

(b) **Efficiency and Productivity.** Typically these include the achievement of targets for unaccounted-for water, power or telephone calls (losses or non-billed services), availability (in working order) of buses or locomotives, number of days or percentage of accounts receivable, number of customers or items produced (tons of water produced, kWh generated) per staff, quality of service (duration of water or power outages, water quality, call completion ratio, wagon turnover) changes in the cost per unit of output (water, houses, kwh, main telephone lines, ton-km, passenger-km, etc), percent wages or administrative expenses to costs or revenues, net fuel efficiency for thermal plants.

(c) **Financial Performance.** The financial indicators (which should try to exclude factors beyond management control, like the approval or denial of a tariff increase). In addition, it is better to use ratios that are substantially self-adjusted for inflation (like the working ratio). Typical indicators include the operating ratio (operating costs divided by operational revenues), the working ratio (operational costs excluding depreciation divided by operational revenues), rate of return on average fixed assets in operation (normally on revalued terms), percent of the investments that are self-financed, number of days of accounts receivable, debt service ratio and remittances to the Government.

(d) **Qualitative Objectives.** These may include outlays in research, improvements in administration and training, adequate and timely financial projections and long-term planning.

19. **Unification of Systems.** Are three systems necessary? Or, should they be merged? A minor point here involves the Managerial Compensation Scheme. It is of course necessary to differentiate CEO base compensation by the size and importance of the enterprise being run. Most of the indicators address this issue, but several (profits, rate of expansion, quality of corporate plan) are really performance indicators. Our recommendation is that the latter indicators be dropped, thus maintaining a clear distinction between the determinants of base pay (size, importance and complexity) and those of the bonus (an increment to base pay, varying with performance).

20. The more important question is whether it is desirable to merge the Basic and Good Enterprise Systems. The Basic Bonus System is the most important, because it provides large enterprises monetary incentives for their entire labor forces. However, its criterion (profit) is a bit too simple and its performance indicators could be usefully expanded along the lines of the more sophisticated Good Enterprise System. On the other hand, the Good Enterprise System lacks direct monetary incentives and is a discrete "Pass/Fail" system that only provides useful motivation to a handful of firms at the top.

21. We, thus, recommend that the two systems should be merged into one, with "A-Grade" the highest of a five-step ranking. The merger would take advantage of the stronger features of each system, while eliminating the weaker. Each step would be associated both with higher bonuses and greater autonomy. **The details of how this would be accomplished are spelled out in the next section (tactics), after discussion of additional "big picture" strategic issues.**

22. **Political Feasibility.** Merging the two systems and making bonuses sensitive to performance would increase the variance of the bonus payments so that some enterprises and their employees would earn more than at present, but others could earn less. In most countries it would be

politically difficult to introduce a new evaluation system that makes a significant number of workers worse off. If so, then solution is to raise the mean. This can be accomplished by adding the new bonus to the historic bonus (say, the average of the previous three years). Alternatively, the old bonus could be converted to a one-time wage increment. Either way, the important factor is not the mean, but the variance with performance. Workers who receive pretty much the same bonus year in and year out soon began to view it not as an incentive for special performance, but as part of normal compensation for normal performance. A well designed system puts continual pressure on even the best enterprises to do even better. Further, it places equal attention on the enterprise at the top and the bottom of the performance distribution. If one firm reduces losses by $10 million that is as good as another increasing profits by $10 million.

23. In sum, the critical need is to motivate all employees in all firms to do better every year. If it is necessary to raise the base wage a bit in order to make this acceptable, it is a small price to pay.

24. **Incentives.** Incentives are central to any contracting system; without them contracting is just a paper exercise. The three forms of incentives now in use should be incorporated into the new system and consideration given to adding two new ones.

25. Under the proposed system the first incentive would, as now, be monetary, with A-rated firms receiving, for example, 5 months bonus and E-rated firms 0 or 1 month (the precise details would need to be worked out). The CEO and board members would receive a percentage of their base pay. The rest of the bonus would go into a bonus pool which the CEO could distribute uniformly or individually, depending on his/her management style.

26. A second, non-monetary, incentive would instill professional pride by recognizing jobs well done. Annual rankings should be published in the newspapers, with special recognition for the CEOs of the best firms. One difference from the existing system is that **all** firms would be affected, thus spreading the incentive much more widely. Note that this and other non-monetary incentives are probably more effective at the higher levels of enterprises, while the monetary incentives have relatively more impact at the bottom. Both are necessary to motivate the entire workforce.

27. The third incentive would mix monetary and non-monetary factors by granting increased autonomy to higher ranking enterprises. The non-pecuniary incentive is that good managers are happier with more autonomy. If this autonomy is used to increase wages, then there is a pecuniary element as well. Unfortunately, granting increased autonomy is not as simple as granting bonuses or recognition. We will therefore have more to say about this in the next section on Tactics.

28. Two additional forms of incentives should also be considered. First, after firms issue shares on the stock exchange, stock options should replace bonuses for senior managers. There is a danger that managers rewarded primarily for this period's performance may not pay enough attention to the long-run health of the company. Although the evaluation system described below attempts to deal with the problem, offering stock options is superior. The other critical incentive is that the enterprise's ranking should be a major factor in hiring, firing, and transferring senior managers.

29. **Principles for Selecting Indicators.** If something like the strategy suggested above is adopted, the next step would be to develop a detailed Performance Reward System. This will entail a

considerable amount of work. A host of questions currently being asked in Thailand need to be answered. Four general principles should be followed in developing the system:

Fairness to Enterprises: The measures should be fair to the nation in that they only go up when the nation is better off.

Fairness to Management: The measures should be fair to management in that they respond primarily to factors within their control.

Parsimony: Only primary, bottom-line criteria that measure what the owner really cares about (e.g. profit) should be included. Secondary criteria that have no independent value outside of their contribution to a primary indicator (e.g. sales) should be excluded in the Performance Reward System. However, these indicators are valuable for establishing the targets and for ex-post review of performance. Violation of this precept means unwarranted intervention in management prerogatives because it means going beyond setting goals to telling managers how to achieve those goals.

Symmetry (Non-duplicative): In selecting criteria, all benefits and all costs should be included once and only once. A dollar saved from cutting costs is just as good as a dollar gained from increasing output and should be rewarded equally.

30. These very simple rules have proven to be quite powerful in deciding the indicators to use and how to measure them; they lead to four types of indicators:

Static Efficiency: measures such as profit and productivity that measure the operating efficiency of the enterprise during the period in question).

Dynamic Efficiency: planning, training etc., whose costs occur now but whose benefits occur in the future and thus would be neglected if only profit were rewarded.

Project Implementation: in instances where enterprises have major on-going projects.

Other non-duplicative indicators such as: non-operating returns, privatization, restructuring, quality of service, etc.

31. While criteria other than profit and productivity certainly have a role, that role is limited by two considerations. First, profit/productivity should receive the bulk of the weight for all but promotional institutions. Second, anything that is already rewarded because it is included in current profit, should not be further rewarded by giving additional credit. This would violate the principle of symmetry.

32. **Autonomy Specification.** A legitimate concern with the current Thai system is the potential for abuse of autonomy. Thus, an important technical task will be specifying autonomy levels in a way that does not create perverse behavioral incentives. To take an extreme example, what if an A-rated firm used its autonomy to raise wages by 50% and this then dropped the firm to a D-rating the following year?

This problem is significantly reduced by moving to five autonomy categories rather than two, because gradations are smaller. However, difficulties remain. What is needed is careful specification of autonomy levels with due consideration to the problem of time consistency.

33. Figure 4 identifies possible autonomy levels for each of three different wage setting decisions. The first row says that an E-rated firm receives no wage concessions, but is governed by the existing system. Column 1 then shows how autonomy might increase for the setting of the average annual wage increment. D-rated firms can raise wages at the rate of increase of the consumer price index (CPI), with prior approval of the government. C-rated firms can raise wages at the sum of the rate of CPI increase plus the increase in total factor productivity (TFP), again with the ex-post approval of the government. B-rated firms can raise wages at the CPI plus TFP rates, without government approval. Finally, an A-rated firm can raise wages freely, but increases beyond the CPI plus TFP rate are temporary raises that are removed if the firm falls by one rating class in subsequent years (they might be made permanent if the firm retains its rating for three years). The second column shows autonomy levels for the structure of wages (the first column only dealt with the level of average wages, not how they are distributed amongst different classes of employees. Here, considerably more autonomy is warranted for all classes of enterprises. D-rated firms might be free to redistribute the annual increment; C-rated firms might be free to restructure wages with government approval; and B & A-rated firms should be free to restructure wages as they see fit.

Figure 4: Possible Wage Control System

Grade	Limit on Average Annual Increase	Structure of Wages	One Time Realignment
E	Existing System	Existing System	Existing System
D	CPI Pre-Approval	Redistribute Increment	Existing System
C	TFP + CPI	FREE	With Study Post-Approval
B	TFP + CPI	FREE	With Study Post-Approval
A	FREE but excess over CPI + TFP temporary until A grade maintained for 3 subsequent years	FREE	Not Applicable (already granted in column 1)

Notes: CPI = Consumer price increase (rate of increase)
TFP = Total Factor Productivity (rate of increase)

34. The final column of Figure 4 deals with the issue of allowing a one-time increase in the basic wage for firms that have fallen well behind the market. Here the figure suggests that D-rated firms remain under the existing system; C-rated firms can raise wages with a study and government pre-approval; and B-rated firms can do so with post-approval. A-rated firms are already granted freedom

in this regard by column 1.

35. It should be stressed that these suggestions are only suggestions and should be modified after careful study. They nonetheless provide a starting point for the analysis. Other categories of autonomy need to have similar matrices developed. For most decisions considerable autonomy should be granted to all enterprises (e.g. procurement). For a very limited number of other decisions, some government control would be desirable even for A-rated firms (e.g. major investment decisions). There is considerable international experience with multi-divisional and multi-national firms that suggests that decision areas should have more and less control. However, consideration of local conditions would lead to modifications by a Thai committee.

36. **Next Steps.** How are these various elements of the strategy to be developed, operationalized and implemented? The following steps would need to be undertaken:

The first step would be a high-level policy decision on general principles, at the level of detail of this report.

The second step would be the establishment of a unit at the Ministry of Finance with sole responsibility for performance contracting. International experience suggests that this is a full time job, even though there are seasonal peak periods. How large should such a unit be? The current "Good Enterprise" system relies on outside consultants to do much of the actual evaluation work and this precedent should be adopted in the new system so as to allow the core staff to be of modest size. Six to twelve well trained professionals should be adequate. Their jobs would be to develop and maintain a Performance Contracting Policy Manual, to negotiate contracts on behalf of the government, to select and control consultants to do the intermittent work, to monitor performance and to produce periodic reports.

The third step would be to train unit members and selected enterprise and consultant staff in Performance Contracting methodology. There is a lot to be learned from international experience and no reason to rediscover the wheel. This training would have to be organized by the Ministry of Finance and cover the whole range of issues such as: specification of objectives; identification and measurement of the different classes of indicators for specific enterprises; an approach to assigning of weights; informational requirements and rules for target-setting; adjusting for price controls and non-commercial objectives; monitoring and review; award of incentives; publication and dissemination of results, etc. The training workshops will be organized by the Performance contracting Unit and conducted by international experts. In addition, the higher level staff of the Unit may visit countries with on-going performance evaluation systems such as Korea, Mexico, Pakistan ,etc.

The fourth step would be to integrate international experience with Thai conditions and produce detailed Performance Contracting Manual Guidelines for the selection of company-specific indicators, weights, targets, specify various dimensions of autonomy, structure of incentives, etc. This work will be performed by the newly established Performance Contracting Unit with the help of international and local consultants.

The fifth step in the process (simultaneous with the fourth step) will be the preparatory work undertaken by the enterprises for the performance contract negotiations. This work, undertaken by the enterprises, possibly with the assistance of the Finance Ministry Unit (and consultants) will update the information base (that is already quite good in Thailand) and prepare corporate plans that reflect the medium-term goals and possibilities of the enterprise and form the basis of the negotiations for the annual performance targets.

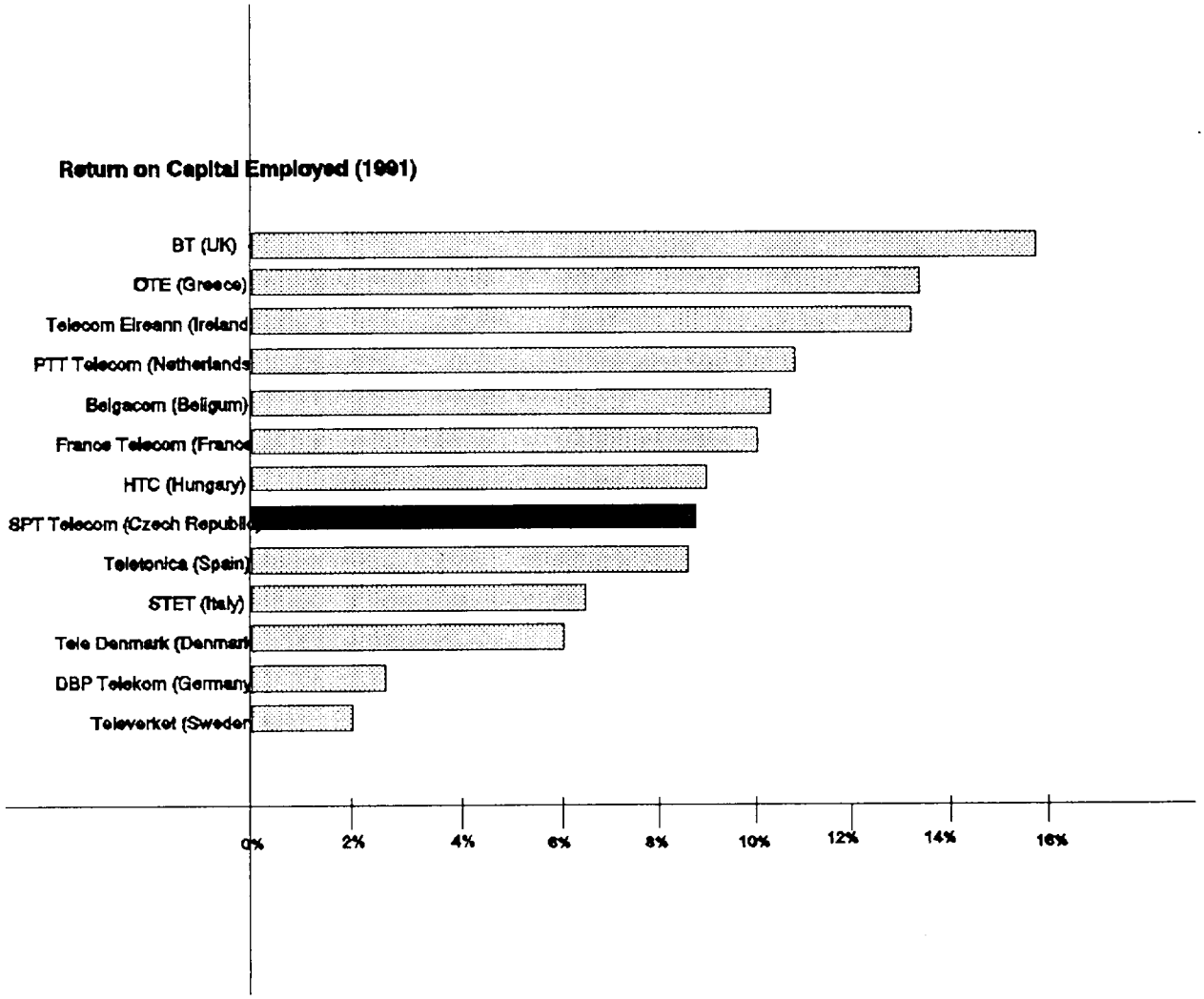
The sixth step would be negotiation of contracts with relevant enterprises. The preliminary negotiations will be conducted by the Unit staff, supported by outside consultants (at least in the initial years) and the representatives of the enterprises. In the final round of the negotiations, depending upon the importance of the enterprise, higher level officials (e.g. Minister or Secretary) will complete the negotiations with the Chief Executive of the company.

A seventh step might be the introduction of a standardized performance information system to monitor progress, do all quantitative computations on a standardized basis, and produce comparable reports for all enterprises. If this approach were chosen, the staffing pattern would be closer to 12 rather than 6 individuals for the unit.

37. **Timing and Coverage.** Equity requires that an evaluation system be in place prior to the year being evaluated. In order to accomplish this before FY1995, a great deal of work must be accomplished in a short period of time. To make this feasible, it would be desirable to include only a limited number of enterprises in the first year. It takes almost as much work to evaluate a small enterprise as a large enterprise, so most of the benefits can be obtained[5] with only a fraction of the work. For example, including only the largest 14 companies would generate 855 of the benefits, with only about 30% of the work.[6] Remaining companies could be added in the following year.

[5] As measured by sales.

[6] Fourteen enterprises constitute 23 percent of the number of companies, but because they are large will take a little more work, say 30% of the total.


Return on Capital Employed (1991)
BT (UK)
OTE (Greece)
Telecom Eireann (Ireland
PTT Telecom (Netherlands
Belgacom (Belgium)
France Telecom (France
HTC (Hungary)
SPT Telecom (Czech Republic
Telefonica (Spain)
STET (Italy)
Tele Denmark (Denmark
DBP Telekom (Germany
Televerket (Sweden
0%
2%
4%
6%
8%
10%
12%
14%
16%

Thailand

Private Sector Participation and Improved Efficiency of State Enterprises

SEs' Financial Results and Indicators - (Million Baht)

Consolidated Financial Results by Categories for 1989-93

	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
	15 PUBLIC UTILITIES									
1989	366839	249874	116965	189826	160202	29624	50670	6580	3013	203355
1990	433995	288853	145142	230255	190539	39716	64522	9335	4545	211773
1991	512390	321679	190711	277280	226477	50803	111861	11696	5558	200803
1992	580406	355328	225078	297492	243351	54141	114711	17295	6007	205924
1993	695396	413938	281458	296944	248940	48004	243216	19537	11181	200242
	COMMERCIAL/INDUSTRIAL SEs									
1989	93610	63322	30288	77916	66548	11368	5783	3867	533	42899
1990	106161	71282	34879	89555	78489	11066	15170	3114	940	44519
1991	115563	76437	39126	98623	88356	10267	25296	3624	723	48228
1992	144801	97377	47424	99895	90836	9059	33670	4801	2	47007
1993	152491	99504	52987	106534	94333	12193	24687	4629	2137	49646
	FINANCIAL SEs									
1989	422792	397946	24846	38784	35506	3278	9448	711	0	28917
1990	492984	462788	30197	51972	48092	3880	506	877	0	31894
1991	597730	562988	34742	66689	62309	4380	25	104	0	33994
1992	657942	614182	43760	70111	61678	8433	2126	367	0	36878
1993	760908	707780	53128	84039	78117	5922	1639	513	0	38918
	OTHER SEs									
1989	7224	1787	5437	13177	11835	1342	430	2733	986	5374
1990	7121	1846	5275	11758	12267	-509	461	2678	1566	5545
1991	7588	2116	5472	13703	13823	-119	1148	3338	1968	4986
1992	8070	2164	5906	16859	16895	-36	787	4230	2381	5984
1993	7793	2221	5572	17861	18163	-302	2717	4131	3824	6412
	OTHER PUBLIC ENTERPRISES									
1989	11583	9535	2049	1809	1237	572	1690	7	385	3381
1990	14593	11524	3069	2129	1497	632	5654	34	706	3716
1991	23218	19098	4121	2358	1752	606	8232	82	555	3796
1992	29255	23921	5334	2934	2425	510	7129	121	799	4455
1993	39120	33351	5769	3772	3405	367	12945	63	4671	4671
	TOTAL ALL SEs									
1989	902048	722463	179585	321512	275328	46184	68022	13898	4917	283926
1990	1054854	836293	218561	385669	330884	54785	86314	16039	7757	297447
1991	1256490	982318	274173	458653	392716	65937	146562	18844	8804	291807
1992	1420474	1092972	327502	487291	415184	72107	158424	26815	9189	300248
1993	1655708	1256794	398914	509150	442957	66184	285204	28874	21812	299889

Consolidated Indicators by Categories for 1989-93 - Million

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	In 1993 Prices Revenue/ Employee	Cost/ Employee	Profit/ Employee	Operating Ratio COST/REV
15 PUBLIC UTILITIES								
1989	8.1%	25.3%	15.6%	213.6%	1.13	0.96	0.18	84.4%
1990	9.2%	27.4%	17.2%	199.0%	1.24	1.03	0.21	82.8%
1991	9.9%	26.6%	18.3%	168.7%	1.49	1.22	0.27	81.7%
1992	9.3%	24.1%	18.2%	157.9%	1.50	1.23	0.27	81.8%
1993	6.9%	17.1%	16.2%	147.1%	1.48	1.24	0.24	83.8%
COMMERCIAL/INDUSTRIAL SEs								
1989	12.1%	37.5%	14.6%	209.1%	2.20	1.88	0.32	85.4%
1990	10.4%	31.7%	12.4%	204.4%	2.30	2.02	0.28	87.6%
1991	8.9%	26.2%	10.4%	195.4%	2.21	1.98	0.23	89.6%
1992	6.3%	19.1%	9.1%	205.3%	2.21	2.01	0.20	90.9%
1993	8.0%	23.0%	11.4%	187.8%	2.15	1.90	0.25	88.5%
FINANCIAL SEs								
1989	0.8%	13.2%	8.5%	1601.7%	1.63	1.49	0.14	91.5%
1990	0.8%	12.8%	7.5%	1532.6%	1.86	1.73	0.14	92.5%
1991	0.7%	12.6%	6.6%	1620.5%	2.12	1.98	0.14	93.4%
1992	1.3%	19.3%	12.0%	1403.5%	1.98	1.74	0.24	88.0%
1993	0.8%	11.1%	7.0%	1332.2%	2.16	2.01	0.15	93.0%
OTHER SEs								
1989	18.6%	24.7%	10.2%	32.9%	2.97	2.67	0.30	89.8%
1990	-7.1%	-9.7%	-4.3%	35.0%	2.43	2.53	-0.11	104.3%
1991	-1.6%	-2.2%	-0.9%	38.7%	2.28	3.00	-0.03	100.9%
1992	-0.4%	-0.6%	-0.2%	36.6%	2.93	2.94	-0.01	100.2%
1993	-3.9%	-5.4%	-1.7%	39.9%	2.79	2.83	-0.05	101.7%
OTHER PUBLIC ENTERPRISES								
1989	4.9%	27.9%	31.6%	465.4%	0.65	0.44	0.21	68.4%
1990	4.3%	20.6%	29.7%	375.5%	0.66	0.46	0.19	70.3%
1991	2.6%	14.7%	25.7%	463.4%	0.67	0.50	0.17	74.3%
1992	1.7%	9.6%	17.4%	448.5%	0.68	0.57	0.12	82.6%
1993	0.9%	6.4%	9.7%	578.1%	0.81	0.73	0.08	90.3%
TOTAL ALL SEs								
1989	5.1%	25.7%	14.4%	402.3%	1.37	1.18	0.20	85.6%
1990	5.2%	25.1%	14.2%	382.6%	1.48	1.27	0.21	85.8%
1991	5.2%	24.0%	14.4%	358.3%	1.70	1.46	0.24	85.6%
1992	5.1%	22.0%	14.8%	333.7%	1.69	1.44	0.25	85.2%
1993	4.0%	16.6%	13.0%	315.1%	1.70	1.48	0.22	87.0%

Public Utilities Sorted by Equity (1993)

ACR	Equity	Assets	Liabi-lities	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy
EGAT	28.9%	30.6%	31.8%	55772	46492	9279	54167	2468	202
PEA	14.5%	11.5%	9.6%	45837	36807	9030	16987	1670	393
TOT	14.2%	12.6%	11.5%	15049	7045	8004	30313	5767	0
PTT	10.2%	9.2%	8.5%	89527	82114	7413	18520	2212	0
CAT	7.0%	3.3%	0.7%	15192	10957	4235	11446	3298	0
MEA	4.8%	5.8%	6.4%	39555	36689	2867	10973	540	0
ERTA	4.5%	11.8%	16.8%	1755	1152	603	58503	354	5851
MWA	4.4%	3.8%	3.4%	6436	4118	2319	6294	251	41
PAT	3.5%	2.0%	0.9%	5603	3113	2490	6037	1458	125
PWA	3.0%	1.6%	0.7%	3381	3286	95	8312	0	1385
SRT	2.9%	4.0%	4.7%	4705	5634	-929	10943	0	2984
AAT	2.8%	2.1%	1.7%	4962	2274	2688	5545	1345	0
MCOT	1.0%	0.4%	0.0%	1029	406	623	997	175	0
ETO	-0.2%	0.1%	0.2%	1751	1871	-121	45	0	0
BMTA	-1.3%	1.2%	2.9%	6390	6982	-591	4133	0	199
	100.0%	100.0%	100.0%	296944	248940	48004	243216	19537	11181

Public Utilities Sorted by Return on Equity (1993)

ACR	ROE	ROA	ROS	Debt to Equity	Assets (%)	Liabi-lities (%)	Equity
AAT	33.8%	18.1%	54.2%	86.2%	14824	6864	7960
PTT	25.9%	11.6%	8.3%	123.7%	63969	35370	28599
PAT	25.2%	18.3%	44.4%	37.6%	13614	3719	9895
MCOT	22.4%	21.9%	60.6%	2.2%	2846	61	2785
PEA	22.2%	11.2%	19.7%	97.3%	80315	39607	40708
CAT	21.6%	18.7%	27.9%	15.4%	22607	3025	19582
MEA	21.2%	7.2%	7.2%	196.2%	39989	26488	13501
TOT	20.1%	9.1%	53.2%	119.6%	87567	47697	39870
MWA	18.6%	8.7%	36.0%	113.9%	26668	14200	12468
EGAT	11.4%	4.4%	16.6%	162.0%	212798	131591	81207
ERTA	4.8%	0.7%	34.3%	551.8%	82259	69638	12621
PWA	1.1%	0.8%	2.8%	36.2%	11440	3043	8397
SRT	-11.3%	-3.3%	-19.8%	239.4%	27845	19641	8204
BMTA	NA	-7.2%	-9.3%	NA	8210	11990	-3780
ETO	NA	-27.1%	-6.9%	NA	445	1002	-558
	17.1%	6.9%	16.2%	147.1%	695396	413938	281458

Public Utilities Sorted by Capital Expenditures (1993)

ACR	Capital Expend.	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax
ERTA	24.1%	82259	69638	12621	1755	1152	603
EGAT	22.3%	212798	131591	81207	55772	46492	9279
TOT	12.5%	87567	47697	39870	15049	7045	8004
PTT	7.6%	63969	35370	28599	89527	82114	7413
PEA	7.0%	80315	39607	40708	45837	36807	9030
CAT	4.7%	22607	3025	19582	15192	10957	4235
MEA	4.5%	39989	26488	13501	39555	36689	2867
SRT	4.5%	27845	19641	8204	4705	5634	-929
PWA	3.4%	11440	3043	8397	3381	3286	95
MWA	2.6%	26668	14200	12468	6436	4118	2319
PAT	2.5%	13614	3719	9895	5603	3113	2490
AAT	2.3%	14824	6864	7960	4962	2274	2688
BMTA	1.7%	8210	11990	-3780	6390	6982	-591
MCOT	0.4%	2846	61	2785	1029	406	623
ETO	0.0%	445	1002	-558	1751	1871	-121

Mainly Commercial Enterprises - Results and Indicators for 1989

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Thai Plywood Co.,Ltd.	MOA	TP	971	238	733	938	794	144	174	0	0	1,567
Rubber Estate Organization	MOA	REO	425	226	199	223	238	-16	32	12	0	689
The Marketing Organization Farmers	MOA	MOF	4612	6261	-1648	1227	1379	-153	118	0	0	593
Fish Marketing Organization	MOA	FMO	411	138	273	97	79	19	38	8	0	323
Forestry Industry Organization	MOA	FIO	2538	220	2317	1175	786	389	312	296	0	3,237
Dairy Farm Promotion Organization	MOA	DFO	512	429	83	1067	1058	9	96	1	0	1,062
Cold Storage Organization	MOA	CSO	351	846	-495	107	183	-76	8	0	0	407
Thai Maritime Navigation Co., Ltd.	MOC	TMN	88	318	-230	147	115	32	NA	0	0	26
Thai Airways International Co., Ltd.	MOC	THAI	63584	47669	15914	44807	37386	7421	4154	665	0	14,123
Transport Co., Ltd.	MOC	TC	1089	266	823	1225	810	415	439	64	0	2,950
Public Warehouse	MOCM	PW	3997	3348	649	970	956	14	3	7	533	445
Textile Organization	MOD	TXO	553	334	220	409	411	-2	2	0	0	3,353
Tanning Organization	MOD	TNO	330	220	110	315	302	13	6	0	0	857
Battery Organization	MOD	BO	197	42	155	150	149	1	3	4	0	422
Bang-Na Glass Organization	MOD	BNG	381	287	94	426	415	11	18	0	0	1,568
Bangkok Dock Co.,Ltd.	MOD	BDC	185	38	147	141	125	16	2	3	0	163
Thailand Tobacco Monopoly	MOF	TTM	9997	1834	8163	21344	18765	2579	173	2595	0	7,472
Playing Cards Factory	MOF	PC	17	3	14	22	20	2	0	1	0	194
Liquor Distillery Organization	MOF	LDO	715	136	578	461	265	196	17	97	0	532
The Police Printing Press	MOI	PP	75	2	73	49	38	10	3	4	0	128
Marketing Organization	MOI	MO	74	2	72	138	132	7	0	4	0	53
Sugar Factory, Inc.	MOID	SF	656	257	400	823	740	82	23	17	0	742
Offshore Mining Organization	MOID	OMO	266	36	230	172	154	18	0	0	0	264
Government Phamaceutical Organization	MOPH	GPO	1585	171	1414	1483	1247	236	164	89	0	1,729
TOTAL MAINLY COMMERCIAL SEs	24		93610	63322	30288	77916	66548	11368	5783	3867	533	42,899

Mainly Commercial Enterprises - Results and Indicators for 1990

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Thai Plywood Co.,Ltd.	MOA	TP	945	132	813	1187	1022	166	141	0	0	1,513
Rubber Estate Organization	MOA	REO	432	240	192	293	304	-10	7	0	0	727
The Marketing Organization Farmers	MOA	MOF	3346	5065	-1719	1545	1615	-71	0	0	0	589
Fish Marketing Organization	MOA	FMO	826	126	700	102	84	19	12	6	0	357
Forestry Industry Organization	MOA	FIO	2698	313	2385	1486	1182	304	131	274	174	3,190
Dairy Farm Promotion Organization	MOA	DFO	521	423	99	1328	1312	16	30	0	0	1,214
Cold Storage Organization	MOA	CSO	394	955	-561	172	238	-66	0	0	0	349
Thai Maritime Navigation Co., Ltd.	MOC	TMN	120	286	-166	280	215	66	0	0	0	33
Thai Airways International Co., Ltd.	MOC	THAI	77939	58945	18993	51200	44446	6754	14009	665	0	17,264
Transport Co., Ltd.	MOC	TC	1282	329	952	1402	1022	380	313	64	0	3,448
Public Warehouse	MOCM	PW	1229	572	656	1016	1009	7	5	0	766	427
Textile Organization	MOD	TXO	516	337	179	397	426	-29	1	0	0	1,962
Tanning Organization	MOD	TNO	333	221	113	284	281	3	4	0	0	839
Battery Organization	MOD	BO	198	46	152	148	148	0	21	3	0	417
Bang-Na Glass Organization	MOD	BNG	406	302	104	478	460	19	0	9	0	1,547
Bangkok Dock Co.,Ltd.	MOD	BDC	200	40	160	148	121	27	3	3	0	164
Thailand Tobacco Monopoly	MOF	TTM	11004	2304	8700	24118	21313	2805	342	1820	0	6,870
Playing Cards Factory	MOF	PC	19	4	14	27	24	4	0	0	0	186
Liquor Distillery Organization	MOF	LDO	771	129	642	499	264	235	22	157	0	542
The Police Printing Press	MOI	PP	101	3	99	70	41	29	4	3	0	127
Marketing Organization	MOI	MO	76	1	75	165	158	7	3	4	0	58
Sugar Factory, Inc.	MOID	SF	691	179	512	1328	1179	149	36	12	0	722
Offshore Mining Organization	MOID	OMO	263	58	204	84	101	-17	1	12	0	253
Government Phamaceutical Organization	MOPH	GPO	1852	271	1581	1796	1526	270	85	83	0	1,721
TOTAL MAINLY COMMERCIAL SEs			106161	71282	34879	89555	78489	11066	15170	3114	940	44,519

Mainly Commercial Enterprises - Results and Indicators for 1991

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Thai Plywood Co.,Ltd.	MOA	TP	941	80	861	1095	969	127	74	0	0	1,518
Rubber Estate Organization	MOA	REO	432	184	248	339	315	23	27	2	0	2,276
The Marketing Organization Farmers	MOA	MOF	3215	4967	-1752	1406	1439	-33	11	0	2	590
Fish Marketing Organization	MOA	FMO	817	113	704	104	92	12	15	6	0	353
Forestry Industry Organization	MOA	FIO	2616	380	2237	1209	1174	35	572	31	0	3,203
Dairy Farm Promotion Organization	MOA	DFO	442	362	80	1356	1335	20	104	4	0	1,231
Cold Storage Organization	MOA	CSO	387	1007	-619	88	159	-71	4	0	0	353
Thai Maritime Navigation Co., Ltd.	MOC	TMN	231	317	-86	444	362	81	57	0	0	39
Thai Airways International Co., Ltd.	MOC	THAI	84797	63416	21381	57345	52259	5086	21502	665	0	18,823
Transport Co., Ltd.	MOC	TC	1337	367	970	1553	1319	234	352	83	0	3,684
Public Warehouse	MOCM	PW	2964	2317	648	729	714	15	10	7	721	422
Textile Organization	MOD	TXO	607	364	243	389	395	-7	15	1	0	1,920
Tanning Organization	MOD	TNO	361	229	132	316	297	19	18	0	0	841
Battery Organization	MOD	BO	190	44	147	124	132	-8	19	0	0	407
Bang-Na Glass Organization	MOD	BNG	397	296	101	519	507	12	4	3	0	1,543
Bangkok Dock Co.,Ltd.	MOD	BDC	202	30	172	195	162	33	13	6	0	166
Thailand Tobacco Monopoly	MOF	TTM	11590	1349	10241	27494	23493	4001	1940	2488	0	7,069
Playing Cards Factory	MOF	PC	28	3	25	37	25	13	4	1	0	186
Liquor Distillery Organization	MOF	LDO	853	136	716	565	286	279	72	188	0	548
The Police Printing Press	MOI	PP	107	3	104	73	57	16	30	7	0	133
Marketing Organization	MOI	MO	81	1	80	207	198	9		4	0	59
Sugar Factory, Inc.	MOID	SF	660	106	554	895	796	99	0	34	0	874
Offshore Mining Organization	MOID	OMO	233	56	177	71	98	-27	27	0	0	250
Government Phamaceutical Organization	MOPH	GPO	2075	312	1763	2071	1772	298	428	95	0	1,740
TOTAL MAINLY COMMERCIAL SEs			115563	76437	39126	98623	88356	10267	25296	3624	723	48,228

Mainly Commercial Enterprises - Results and Indicators for 1992

	MIN	ACR	Assets	Liabi-lities	Equity lities	Revenue	Cost	Profit Before Tax	Capital Expend. Tax	Remit. to Govt.	Subsidy to Govt.	Number of Employ.
Thai Plywood Co.,Ltd.	MOA	TP	1043	135	907	981	879	103	48	0	0	1,426
Rubber Estate Organization	MOA	REO	412	204	208	327	308	19	12	0	0	677
The Marketing Organization Farmers	MOA	MOF	3080	4672	-1592	1218	1171	47	4	0	2	572
Fish Marketing Organization	MOA	FMO	775	95	681	119	111	8	11	0	0	351
Forestry Industry Organization	MOA	FIO	2603	464	2139	627	704	-77	349	30	0	3,052
Dairy Farm Promotion Organization	MOA	DFO	569	499	70	1281	1279	1	128	0	0	1,262
Cold Storage Organization	MOA	CSO	345	971	-626	84	156	-72	6	0	0	349
Thai Maritime Navigation Co., Ltd.	MOC	TMN	182	226	-44	357	294	63	65	0	0	35
Thai Airways International Co., Ltd.	MOC	THAI	114888	85804	29084	59756	55375	4381	31065	1115	0	20,132
Transport Co., Ltd.	MOC	TC	1562	485	1077	1725	1430	295	420	54	0	3,758
Public Warehouse	MOCM	PW	822	73	749	1005	955	50	8	5	0	56
Textile Organization	MOD	TXO	576	328	248	451	432	19	12	1	0	1,875
Tanning Organization	MOD	TNO	415	289	127	363	368	-5	10	0	0	827
Battery Organization	MOD	BO	209	55	154	136	135	1	32	0	0	393
Bang-Na Glass Organization	MOD	BNG	359	296	63	463	494	-31	40	5	0	1,492
Bangkok Dock Co.,Ltd.	MOD	BDC	253	77	176	161	141	20	7	6	0	152
Thailand Tobacco Monopoly	MOF	TTM	12298	2071	10226	26679	23177	3501	763	3202	0	6,940
Playing Cards Factory	MOF	PC	87	6	81	41	30	11	0	3	0	174
Liquor Distillery Organization	MOF	LDO	805	43	761	576	301	275	69	223	0	548
The Police Printing Press	MOI	PP	113	7	106	67	59	7	7	5	0	122
Marketing Organization	MOI	MO	80	1	80	241	233	8	8	5	0	56
Sugar Factory, Inc.	MOID	SF	757	86	671	883	708	175	69	45	0	706
Offshore Mining Organization	MOID	OMO	219	69	150	63	.94	-31	0	0	0	231
Government Phamaceutical Organization	MOPH	GPO	2350	420	1930	2291	2000	291	536	104	0	1,821
TOTAL MAINLY COMMERCIAL SEs			144801	97377	47424	99895	90836	9059	33670	4801	2	47,007

Mainly Commercial Enterprises - Results and Indicators for 1993

	MIN	ACR	Assets	Liabi-lities	Equity lities	Revenue	Cost	Profit Before Tax	Capital Expend. Tax	Remit. to Govt.	Subsidy to Govt.	Number of Employ.
Thai Plywood Co.,Ltd.	MOA	TP	1118	188	930	1420	1304	116	79	12	0	1,477
Rubber Estate Organization	MOA	REO	412	204	208	327	308	19	0	7	29	1,915
The Marketing Organization Farmers	MOA	MOF	2959	4535	-1577	1043	1028	6	14	0	86	528
Fish Marketing Organization	MOA	FMO	759	67	692	158	138	20	10	2	0	399
Forestry Industry Organization	MOA	FIO	3081	850	2231	1210	1189	21	371	0	0	2,907
Dairy Farm Promotion Organization	MOA	DFO	550	457	94	1499	1492	7	0	0	7	560
Cold Storage Organization	MOA	CSO	346	1037	-690	96	160	-64	9	0	0	352
Thai Maritime Navigation Co., Ltd.	MOC	TMN	282	173	109	485	385	100	65	0	0	60
Thai Airways International Co., Ltd.	MOC	THAI	120740	86496	34243	64438	56417	8021	18583	1300	0	21,876
Transport Co., Ltd.	MOC	TC	1408	356	1052	1965	1869	96	44	64	0	2,604
Public Warehouse	MOCM	PW	1446	760	686	832	822	10	14	13	2015	420
Textile Organization	MOD	TXO	600	412	188	417	414	3	14	6	0	1,875
Tanning Organization	MOD	TNO	424	293	130	343	339	3	77	0	0	835
Battery Organization	MOD	BO	212	57	156	183	180	3	18	0	0	405
Bang-Na Glass Organization	MOD	BNG	395	301	94	528	526	1	57	0	0	1,470
Bangkok Dock Co.,Ltd.	MOD	BDC	238	36	203	460	436	24	34	3	0	162
Thailand Tobacco Monopoly	MOF	TTM	12797	2512	10284	26862	23726	3135	4087	2869	0	7,163
Playing Cards Factory	MOF	PC	74	5	69	44	38	6	8	9	0	175
Liquor Distillery Organization	MOF	LDO	840	37	804	601	318	284	201	208	0	658
The Police Printing Press	MOI	PP	127	9	118	118	72	46	20	3	0	130
Marketing Organization	MOI	MO	82	0	82	238	232	6	53	4	0	44
Sugar Factory, Inc.	MOID	SF	780	164	616	772	736	35	245	52	0	1,351
Offshore Mining Organization	MOID	OMO	209	70	140	157	170	-13	3	0	0	244
Government Phamaceutical Organization	MOPH	GPO	2611	483	2127	2339	2033	306	679	77	0	2,036
TOTAL MAINLY COMMERCIAL SEs			152491	99504	52987	106534	94333	12193	24687	4629	2137	49,646
TOTAL MAINLY COMMERCIAL SEs 89			93610	63322	30288	77916	66548	11368	5783	3867	533	42899
TOTAL MAINLY COMMERCIAL SEs 90			106161	71282	34879	89555	78489	11066	15170	3114	940	44519
TOTAL MAINLY COMMERCIAL SEs 91			115563	76437	39126	98623	88356	10267	25296	3624	723	48228
TOTAL MAINLY COMMERCIAL SEs 92			144801	97377	47424	99895	90836	9059	33670	4801	2	47007
TOTAL MAINLY COMMERCIAL SEs 93			152491	99504	52987	106534	94333	12193	24687	4629	2137	49646

Financial Enterprises - Financial Results for 1989

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Krung Thai Bank	MOF	KTB	221203	211562	9640	18359	17270	1089	251	0	0	13163
Government Savings Bank	MOF	GSB	125703	116552	9151	12702	11018	1684	5824	675	0	7645
The Government Housing Bank	MOF	GHB	25973	24406	1567	2336	2152	184	13	20	0	594
Dhipaya Insurance Co.,Ltd.	MOF	DIC	1325	1219	106	577	551	26	NA	4	0	248
Bank of Agriculture and Agricultural	MOF	BAAC	48091	44044	4046	4737	4471	266	3354	0	0	7037
Office of the Public Pawnshop	MOI	OPP	498	162	336	74	44	30	7	12	0	230
TOTAL FINANCIAL INSTITUTIONS			422792	397946	24846	38784	35506	3278	9448	711	0	28917

Financial Enterprises - Financial Results for 1990

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Krung Thai Bank	MOF	KTB	267300	254623	12677	27874	25914	1960	432	0	0	14411
Government Savings Bank	MOF	GSB	132810	122783	10026	13365	12277	1087	0	826	0	8280
The Government Housing Bank	MOF	GHB	34681	32680	2001	3781	3312	469	55	35	0	769
Dhipaya Insurance Co.,Ltd.	MOF	DIC	943	836	107	689	664	25	0	4	0	296
Bank of Agriculture and Agricultural	MOF	BAAC	56728	51691	5036	6185	5875	309	0	0	0	7896
Office of the Public Pawnshop	MOI	OPP	523	174	350	78	49	29	19	12	0	242
TOTAL FINANCIAL INSTITUTIONS			492984	462788	30197	51972	48092	3880	506	877	0	31894

Financial Enterprises - Financial Results for 1991

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Krung Thai Bank	MOF	KTB	338890	324207	14683	38805	36880	1926	0	0	0	15685
Government Savings Bank	MOF	GSB	140169	128960	11209	14002	12647	1355	0	0	0	8778
The Government Housing Bank	MOF	GHB	44282	41729	2553	5579	4924	656	0	90	0	883
Dhipaya Insurance Co.,Ltd.	MOF	DIC	908	794	114	961	932	29		4	0	312
Bank of Agriculture and Agricultural	MOF	BAAC	72860	67039	5822	7249	6859	390	0	0	0	8069
Office of the Public Pawnshop	MOI	OPP	621	259	362	93	68	25	25	9	0	267
TOTAL FINANCIAL INSTITUTIONS			597730	562988	34742	66689	62309	4380	25	104	0	33994

Financial Enterprises - Financial Results for 1992

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Krung Thai Bank	MOF	KTB	364157	344025	20133	40808	36219	4589	367	229	0	16657
Government Savings Bank	MOF	GSB	150910	137665	13245	14087	11928	2159	538	0	0	9174
The Government Housing Bank	MOF	GHB	55977	52572	3405	5816	4872	944	191	131	0	1047
Dhipaya Insurance Co.,Ltd.	MOF	DIC	1314	1188	127	1350	1313	37	9	4	0	337
Bank of Agriculture and Agricultural	MOF	BAAC	84964	78509	6455	7947	7282	666	976	0	0	9391
Office of the Public Pawnshop	MOI	OPP	619	224	395	103	64	39	45	2	0	272
TOTAL FINANCIAL INSTITUTIONS			657942	614182	43760	70111	61678	8433	2126	367	0	36878

Financial Enterprises - Financial Results for 1993

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Krung Thai Bank	MOF	KTB	444600	420273	24327	52474	49749	2725	0	303	0	17205
Government Savings Bank	MOF	GSB	173696	158817	14879	14732	12662	2070	1028	0	0	9719
The Government Housing Bank	MOF	GHB	62336	58640	3696	7055	6329	726	544	196	0	1262
Dhipaya Insurance Co.,Ltd.	MOF	DIC	962	833	129	1046	1028	18	18	4	0	380
Bank of Agriculture and Agricultural	MOF	BAAC	78641	68944	9696	8628	8270	357	0	0	0	10006
Office of the Public Pawnshop	MOI	OPP	674	274	400	105	79	26	49	10	0	346
TOTAL FINANCIAL INSTITUTIONS			760908	707780	53128	84039	78117	5922	1639	513	0	38918

TOTAL FINANCIAL INSTITUTIONS 89			422792	397946	24846	38784	35506	3278	9448	711	0	28917
TOTAL FINANCIAL INSTITUTIONS 90			492984	462788	30197	51972	48092	3880	506	877	0	31894
TOTAL FINANCIAL INSTITUTIONS 91			597730	562988	34742	66689	62309	4380	25	104	0	33994
TOTAL FINANCIAL INSTITUTIONS 92			657942	614182	43760	70111	61678	8433	2126	367	0	36878
TOTAL FINANCIAL INSTITUTIONS 93			760908	707780	53128	84039	78117	5922	1639	513	0	38918

Other Public Enterprises - Financial Results for 1989

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Rapid Transit Metro	MOC	RTM										
Aeronautical Radio of Thailand	MOC	ART	494	459	35	261	261	0	253	0	0	869
National Housing Authority	MOI	NHA	8719	7093	1625	1267	788	478	520	7	385	2175
Industrial Estate Authority of Thailan	MOID	IEAT	2371	1982	388	281	187	94	917	0	0	337
TOTAL OTHER PUBLIC ENTERPRISES			11583	9535	2049	1809	1237	572	1690	7	385	3381

Other Public Enterprises - Financial Results for 1990

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Rapid Transit Metro	MOC	RTM										
Aeronautical Radio of Thailand	MOC	ART	664	629	35	334	334	0	244	0	0	1024
National Housing Authority	MOI	NHA	9865	7822	2043	1316	921	395	2552	34	461	2299
Industrial Estate Authority of Thailan	MOID	IEAT	4063	3073	991	480	243	237	2858	0	246	393
TOTAL OTHER PUBLIC ENTERPRISES			14593	11524	3069	2129	1497	632	5654	34	706	3716

Other Public Enterprises - Financial Results for 1991

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Rapid Transit Metro	MOC	RTM										
Aeronautical Radio of Thailand	MOC	ART	994	844	150	450	450	0	508	0	0	1175
National Housing Authority	MOI	NHA	15803	13468	2336	1317	1001	316	4407	72	375	2191
Industrial Estate Authority of Thailan	MOID	IEAT	6422	4786	1635	591	300	290	3317	10	180	430
TOTAL OTHER PUBLIC ENTERPRISES			23218	19098	4121	2358	1752	606	8232	82	555	3796

Other Public Enterprises - Financial Results for 1992

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Rapid Transit Metro	MOC	RTM										
Aeronautical Radio of Thailand	MOC	ART	1777	1116	660	743	743	0	470	0	0	1321
National Housing Authority	MOI	NHA	19995	17422	2573	1557	1323	234	5341	71	656	2560
Industrial Estate Authority of Thailan	MOID	IEAT	7483	5383	2101	634	359	276	1318	50	143	574
TOTAL OTHER PUBLIC ENTERPRISES			29255	23921	5334	2934	2425	510	7129	121	799	4455

Other Public Enterprises - Financial Results for 1993

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Rapid Transit Metro	MOC	RTM										
Aeronautical Radio of Thailand	MOC	ART	2358	1698	660	944	1011	-67	992	0	1507	1507
National Housing Authority	MOI	NHA	28121	25311	2810	1778	1620	158	10998	21	2605	2605
Industrial Estate Authority of Thailan	MOID	IEAT	8641	6342	2299	1050	774	276	955	42	559	559
TOTAL OTHER PUBLIC ENTERPRISES			39120	33351	5769	3772	3405	367	12945	63	4671	4671
TOTAL OTHER PUBLIC ENTERPRISES 89			11583	9535	2049	1809	1237	572	1690	7	385	3381
TOTAL OTHER PUBLIC ENTERPRISES 90			14593	11524	3069	2129	1497	632	5654	34	706	3716
TOTAL OTHER PUBLIC ENTERPRISES 91			23218	19098	4121	2358	1752	606	8232	82	555	3796
TOTAL OTHER PUBLIC ENTERPRISES 92			29255	23921	5334	2934	2425	510	7129	121	799	4455
TOTAL OTHER PUBLIC ENTERPRISES 93			39120	33351	5769	3772	3405	367	12945	63	4671	4671

Other SEs (Promotional and Non-Commercial)- Financial Results for 1989

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Office of The Rubber Replanting Aid	FuMOA	ORR	4318	305	4013	2571	1421	1150	61	0	1	2140
Promotion of Teaching Science and Tech	MOE	PTS	49	14	35	53	49	4	9	0	52	195
Government Lottery Bureau	MOF	GLB	1654	1168	486	9662	9505	157	33	2733	0	714
Scientific and Technological Research	MOS	STR	182	95	87	240	236	5	20	0	155	747
Zoological Park Organization	PMO	ZPO	151	1	150	49	47	2	12	0	7	424
Tourism Authority of Thailand	PMO	TAT	594	162	432	486	467	19	29	0	526	719
Sports Organization of Thailand	PMO	SOT	276	42	235	115	111	4	267	0	244	435
TOTAL OTHER STATE ENTERPRISES			7224	1787	5437	13177	11835	1342	430	2733	986	5374

Other SEs (Promotional and Non-Commercial)- Financial Results for 1990

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Govt. to Govt.	Subsidy	Employ. of Employ.
Office of The Rubber Replanting Aid	FuMOA	ORR	3877	245	3632	895	1644	-749	35	0	49	2200
Promotion of Teaching Science and Tech	MOE	PTS	63	18	45	70	60	10	5	0	66	200
Government Lottery Bureau	MOF	GLB	1626	1171	455	9680	9506	174	4	2678	0	720
Scientific and Technological Research	MOS	STR	235	140	95	303	295	8	105	0	234	766
Zoological Park Organization	PMO	ZPO	165	2	164	61	58	2	25	0	8	484
Tourism Authority of Thailand	PMO	TAT	713	208	505	628	580	48	22	0	825	743
Sports Organization of Thailand	PMO	SOT	441	62	379	121	124	-3	266	0	384	432
TOTAL OTHER STATE ENTERPRISES			7121	1846	5275	11758	12267	-509	461	2678	1566	5545

Other SEs (Promotional and Non-Commercial)- Financial Results for 1991

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Office of The Rubber Replanting Aid	FuMOA	ORR	3729	303	3426	1293	1706	-413	56	0	261	1518
Promotion of Teaching Science and Tech	MOE	PTS	65	19	46	81	80	1	11	0	73	198
Government Lottery Bureau	MOF	GLB	1971	1451	520	11297	11146	151	43	3338	0	875
Scientific and Technological Research	MOS	STR	289	175	114	207	179	28	40	0	186	757
Zoological Park Organization	PMO	ZPO	203	2	201	71	73	-2	40	0	28	432
Tourism Authority of Thailand	PMO	TAT	633	96	537	597	511	86	104	0	987	755
Sports Organization of Thailand	PMO	SOT	698	70	628	159	128	30	854	0	433	451
TOTAL OTHER STATE ENTERPRISES			7588	2116	5472	13703	13823	-119	1148	3338	1968	4986

Other SEs (Promotional and Non-Commercial)- Financial Results for 1992

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Office of The Rubber Replanting Aid Fu	MOA	ORR	3187	312	2875	1892	2164	-271	248	0	443	2371
Promotion of Teaching Science and Tech	MOE	PTS	75	22	53	108	107	1	2	0	100	230
Government Lottery Bureau	MOF	GLB	2256	1554	702	13555	13298	258	10	4230	0	807
Scientific and Technological Research	MOS	STR	741	188	554	237	217	20	138	0	220	726
Zoological Park Organization	PMO	ZPO	261	3	259	62	63	-1	31	0	31	565
Tourism Authority of Thailand	PMO	TAT	747	71	676	847	883	-36	124	0	1250	833
Sports Organization of Thailand	PMO	SOT	803	14	789	158	164	-6	235	0	337	452
TOTAL OTHER STATE ENTERPRISES			8070	2164	5906	16859	16895	-36	787	4230	2381	5984

Other SEs (Promotional and Non-Commercial)- Financial Results for 1993

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Civil Aviation Organization	MOC	CAO										
Botanical Garden Organization	PMO	BGO										
Office of The Rubber Replanting Aid Fu	MOA	ORR	2033	346	1686	1830	2417	-587	430	0	391	2630
Promotion of Teaching Science and Tech	MOE	PTS	85	24	61	147	147	0	9	0	139	218
Government Lottery Bureau	MOF	GLB	2350	1598	753	13546	13320	226	161	4131	0	857
Scientific and Technological Research	MOS	STR	793	194	599	256	231	25	51	0	277	609
Zoological Park Organization	PMO	ZPO	327	3	324	65	79	-15	71	0	60	769
Tourism Authority of Thailand	PMO	TAT	1080	49	1032	1817	1762	55	190	0	1479	862
Sports Organization of Thailand	PMO	SOT	1124	7	1117	200	207	-7	1804	0	1479	467
TOTAL OTHER STATE ENTERPRISES			7793	2221	5572	17861	18163	-302	2717	4131	3824	6412
TOTAL OTHER STATE ENTERPRISES 89			7224	1787	5437	13177	11835	1342	430	2733	986	5374
TOTAL OTHER STATE ENTERPRISES 90			7121	1846	5275	11758	12267	-509	461	2678	1566	5545
TOTAL OTHER STATE ENTERPRISES 91			7588	2116	5472	13703	13823	-119	1148	3338	1968	4986
TOTAL OTHER STATE ENTERPRISES 92			8070	2164	5906	16859	16895	-36	787	4230	2381	5984
TOTAL OTHER STATE ENTERPRISES 93			7793	2221	5572	17861	18163	-302	2717	4131	3824	6412

Public Utilities - Financial Results for 1989

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Telephone Organization of Thailand	MOC	TOT	50373	37491	12882	13739	7951	5788	11812	819	0	18186
State Railway of Thailand	MOC	SRT	20762	13287	7475	4036	4628	-592	1817	0	1431	25019
Port Authority of Thailand	MOC	PAT	6712	1205	5507	3745	1568	2177	1408	742	270	5841
Express Transportation Organization	MOC	ETO	471	763	-291	1186	1143	44	53	0	0	2858
Communications Authority of Thailand	MOC	CAT	12558	1910	10648	10568	6909	3659	1801	1086	8	21979
Bangkok Mass Transit Authority of Thai	MOC	BMTA	789	9849	-9060	3840	4723	-884	46	0	0	22703
Airports Authority of Thailand	MOC	AAT	10173	6036	4137	3237	1233	2004	1296	690	0	2505
Provincial Waterworks Authority	MOI	PWA	6902	1814	5088	1750	1382	368	1139	222	412	5247
Provincial Electricity Authority	MOI	PEA	43416	35249	8167	25591	23128	2463	3856	206	332	43738
Metropolitan Waterworks Authority	MOI	MWA	19399	13885	5514	4532	3581	950	4718	91	303	5852
Metropolitan Electricity Authority	MOI	MEA	21135	15560	5575	27596	26727	870	2105	756	4	11649
Expressway and Rapid Transit Authority	MOI	ERTA	13077	9328	3749	1111	745	366	2625	84	67	1535
Petroleum Authority of Thailand	MOID	PTT	37649	24399	13250	45744	43996	1747	4154	726	0	3713
Mass Communications Organization of Th	PMO	MCOT	955	46	909	500	261	239	301	98	0	798
Electricity Generating Authority of Th	PMO	EGAT	122466	79051	43415	42650	32226	10424	13540	1061	186	31732
TOTAL 15 PUBLIC UTILITIES			366839	249874	116965	189826	160202	29624	50670	6580	3013	203355

Public Utilities - Financial Results for 1990

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Telephone Organization of Thailand	MOC	TOT	62472	44154	18318	17221	9180	8041	9976	1737	0	18727
State Railway of Thailand	MOC	SRT	21449	14346	7103	4545	5340	-795	1542	0	1452	25769
Port Authority of Thailand	MOC	PAT	8773	1952	6821	4580	1999	2580	1719	1307	75	6184
Express Transportation Organization	MOC	ETO	480	699	-219	1427	1355	72	146	0	0	3901
Communications Authority of Thailand	MOC	CAT	15602	2342	13259	13295	8661	4634	1381	1830	0	22833
Bangkok Mass Transit Authority of Thai	MOC	BMTA	869	10844	-9976	4066	5040	-974	16	0	0	22973
Airports Authority of Thailand	MOC	AAT	11551	5867	5684	4008	1467	2541	1069	1002	0	2650
Provincial Waterworks Authority	MOI	PWA	7491	1837	5655	1982	1553	429	1224	147	602	5680
Provincial Electricity Authority	MOI	PEA	51215	39036	12179	31034	27185	3849	6233	370	550	45213
Metropolitan Waterworks Authority	MOI	MWA	19846	12713	7133	5412	3976	1436	2371	143	384	5748
Metropolitan Electricity Authority	MOI	MEA	25451	18571	6881	32419	30775	1644	3931	253	0	12858
Expressway and Rapid Transit Authority	MOI	ERTA	15145	11006	4139	1251	717	534	2407	128	314	1582
Petroleum Authority of Thailand	MOID	PTT	44349	28432	15917	58047	54968	3080	3624	757	912	3728
Mass Communications Organization of Th	PMO	MCOT	1123	59	1064	559	300	259	85	96	0	857
Electricity Generating Authority of Th	PMO	EGAT	148178	96995	51183	50410	38024	12386	28800	1564	256	33070
TOTAL 15 PUBLIC UTILITIES			433995	288853	145142	230255	190539	39716	64522	9335	4545	211773

Public Utilities - Financial Results for 1991

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Telephone Organization of Thailand	MOC	TOT	72800	45268	27532	20355	9902	10453	27754	2413	0	18941
State Railway of Thailand	MOC	SRT	22666	15380	7286	5489	6268	-778	8198	0	1646	25864
Port Authority of Thailand	MOC	PAT	11465	3021	8443	5248	2219	3028	4119	1548	400	6688
Express Transportation Organization	MOC	ETO	458	755	-297	1609	1650	-42	152	7	0	4688
Communications Authority of Thailand	MOC	CAT	19109	2500	16609	16272	10229	6043	3751	2320	0	23604
Bangkok Mass Transit Authority of Thai	MOC	BMTA	6709	11770	-5061	4828	5087	-258	10	0	0	22469
Airports Authority of Thailand	MOC	AAT	12958	6558	6400	4500	1719	2780	4035	1300	0	2875
Provincial Waterworks Authority	MOI	PWA	8237	1857	6380	2238	1765	473	2460	172	800	5950
Provincial Electricity Authority	MOI	PEA	58395	40578	17818	37149	31342	5807	6792	578	1292	28244
Metropolitan Waterworks Authority	MOI	MWA	21925	12946	8978	6128	4286	1842	3983	215	119	5865
Metropolitan Electricity Authority	MOI	MEA	31560	22280	9280	36749	34214	2535	4503	247	0	13824
Expressway and Rapid Transit Authority	MOI	ERTA	23847	19148	4699	1598	825	773	6478	187	1300	2264
Petroleum Authority of Thailand	MOID	PTT	45604	25731	19873	77190	71090	6100	3792	1605	0	3813
Mass Communications Organization of Th	PMO	MCOT	1348	62	1286	691	348	343	478	104	0	911
Electricity Generating Authority of Th	PMO	EGAT	175309	113824	61485	57235	45532	11704	35356	1000	0	34803
TOTAL 15 PUBLIC UTILITIES			512390	321679	190711	277280	226477	50803	111861	11696	5558	200803

Public Utilities - Financial Results for 1992

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Telephone Organization of Thailand	MOC	TOT	81973	49598	32375	23336	11802	11534	26068	4181	0	20787
State Railway of Thailand	MOC	SRT	24709	18091	6618	5852	7031	-1178	2104	0	2689	25284
Port Authority of Thailand	MOC	PAT	12159	3537	8622	5218	2788	2429	926	1817	207	6642
Express Transportation Organization	MOC	ETO	448	911	-463	1542	1708	-166	0	1	0	4137
Communications Authority of Thailand	MOC	CAT	22413	2842	19571	18097	12102	5996	9585	3030	0	24589
Bangkok Mass Transit Authority of Thai	MOC	BMTA	9410	13205	-3795	6400	6336	64	4909	0	100	23941
Airports Authority of Thailand	MOC	AAT	14071	6411	7660	4670	1981	2690	5910	1391	0	3128
Provincial Waterworks Authority	MOI	PWA	8656	1696	6960	2587	2368	219	6043	189	858	6091
Provincial Electricity Authority	MOI	PEA	69904	44867	25037	42212	34550	7661	9016	871	216	29733
Metropolitan Waterworks Authority	MOI	MWA	23748	13236	10513	6109	4439	1670	3504	276	98	6011
Metropolitan Electricity Authority	MOI	MEA	35874	24840	11034	39622	37328	2295	7275	381	0	13760
Expressway and Rapid Transit Authority	MOI	ERTA	30346	23958	6387	1911	902	1009	2693	271	1349	2145
Petroleum Authority of Thailand	MOID	PTT	51958	27635	24323	76400	69257	7143	12933	2135	0	3662
Mass Communications Organization of Th	PMO	MCOT	1677	91	1586	835	397	437	507	137	0	949
Electricity Generating Authority of Th	PMO	EGAT	193060	124409	68650	62702	50363	12339	23238	2614	491	35065
TOTAL 15 PUBLIC UTILITIES			580406	355328	225078	297492	243351	54141	114711	17295	6007	205924

Public Utilities - Financial Results and Indicators for 1993

	MIN	ACR	Assets	Liabi-lities	Equity	Revenue	Cost	Profit Before Tax	Capital Expend.	Remit. to Govt.	Subsidy	Number of Employ.
Telephone Organization of Thailand	MOC	TOT	87567	47697	39870	15049	7045	8004	30313	5767	0	19151
State Railway of Thailand	MOC	SRT	27845	19641	8204	4705	5634	-929	10943	0	2984	21004
Port Authority of Thailand	MOC	PAT	13614	3719	9895	5603	3113	2490	6037	1458	125	6796
Express Transportation Organization	MOC	ETO	445	1002	-558	1751	1871	-121	45	0	0	2973
Communications Authority of Thailand	MOC	CAT	22607	3025	19582	15192	10957	4235	11446	3298	0	24456
Bangkok Mass Transit Authority of Thai	MOC	BMTA	8210	11990	-3780	6390	6982	-591	4133	0	199	23506
Airports Authority of Thailand	MOC	AAT	14824	6864	7960	4962	2274	2688	5545	1345	0	2365
Provincial Waterworks Authority	MOI	PWA	11440	3043	8397	3381	3286	95	8312	0	1385	7137
Provincial Electricity Authority	MOI	PEA	80315	39607	40708	45837	36807	9030	16987	1670	393	30847
Metropolitan Waterworks Authority	MOI	MWA	26668	14200	12468	6436	4118	2319	6294	251	41	5638
Metropolitan Electricity Authority	MOI	MEA	39989	26488	13501	39555	36689	2867	10973	540	0	13625
Expressway and Rapid Transit Authority	MOI	ERTA	82259	69638	12621	1755	1152	603	58503	354	5851	3359
Petroleum Authority of Thailand	MOID	PTT	63969	35370	28599	89527	82114	7413	18520	2212	0	3900
Mass Communications Organization of Th	PMO	MCOT	2846	61	2785	1029	406	623	997	175	0	980
Electricity Generating Authority of Th	PMO	EGAT	212798	131591	81207	55772	46492	9279	54167	2468	202	34505
TOTAL 15 PUBLIC UTILITIES			695396	413938	281458	236944	248940	48004	243216	19537	11181	200242
TOTAL 15 PUBLIC UTILITIES 89			366839	249874	116965	189826	160202	29624	50670	6580	3013	203355
TOTAL 15 PUBLIC UTILITIES 90			433995	288853	145142	230255	190539	39716	64522	9335	4545	211773
TOTAL 15 PUBLIC UTILITIES 91			512390	321679	190711	277280	226477	50803	111861	11696	5558	200803
TOTAL 15 PUBLIC UTILITIES 92			580406	355328	225078	297492	243351	54141	114711	17295	6007	205924
TOTAL 15 PUBLIC UTILITIES 93			695396	413938	281458	296944	248940	48004	243216	19537	11181	200242

Mainly Commercial SEs - Financial Indicators for 1989

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Thai Plywood Co.,Ltd.	14.9%	19.7%	15.4%	32.5%	0.60	0.51	0.09
Rubber Estate Organization	-3.7%	-7.8%	-7.0%	113.3%	0.32	0.35	-0.02
The Marketing Organization Farmers	-3.3%	NA	-12.5%	NA	2.07	2.33	-0.26
Fish Marketing Organization	4.5%	6.8%	19.1%	50.7%	0.30	0.24	0.06
Forestry Industry Organization	15.3%	16.8%	33.1%	9.5%	0.36	0.24	0.12
Dairy Farm Promotion Organization	1.8%	11.1%	0.9%	517.6%	1.00	1.00	0.01
Cold Storage Organization	-21.6%	NA	-71.4%	NA	0.26	0.45	-0.19
Thai Maritime Navigation Co., Ltd.	36.6%	NA	21.8%	NA	5.67	4.43	1.24
Thai Airways International Co., Ltd.	11.7%	46.6%	16.6%	299.5%	3.17	2.65	0.53
Transport Co., Ltd.	38.1%	50.4%	33.9%	32.3%	0.42	0.27	0.14
Public Warehouse	0.4%	2.2%	1.5%	515.8%	2.18	2.15	0.03
Textile Organization	-0.4%	-0.9%	-0.5%	151.9%	0.12	0.12	-0.00
Tanning Organization	3.9%	11.7%	4.1%	199.5%	0.37	0.35	0.02
Battery Organization	0.7%	0.8%	0.9%	27.2%	0.36	0.35	0.00
Bang-Na Glass Organization	2.9%	11.8%	2.6%	306.8%	0.27	0.26	0.01
Bangkok Dock Co.,Ltd.	8.6%	10.9%	11.4%	25.8%	0.86	0.76	0.10
Thailand Tobacco Monopoly	25.8%	31.6%	12.1%	22.5%	2.86	2.51	0.35
Playing Cards Factory	11.7%	13.9%	8.9%	18.3%	0.11	0.10	0.01
Liquor Distillery Organization	27.4%	33.9%	42.5%	23.6%	0.87	0.50	0.37
The Police Printing Press	13.7%	14.2%	21.2%	3.0%	0.38	0.30	0.08
Marketing Organization	9.0%	9.2%	4.8%	2.1%	2.61	2.49	0.13
Sugar Factory, Inc.	12.5%	20.6%	10.0%	64.2%	1.11	1.00	0.11
Offshore Mining Organization	6.9%	8.0%	10.7%	15.8%	0.65	0.58	0.07
Government Phamaceutical Organization	14.9%	16.7%	15.9%	12.1%	0.86	0.72	0.14
TOTAL MAINLY COMMERCIAL SEs	12.1%	37.5%	14.6%	209.1%	1.82	1.55	0.27

Mainly Commercial SEs - Financial Indicators for 1990

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Thai Plywood Co.,Ltd.	17.5%	20.4%	13.9%	16.3%	0.78	0.68	0.11
Rubber Estate Organization	-2.4%	-5.3%	-3.5%	124.9%	0.40	0.42	-0.01
The Marketing Organization Farmers	-2.1%	NA	-4.6%	NA	2.62	2.74	-0.12
Fish Marketing Organization	2.3%	2.7%	18.3%	18.0%	0.29	0.23	0.05
Forestry Industry Organization	11.3%	12.7%	20.5%	13.1%	0.47	0.37	0.10
Dairy Farm Promotion Organization	3.0%	16.0%	1.2%	428.2%	1.09	1.08	0.01
Cold Storage Organization	-16.6%	NA	-38.0%	NA	0.49	0.68	-0.19
Thai Maritime Navigation Co., Ltd.	54.5%	NA	23.4%	NA	8.49	6.50	1.99
Thai Airways International Co., Ltd.	8.7%	35.6%	13.2%	310.4%	2.97	2.57	0.39
Transport Co., Ltd.	29.6%	39.9%	27.1%	34.6%	0.41	0.30	0.11
Public Warehouse	0.6%	1.1%	0.7%	87.2%	2.38	2.36	0.02
Textile Organization	-5.6%	-16.1%	-7.2%	188.6%	0.20	0.22	-0.01
Tanning Organization	0.8%	2.3%	0.9%	195.3%	0.34	0.34	0.00
Battery Organization	0.2%	0.2%	0.2%	30.4%	0.35	0.35	0.00
Bang-Na Glass Organization	4.6%	17.8%	3.9%	289.6%	0.31	0.30	0.01
Bangkok Dock Co.,Ltd.	13.6%	17.1%	18.4%	25.1%	0.90	0.74	0.17
Thailand Tobacco Monopoly	25.5%	32.2%	11.6%	26.5%	3.51	3.10	0.41
Playing Cards Factory	19.5%	25.4%	13.3%	30.4%	0.15	0.13	0.02
Liquor Distillery Organization	30.5%	36.6%	47.1%	20.1%	0.92	0.49	0.43
The Police Printing Press	28.8%	29.6%	41.6%	2.6%	0.55	0.32	0.23
Marketing Organization	9.5%	9.7%	4.4%	1.5%	2.84	2.72	0.13
Sugar Factory, Inc.	21.5%	29.1%	11.2%	35.0%	1.84	1.63	0.21
Offshore Mining Organization	-6.3%	-8.1%	-19.7%	28.6%	0.33	0.40	-0.07
Government Phamaceutical Organization	14.6%	17.1%	15.0%	17.1%	1.04	0.89	0.16
TOTAL MAINLY COMMERCIAL SEs	10.4%	31.7%	12.4%	204.4%	2.01	1.76	0.25

Mainly Commercial SEs - Financial Indicators for 1991

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Thai Plywood Co.,Ltd.	13.4%	14.7%	11.6%	9.3%	0.72	0.64	0.08
Rubber Estate Organization	5.4%	9.4%	6.9%	74.0%	0.15	0.14	0.01
The Marketing Organization Farmers	-1.0%	NA	-2.3%	NA	2.38	2.44	-0.06
Fish Marketing Organization	1.4%	1.7%	11.3%	16.0%	0.29	0.26	0.03
Forestry Industry Organization	1.3%	1.6%	2.9%	17.0%	0.38	0.37	0.01
Dairy Farm Promotion Organization	4.6%	25.5%	1.5%	450.9%	1.10	1.08	0.02
Cold Storage Organization	-18.4%	NA	-81.2%	NA	0.25	0.45	-0.20
Thai Maritime Navigation Co., Ltd.	35.2%	NA	18.3%	NA	11.38	9.29	2.09
Thai Airways International Co., Ltd.	6.0%	23.8%	8.9%	296.6%	3.05	2.78	0.27
Transport Co., Ltd.	17.5%	24.1%	15.1%	37.9%	0.42	0.36	0.06
Public Warehouse	0.5%	2.3%	2.0%	357.7%	1.73	1.69	0.04
Textile Organization	-1.1%	-2.7%	-1.7%	149.9%	0.20	0.21	-0.00
Tanning Organization	5.4%	14.7%	6.1%	172.9%	0.38	0.35	0.02
Battery Organization	-4.3%	-5.6%	-6.7%	29.8%	0.30	0.32	-0.02
Bang-Na Glass Organization	3.0%	11.8%	2.3%	293.3%	0.34	0.33	0.01
Bangkok Dock Co.,Ltd.	16.2%	19.1%	16.8%	17.6%	1.17	0.98	0.20
Thailand Tobacco Monopoly	34.5%	39.1%	14.6%	13.2%	3.89	3.32	0.57
Playing Cards Factory	44.9%	50.9%	34.0%	13.2%	0.20	0.13	0.07
Liquor Distillery Organization	32.7%	38.9%	49.3%	19.0%	1.03	0.52	0.51
The Police Printing Press	14.9%	15.2%	21.8%	2.4%	0.55	0.43	0.12
Marketing Organization	11.6%	11.7%	4.5%	0.8%	3.51	3.35	0.16
Sugar Factory, Inc.	15.1%	17.9%	11.1%	19.1%	1.02	0.91	0.11
Offshore Mining Organization	-11.7%	-15.4%	-38.3%	31.5%	0.28	0.39	-0.11
Government Phamaceutical Organization	14.4%	16.9%	14.4%	17.7%	1.19	1.02	0.17
TOTAL MAINLY COMMERCIAL SEs	8.9%	26.2%	10.4%	195.4%	2.04	1.83	0.21

Mainly Commercial SEs - Financial Indicators for 1992

	ROA of (%)	ROE (%)	ROS (%)	Debt to Equity (%)	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Thai Plywood Co.,Ltd.	9.9%	11.3%	10.5%	14.9%	0.69	0.62	0.07
Rubber Estate Organization	4.6%	9.0%	5.8%	98.2%	0.48	0.45	0.03
The Marketing Organization Farmers	1.5%	NA	3.9%	NA	2.13	2.05	0.08
Fish Marketing Organization	1.1%	1.2%	6.9%	13.9%	0.34	0.32	0.02
Forestry Industry Organization	-3.0%	-3.6%	-12.3%	21.7%	0.21	0.23	-0.03
Dairy Farm Promotion Organization	0.2%	1.9%	0.1%	714.9%	1.01	1.01	0.00
Cold Storage Organization	-20.9%	NA	-86.1%	NA	0.24	0.45	-0.21
Thai Maritime Navigation Co., Ltd.	34.7%	NA	17.7%	NA	10.19	8.39	1.80
Thai Airways International Co., Ltd.	3.8%	15.1%	7.3%	295.0%	2.97	2.75	0.22
Transport Co., Ltd.	18.9%	27.4%	17.1%	45.0%	0.46	0.38	0.08
Public Warehouse	6.0%	6.6%	4.9%	9.8%	17.94	17.06	0.88
Textile Organization	3.3%	7.6%	4.2%	131.9%	0.24	0.23	0.01
Tanning Organization	-1.2%	-4.0%	-1.4%	228.1%	0.44	0.45	-0.01
Battery Organization	0.3%	0.4%	0.5%	36.0%	0.35	0.34	0.00
Bang-Na Glass Organization	-8.5%	-48.7%	-6.6%	471.0%	0.31	0.33	-0.02
Bangkok Dock Co.,Ltd.	8.0%	11.5%	12.5%	44.1%	1.06	0.93	0.13
Thailand Tobacco Monopoly	28.5%	34.2%	13.1%	20.3%	3.84	3.34	0.50
Playing Cards Factory	12.9%	13.9%	27.2%	7.2%	0.24	0.17	0.06
Liquor Distillery Organization	34.2%	36.2%	47.8%	5.7%	1.05	0.55	0.50
The Police Printing Press	6.7%	7.1%	11.2%	6.6%	0.55	0.49	0.06
Marketing Organization	10.4%	10.5%	3.5%	0.7%	4.30	4.15	0.15
Sugar Factory, Inc.	23.1%	26.0%	19.8%	12.9%	1.25	1.00	0.25
Offshore Mining Organization	-14.3%	-20.9%	-49.7%	46.1%	0.27	0.41	-0.14
Government Phamaceutical Organization	12.4%	15.1%	12.7%	21.8%	1.26	1.10	0.16
TOTAL MAINLY COMMERCIAL SEs	6.3%	19.1%	9.1%	205.3%	2.13	1.93	0.19

Mainly Commercial SEs - Financial Indicators for 1993

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity (%)	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Thai Plywood Co.,Ltd.	10.4%	12.5%	8.2%	20.2%	0.96	0.88	0.08
Rubber Estate Organization	4.6%	9.0%	5.8%	98.2%	0.17	0.16	0.01
The Marketing Organization Farmers	0.2%	NA	0.6%	NA	1.98	1.95	0.01
Fish Marketing Organization	2.6%	2.8%	12.4%	9.7%	0.39	0.35	0.05
Forestry Industry Organization	0.7%	1.0%	1.8%	38.1%	0.42	0.41	0.01
Dairy Farm Promotion Organization	1.3%	7.5%	0.5%	488.2%	2.68	2.66	0.01
Cold Storage Organization	-18.5%	NA	-66.6%	NA	0.27	0.46	-0.18
Thai Maritime Navigation Co., Ltd.	35.5%	91.9%	20.6%	159.1%	8.08	6.42	1.67
Thai Airways International Co., Ltd.	6.6%	23.4%	12.4%	252.6%	2.95	2.58	0.37
Transport Co., Ltd.	6.8%	9.2%	4.9%	33.9%	0.75	0.72	0.04
Public Warehouse	0.7%	1.5%	1.2%	110.9%	1.98	1.96	0.02
Textile Organization	0.5%	1.6%	0.7%	219.4%	0.22	0.22	0.00
Tanning Organization	0.8%	2.7%	1.0%	225.6%	0.41	0.41	0.00
Battery Organization	1.4%	1.9%	1.7%	36.6%	0.45	0.44	0.01
Bang-Na Glass Organization	0.3%	1.4%	0.3%	319.0%	0.36	0.36	0.00
Bangkok Dock Co.,Ltd.	10.2%	11.9%	5.3%	17.6%	2.84	2.69	0.15
Thailand Tobacco Monopoly	24.5%	30.5%	11.7%	24.4%	3.75	3.31	0.44
Playing Cards Factory	8.1%	8.6%	13.6%	7.1%	0.25	0.22	0.03
Liquor Distillery Organization	33.8%	35.3%	47.2%	4.6%	0.91	0.48	0.43
The Police Printing Press	36.1%	39.0%	39.0%	8.0%	0.91	0.55	0.35
Marketing Organization	7.8%	7.8%	2.7%	0.4%	5.41	5.27	0.14
Sugar Factory, Inc.	4.5%	5.7%	4.6%	26.7%	0.57	0.55	0.03
Offshore Mining Organization	-6.1%	-9.1%	-8.1%	49.8%	0.64	0.70	-0.05
Government Phamaceutical Organization	11.7%	14.4%	13.1%	22.7%	1.15	1.00	0.15
TOTAL MAINLY COMMERCIAL SEs	8.0%	23.0%	11.4%	187.8%	2.15	1.90	0.25
TOTAL MAINLY COMMERCIAL SEs 89	12.1%	37.5%	14.6%	209.1%	1.82	1.55	0.27
TOTAL MAINLY COMMERCIAL SEs 90	10.4%	31.7%	12.4%	204.4%	2.01	1.76	0.25
TOTAL MAINLY COMMERCIAL SEs 91	8.9%	26.2%	10.4%	195.4%	2.04	1.83	0.21
TOTAL MAINLY COMMERCIAL SEs 92	6.3%	19.1%	9.1%	205.3%	2.13	1.93	0.19
TOTAL MAINLY COMMERCIAL SEs 93	8.0%	23.0%	11.4%	187.8%	2.15	1.90	0.25

Financial SEs - Financial Indicators for 1989

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Krung Thai Bank	0.5%	11.3%	5.9%	2194.6%	1.39	1.31	0.08
Government Savings Bank	1.3%	18.4%	13.3%	1273.7%	1.66	1.44	0.22
The Government Housing Bank	0.7%	11.7%	7.9%	1557.6%	3.93	3.62	0.31
Dhipaya Insurance Co.,Ltd.	2.0%	24.5%	4.5%	1155.0%	2.33	2.22	0.10
Bank of Agriculture and Agricultural C	0.6%	6.6%	5.6%	1088.5%	0.67	0.64	0.04
Office of the Public Pawnshop	6.0%	8.9%	40.7%	48.2%	0.32	0.19	0.13
TOTAL FINANCIAL INSTITUTIONS	0.8%	13.2%	8.5%	1601.7%	1.34	1.23	0.11

Financial SEs - Financial Indicators for 1990

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Krung Thai Bank	0.7%	15.5%	7.0%	2008.6%	1.93	1.80	0.14
Government Savings Bank	0.8%	10.8%	8.1%	1224.6%	1.61	1.48	0.13
The Government Housing Bank	1.4%	23.5%	12.4%	1633.6%	4.92	4.31	0.61
Dhipaya Insurance Co.,Ltd.	2.6%	23.2%	3.6%	782.3%	2.33	2.24	0.08
Bank of Agriculture and Agricultural C	0.5%	6.1%	5.0%	1026.3%	0.78	0.74	0.04
Office of the Public Pawnshop	5.5%	8.3%	36.9%	49.6%	0.32	0.20	0.12
TOTAL FINANCIAL INSTITUTIONS	0.8%	12.8%	7.5%	1532.6%	1.63	1.51	0.12

Financial SEs - Financial Indicators for 1991

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Krung Thai Bank	0.6%	13.1%	5.0%	2208.0%	2.47	2.35	0.12
Government Savings Bank	1.0%	12.1%	9.7%	1150.5%	1.60	1.44	0.15
The Government Housing Bank	1.5%	25.7%	11.8%	1634.6%	6.32	5.58	0.74
Dhipaya Insurance Co.,Ltd.	3.2%	25.2%	3.0%	699.1%	3.08	2.99	0.09
Bank of Agriculture and Agricultural C	0.5%	6.7%	5.4%	1151.6%	0.90	0.85	0.05
Office of the Public Pawnshop	4.0%	6.8%	26.7%	71.5%	0.35	0.25	0.09
TOTAL FINANCIAL INSTITUTIONS	0.7%	12.6%	6.6%	1620.5%	1.96	1.83	0.13

Financial SEs - Financial Indicators for 1992

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Krung Thai Bank	1.3%	22.8%	11.2%	1708.8%	2.45	2.17	0.28
Government Savings Bank	1.4%	16.3%	15.3%	1039.4%	1.54	1.30	0.24
The Government Housing Bank	1.7%	27.7%	16.2%	1543.9%	5.56	4.65	0.90
Dhipaya Insurance Co.,Ltd.	2.8%	29.4%	2.8%	938.6%	4.01	3.90	0.11
Bank of Agriculture and Agricultural C	0.8%	10.3%	8.4%	1216.3%	0.85	0.78	0.07
Office of the Public Pawnshop	6.3%	9.8%	37.6%	56.6%	0.38	0.24	0.14
TOTAL FINANCIAL INSTITUTIONS	1.3%	19.3%	12.0%	1403.5%	1.90	1.67	0.23

Financial SEs - Financial Indicators for 1993

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Krung Thai Bank	0.6%	11.2%	5.2%	1727.6%	3.05	2.89	0.16
Government Savings Bank	1.2%	13.9%	14.1%	1067.4%	1.52	1.30	0.21
The Government Housing Bank	1.2%	19.6%	10.3%	1586.4%	5.59	5.02	0.58
Dhipaya Insurance Co.,Ltd.	1.9%	13.9%	1.7%	647.6%	2.75	2.70	0.05
Bank of Agriculture and Agricultural C	0.5%	3.7%	4.1%	711.0%	0.86	0.83	0.04
Office of the Public Pawnshop	3.8%	6.4%	24.6%	68.3%	0.30	0.23	0.07
TOTAL FINANCIAL INSTITUTIONS	0.8%	11.1%	7.0%	1332.2%	2.16	2.01	0.15
TOTAL FINANCIAL INSTITUTIONS 89	0.8%	13.2%	8.5%	1601.7%	1.34	1.23	0.11
TOTAL FINANCIAL INSTITUTIONS 90	0.8%	12.8%	7.5%	1532.6%	1.63	1.51	0.12
TOTAL FINANCIAL INSTITUTIONS 91	0.7%	12.6%	6.6%	1620.5%	1.96	1.83	0.13
TOTAL FINANCIAL INSTITUTIONS 92	1.3%	19.3%	12.0%	1403.5%	1.90	1.67	0.23
TOTAL FINANCIAL INSTITUTIONS 93	0.8%	11.1%	7.0%	1332.2%	2.16	2.01	0.15

Other Public Enterprises - Financial Indicators for 1989

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Rapid Transit Metro	NA	NA	NA	NA	NA	NA	NA
Aeronautical Radio of Thailand	0.0%	0.0%	0.0%	1311.7%	0.30	0.30	0.00
National Housing Authority	5.5%	29.4%	37.8%	436.4%	0.58	0.36	0.22
Industrial Estate Authority of Thailan	4.0%	24.1%	33.4%	510.6%	0.83	0.55	0.28
TOTAL OTHER PUBLIC ENTERPRISES	4.9%	27.9%	31.6%	465.4%	0.53	0.37	0.17

Other Public Enterprises - Financial Indicators for 1990

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Rapid Transit Metro	NA	NA	NA	NA	NA	NA	NA
Aeronautical Radio of Thailand	0.0%	0.0%	0.0%	1784.4%	0.33	0.33	0.00
National Housing Authority	4.0%	19.4%	30.0%	382.9%	0.57	0.40	0.17
Industrial Estate Authority of Thailan	5.8%	23.9%	49.4%	310.2%	1.22	0.62	0.60
TOTAL OTHER PUBLIC ENTERPRISES	4.3%	20.6%	29.7%	375.5%	0.57	0.40	0.17

Other Public Enterprises - Financial Indicators for 1991

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Rapid Transit Metro	NA	NA	NA	NA	NA	NA	NA
Aeronautical Radio of Thailand	0.0%	0.0%	0.0%	562.4%	0.38	0.38	0.00
National Housing Authority	2.0%	13.5%	24.0%	576.6%	0.60	0.46	0.14
Industrial Estate Authority of Thailan	4.5%	17.8%	49.1%	292.7%	1.37	0.70	0.68
TOTAL OTHER PUBLIC ENTERPRISES	2.6%	14.7%	25.7%	463.4%	0.62	0.46	0.16

Other Public Enterprises - Financial Indicators for 1992

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Rapid Transit Metro	NA	NA	NA	NA	NA	NA	NA
Aeronautical Radio of Thailand	0.0%	0.0%	0.0%	169.1%	0.56	0.56	0.00
National Housing Authority	1.2%	9.1%	15.0%	677.1%	0.61	0.52	0.09
Industrial Estate Authority of Thailan	3.7%	13.1%	43.5%	256.3%	1.11	0.62	0.48
TOTAL OTHER PUBLIC ENTERPRISES	1.7%	9.6%	17.4%	448.5%	0.66	0.54	0.11

Other Public Enterprises - Financial Indicators for 1993

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Rapid Transit Metro							
Aeronautical Radio of Thailand	ERR	-10.1%	-7.1%	257.1%	0.63	0.67	-0.04
National Housing Authority	0.6%	5.6%	8.9%	900.9%	0.68	0.62	0.06
Industrial Estate Authority of Thailan	3.2%	12.0%	26.3%	275.8%	1.88	1.38	0.49
TOTAL OTHER PUBLIC ENTERPRISES	0.9%	6.4%	9.7%	578.1%	0.81	0.73	0.08
TOTAL OTHER PUBLIC ENTERPRISES 89	4.9%	27.9%	31.6%	465.4%	0.53	0.37	0.17
TOTAL OTHER PUBLIC ENTERPRISES 90	4.3%	20.6%	29.7%	375.5%	0.57	0.40	0.17
TOTAL OTHER PUBLIC ENTERPRISES 91	2.6%	14.7%	25.7%	463.4%	0.62	0.46	0.16
TOTAL OTHER PUBLIC ENTERPRISES 92	1.7%	9.6%	17.4%	448.5%	0.66	0.54	0.11
TOTAL OTHER PUBLIC ENTERPRISES 93	0.9%	6.4%	9.7%	578.1%	0.81	0.73	0.08

Other SEs (Promotional and Non-Commercial) - Financial Indicators for 1989

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Office of The Rubber Replanting Aid Fu	26.6%	28.7%	44.7%	7.6%	1.20	0.66	0.54
Promotion of Teaching Science and Tech	8.6%	12.0%	7.9%	40.1%	0.27	0.25	0.02
Government Lottery Bureau	9.5%	32.4%	1.6%	240.3%	13.53	13.31	0.22
Scientific and Technological Research	2.6%	5.5%	2.0%	108.6%	0.32	0.32	0.01
Zoological Park Organization	1.2%	1.2%	3.8%	0.7%	0.12	0.11	0.00
Tourism Authority of Thailand	3.2%	4.4%	3.9%	37.6%	0.68	0.65	0.03
Sports Organization of Thailand	1.5%	1.8%	3.6%	17.8%	0.26	0.25	0.01
TOTAL OTHER STATE ENTERPRISES	18.6%	24.7%	10.2%	32.9%	2.45	2.20	0.25

Other SEs (Promotional and Non-Commercial) - Financial Indicators for 1990

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Office of The Rubber Replanting Aid Fu	-19.3%	-20.6%	-83.7%	6.8%	0.41	0.75	-0.34
Promotion of Teaching Science and Tech	16.2%	22.7%	14.7%	40.2%	0.35	0.30	0.05
Government Lottery Bureau	10.7%	38.2%	1.8%	257.4%	13.44	13.20	0.24
Scientific and Technological Research	3.4%	8.4%	2.7%	146.8%	0.40	0.39	0.01
Zoological Park Organization	1.5%	1.5%	4.0%	1.1%	0.13	0.12	0.01
Tourism Authority of Thailand	6.7%	9.5%	7.6%	41.1%	0.85	0.78	0.06
Sports Organization of Thailand	-0.6%	-0.7%	-2.4%	16.4%	0.28	0.29	-0.01
TOTAL OTHER STATE ENTERPRISES	-7.1%	-9.7%	-4.3%	35.0%	2.12	2.21	-0.09

Other SEs (Promotional and Non-Commercial) - Financial Indicators for 1991

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Office of The Rubber Replanting Aid Fu	-11.1%	-12.1%	-32.0%	8.8%	0.85	1.12	-0.27
Promotion of Teaching Science and Tech	1.5%	2.2%	1.2%	39.8%	0.41	0.40	0.01
Government Lottery Bureau	7.7%	29.1%	1.3%	279.2%	12.91	12.74	0.17
Scientific and Technological Research	9.6%	24.2%	13.4%	152.9%	0.27	0.24	0.04
Zoological Park Organization	-0.9%	-0.9%	-2.5%	0.9%	0.16	0.17	-0.00
Tourism Authority of Thailand	13.6%	16.0%	14.4%	17.9%	0.79	0.68	0.11
Sports Organization of Thailand	4.3%	4.8%	19.1%	11.2%	0.35	0.28	0.07
TOTAL OTHER STATE ENTERPRISES	-1.6%	-2.2%	-0.9%	38.7%	2.75	2.77	-0.02

Other SEs (Promotional and Non-Commercial) - Financial Indicators for 1992

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Office of The Rubber Replanting Aid Fu	-8.5%	-9.4%	-14.3%	10.9%	0.80	0.91	-0.11
Promotion of Teaching Science and Tech	1.3%	1.8%	0.9%	41.1%	0.47	0.47	0.00
Government Lottery Bureau	11.4%	36.7%	1.9%	221.4%	16.80	16.48	0.32
Scientific and Technological Research	2.7%	3.6%	8.4%	33.9%	0.33	0.30	0.03
Zoological Park Organization	-0.2%	-0.2%	-0.9%	1.0%	0.11	0.11	-0.00
Tourism Authority of Thailand	-4.8%	-5.3%	-4.3%	10.5%	1.02	1.06	-0.04
Sports Organization of Thailand	-0.7%	-0.8%	-3.8%	1.8%	0.35	0.36	-0.01
TOTAL OTHER STATE ENTERPRISES	-0.4%	-0.6%	-0.2%	36.6%	2.82	2.82	-0.01

Other SEs (Promotional and Non-Commercial) - Financial Indicators for 1993

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Civil Aviation Organization							
Botanical Garden Organization							
Office of The Rubber Replanting Aid Fu	-28.9%	-34.8%	-32.1%	20.5%	0.70	0.92	-0.22
Promotion of Teaching Science and Tech	0.2%	0.2%	0.1%	38.9%	0.67	0.67	0.00
Government Lottery Bureau	9.6%	30.0%	1.7%	212.3%	15.81	15.54	0.26
Scientific and Technological Research	3.2%	4.2%	9.9%	32.4%	0.42	0.38	0.04
Zoological Park Organization	-4.4%	-4.5%	-22.4%	1.0%	0.08	0.10	-0.02
Tourism Authority of Thailand	5.1%	5.3%	3.0%	4.7%	2.11	2.04	0.06
Sports Organization of Thailand	-0.6%	-0.6%	-3.4%	0.6%	0.43	0.44	-0.01
TOTAL OTHER STATE ENTERPRISES	-3.9%	-5.4%	-1.7%	39.9%	2.79	2.83	-0.05
TOTAL OTHER STATE ENTERPRISES 89	18.6%	24.7%	10.2%	32.9%	2.45	2.20	0.25
TOTAL OTHER STATE ENTERPRISES 90	-7.1%	-9.7%	-4.3%	35.0%	2.12	2.21	-0.09
TOTAL OTHER STATE ENTERPRISES 91	-1.6%	-2.2%	-0.9%	38.7%	2.75	2.77	-0.02
TOTAL OTHER STATE ENTERPRISES 92	-0.4%	-0.6%	-0.2%	36.6%	2.82	2.82	-0.01
TOTAL OTHER STATE ENTERPRISES 93	-3.9%	-5.4%	-1.7%	39.9%	2.79	2.83	-0.05

Public Utilities - Financial Indicators for 1989

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Telephone Organization of Thailand	11.5%	44.9%	42.1%	291.0%	0.76	0.44	0.32
State Railway of Thailand	-2.9%	-7.9%	-14.7%	177.8%	0.16	0.18	-0.02
Port Authority of Thailand	32.4%	39.5%	58.1%	21.9%	0.64	0.27	0.37
Express Transportation Organization	9.3%	NA	3.7%	NA	0.42	0.40	0.02
Communications Authority of Thailand	29.1%	34.4%	34.6%	17.9%	0.48	0.31	0.17
Bangkok Mass Transit Authority of Thai	-112.0%	NA	-23.0%	NA	0.17	0.21	-0.04
Airports Authority of Thailand	19.7%	48.4%	61.9%	145.9%	1.29	0.49	0.80
Provincial Waterworks Authority	5.3%	7.2%	21.0%	35.7%	0.33	0.26	0.07
Provincial Electricity Authority	5.7%	30.2%	9.6%	431.6%	0.59	0.53	0.06
Metropolitan Waterworks Authority	4.9%	17.2%	21.0%	251.8%	0.77	0.61	0.16
Metropolitan Electricity Authority	4.1%	15.6%	3.2%	279.1%	2.37	2.29	0.07
Expressway and Rapid Transit Authority	2.8%	9.8%	33.0%	248.8%	0.72	0.49	0.24
Petroleum Authority of Thailand	4.6%	13.2%	3.8%	184.1%	12.32	11.85	0.47
Mass Communications Organization of Th	25.0%	26.3%	47.8%	5.0%	0.63	0.33	0.30
Electricity Generating Authority of Th	8.5%	24.0%	24.4%	182.1%	1.34	1.02	0.33
TOTAL 15 PUBLIC UTILITIES	8.1%	25.3%	15.6%	213.6%	0.93	0.79	0.15

Public Utilities - Financial Indicators for 1990

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Telephone Organization of Thailand	12.9%	43.9%	46.7%	241.0%	0.92	0.49	0.43
State Railway of Thailand	-3.7%	-11.2%	-17.5%	202.0%	0.18	0.21	-0.03
Port Authority of Thailand	29.4%	37.8%	56.3%	28.6%	0.74	0.32	0.42
Express Transportation Organization	15.0%	NA	5.0%	NA	0.37	0.35	0.02
Communications Authority of Thailand	29.7%	34.9%	34.9%	17.7%	0.58	0.38	0.20
Bangkok Mass Transit Authority of Thai	-112.2%	NA	-24.0%	NA	0.18	0.22	-0.04
Airports Authority of Thailand	22.0%	44.7%	63.4%	103.2%	1.51	0.55	0.96
Provincial Waterworks Authority	5.7%	7.6%	21.6%	32.5%	0.35	0.27	0.08
Provincial Electricity Authority	7.5%	31.6%	12.4%	320.5%	0.69	0.60	0.09
Metropolitan Waterworks Authority	7.2%	20.1%	26.5%	178.2%	0.94	0.69	0.25
Metropolitan Electricity Authority	6.5%	23.9%	5.1%	269.9%	2.52	2.39	0.13
Expressway and Rapid Transit Authority	3.5%	12.9%	42.7%	265.9%	0.79	0.45	0.34
Petroleum Authority of Thailand	6.9%	19.3%	5.3%	178.6%	15.57	14.74	0.83
Mass Communications Organization of Th	23.1%	24.4%	46.4%	5.5%	0.65	0.35	0.30
Electricity Generating Authority of Th	8.4%	24.2%	24.6%	189.5%	1.52	1.15	0.37
TOTAL 15 PUBLIC UTILITIES	9.2%	27.4%	17.2%	199.0%	1.09	0.90	0.19

Public Utilities - Financial Indicators for 1991

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Telephone Organization of Thailand	14.4%	38.0%	51.4%	164.4%	1.07	0.52	0.55
State Railway of Thailand	-3.4%	-10.7%	-14.2%	211.1%	0.21	0.24	-0.03
Port Authority of Thailand	26.4%	35.9%	57.7%	35.8%	0.78	0.33	0.45
Express Transportation Organization	-9.1%	NA	-2.6%	NA	0.34	0.35	-0.01
Communications Authority of Thailand	31.6%	36.4%	37.1%	15.0%	0.69	0.43	0.26
Bangkok Mass Transit Authority of Thai	-3.8%	NA	-5.3%	NA	0.21	0.23	-0.01
Airports Authority of Thailand	21.5%	43.4%	61.8%	102.5%	1.57	0.60	0.97
Provincial Waterworks Authority	5.7%	7.4%	21.1%	29.1%	0.38	0.30	0.08
Provincial Electricity Authority	9.9%	32.6%	15.6%	227.7%	1.32	1.11	0.21
Metropolitan Waterworks Authority	8.4%	20.5%	30.1%	144.2%	1.04	0.73	0.31
Metropolitan Electricity Authority	8.0%	27.3%	6.9%	240.1%	2.66	2.47	0.18
Expressway and Rapid Transit Authority	3.2%	16.4%	48.4%	407.5%	0.71	0.36	0.34
Petroleum Authority of Thailand	13.4%	30.7%	7.9%	129.5%	20.24	18.64	1.60
Mass Communications Organization of Th	25.5%	26.7%	49.7%	4.8%	0.76	0.38	0.38
Electricity Generating Authority of Th	6.7%	19.0%	20.4%	185.1%	1.64	1.31	0.34
TOTAL 15 PUBLIC UTILITIES	9.9%	26.6%	18.3%	168.7%	1.38	1.13	0.25

Public Utilities - Financial Indicators for 1992

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Telephone Organization of Thailand	14.1%	35.6%	49.4%	153.2%	1.12	0.57	0.55
State Railway of Thailand	-4.8%	-17.8%	-20.1%	273.4%	0.23	0.28	-0.05
Port Authority of Thailand	20.0%	28.2%	46.6%	41.0%	0.79	0.42	0.37
Express Transportation Organization	-37.0%	NA	-10.8%	NA	0.37	0.41	-0.04
Communications Authority of Thailand	26.8%	30.6%	33.1%	14.5%	0.74	0.49	0.24
Bangkok Mass Transit Authority of Thai	0.7%	NA	1.0%	NA	0.27	0.26	0.00
Airports Authority of Thailand	19.1%	35.1%	57.6%	83.7%	1.49	0.63	0.86
Provincial Waterworks Authority	2.5%	3.1%	8.4%	24.4%	0.42	0.39	0.04
Provincial Electricity Authority	11.0%	30.6%	18.1%	179.2%	1.42	1.16	0.26
Metropolitan Waterworks Authority	7.0%	15.9%	27.3%	125.9%	1.02	0.74	0.28
Metropolitan Electricity Authority	6.4%	20.8%	5.8%	225.1%	2.88	2.71	0.17
Expressway and Rapid Transit Authority	3.3%	15.8%	52.8%	375.1%	0.89	0.42	0.47
Petroleum Authority of Thailand	13.7%	29.4%	9.3%	113.6%	20.86	18.91	1.95
Mass Communications Organization of Th	26.1%	27.6%	52.4%	5.7%	0.88	0.42	0.46
Electricity Generating Authority of Th	6.4%	18.0%	19.7%	181.2%	1.79	1.44	0.35
TOTAL 15 PUBLIC UTILITIES	9.3%	24.1%	18.2%	157.9%	1.44	1.18	0.26

Public Utilities - Financial Indicators for 1993

	ROA (%)	ROE (%)	ROS (%)	Debt to Equity	Revenue/ Employee	Cost/ Employee	Profit/ Employee
Telephone Organization of Thailand	9.1%	20.1%	53.2%	119.6%	0.79	0.37	0.42
State Railway of Thailand	-3.3%	-11.3%	-19.8%	239.4%	0.22	0.27	-0.04
Port Authority of Thailand	18.3%	25.2%	44.4%	37.6%	0.82	0.46	0.37
Express Transportation Organization	-27.1%	NA	-6.9%	NA	0.59	0.63	-0.04
Communications Authority of Thailand	18.7%	21.6%	27.9%	15.4%	0.62	0.45	0.17
Bangkok Mass Transit Authority of Thai	-7.2%	NA	-9.3%	NA	0.27	0.30	-0.03
Airports Authority of Thailand	18.1%	33.8%	54.2%	86.2%	2.10	0.96	1.14
Provincial Waterworks Authority	0.8%	1.1%	2.8%	36.2%	0.47	0.46	0.01
Provincial Electricity Authority	11.2%	22.2%	19.7%	97.3%	1.49	1.19	0.29
Metropolitan Waterworks Authority	8.7%	18.6%	36.0%	113.9%	1.14	0.73	0.41
Metropolitan Electricity Authority	7.2%	21.2%	7.2%	196.2%	2.90	2.69	0.21
Expressway and Rapid Transit Authority	0.7%	4.8%	34.3%	551.8%	0.52	0.34	0.18
Petroleum Authority of Thailand	11.6%	25.9%	8.3%	123.7%	22.96	21.05	1.90
Mass Communications Organization of Th	21.9%	22.4%	60.6%	2.2%	1.05	0.41	0.64
Electricity Generating Authority of Th	4.4%	11.4%	16.6%	162.0%	1.62	1.35	0.27
TOTAL 15 PUBLIC UTILITIES	6.9%	17.1%	16.2%	147.1%	1.48	1.24	0.24
TOTAL 15 PUBLIC UTILITIES 89	8.1%	25.3%	15.6%	213.6%	0.93	0.79	0.15
TOTAL 15 PUBLIC UTILITIES 90	9.2%	27.4%	17.2%	199.0%	1.09	0.90	0.19
TOTAL 15 PUBLIC UTILITIES 91	9.9%	26.6%	18.3%	168.7%	1.38	1.13	0.25
TOTAL 15 PUBLIC UTILITIES 92	9.3%	24.1%	18.2%	157.9%	1.44	1.18	0.26
TOTAL 15 PUBLIC UTILITIES 93	6.9%	17.1%	16.2%	147.1%	1.48	1.24	0.24

Thailand

Private Sector Participation and Improved Efficiency of State Enterprises

Financial Results and Indicators for the 15 Public Utilities SEs (Million Baht) (In Alphabetic Order of SEs)

Consolidated Results and Indicators for 15 Public Utilities

CONSOLIDATED 15 SEs	1986	1987	1988	1989	1990	1991	1992	1993
Assets	274714	296635	325934	366839	433995	512390	580405	695396
Liabilities	208711	222796	236777	249874	288853	321679	355327	413936
Equity	66003	73839	89157	116965	145142	190711	225077	281459
Revenues	135431	146813	165257	189826	230255	277280	297492	296943
Costs	125099	131920	146005	160202	190539	226477	243350	248939
Profits before Tax	10332	14893	19252	29624	39716	50803	54141	48003
Capital Expenditures	37365	23379	28364	50670	64522	111861	116112	243216
Remittance to Government	3363	4016	4448	6580	9335	11196	17295	19538
Subsidy	78	1249	2066	3013	3633	5558	6007	11180
Number of Employees	182573	180386	179780	203355	211773	200803	205924	200242
% Return on Assets (Profit/Total Assets	3.8%	5.0%	5.9%	8.1%	9.2%	9.9%	9.3%	6.9%
% Return on Equity (Profit/Equity)	15.7%	20.2%	21.6%	25.3%	27.4%	26.6%	24.1%	17.1%
% Return on Sales (Net Income/Sales)	7.6%	10.1%	11.6%	15.6%	17.2%	18.3%	18.2%	16.2%
Debt Equity	316.2%	301.7%	265.6%	213.6%	199.0%	168.7%	157.9%	147.1%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	1.01	1.08	1.18	1.13	1.24	1.50	1.50	1.48
Cost per Employee (Million Baht)	0.93	0.97	1.04	0.96	1.03	1.22	1.23	1.24
Profit per Employee (Million Baht)	0.08	0.11	0.14	0.18	0.21	0.27	0.27	0.24
Operating Ratio (Cost/Revenues)	92.4%	89.9%	88.4%	84.4%	82.8%	81.7%	81.8%	83.8%
% Remittances to Government	32.6%	27.0%	23.1%	22.2%	23.5%	22.0%	31.9%	40.7%
Addit.Remittances if Minimum is 30%	1434	1696	1857	3762	4361	6019	3106	2171
Total Remit, if Minimum is 30%	4797	5711	6305	10342	13695	17215	20401	21709
% Remittance on Capex	13%	24%	22%	20%	21%	15%	18%	9%

Airports Authority Of Thailand (AAT)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	5287	6981	8371	10173	11551	12958	14071	14824
Liabilities	2609	4375	5450	6036	5867	6558	6411	6864
Equity	2678	2606	2922	4137	5684	6400	7660	7960
Revenues	1389	1672	2394	3237	4008	4500	4670	4962
Costs	558	676	1013	1233	1467	1719	1981	2274
Profits before Tax	832	996	1381	2004	2541	2780	2690	2688
Capital Expenditures	1263	1412	789	1296	1069	4035	5910	5545
Remittance to Government	190	300	400	690	1002	1300	1391	1345
Subsidy	0	0	0	0	0	0	0	0
Number of Employees	2255	2209	2394	2505	2650	2875	3128	2365
% Return on Assets (Profit/Total Assets	15.7%	14.3%	16.5%	19.7%	22.0%	21.5%	19.1%	18.1%
% Return on Equity (Profit/Equity)	31.1%	38.2%	47.3%	48.4%	44.7%	43.4%	35.1%	33.8%
% Return on Sales (Net Income/Sales)	59.9%	59.6%	57.7%	61.9%	63.4%	61.8%	57.6%	54.2%
Debt Equity	97.4%	167.9%	186.5%	145.9%	103.2%	102.5%	83.7%	86.2%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.84	1.00	1.28	1.57	1.73	1.70	1.55	2.10
Cost per Employee (Million Baht)	0.34	0.41	0.54	0.60	0.63	0.65	0.66	0.96
Profit per Employee (Million Baht)	0.50	0.60	0.74	0.97	1.10	1.05	0.89	1.14
Operating Ratio (Cost/Revenues)	40.1%	40.4%	42.3%	38.1%	36.6%	38.2%	42.4%	45.8%
% Remittances to Government	22.8%	30.1%	29.0%	34.4%	39.4%	46.8%	51.7%	50.0%
Incr. in Remittance if minimum is 30%	59	0	14	0	0	0	0	0

1/ Source: Consolidated from annual reports prepared by the Comptroller's Department, Ministry of Finance

Bangkok Mass Transit Authority Of Thailand (BMTA)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	596	646	696	789	869	6709	9410	8210
Liabilities	7132	8093	8893	9849	10844	11770	13205	11990
Equity	-6536	-7446	-8197	-9060	-9976	-5061	-3795	-3780
Revenues	3143	3217	3398	3840	4066	4828	6400	6390
Costs	4269	4130	4165	4723	5040	5087	6336	6981
Profits before Tax	-1126	-913	-767	-884	-974	-258	64	-591
Capital Expenditures	148	105	26	46	16	10	6311	4133
Remittance to Government	0	0	0	0	0	0	0	0
Subsidy	0	0	0	0	0	0	100	199
Number of Employees	22255	19892	19738	22703	22973	22469	23941	23506
% Return on Assets (Profit/Total Assets	-189.0%	-141.2%	-110.2%	-112.0%	-112.2%	-3.8%	0.7%	-7.2%
% Return on Equity (Profit/Equity)	NA	NA	NA	NA	NA	NA	NA	NA
% Return on Sales (Net Income/Sales)	-35.8%	-28.4%	-22.6%	-23.0%	-24.0%	-5.3%	1.0%	-9.2%
Debt/Equity	NA	NA	NA	NA	NA	NA	NA	NA
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.19	0.21	0.22	0.21	0.20	0.23	0.28	0.27
Cost per Employee (Million Baht)	0.26	0.28	0.27	0.25	0.25	0.25	0.28	0.30
Profit per Employee (Million Baht)	-0.07	-0.06	-0.05	-0.05	-0.05	-0.01	0.00	-0.03
Operating Ratio (Cost/Revenues)	135.8%	128.4%	122.6%	123.0%	124.0%	105.3%	99.0%	109.2%
% Remittances to Government	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Incr. in Remittance if minimum is 30%	0	0	0	0	0	0	19	0

Communications Authority Of Thailand (CAT)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	6332	7287	10011	12558	15602	19109	22413	22607
Liabilities	1392	953	1801	1910	2342	2500	2842	3025
Equity	4940	6334	8210	10648	13259	16609	19571	19582
Revenues	5068	6099	8367	10568	13295	16272	18097	15192
Costs	3413	4053	5654	6909	8661	10229	12102	10957
Profits before Tax	1655	2046	2713	3659	4634	6043	5996	4235
Capital Expenditures	3301	971	888	1801	1381	3751	9585	11446
Remittance to Government	500	744	720	1086	1830	2320	3030	3298
Subsidy	0	0	8	8	0	0	0	0
Number of Employees	21414	20873	21423	21979	22833	23604	24589	24,456
% Return on Asset (%)	26.1%	28.1%	27.1%	29.1%	29.7%	31.6%	26.8%	18.7%
% Return on Equit (%)	33.5%	32.3%	33.0%	34.4%	34.9%	36.4%	30.6%	21.6%
% Return on Sales (%)	32.7%	33.5%	32.4%	34.6%	34.9%	37.1%	33.1%	27.9%
Debt Equity	28.2%	15.0%	21.9%	17.9%	17.7%	15.0%	14.5%	15.4%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.32	0.39	0.50	0.58	0.67	0.75	0.77	0.62
Cost per Employee (Million Baht)	0.22	0.26	0.34	0.38	0.43	0.47	0.51	0.45
Profit per Employee (Million Baht)	0.11	0.13	0.16	0.20	0.23	0.28	0.25	0.17
Operating Ratio (Cost/Revenues)	67.3%	66.5%	67.6%	65.4%	65.1%	62.9%	66.9%	72.1%
% Remittances to Government	30.2%	36.4%	26.5%	29.7%	39.5%	38.4%	50.5%	77.9%
Incr. in Remittance if minimum is 30%	0	0	94	12	0	0	0	0

Electricity Generation Authority of Thailand (EGAT)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	97645	103897	110378	122466	148178	175309	193060	212798
Liabilities	75837	77158	77485	79051	96995	113824	124409	131591
Equity	21808	26739	32892	43415	51183	61485	68650	81207
Revenues	30409	33717	37474	42650	50410	57235	62702	35772
Costs	27064	26890	30406	32226	38024	45532	50363	46492
Profits before Tax	3344	6826	7069	10424	12386	11704	12339	9279
Capital Expenditures	8530	5634	7000	13540	28800	35356	23238	54167
Remittance to Government	470	600	956	1061	1564	1000	2614	2468
Subsidy	0	72	64	186	256	0	491	202
Number of Employees	32264	31176	31342	31732	33070	34803	35065	34505
% Return on Assets (Profit/Total Assets	3.4%	6.6%	6.4%	8.5%	8.4%	6.7%	6.4%	4.4%
% Return on Equity (Profit/Equity)	15.3%	25.5%	21.5%	24.0%	24.2%	19.0%	18.0%	11.4%
% Return on Sales (Net Income/Sales)	11.0%	20.2%	18.9%	24.4%	24.6%	20.4%	19.7%	16.6%
Debt Equity	347.7%	288.6%	235.6%	182.1%	189.5%	185.1%	181.2%	162.0%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	1.28	1.44	1.53	1.63	1.75	1.78	1.86	1.62
Cost per Employee (Million Baht)	1.14	1.14	1.24	1.23	1.32	1.42	1.49	1.35
Profit per Employee (Million Baht)	0.14	0.29	0.29	0.40	0.43	0.36	0.37	0.27
Operating Ratio (Cost/Revenues)	89.0%	79.8%	81.1%	75.6%	75.4%	79.6%	80.3%	83.4%
% Remittances to Government	14.1%	8.8%	13.5%	10.2%	12.6%	8.5%	21.2%	26.6%
Incr. in Remittance if minimum is 30%	533	1448	1165	2066	2152	2511	1088	316

Express and Rapid Transit Authority (ERTA)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	7938	9900	10948	13077	15145	23847	30346	82259
Liabilities	5001	6700	7535	9328	11006	19148	23958	69638
Equity	2937	3200	3413	3749	4139	4699	6387	12621
Revenues	618	707	945	1111	1251	1598	1911	1755
Costs	357	410	704	745	717	825	902	1152
Profits before Tax	262	298	240	366	534	773	1009	603
Capital Expenditures	2068	1558	800	2625	2407	6478	2693	58503
Remittance to Government	40	65	90	84	128	187	271	354
Subsidy	0	43	67	67	314	1300	1349	5851
Number of Employees	933	907	1297	1535	1582	2264	2145	3359
% Return on Assets (Profit/Total Assets	3.3%	3.0%	2.2%	2.8%	3.5%	3.2%	3.3%	0.7%
% Return on Equity (Profit/Equity)	8.9%	9.3%	7.0%	9.8%	12.9%	16.4%	15.8%	4.8%
% Return on Sales (Net Income/Sales)	42.3%	42.1%	25.4%	33.0%	42.7%	48.4%	52.8%	34.4%
Debt Equity	170.2%	209.4%	220.8%	248.8%	265.9%	407.5%	375.1%	551.8%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.90	0.78	0.73	0.72	0.79	0.71	0.89	0.52
Cost per Employee (Million Baht)	0.52	0.45	0.54	0.49	0.45	0.36	0.42	0.34
Profit per Employee (Million Baht)	0.38	0.33	0.19	0.24	0.34	0.34	0.47	0.18
Operating Ratio (Cost/Revenues)	57.7%	57.9%	74.6%	67.0%	57.3%	51.6%	47.2%	65.6%
% Remittances to Government	15.3%	21.8%	37.4%	22.9%	24.0%	24.2%	26.9%	58.7%
Incr. in Remittance if minimum is 30%	38	24	0	26	32	45	32	0

Express Transportation Organization (ETO)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	336	367	382	471	480	458	448	445
Liabilities	721	750	734	763	699	755	911	1002
Equity	-385	-384	-352	-291	-219	-297	-463	-558
Revenues	1005	1056	1006	1186	1427	1609	1541	1751
Costs	1078	1054	974	1143	1355	1650	1708	1871
Profits before Tax	-73	2	32	44	72	-42	-166	-121
Capital Expenditures	4	1	1	53	146	152	0	45
Remittance to Government	0	0	0	0	0	7	1	0
Subsidy	0	0	0	0	0	0	0	0
Number of Employees	3389	5143	3121	2858	3901	4688	4137	2973
% Return on Assets (Profit/Total Assets	-21.6%	0.5%	8.3%	9.3%	15.0%	-9.1%	-37.1%	-27.2%
% Return on Equity (Profit/Equity)	NA	NA	NA	NA	NA	NA	NA	NA
% Return on Sales (Net Income/Sales)	-7.2%	0.2%	3.2%	3.7%	5.0%	-2.6%	-10.8%	-6.9%
Debt Equity	NA	NA	NA	NA	NA	NA	NA	NA
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.40	0.27	0.41	0.50	0.42	0.37	0.39	0.59
Cost per Employee (Million Baht)	0.43	0.27	0.40	0.49	0.40	0.38	0.43	0.63
Profit per Employee (Million Baht)	-0.03	0.00	0.01	0.02	0.02	-0.01	-0.04	-0.04
Operating Ratio (Cost/Revenues)	107.2%	99.8%	96.8%	96.3%	95.0%	102.6%	110.8%	1.07
% Remittances to Government	0.0%	0.0%	0.0%	0.0%	0.0%	-16.8%	-0.6%	0.0%
Incr. in Remittance if minimum is 30%	0	1	10	13	22	0	0	0

Mass Communications Organization Of Thailand (MCTOT)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	543	695	833	955	1123	1348	1677	2846
Liabilities	35	55	44	46	59	62	91	61
Equity	508	640	788	909	1064	1286	1586	2785
Revenues	325	397	469	500	559	691	835	1029
Costs	168	197	225	261	300	348	397	406
Profits before Tax	157	200	245	239	259	343	437	623
Capital Expenditures	64	70	81	301	85	478	507	997
Remittance to Government	13	55	80	98	96	104	137	175
Subsidy	0	0	0	0	0	0	0	0
Number of Employees	590	636	669	798	857	911	949	980
% Return on Assets (Profit/Total Assets	28.9%	28.8%	29.4%	25.0%	23.1%	25.5%	26.1%	21.9%
% Return on Equity (Profit/Equity)	30.9%	31.3%	31.0%	26.3%	24.4%	26.7%	27.6%	22.4%
% Return on Sales (Net Income/Sales)	48.4%	50.4%	52.1%	47.8%	46.4%	49.7%	52.3%	60.5%
Debt Equity	6.9%	8.6%	5.6%	5.0%	5.5%	4.8%	5.7%	2.2%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.75	0.83	0.90	0.76	0.75	0.82	0.92	1.05
Cost per Employee (Million Baht)	0.39	0.41	0.43	0.40	0.40	0.41	0.44	0.41
Profit per Employee (Million Baht)	0.36	0.42	0.47	0.36	0.35	0.41	0.48	0.64
Operating Ratio (Cost/Revenues)	51.6%	49.6%	47.9%	52.2%	53.6%	50.3%	47.5%	39.5%
% Remittances to Government	8.3%	27.4%	32.8%	41.0%	37.0%	30.3%	31.4%	28.1%
Incr. in Remittance if minimum is 30%	34	5	0	0	0	0	0	12

Metropolitan Electricity Authority (MEA)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	15777	16972	18811	21135	25451	31560	35874	39989
Liabilities	11913	12831	14162	15560	18571	22280	24840	26488
Equity	3864	4140	4650	5575	6881	9280	11034	13501
Revenues	20305	22562	24735	27596	32419	36749	39622	39555
Costs	20001	22115	24123	26727	30775	34214	37327	36689
Profits before Tax	304	447	611	870	1644	2535	2295	2867
Capital Expenditures	1149	858	1188	2105	3931	4503	7275	10973
Remittance to Government	450	157	257	756	253	247	381	540
Subsidy	0	0	0	4	0	0	0	0
Number of Employees	10567	10865	11014	11649	12858	13824	13760	13625
% Return on Asset (%)	1.9%	2.6%	3.3%	4.1%	6.5%	8.0%	6.4%	7.2%
% Return on Equit (%)	7.9%	10.8%	13.2%	15.6%	23.9%	27.3%	20.8%	21.2%
% Return on Sales (%)	1.5%	2.0%	2.5%	3.2%	5.1%	6.9%	5.8%	7.2%
Debt Equity	308.3%	309.9%	304.6%	279.1%	269.9%	240.1%	225.1%	196.2%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	2.61	2.76	2.87	2.87	2.89	2.88	2.99	2.90
Cost per Employee (Million Baht)	2.57	2.70	2.80	2.78	2.74	2.68	2.82	2.69
Profit per Employee (Million Baht)	0.04	0.05	0.07	0.09	0.15	0.20	0.17	0.21
Operating Ratio (Cost/Revenues)	98.5%	98.0%	97.5%	96.8%	94.9%	93.1%	94.2%	92.8%
% Remittances to Government	148.1%	35.1%	42.0%	86.9%	15.4%	9.7%	16.6%	18.8%
Incr. in Remittance if minimum is 30%	0	0	0	0	240	514	308	320

Metropolitan Waterworks Authority (MWA)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	15135	16455	18459	19399	19846	21925	23748	26668
Liabilities	12051	12790	14036	13885	12713	12946	13236	14200
Equity	3084	3665	4423	5514	7133	8978	10513	12468
Revenues	3624	3711	4057	4532	5412	6128	6109	6436
Costs	2986	3147	3451	3581	3976	4286	4439	4118
Profits before Tax	638	564	606	950	1436	1842	1670	2319
Capital Expenditures	2566	1912	3807	4718	2371	3983	3504	6294
Remittance to Government	30	77	104	91	143	215	276	251
Subsidy	0	89	266	303	384	119	98	41
Number of Employees	5952	5833	5817	5852	5748	5865	6011	5638
% Return on Assets (Profit/Total Assets	4.2%	3.4%	3.3%	4.9%	7.2%	8.4%	7.0%	8.7%
% Return on Equity (Profit/Equity)	20.7%	15.4%	13.7%	17.2%	20.1%	20.5%	15.9%	18.6%
% Return on Sales (Net Income/Sales)	17.6%	15.2%	14.9%	21.0%	26.5%	30.1%	27.3%	36.0%
Debt Equity	390.7%	348.9%	317.3%	251.8%	178.2%	144.2%	125.9%	113.9%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.83	0.84	0.89	0.94	1.08	1.13	1.06	1.14
Cost per Employee (Million Baht)	0.68	0.72	0.76	0.74	0.79	0.79	0.77	0.73
Profit per Employee (Million Baht)	0.15	0.13	0.13	0.20	0.29	0.34	0.29	0.41
Operating Ratio (Cost/Revenues)	82.4%	84.8%	85.1%	79.0%	73.5%	69.9%	72.7%	64.0%
% Remittances to Government	4.7%	13.7%	17.2%	9.6%	9.9%	11.7%	16.6%	10.8%
Incr. in Remittance if minimum is 30%	161	92	78	194	288	337	225	445

Port Authority Of Thailand (PAT)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	3267	3713	4850	6712	8773	11465	12159	13614
Liabilities	465	558	785	1205	1952	3021	3537	3719
Equity	2802	3155	4065	5507	6821	8443	8622	9895
Revenues	1556	1774	2712	3745	4580	5248	5218	5603
Costs	1184	1228	1476	1568	1999	2219	2788	3113
Profits before Tax	372	546	1236	2177	2580	3028	2429	2490
Capital Expenditures	1022	272	459	1408	1719	4119	926	6037
Remittance to Government	250	230	328	742	1307	1548	1817	1458
Subsidy	0	0	0	270	75	400	207	125
Number of Employees	6963	5907	5974	5841	6184	6688	6642	6796
% Return on Assets (Profit/Total Assets	11.4%	14.7%	25.5%	32.4%	29.4%	26.4%	20.0%	18.3%
% Return on Equity (Profit/Equity)	13.3%	17.3%	30.4%	39.5%	37.8%	35.9%	28.2%	25.2%
% Return on Sales (Net Income/Sales)	23.9%	30.8%	45.6%	58.1%	56.3%	57.7%	46.6%	44.4%
Debt Equity	16.6%	17.7%	19.3%	21.9%	28.6%	35.8%	41.0%	37.6%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.30	0.40	0.58	0.78	0.85	0.85	0.82	0.82
Cost per Employee (Million Baht)	0.23	0.28	0.32	0.33	0.37	0.36	0.44	0.46
Profit per Employee (Million Baht)	0.07	0.12	0.26	0.45	0.48	0.49	0.38	0.37
Operating Ratio (Cost/Revenues)	76.1%	69.2%	54.4%	41.9%	43.7%	42.3%	53.4%	55.6%
% Remittances to Government	67.3%	42.1%	26.5%	34.1%	50.7%	51.1%	74.8%	58.6%
Incr. in Remittance if minimum is 30%	0	0	43	0	0	0	0	0

Provincial Electricity Authority (PEA)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	30668	35196	39493	43416	51215	58395	69904	80315
Liabilities	26876	30916	33772	35249	39036	40578	44867	39607
Equity	3792	4279	5721	8167	12179	17818	25037	40708
Revenues	16464	18807	21602	25591	31034	37149	42212	45837
Costs	16227	18405	20232	23128	27185	31342	34550	36807
Profits before Tax	238	402	1370	2463	3849	5807	7661	9030
Capital Expenditures	2969	2688	2638	3856	6233	6792	9016	16987
Remittance to Government	30	45	60	206	370	578	871	1670
Subsidy	0	13	327	332	550	1292	216	393
Number of Employees	23120	24397	25017	43738	45213	28244	29733	30847
% Return on Assets (Profit/Total Assets	0.8%	1.1%	3.5%	5.7%	7.5%	9.9%	11.0%	11.2%
% Return on Equity (Profit/Equity)	6.3%	9.4%	23.9%	30.2%	31.6%	32.6%	30.6%	22.2%
% Return on Sales (Net Income/Sales)	1.4%	2.1%	6.3%	9.6%	12.4%	15.6%	18.1%	19.7%
Debt Equity	708.7%	722.5%	590.4%	431.6%	320.5%	227.7%	179.2%	97.3%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.97	1.02	1.10	0.71	0.79	1.42	1.48	1.49
Cost per Employee (Million Baht)	0.95	1.00	1.03	0.64	0.69	1.20	1.21	1.19
Profit per Employee (Million Baht)	0.01	0.02	0.07	0.07	0.10	0.22	0.27	0.29
Operating Ratio (Cost/Revenues)	98.6%	97.9%	93.7%	90.4%	87.6%	84.4%	81.8%	80.3%
% Remittances to Government	12.6%	11.2%	4.4%	8.3%	9.6%	10.0%	11.4%	18.5%
Incr. in Remittance if minimum is 30%	41	76	351	533	785	1164	1427	1039

Petroleum Authority Of Thailand (PTT)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	34447	35346	36124	37649	44349	45604	51958	63969
Liabilities	24244	24314	23904	24399	28432	25731	27635	35370
Equity	10203	11032	12220	13250	15917	19873	24323	28599
Revenues	38578	38561	41357	45744	58047	77190	76400	89527
Costs	36934	36971	39379	43996	54968	71090	69257	82114
Profits before Tax	1644	1589	1978	1747	3080	6100	7143	7412
Capital Expenditures	2443	1252	2022	4154	3624	3792	12933	18520
Remittance to Government	1020	576	557	726	757	1105	2135	2212
Subsidy	0	0	0	0	0	0	0	0
Number of Employees	3792	3730	3739	3713	3728	3813	3662	3900
% Return on Assets (Profit/Total Assets	4.8%	4.5%	5.5%	4.6%	6.9%	13.4%	13.7%	11.6%
% Return on Equity (Profit/Equity)	16.1%	14.4%	16.2%	13.2%	19.3%	30.7%	29.4%	25.9%
% Return on Sales (Net Income/Sales)	4.3%	4.1%	4.8%	3.8%	5.3%	7.9%	9.3%	8.3%
Debt Equity	237.6%	220.4%	195.6%	184.1%	178.6%	129.5%	113.6%	123.7%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	13.84	13.72	14.14	14.95	17.83	21.93	21.70	22.96
Cost per Employee (Million Baht)	13.25	13.15	13.47	14.38	16.88	20.19	19.67	21.05
Profit per Employee (Million Baht)	0.59	0.57	0.68	0.57	0.95	1.73	2.03	1.90
Operating Ratio (Cost/Revenues)	95.7%	95.9%	95.2%	96.2%	94.7%	92.1%	90.7%	91.7%
% Remittances to Government	62.1%	36.2%	28.2%	41.5%	24.6%	18.1%	29.9%	29.8%
Incr. in Remittance if minimum is 30%	0	0	36	0	167	725	8	12

Provincial Waterworks Authority (PWA)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	5745	6046	6354	6902	7491	8237	8656	11440
Liabilities	1906	1962	1907	1814	1837	1857	1696	3043
Equity	3839	4084	4447	5088	5655	6380	6960	8397
Revenues	1510	1610	1749	1750	1982	2238	2587	3381
Costs	1152	1240	1389	1382	1553	1765	2368	3286
Profits before Tax	358	371	360	368	429	473	219	94
Capital Expenditures	658	1292	604	1139	1224	2460	6043	8312
Remittance to Government	0	61	144	222	147	172	189	0
Subsidy	0	128	324	412	602	800	858	1385
Number of Employees	5250	5303	5216	5247	5680	5950	6091	7137
% Return on Assets (Profit/Total Assets	6.2%	6.1%	5.7%	5.3%	5.7%	5.7%	2.5%	0.8%
% Return on Equity (Profit/Equity)	9.3%	9.1%	8.1%	7.2%	7.6%	7.4%	3.1%	1.1%
% Return on Sales (Net Income/Sales)	23.7%	23.0%	20.6%	21.0%	21.6%	21.1%	8.5%	2.8%
Debt Equity	49.7%	48.1%	42.9%	35.7%	32.5%	29.1%	24.4%	36.2%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.39	0.40	0.43	0.40	0.40	0.41	0.44	0.47
Cost per Employee (Million Baht)	0.30	0.31	0.34	0.32	0.31	0.32	0.40	0.46
Profit per Employee (Million Baht)	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.01
Operating Ratio (Cost/Revenues)	76.3%	77.0%	79.4%	79.0%	78.4%	78.9%	91.5%	97.2%
% Remittances to Government	0.0%	16.5%	40.0%	60.4%	34.4%	36.3%	86.3%	0.0%
Incr. in Remittance if minimum is 30%	107	50	0	0	0	0	0	28

State Railway Of Thailand (SRT)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	18302	18599	20066	20762	21449	22666	24709	27845
Liabilities	11614	11974	13171	13287	14346	15380	18091	19641
Equity	6689	6625	6896	7475	7103	7286	6618	8204
Revenues	3332	3370	3701	4036	4545	5489	5852	4705
Costs	4367	4355	4251	4628	5340	6268	7031	5634
Profits before Tax	-1035	-986	-550	-592	-795	-778	-1178	-929
Capital Expenditures	1447	737	1261	1817	1542	8198	2103	10943
Remittance to Government	0	0	0	0	0	0	0	0
Subsidy	78	904	1010	1431	1452	1646	2689	2984
Number of Employees	26329	25769	25063	25019	25769	25864	25284	21004
% Return on Assets (Profit/Total Assets	-5.7%	-5.3%	-2.7%	-2.9%	-3.7%	-3.4%	-4.8%	-3.3%
% Return on Equity (Profit/Equity)	-15.5%	-14.9%	-8.0%	-7.9%	-11.2%	-10.7%	-17.8%	-11.3%
% Return on Sales (Net Income/Sales)	-31.1%	-29.3%	-14.9%	-14.7%	-17.5%	-14.2%	-20.1%	-19.7%
Debt Equity	173.6%	180.7%	191.0%	177.8%	202.0%	211.1%	273.4%	239.4%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.17	0.17	0.19	0.20	0.20	0.23	0.24	0.22
Cost per Employee (Million Baht)	0.23	0.22	0.22	0.22	0.24	0.26	0.29	0.27
Profit per Employee (Million Baht)	-0.05	-0.05	-0.03	-0.03	-0.04	-0.03	-0.05	-0.04
Operating Ratio (Cost/Revenues)	131.1%	129.3%	114.9%	114.7%	117.5%	114.2%	120.1%	119.7%
% Remittances to Government	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Incr. in Remittance if minimum is 30%	0	0	0	0	0	0	0	0

Telephone Organization Of Thailand (TOT)

	1986	1987	1988	1989	1990	1991	1992	1993
Assets	32696	34536	40157	50373	62472	72800	81973	87567
Liabilities	26916	29367	33099	37491	44154	45268	49598	47697
Equity	5781	5169	7059	12882	18318	27532	32375	39870
Revenues	8105	9553	11291	13739	17221	20355	23336	15049
Costs	5342	7049	8563	7951	9180	9902	11802	7045
Profits before Tax	2763	2504	2728	5788	8041	10453	11534	8004
Capital Expenditures	9734	4619	6801	11812	9976	27754	26068	30313
Remittance to Government	370	1105	751	819	1737	2413	4181	5767
Subsidy	0	0	0	0	0	0	0	0
Number of Employees	17500	17746	17956	18186	18727	18941	20787	19151
% Return on Asset (%)	8.5%	7.3%	6.8%	11.5%	12.9%	14.4%	14.1%	9.1%
% Return on Equit (%)	47.8%	48.4%	38.6%	44.9%	43.9%	38.0%	35.6%	20.1%
% Return on Sales (%)	34.1%	26.2%	24.2%	42.1%	46.7%	51.4%	49.4%	53.2%
Debt Equity	465.6%	568.1%	468.9%	291.0%	241.0%	164.4%	153.2%	119.6%
EFFICIENCY INDICATORS 1993 Prices								
Revenue per Employee (Million Baht)	0.63	0.71	0.80	0.92	1.05	1.16	1.17	0.79
Cost per Employee (Million Baht)	0.42	0.53	0.61	0.53	0.56	0.57	0.59	0.37
Profit per Employee (Million Baht)	0.21	0.19	0.19	0.39	0.49	0.60	0.58	0.42
Operating Ratio (Cost/Revenues)	65.9%	73.8%	75.8%	57.9%	53.3%	48.6%	50.6%	46.8%
% Remittances to Government	13.4%	44.1%	27.5%	14.1%	21.6%	23.1%	36.3%	72.1%
Incr. in Remittance if minimum is 30%	459	0	67	918	675	723	0	0

Thailand

Private Sector Participation and Improved Efficiency of SEs

Pension Systems

Executive Summary

1. **The Pension System of the State Enterprises**. The main objective of the pension system study is to review the pension systems of the SEs to identify potential problems when their pension systems are converted to the system used by the private sector, i.e., the Provident Fund (PF). The present pension arrangements for the 15 public utility state enterprises (SEs) are defined benefit (DB) pension plans providing lump sum benefits based on one month's salary for each year of service completed. Each SE is required to contribute 10% of payroll. These contributions are held as deposits in bank accounts. Pension assets are legally owned by the SEs. The Ministry of Finance (MOF) is considering converting the pension plans into PFs. Existing employees will be given the choice of joining a new PF or of remaining in the current pension plan. The proposals are consistent with PFs already set up by several SEs which have been corporatized and one SE which was privatized. Existing benefit entitlements can be met, as existing employees are given an option to remain in the current pension plans.

2. In principle, the proposed plan benefit design on conversion is reasonable. However, the mission found that there are several shortcomings in the operational and funding aspects of the current and proposed retirement systems of the SEs. The amount of pension liability of each SE is unknown. It is clear that there has been no actuarial assessment of the pension liability of the SEs. There is also a serious mismatch of assets and liabilities.

3. We recommend that the following measures be taken:

- Actuarial valuation be carried out for each SE to determine the pension liability, compared with available assets, and appropriate level of contribution. The financial status of the SEs' plans disclosed by the valuations will enable the MOF to make an informed decision on whether to retain the existing system or to proceed with the proposed conversion.

- Diversified investment portfolios be allowed for the pension plan assets, including a significant proportion of equity type investments, to be consistent with its long term obligations.

- Assets of pension plans should be independent of SE's finances. This will ensure equitable treatment of PF assets which are wholly secured independently of the employer and the pension plan assets. The concept of "juristic person" can be applied to the pension plans; beneficial trusts analogous to those used in the mutual fund industry are also suitable.

4. Assuming that the MOF proposed arrangements are implemented, the following measures are also recommended:

- Detailed projections of expected benefits, using various financial scenarios and membership profiles, should be carried out to determine the appropriate level of contributions for PF members. Projections should be made for employees who remain in the pension plans, for those joining the PF and for new entrants.

- Consideration should be given to a period of consultation with employee representatives before pension changes are implemented. In due course, an employee communications exercise should be carried out to inform and educate employees on the changes to their pension benefits.

5. Apart from the need to perform actuarial valuations, investment objectives and strategies have to be established. These issues should be addressed in the near future. Implementation considerations include establishing appropriate asset allocation, selecting and appointing fund managers, instituting regular review and monitoring of investment performance of fund managers. A "controlling body" with responsibility to institute objectives and implementation is also required. An outline of a working framework of these issues has already been suggested in an earlier World Bank report of 10 February 1993. That report sets out the findings and recommendations of a World Bank mission to review the civil service pension plan. The comments set out in Section V of that report on implementation of investment issues are equally applicable to the SEs' pension plans.

6. **Provident Funds Industry.** This section reviews the pension system for the **private sector** which will be applicable to the SEs upon their conversion. The private sector pension system is governed by the Provident Fund Act of 1987. The main objectives of the act are to promote private sector provision of retirement benefits and to mobilize employee savings.

7. There are currently 708 PFs covering about 400,000 employees, or about 1% of active work force in Thailand. Total assets managed by 16 licensed managers amounted to Baht 21 billion as of September 1993. **Total PF assets have increased about 37 fold since 1984. However, the total size is modest compared to Thailand stock market capitalization of $90 billion and the $6 billion mutual funds industry.** There is also a lack of awareness among employees and employers of PF issues and of the Provident Fund Act which regulates the operation of private sector PFs. It is clear that there has been little penetration of PFs in the work force. There is ample opportunity and potential for further growth in the retirement scheme industry to meet the objectives of mobilizing the current savings gap, and to assist in the development of capital markets.

8. The mission recommends that the following measures be taken to increase the attractiveness and coverage of PFs:

- A public promotion campaign be effected to increase awareness of the act. The merits of establishing PFs should be highlighted to both employees and employers.

- To encourage establishment of PFs, we recommend that the limit on tax allowance of Baht 10,000 per annum be removed and replaced by a percentage of earnings. An upper limit of, say, Baht 30,000, indexed to wage inflation, can still be maintained to cap excessive contributions.

- PFs where only the employer or the employee contributes should be allowed. This will encourage the establishment of PFs, and generate savings.

- There should be no difference between tax treatment of PFs and DB schemes. Fully funded DB schemes should also be permitted under the Provident Fund Act, with corresponding tax incentives.

- The investment restrictions of the act should be progressively removed as the PF industry and the SET matures. Asset allocation should in time be left to the Fund Committee. When compulsory holdings are removed, guidelines may still be retained to assist Fund Committees.

- Overseas investments should gradually be permitted to increase diversification.

- The maximum investment fee set out under the act should be removed. Fee levels should be negotiated between the fund manager and the Fund Committee.

- The MOF should license more PF managers to increase competition. Authorization should be extended to all institutions who wish to pursue the PF management business, subject to

appropriate business criteria. Authorized institutions may, for example, include banks, insurance companies, and mutual fund companies. Consideration should also be given to transferring supervision of fund managers to the SEC.

9. The issues surrounding the establishment of funded schemes and their on-going monitoring are complex, and will require specialized knowledge of pension matters. Consideration should be given to training of MOF personnel involved in the supervision of pension issues. An external consultant can be retained to provide on-going advice and training on all aspects of pension matters.

(A) The Pension System of the State Enterprises

10. The present arrangements for all 15 SEs are DBs plans (referred to as "pension plans" in Thailand) providing lump sum benefits based on one month's basic salary for each year of service completed. The system is similar to that of the government civil service pension plan except for the fact that the payment at the end is a lump sum amount. Attachment 1 sets out the broad features of the current pension arrangements operated by the SEs.

11. Each SE must contribute at least 10% of monthly payroll to finance the cost of providing the benefits promised. The funds built up from the 10% contributions paid by the SEs are currently held in bank accounts. As at September 1992, the total funds held in respect of the 15 SEs amounted to Baht 25.3 billion. These bank accounts are held off-balance sheet and we understand that legal title to these funds are held by the SEs. There is therefore no separation of assets held in respect of pension liabilities and the assets of the SEs. This would not present any difficulties at the present time as far as solvency of the plans is concerned since the Royal Thai Government is the ultimate guarantor. However, post privatization, it would be imperative that pension fund assets be constituted as legal entities separate from the SEs to increase the security of members' benefit entitlements.

12. It appears that there has been no actuarial assessments of the pension liabilities of the SEs. Such assessments, known as "actuarial valuations", conducted regularly, are essential to the proper management and operation of a DB pension scheme. It is likely that with some 200,000 SE employees, the magnitude of the accrued pension obligation would be very significant. Although the SEs are required to contribute 10% of payrolls to a fund for the cost of providing the benefits, without proper actuarial valuations, it would be fortuitous that this contribution rate would be appropriate for each separate SE.

13. Regulations issued by the MOF restrict the investment of the funds held to deposits/fixed income securities of various MOF approved Banks. As the pension benefits are based on final salary, the SE pension liabilities will increase correspondingly with salary increases granted to SE employees. The MOF investment restrictions on asset allocation of the funds to broadly fixed interest securities mean that there is a serious mismatch of liability and asset profiles; the former being essentially linked to salary and inflation growth and requiring capital growth assets like equities, but actual assets are invested in non-growth income stocks.

14. There are certain shortcomings in the funding and operational aspects of the current DB plans of the SEs. These are discussed below.

15. **The Proposed New PF Arrangements.** If as is usually the case, salaries increase at least as much as inflation, the main advantage of existing DB is that member benefits are protected against such inflation. In a tight labor market and in order to be competitive with the private sector, salary increases granted by the SEs in recent years have been relatively high.

16. In the light of the expected continuing significance of salary inflation, the MOF is concerned that the continuation of the DB schemes may lead to an increasingly heavy burden of pension liabilities. The unfunded liability of the present plan is estimated at roughly $6.0 billion. The MOF has been reviewing the

current pension system for some while and is intending to convert the DB schemes to PF schemes. The proposals are described in Attachment 2. The MOF's intention is to set up PFs (PFs) for new employees. Existing employees will be given the option of switching to the new PFs with a transfer of their accrued benefits or of remaining in the existing DB plans.

17. From our discussions with officials from the MOF, it was clear that the PFs have already been implemented by a number of SEs. There are four SEs which have been corporatized and one of them partially privatized, i.e., Thai Airlines International. These SEs (Thai Airlines, PTT, Aeronautical Radio of Thailand, Dhipaya Insurance Company and Krung Thai Bank) have converted their DB plans to PFs which are governed by the Provident Fund Act of 1987. The existing employees were given an option to convert to the PFs or to continue with their DB plans. Thus far, about half of the employees of Thai Airlines have decided to convert to the PF. In the case of Krung Thai Bank, all of them adopted the PF since the previous system was essentially a PF system. We understand that the Civil Service DB scheme will also be converted along the lines proposed for the SEs.

18. The proposed arrangements will be consistent with the arrangements already in place for the various SEs that have started on the privatization route; the proposed Civil Service PF scheme, and in particular the private sector operated PFs.

19. "Grandfathering" of existing benefits is achieved by the existing employees having the choice to remain in the current DB scheme. Providing employees with a choice will inevitably mean that there will be selection against the fund, since one would expect existing employees who will be better off in the new PF choose to transfer, and vice versa. Ultimately, the cost may be higher than operating the existing scheme for all existing employees with new entrants joining the new PF. However, in principle, the proposed arrangements are reasonable.

20. The PF benefits to be offered under the proposed arrangements are broadly in line with private sector operations, although a significant number of private sector companies still operate DB schemes. To maintain competitiveness in the market place, it would be necessary to conduct a proper survey of retirement arrangements operated by the SEs' potential competitors in their particular industry, for example, compare PTT with ESSO and Shell.

21. It should be noted that the underlying objective of the MOF is to ensure that schemes operated by SEs are adequately funded. This can still be met by retaining the current DB schemes. The basic differences between the current DB schemes and the proposed PF schemes are that benefits are guaranteed in the DB schemes with the employer retaining the investment risk while, under the PF schemes, the investment risk is transferred to the employee with benefits dependent on the level of investment returns. It could be envisaged that if the employee retires or leaves service with a PF benefit in times of adverse investment experience (i.e., where asset values are depressed), the benefit available could be much smaller than the benefit from a corresponding DB.

22. Operating DB arrangements does not necessarily equate to an increasing or unmanageable cost for the employer. The two key financial factors which have an impact on the cost to the employer are salary increases and investment returns on assets held. With proper and disciplined long-term funding by the employer, which is determined and reviewed regularly by actuarial valuations, coupled with appropriate asset allocation, the long-term contribution rate required from the company sponsoring the DB scheme should be a relatively stable percentage of payroll. Indeed, generally DB schemes are more efficient in providing retirement benefits since a long-term view can be taken on investment allocation.

23. In the following paragraphs, we focus on the implementation aspects of the proposals from the CGD and, as the current DB plans will be retained (at least for the existing employees), we also recommend measures to address the shortcomings highlighted earlier.

24. Actuarial valuations of each SE's DB plan should be carried out by qualified actuaries. These

valuations will disclose the unfunded liability and indicate the appropriate level of contributions required in order to finance on-going accrual of plan benefits for each SE. The information on the financial status of the SEs' plans will enable the MOF to make an informed decision on whether to retain the existing system or to proceed with the proposed conversion (the value of assets held for certain SEs' plans may be more than sufficient to cover the accrued actuarial pension liability).

25. It is recognized that presently the government will underwrite the cost of providing the plan benefits, and thus there will be no risk of default. However, for actual privatization of the SEs, the operational aspects of any pension system ultimately adopted by the privatized company should reflect best practice. We therefore recommend that the assets currently held in the SEs be legally separated from the SEs as soon as possible. This is a fundamental principle of securing members' plan benefit interests independent of the fortunes of the sponsoring company. The concept of "juristic person" established under the Provident Fund Act can be used or, alternatively, the assets can be constituted under a beneficial trust analogous to that used in the mutual funds industry.

26. The assets in respect of the retained DB plans should be managed by professional fund managers, as in the case of PF assets established by the private sector under the Provident Fund Act.

27. The current practice of compulsory holdings in entirely fixed interest securities is inappropriate for DB plans (and indeed for defined contribution plans also). The aim of the plans is the provision of retirement benefits for the employees and, as such, the plans' obligations are long-term. Furthermore, plan benefits are related to salary inflation. We recommend that the investment restrictions be relaxed to allow investments in a well diversified portfolio consistent with the nature of the plans' liabilities. Asset allocation should be biased in favor of capital growth securities to reflect the requirement to match the growth in liabilities. A typical portfolio distribution of assets held for DB plans found in other countries is shown in Table 1.

Table 1: Typical Portfolio Distribution of Provident Funds

Asset Category	Percentage of Total Portfolio
Equities	60% to 80%
Fixed Interest Securities	20% to 30%
Other Liquid Assets and Cash	0% to 10%

28. Equity investment would include mutual funds, warrants, convertible debentures. Consideration should also be given to investment in overseas securities to increase diversification and reduce portfolio risk.

29. Assuming that the proposed arrangements are to be implemented, it will be necessary to determine not only the appropriate rate of contribution to fund the retained DB plans, but also the rate to be paid by both the employee and the employer to the PF. Ideally, equity of treatment between the new and existing employees participating in the different schemes is desirable. This is, however, difficult to achieve with the operation of two very different type of schemes. This underlies the conceptual difference between the benefit provision from a DB plan, where benefits can be demonstrably determined according to a formula, and a PF, where benefits are based entirely on the accumulation of contributions and investment earnings thereon. Nevertheless, it would be useful to perform projection exercises of the benefit levels expected under the different schemes to investigate broad equity of treatment.

30. We understand that officials from the CGD have performed projection exercises. We suggest

that these be extended to include various financial scenarios, which should be as realistic as possible. In particular, the salary increases expected to be granted to SE's employees in the short-term should be built into the calculations. The exercise should be performed for various age, service and salary profiles. These projection exercises will enable the appropriate level of employer PF contributions to be determined to meet the objectives of equitable treatment for:

(i) a new employee (ensuring benefits under the new PF will competitive and will not be "excessive" relative to the old DB benefit); and

(ii) an existing employee who elects to join the PF (ensuring that PF are expected to be comparable to that available from the old DB scheme).

(B) The Provident Fund Act and the Private Sector Arrangements

31. The mission carried out a review of the pension system for the private sector which will be applicable to the SEs upon their conversion. The Provident Fund Act of 1987 regulates the operation of all registered private sector PFs. This act replaces the previous Ministerial Regulations No. 162 and confers wider tax advantages to employees and employers. The main objectives of the act are to encourage private sector provision of retirement benefits and to promote the mobilization of private savings for economic development. A summary of the Provident Fund Act is given in Attachment 3.

32. Key statistics of the PF industry are given in Table 2. The number of private sector PFs established and registered under the act has increased from 159 in 1984 to about 700 in September 1993, covering approximately 2,000 employers. As of September 30, 1993, the total number of employees covered was about 402,000. The growth in PFs is illustrated in Table 2 below.

Table 2: Provident Fund Industry

REGISTERED PROVIDENT FUNDS 1984-1993										
YEAR	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**30 Sept 1993**
1) Number of Funds	159	267	448	522	645	780	623	591	649	708
2) Number of Employers	154	260	441	514	637	834	1,349	1,419	1,764	2,021
3) Number of Members	28,413	40,832	74,153	83,254	105,240	157,189	219,637	257,642	344,461	401,840
4) Amount of Funds (millions of Baht)	562	1,122	2,421	3,204	4,048	5,316	7,110	9,685	16,720	20,600

(Note : The decrease in the number of funds in 1990 and 1991 was due to several employers participating in pooled group funds).

Source: MOF, Capital Markets Policy Division.

33. As of September 30, 1993, total assets under management by the 16 licensed fund managers amounted to about Baht 21 billion (about $800 million). **Total assets of the PFs have increased by about 37 fold or approximately 53% per annum since 1984. However, its total size is modest compared to the stock market capitalization of about $90 billion.** Total PF assets also compare unfavorably with the $6.0 billion

mutual funds industry, which has been aggressively promoted since February 1992. Thus far, the PF industry has played a modest role in the development of Thailand's capital market.

34. Although the PF industry and coverage has shown strong growth rates over the last 10 years, the percentage of workers covered is still very low, at about 1% of the active working population. The distribution of the working population is given in Chart 1. Even after excluding agricultural workers, who form 60% of the working population, only about 3% of the urban workers are covered. Chart 2 illustrates the distribution of workers covered by retirement benefit schemes.

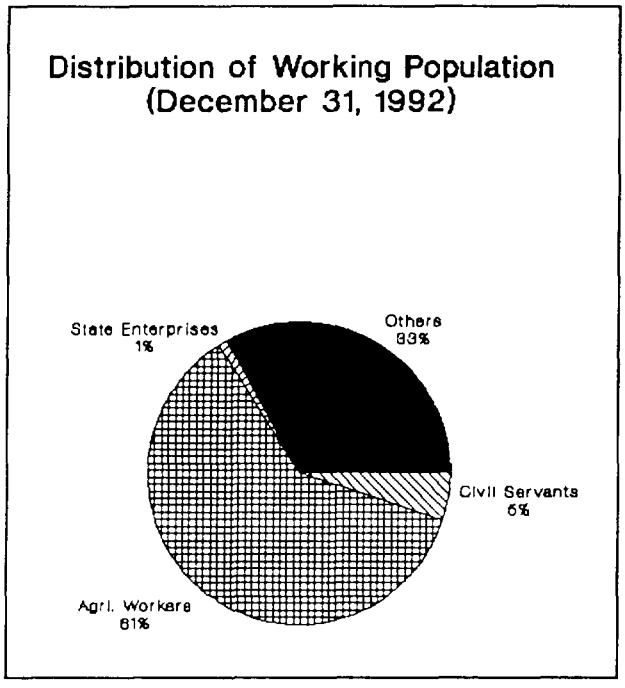


Chart 1

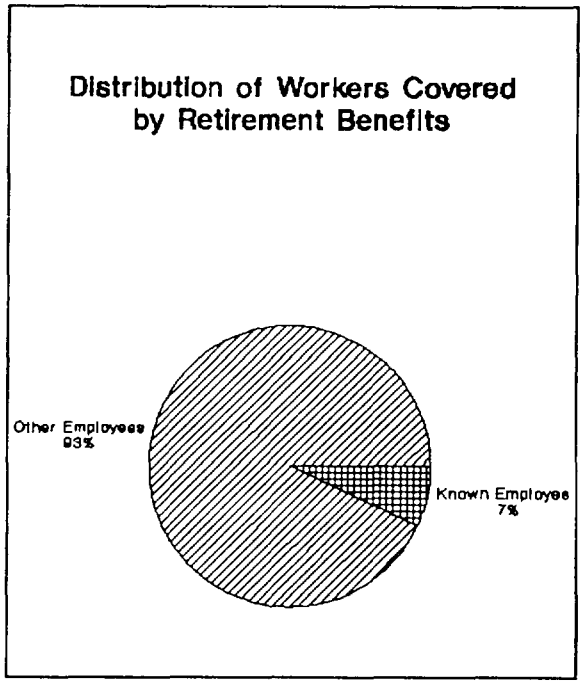


Chart 2

35. The employee benefits area in Thailand is still relatively undeveloped. Many Thai workers perceive increases in current earnings to be more important and preferable to long-term retirement benefits provided via the employers' PFs. Indeed, a guaranteed income is still being sought by a majority of the Thai workforce. Therefore, it is not surprising that the PF coverage is relatively low. There is also a compounding factor of lack of awareness among employees and employers of the Provident Fund Act. There is a need to educate both the employers and employees of the merits of retirement benefit provision. The PF industry can play an important part in the mobilization of workers savings to reduce the current savings gap, and in the development of the capital markets.

36. With increasing urbanization and the broadening of the economic base away from reliance on agriculture, the demand for employee benefits will inevitably grow. The current labor shortage leading to higher wages and the entry of more multinational companies, which would typically provide a wider range of employee benefits, will also provide an impetus towards more formal retirement benefit provisions in Thailand.

37. The majority of employers who operate retirement benefits for employees have set up PFs although, as mentioned earlier, a significant number provide benefits via DB schemes. Typically, in the private sector practice, PF members are required to contribute at between 3% to 5%. Some PFs allow employees to contribute at a level within a range of contribution rates. Employers must match employee contributions, and a number contribute on a sliding scale with higher rates for employees who have completed longer service. Most of the PFs specify a minimum vesting period before the employees are entitled to the full amount of the employers' contributions.

38. In Thailand, it is believed that many employers, particularly multinational companies, have established DB (final salary) schemes to provide retirement and leaving service benefits for their employees. The benefit is usually based on a multiple of salary for each year of service. These schemes are usually unfunded and operated as book-reserve plans, which provide benefit payments directly from the employer's accounts. These plans are currently not eligible for registration under the Provident Fund Act, and thus do not qualify for favorable tax treatments and tax incentives. However, benefits paid by the employer can be treated as a tax expense in the year benefits are paid. One advantage of operating such a DB scheme is that the Statutory Severance payment under the Labor Law may be included in the scheme benefit, whereas the statutory benefit would be separate and payable in addition to any benefit from a registered PF. This lack of flexibility to integrate statutory and PF scheme benefits may be an inhibiting factor in employers' setting up PFs.

39. The typical asset distribution of private sector PFs as of 30 September 1993 is given in Table 3.

Table 3: Assets Distribution of Provident Funds

	%
i) Cash and Bank Deposits	40
ii) Banks and Financial Companies' Note	47
iii) Government and Stock Enterprises Bonds	2
iv) Stocks and Unit Trusts	11
Total	100

40. The amount invested in the stock market amounted to about Baht 2.0 billion, or about 0.1% of stock market capitalization. PFs are established for the provision of retirement benefits and, as such, have long-term obligations and liability profiles. Correspondingly, it is expected that asset allocation would be biased in favor of equity type investments rather than fixed income securities. In general, assets of PFs may be expected to be invested in **at least** 40%-50% equities, and the remainder in fixed income securities.

41. The typical Thai PF asset distribution as of September 1993 was 10% equities and 90% fixed interest (Table 3). This asset allocation is very conservative. The Provident Fund Act currently imposes investments restriction on the asset allocation of PFs. Broadly, the restrictions are that a minimum of 60% must be invested in fixed interest securities, and a maximum of 40% in equities (stocks and unit trusts). Principal factors that may have led to the conservatism of private sector PF asset allocations are that the Fund Committees of PFs are inherently conservative and risk averse, and are inhibited by the maximum limit on equities. They may also wish not to be seen to be too out of line with the general practice.

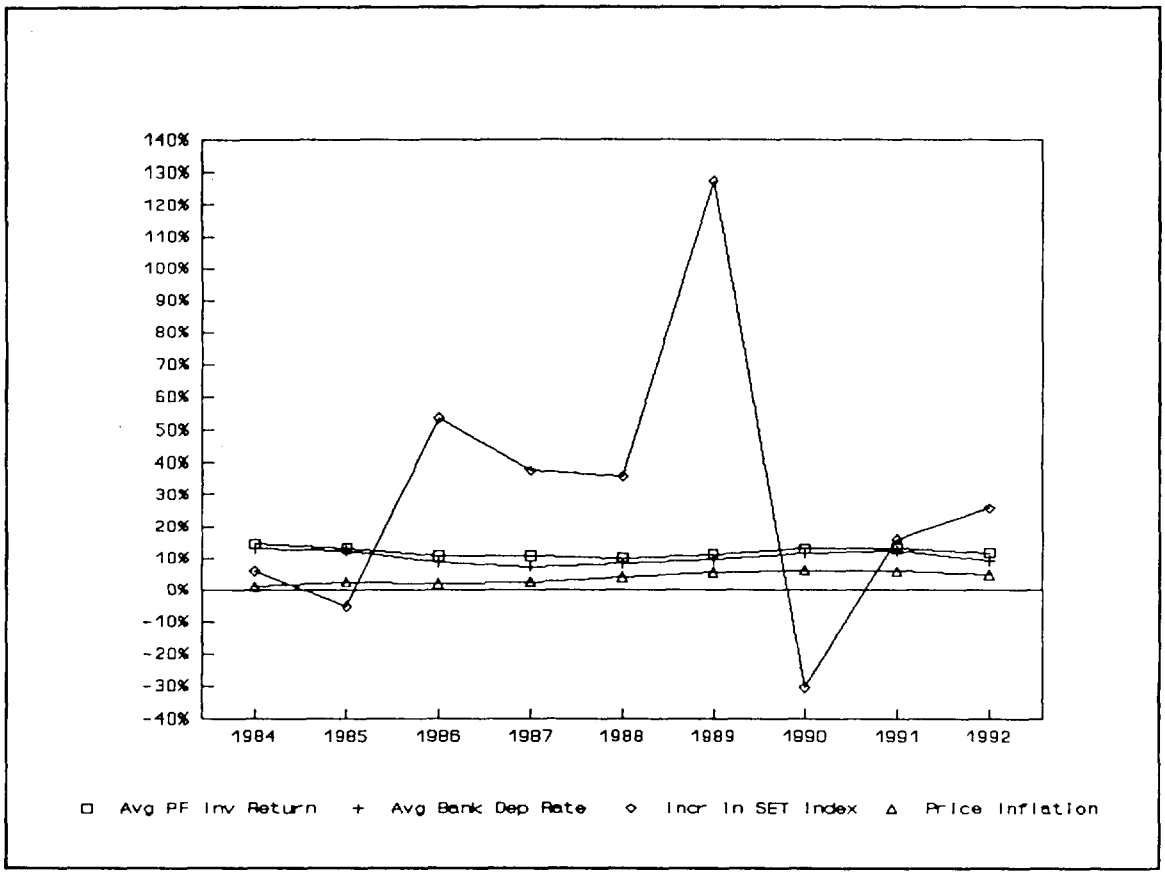
42. Average investment earnings of the PFs have been about 12% per annum for the 9 years to 1992 (Table 4). This exceeded the average interest rate on bank deposits by about 2% per annum over the same period, but was far below the return on the SET index of 23% per annum during the same period (Graph 1). Although the actual investment returns obtained were attractive relative to average bank interest rates, the returns would have been higher if a more balanced and diversified portfolio of asset distribution were adopted. It is clear that by inhibiting investment in equity holdings, the returns obtained by PFs have suffered. There is, of course, a higher risk attaching to equity investment which should be recognized, but empirical evidence of pension assets investments has shown that returns from balanced and diversified portfolios can be expected to be higher in the long-term.

Table 4: Comparison of Investment Returns of Provident Fund Assets with Selected Financial Indicators

COMPARISON OF INVESTMENT RETURNS OF PROVIDENT FUND ASSETS WITH SELECTED FINANCIAL INDICATORS				
Years	**Average Investment Return on Provident Fund Assets** %	**Average Interest Rate on Bank Deposits** %	**Increase in Index Stock Exchange of Thailand** %	**Rate of Price Inflation** %
1984	14.50	12.92	5.82	0.90
1985	13.15	12.12	-5.16	2.40
1986	10.75	8.73	53.54	1.80
1987	10.60	7.25	37.52	2.50
1988	9.96	8.27	35.72	3.80
1989	11.22	9.50	127.34	5.40
1990	12.82	11.30	-30.29	6.00
1991	13.07	12.38	16.07	5.70
1992	11.60	9.15	25.59	4.80
Total Compound Average per annum	12.00	10.20	23.40	3.70

Source: MOF, Capital Markets Policy Division.

Graph 3



Source: MOF, Capital Markets Policy Division.

43. PF managers are licensed by the MOF. The number of authorized managers as of September 30, 1993, was 16. However, three or four large players dominate the industry, accounting for about 75% of the total assets under management. There is a clear need to promote the expansion of the industry. Furthermore, some fund managers are providing guaranteed investment returns. The ability to provide investment guarantees in the present situation, where asset allocation of PFs is restricted, may inhibit further growth in the PF management industry. However, if the investment restrictions are removed, this will encourage more competition, and guaranteed returns will be part of consumer choice of different investment service offered by fund managers.

44. In the time available, the mission's review of the Provident Fund Act and the industry was necessarily limited. Nevertheless, in our review, we found that there were areas of the Provident Fund Act and aspects of the industry that may inhibit the growth of PFs. There is limited penetration of PFs in the workforce. Inducements must be presented to encourage formally established and funded schemes. There is clearly ample opportunity and potential for further growth in the retirement scheme industry to meet the objectives of mobilizing employee savings to reduce the current savings gap and to assist in the development of capital markets. Some measures to increase the attractiveness of the PFs are recommended below.

45. To promote the continuing growth of PFs and the coverage of employees, we recommend that the MOF consider undertaking a public campaign to increase awareness of the act and retirement benefit provision. The merits of establishing PFs should be highlighted to employees (e.g., tax savings on investments, retirement planning) and to employers (e.g., a good employer provides retirement benefits, PFs can assist in recruiting and retaining staff). This may be done via newspaper advertisements, television and radio broadcasting. The key for future growth will be the increase in coverage and aggressive promotion of PFs.

46. The limit on the tax allowance of Baht 10,000 per annum for employees' contributions is relatively low and is not indexed to inflation earnings. This represents about 8% of average salaries of about Baht 130,000 ($5,000) per annum. To encourage the establishment of PFs, we recommend that this limit be removed, and replaced by a percentage of earnings, say, between 10% to 15% of earnings. An upper limit of Baht 30,000, indexed to wage inflation, can still be maintained to cap excessive contributions. This revision would provide strong fiscal incentive and promote establishment of PFs. This threshold should be reviewed within the overall fiscal context.

47. Currently, the Provident Fund Act only allows the establishment of PFs where both employees and employer contribute. Such a PF can be registered under the act and will be granted tax allowances. However, we recommend that PFs where only the employer contributes or where only the employees contribute should also be allowed. This will encourage the establishment of PFs, and thus generate more savings.

48. In addition, the Provident Fund Act only allows the establishment of DB schemes. The Provident Fund Act does not make any reference to the establishment of DB schemes (known as pension plans in Thailand). This is surprising given that the government operates such schemes in the Civil Service and the State Enterprises. Nevertheless, some employers have provided, and still maintain, DB schemes from unfunded book-reserve provisions which will not attract the tax privileges afforded by the Provident Fund act. There should be no difference in the tax treatment of PFs and DB schemes. Funded DB schemes should also be permitted under the Act, with corresponding tax breaks. We recommend that employers providing DB schemes should be encouraged to fund their schemes properly by being provided with tax incentives equivalent to those provided for PF schemes under the Provident Fund Act.

49. The mission feels that it is in principle inappropriate for asset allocation to be laid down by law. The PFs are operated by the Fund Committee (consisting of employers and employees) and they should be given the flexibility to decide on the appropriate asset allocation. However, in an emerging PF industry and an immature stock market where the level of sophistication in general investment issues and asset allocation criteria may be considered fairly low, some guidelines rather than specific compliance requirements would be acceptable. The investment restrictions of the act should be progressively removed as the PF industry and the SET matures. Asset allocation should in time be left completely to the Fund Committee. When compulsory minimum and maximum holdings are removed, guidelines may still be retained to assist Fund Committees.

50. The Provident Fund Act also specifies the maximum level of investment management fees that can be charged by the authorized managers. The mission feels that it is also inappropriate for the MOF to specify maximum fees. The level of fees to be charged should be negotiated between the Fund Committee and the fund manager, determined with reference to the market. We recommend the maximum fee be removed.

51. To increase competition for the PF business, the MOF should consider licensing more fund managers. Authorization should be extended to all financial institutions who wish to pursue PF management business,

subject to their meeting the specified business criteria. Authorized institutions may, for example, include banks, insurance companies and mutual fund companies as well as finance companies.

52. Currently, the MOF issues authorization for fund management business. The mutual fund industry, which is much larger, is currently regulated by the SEC. The MOF may want to consider whether it would be desirable for supervision of the PF industry to be transferred to the SEC.

Attachment 1 - Summary of Pension Arrangements of State Enterprises

Benefits Structure

All of the 15 public utility State Enterprises (SEs) have basically the same benefit structure:

A lump sum benefit of one months' basic monthly salary per year of service completed is promised. Schemes providing benefits based on members' final salary are known as DB schemes. (They are sometimes referred to FINAL SALARY schemes). Members do not have the option of electing for a pension unlike the employees in the Civil Service pension scheme.

The lump sum benefit is payable on resignation, subject to completion of a minimum number of years' of service, and death and on retirement at age 60.

Each SE has different minimum period of service for vesting of benefits.

Employees are not required to contribute. The SEs (ultimately the government) pay for the cost of the benefits. Ministerial Regulations currently specify minimum SE contributions of 10% of payroll.

Coverage

The total number of employees covered by the 15 public utility SEs' DB schemes is approximately 212,000. This represents nearly 70% of the total number of employees in all of the 63 SEs.

This may be compared with the total number of employees covered by PF schemes set up under the Provident Fund Act of approximately 400,000 as at September 1993. The corresponding assets under management amounts to approximately Baht 21 billion. It can be seen that if and when the SEs employees benefits are backed by appropriate level of assets the size of the PF assets under managements would increase significantly.

Attachment 2 - Summary of MOF Proposed Provident Fund Arrangements

The CGD's intention is to convert the current arrangement from a DB plan to a PF benefit. Broadly the proposed arrangements are as follows:

Eligibility

A new PF is to be set under the provisions of the Provident Fund Act.

Existing employees have the options of remaining in the existing DB schemes or to elect to join the new PF.

All new employees will join the PF.

Contributions

Employees who join the PF will be required to contribute a percentage of monthly salary to the PF, typically at 3% to 5%.

The SEs will contribute to the PF in respect the employees who joined the PF. An Initial Amount will be deposited into the PF in respect of the existing employees who elected to join equal to the their accrued benefits in the DB schemes. The accrued benefit is calculated as years of service completed x salary at the time of changeover.

Benefits

The benefit from the PF is the accumulation of both the employee and employer contributions plus investment earnings. The benefit arising from the employers contributions will be subject to the vesting condition of the DB schemes which will be replicated in the PF.

For those employees who have elected to remain in the DB schemes their benefit will remain unchanged, i.e., a lump sum based on a number of months of salary.

Attachment 3 - Summary of the Main Provisions of the Provident Fund Act

Effective Date. The Provident Fund Act is effective from December 1987. The provisions of the act have been amended from time to time with the latest Ministerial Regulations being issued in 1991.

Establishment of Provident Fund. Establishment of PFs are by voluntary agreement between the employer and employees. The PF must be established as a separate legal entity from the employer's business. The concept of a "juristic person" is used.

Contributions. Employee contributions must be at least 3% of basic earnings, and employer contributions may not be less than the employee's contribution. Maximum contributions are 15% of basic earnings.

Fund Committee. A committee has to be established consisting of employer's appointees and employee elected representatives. This committee will be responsible for giving investment guidelines to the appointed investment manager.

Registration. The plan rules must be approved and registered with the Registrar, who is the Director-General of the Fiscal Policy Office.

Authorized Fund Managers. The PF assets has to be managed by one of the authorized PF managers. Currently, there are 16 companies authorized to perform fund management although this number is expected to increase.

Investment Guidelines. All registered PFs must comply with the following investment guidelines:

(a) Minimum Compulsory Holdings - totalling 60%

1) Cash or Cash in banks
2) Government Bonds, Treasury Bills or Bonds of Bank of Thailand
3) MoF guaranteed Debt instruments
4) State Enterprises' instruments
5) Bills of Exchange or Promissory Notes endorsed, availed or certified by banks
6) Bank Debt instruments

(b) Maximum Optional Holdings - totalling 40%

7) Debt instruments of SEs (other than 4), IFCT, Finance companies
8) Unit Trusts
9) Shares, Debentures, Convertible Debentures, Warrants
10) Other securities as authorized by MoF

(c) Maximum total investment in shares, debentures, CD and warrants is 25%, with a further restriction of a maximum of 5% in any one company.

(d) Fund assets may not be invested in the sponsoring company.

Investment Fees. Investment management fees shall not exceed 10% of gross earnings.

Benefits. Benefits must be paid in lump sum upon death, retirement or termination of service (vesting of benefits are not specified in the act).

Tax Benefits.

- Employer's contributions are deductible in the period expended, up to a maximum of 15% of employees earnings.
- Tax allowance of employees' contributions at amounts paid, up to a maximum of Baht 10,000 per annum.
- Earnings of registered PFs are tax-exempt.
- Benefits paid to employees are allowed two categories of deductions
  - i) an allowance of Baht 7,000 per year of service or the benefit if lower
  - ii) half of the product of years of service and final salary, less (i)
- Benefits attributable to employees contributions are tax fee.

Thailand

Private Sector Participation and Improved Efficiency of State Enterprises

Government Guidelines for Improving the State Enterprises

1. Following the instructions of the Cabinet, Deputy Prime Minister Amnuay Veerawan, presented a proposal on December 18, 1992, (Attachment 1) to improve the performance of State Enterprises (SEs) to achieve:

(a) State revenue contributions that are effective and incremental.

(b) Reduction in consumers' burden, for example, by reducing service fees to conform with international standard practices.

(c) Management systems providing flexibility and non-bureaucratic rules, especially for their financial systems.

2. The following aspects will be considered in improving the management of SEs:

1. Functioning and reporting systems.
2. Investment budget review.
3. Determination of prices or service fees.
4. State revenue contributions.
5. State role.
6. Policy implementation recommendations.

3. The objectives of these reforms, while maintaining adequate flexibility, will be:

(a) To conform state enterprise management with a liberalized economy and achieve state efficiency enhancement.

(b) To conform state enterprise policy administration with the government principal policies and promotion of income distribution and rural advancement.

(c) To enable proper state control and monitoring of state enterprises to ensure adequate performance and make their managers responsible for achieving set goals and policies.

4. **The Council of Economic Ministers added the following comments**:

(a) The proposals are in line with government policy to improve the efficiency of state enterprises. Consequently, clear policies should be formulated immediately.

(b) Some issues require further study, for example, the divestiture of state enterprises that are no longer necessary to the policy, methods to determine the rate of return, impact of reduced service fees on ongoing privatization policies. Mechanisms in the form of committee or work group should be introduced to make a study, especially on the sales of state enterprises or their assets, which by law necessitate state revenue contributions (except for sales of their shares which the Government can re-invest).

(c) Tenure of top state enterprise managers should be defined in conformity with the respective state enterprise laws. Their performances should be appraised by their governing boards whose performance will in turn be appraised by the Cabinet.

(d) Annual performance audits of state enterprises should be effected by work groups comprising representatives of related agencies responsible for monitoring rather than assigned to Office of Auditor General of Thailand or auditors.

(e) Any immediate improvement should be implemented. Those that require revisions of law or related rules should proceed accordingly.

5. **Resolutions of the Council of Economic Ministers**:

(a) Agreed to approve the principles and ways to improve various state enterprise operations proposed by Deputy Prime Minister Amnuay Veerawan, and the comments and observations of the Council of Economic Ministers.

(b) Approve establishing a follow-up committee (para. 4 (d)), to be chaired by the Prime Minister. The Ministry of Finance and the National Economic and Social Development Board will recommend the members of the committee, for review and immediate appointment by the Prime Minister.

These resolutions were approved by the Cabinet on January 5, 1993

Attachment 1 - Operating Policies to Improve the State Enterprises

In order to conform the state enterprise operations with a liberal economy and to enhance the state efficiency for the common good;

In order for the Government to be able to control (and monitor state enterprises) in ways that the latter still performs conveniently whilst their managers are responsible for achieving set goals and policies. Such policy determination is not a rigid rule, but rather a flexible approach.

And to conform state enterprise policy administration with the government policies on income distribution and rural advancement disparity, as well as promoting them;

The following ways to improve the state enterprise operations are proposed for further consideration and approval:

1. Functioning and reporting systems
2. Investment budget review
3. Determination of prices or service fees
4. State revenue contributions
5. State role
6. Policy implementation recommendations

1. Functioning and reporting systems

1.1 Governing Board

(1) As a rule, the members on board should not exceed 11.

(2) Wherever appropriate, all large enterprises can increase this number up to 15, out of which at least three are to from academia and should not be government officials or civil servants.

1.2 Governor, Director, Managing Director or Equivalent

(1) The governing board would present to the Cabinet every two years an evaluation of the performance of top management of the state enterprise, and suggestions justifiable improvements.

(2) The Cabinet or the authority appointing the governing board would review the performance of the governing board once every two years.

1.3 Improvement of Functional Systems

(1) The governing board would employ regularly (at least twice a year) consultants to study and recommend improvements of the state enterprises.

(2) All state enterprises must formulate personnel development plans and allocate at least 3% of their net profits for education and training of all staff and managers. Another 3% would be used for investments in technological improvement plans. If there are no net profits, the personnel development and technological improvement plans would be included in their operating or investment budget.

1.4 Record-Keeping and Reporting

(1) Public utilities, public services and business state enterprises should implement cost accounting for board management purposes.

(2) All state enterprises are to prepare quarterly balance sheets and profit and loss statements subject to quarterly audits by auditors as same as listed companies.

(3) All state enterprises are to arrange for annual performance audits by Office of Auditor-General of Thailand or others approved by the reporting ministries. The audits would include:

(a) Do income from service rendered and quality of service meet the goals? To what extent? And why?

(b) Are costs or expenses as estimated or as in operating budget? To what extent? And why?

(c) Does utilization of personnel, materials and finance realize the objectives? To what extent? And why?

(d) How much is the overdue payment especially with other state enterprises? And why?

(e) Do services rendered and investment performances follow the goals and plans? To what extent? And why?

Reports for (2) and (3) would be reviewed by the governing boards together with suggestions for actions and improvements, for information and consideration to the reporting ministries and to the Cabinet.

2. Investment Budget Review

(1) The approval of the investment budget is within the authority of the Cabinet, as established by the laws creating the state enterprises

(2) The Cabinet by the Council of Economic Ministers will consider and approve the investment budgets of all state enterprises dealing with public utilities and services as well as others proposing a project investment above ฿500 million.

(3) State enterprises which are public utilities or public services would prepare long-term investment plans (at least 5 years), annual investment budgets and report operating results and financial status for the previous five years.

(4) The work plans and information on annual and long term investment plans would be updated continuously.

(5) Annual investment budget proposals must take into account the operational capacity of each state enterprise, because their investment performance and investment management capability will be evaluated.

(6) Investment budgets proposed for Cabinet review via National Economic and Social Development Board must at least contain the following data for consideration:

(a) Aggregate operating goals for work expansion and efficiency enhancement (increased productivity or cost reduction).

(b) Annual capital investments.

(c) Sources of investment funds.

(d) Investment operational plan. Private collaboration, if any and if yes, how?

(e) Style of management, recruitment and training of employees to support investment plans.

3. Determination of Prices or Service Fees Public Utilities and Public Services

Enterprises whose operations affect people's livelihood and which earn an excessive net income or profit in relation to their capital or assets, or other criteria established by the Cabinet, should consider reducing service rates or fees to achieve an appropriate profit level, except in extraordinary cases agreed by the Cabinet.

In case any state enterprise requires consumer deposits, it shall accept government bonds, state enterprise bonds or bank guarantees and consider minimizing the deposit amounts.

4. State Revenue Contributions

4.1 Income-Generating Category

Revenue is to be contributed at the rate fixed by Ministry of Finance, usually at least 80% of net earning.

4.2 Public Service and Public Utilities Category

At least 30% of net earning or net profit is to be contributed in accordance with the requirements of the Budget Bureau or the Ministry of Finance.

Exceptions would be made on a case-by-case basis, taking into consideration the investment requirements. Such relaxation shall be within a defined time frame

4.3 Agricultural, Commercial, Industrial, Financial and Service Categories

Limited company state enterprises shall pay a minimum dividend of 40% of net profit after tax (already subject to a net income tax at 30% of net profit).

Non-limited company state enterprises, whether exempt or non-exempt by law from revenue contributions, shall contribute at least 30% of their net earnings.

Exception would be granted case by case in view of the need to finance future expansion.

4.4 Promotional Category. No obligation for revenue contribution

5. State Role

5.1 The government shall implement a liberal economic policy using market mechanism and stem monopolistic system as well as unfair competition.

5.2 The government shall play a role in operating certain enterprises for the sake of national development and social services, for instance income-generating, public service/utilities and promotional categories. It may do it by itself or cooperating with the private sector in different manners.

5.3 Some of agricultural, industrial, commercial, financial and services state enterprises established by a special policy and operating well should be retained by the state. Yet, others not longer needed by policy and output terms should be discontinued by the state.

5.4 The government should sell shares, operations or assets of state enterprises not needed by policy and output terms, and which are not conforming to liberal economic policy especially those where competition and the number of private operators is already abundant.

5.5 Proceeds from sales of shares, operations or assets shall be invested by budgetary law or procedures to generate employment and income for remote areas.

6. Suggestions on Policy Implementation

6.1 Upon the Cabinet approval of these proposals as principles and policies for state enterprise conduct, the relevant ministries shall instruct their respective state enterprises to implement them.

6.2 Meetings should take place so that HE the Prime Minister can clarify and assign the implementation of these policies to the top management of large state enterprises, including ministers and permanent secretaries, chairpersons and directors, managers (or equivalent).

6.3 A committee represented by related government agencies should be established and chaired by the Prime Minister. The Permanent Secretary of the Ministry of Finance shall serve as Director and Secretary. The committee would monitor the policy implementation of state enterprises and suggests ways to execute the Item 5 on state withdrawal from the operation of state enterprises. It should comprise representatives of the Ministry of Finance, Budget Bureau and National Economic and Social Development Board, which co-serves as Secretary.

Government Classification of State Enterprises

1. Income-Generating Category

1. Thailand Tobacco Monopoly
2. Government Lottery Office

2. Public Utilities and Public Service Category

1. Electricity Generating Authority of Thailand
2. Metropolitan Electricity Authority
3. Provincial Electricity Authority
4. Metropolitan Water Works Authority
5. Provincial Water Works Authority
6. Expressway and Rapid Transit Authority of Thailand
7. Airports Authority of Thailand
8. State Railway of Thailand
9. Bangkok Mass Transit Authority
10. Telephone Organization of Thailand
11. Communications Authority of Thailand
12. Aeronautical Radio of Thailand
13. National Hosing Authority
14. Industrial Estate Authority of Thailand
15. Metropolitan Rapid Transit Authority

3. Agricultural, Commercial, Industrial, Financial and Service Category

3.1 Limited Company State Enterprises

1. Krung Thai Bank Ltd.
2. Thai Parawood Co., Ltd.
3. Thai Maritime Navigation Co., Ltd.
4. Thai Airways International Co., Ltd.
5. Transport Co., Ltd.
6. Bangkok Dockyard Co., Ltd.
7. Dhippaya Insurance Co., Ltd.
8. Union Hotels and Tourism Co., Ltd.
9. Bangchak Petroleum Co., Ltd.
10. PTT Petroleum Exploration and Production Co., Ltd.

3.2 Non-Limited Company State Enterprises

1. Government Savings Bank
2. Government Housing Bank
3. Bank of Agriculture and Agricultural Cooperatives
4. Public Pawn Shop Office
5. Petroleum Authority of Thailand
6. Offshore Mine Organization
7. Forest Industry Organization
8. Dairy Farming Promotion Organization
9. Rubber Farm Organization
10. Marketing Organization for Farmers
11. Fishery Pier Organization
12. Government Cold Storage Industry Organization
13. Marketing Organization
14. Public Warehouse Organization
15. Liquor Distillery Organization, Excise Department
16. Pharmaceutical Organization
17. Express Transportation Organization
18. Glass Organization
19. Textile Organization
20. Battery Organization
21. Tanning Organization
22. Sugar Factory Inc., Industrial Plant Department
23. Police Printing Press
24. Playing Cards Organization, Excise Department

3.3 Promotional Category

1. Tourism Authority of Thailand
2. Sports Authority of Thailand
3. Scientific and Technological Promotion Institute
4. Thailand's Scientific and Technological Research Institute
5. Office of the Welfare Fund for Rubber Estate
6. Zoological Park Organization
7. Civil Aviation Organization
8. Botanical Garden Organization

Thailand

Private Sector Participation and Improved Efficiency of State enterprises

A Regulatory System for Thailand

1. Regulation and Deregulation

1.1 **Regulation.** Regulation means the direct or indirect monitoring and control by government of the prices, quality of service, operating and investment decisions of a private or government owned enterprise. Regulation can be made effective in many ways, but it usually takes the form of controlling the structure of the enterprise, its conduct or its performance, or a combination of all three.

1.2 The principal objectives of a regulatory regime are: (a) monitoring; (b) control; (c) transparency; and (d) certainty (an absence of confusion). Monitoring may often be as effective as direct control of an industry by government or a regulatory authority.

1.3 Regulation has the advantage to the regulated enterprise of giving it the freedom to make its own commercial decisions. It also benefits the government by achieving better and more informed decision-making, improved performance, greater efficiency and accountability, and better use of scarce resources. This results in a better performing, more efficient industry than one in which decisions are directly or inflexibly controlled by direct and often uncoordinated government intervention. A further advantage to government is a more effective and efficient monitoring (and control) mechanism which places clear duties on the regulated enterprise. Apart from anything else, it facilitates the obtaining of information.

1.4 In its Seventh Five-Year Economic and Social Development Plan, the Royal Thai Government recognizes the need for regulation, while realizing that red tape obstruct the activities of the state enterprises ("3.2.2 (1) The public administrative system lacks flexibility and is governed by a myriad of rules, regulations and restrictions"). The Plan in numerous parts recommends the establishment of improved regulatory systems. For example, in 5.1.3 it proposes to "amend relevant laws, rules and regulations for supervision of state enterprises to promote greater flexibility for state enterprises", while in 6.1.1 it proposes to "transform the role of government from being regulatory with emphasis on control to being supervisory with emphasis on promotion". It further proposes to "revise rules, regulations, criteria, restrictions and reduce unnecessary steps of the government to support flexibility and speed in consideration of projects and to be conducive to a more business oriented approach in the provision of services, as well as set up and efficient monitoring and evaluation system" (3.1.2 (2)) and to "support setting up of a permanent body which is independent from political intervention to supervise and determine price levels for each type of infrastructure services to reflect actual production costs in order to encourage an efficient use of services and to be fair to both the suppliers and users of services" (3.1.4 (1)). There are numerous other references in the Plan on the need for an independent regulatory system.[1/]

[1/] 5.1.1 The internal administration of state enterprises should be appropriately left to the respective executive boards, and the administrators of each state enterprise.

5.3 Employ a pricing policy to enable state enterprises to determine prices of goods and services which reflect production costs, based on efficient operations with high quality, by comparing the set prices with international standards.

Chapter 5. 1.2.6 The procedure to determine price levels is neither sufficiently flexible nor responsive in the business sense. It is highly dependent on the political situation, instead of actual production costs.

1.5 **Regulation v. Deregulation.** The introduction of a regulatory regime can amount to deregulation. Deregulation is a minced legal, political and an administrative concept[2/]. It generally means a reduction of government regulation to permit freer markets and competition. Deregulation, in practice, does not simply mean the repeal or cancellation of regulations, so they cease to exist. It has been taken to mean: (a) the reduction or abolition of governmental agencies with authority to make regulations; (b) the restriction or abolition of the ability of governmental agencies to monitor or control activities; (c) the reduction of monitoring or control activities generally; (d) the rationalization of rules and activities relating to the monitoring and control of the enterprise; (e) the setting of rules or standards by voluntary consensus of those required to conform to them without making regulations embodying them (with or without regulatory oversight); and (f) leaving a particular group of persons or a particular industry to adopt its own system of regulation (with or without regulatory oversight).

1.6 **Governmental Authorities are Difficult to Coordinate.** It is inevitably the case with any state owned industry or enterprise that many governmental agencies, bodies or ministries will have authority over that enterprise. From the point of view of the government in question, the exercise of that authority is always difficult to coordinate and there will be a variety of objectives of the different governmental bodies at play. The ultimate authority and coordinating role can of course rest with the Cabinet, but the Cabinet will not wish to be involved in the day-to-day affairs of the state enterprises.

1.7 Equally, the many spheres of governmental authority make it difficult for the state enterprise to make decisions efficiently and with the necessary speed to conduct business effectively. Moreover, it is extremely difficult to make a decision that will please all the different bodies and authorities. For example, in England and Wales, the privatized water companies complain that they are over-regulated, even though, by most standards, their regulation is regarded as light. In addition, the economic regulator is in

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3.2 (2) Remove price control of liquified petroleum gas, and introduce the full deregulation for implementation by the beginning the Seventh Plan, as well as remove subsidies for liquidized petroleum gas depot and for gas transportation to wholesale depots nationwide.

3.2.2 (2.3) Establish a high level regulation body under the law which is independent, comprising representatives from the public and private sector to formulate policies covering various aspects of communications, including determination of pricing of services to ensure fairness of providers and users of services, as well as co-ordination of work programs and communication services. In the initial stage a National Committee for Communications may be set up based on the authority of the executive branch.

1.4.3 The structure and pricing level of energy still do not reflect real economic costs and are not determined by market mechanisms due to political reasons. Therefore, the use of energy has been inefficient and wasteful, particularly in the case of electricity.]

1.4.5 The administrative mechanism and operation of such public agencies involved in energy development still lack efficiency to promote energy development to respond to the rapid rising needs and economic expansion.

3.1.4 (1) Amend criteria for purchase of petroleum by government agencies to reduce monopoly of the Petroleum Authority of Thailand, particularly for state enterprises which are large users of petroleum products.]

3.1.4 (2) Encourage free and fair competition in the liquified petroleum gas market at every stage, particularly the lifting of control on liquified petroleum gas imports.

[3.2 (3) Formulate clear and transparent criteria for natural gas pricing .. while considering gas pipeline systems as a form of public utility.

3.2.2 (1) Improve organizational structure and administration of state enterprises involved with the energy sector to assume a more business-oriented approach .. including increase in competition, which will eventually lead to removal of control of energy prices.

[2/]N.W. Sterling Achievements in Regulatory Reform in Ontario, (1982); Dianne Gayler, Deregulation: A Plan of Action to Rationalize South Australian Legislation: Notes on Airline Deregulation and Airport Regulation, (1983) 93 Yale Law Journal 319; Dr. Rongphol Charoenphandhu Law Reform and Deregulation (1993)

conflict with the main environmental regulator over investments in infrastructure to improve water quality.

1.8 **Extent of Regulation.** In establishing a regulatory system for the government of Ontario in Canada, key questions to establish the extent of regulation were set out as follows:

(a) What is the public policy or abuse that renders the regulation necessary for the benefit of the public?

(b) Can the purpose be accomplished with the proposed regulation or any part of it?

(c) Are there any provisions that duplicate existing provisions elsewhere that are applicable and sufficient?

(d) Are there any provisions that are more detailed or more particular than is necessary to accomplish the main purpose or, in other words, can the particular regulation be "thinned out" to a degree where it is sufficient and adequate to achieve the required goal?"

1.9 While there will always be scope for rationalizing and reducing the involvement of different governmental bodies in monitoring and controlling state enterprises, the same is also true of the bodies that are involved in the drafting and formulation of new laws and regulations. It will be unsatisfactory if it is conducted by different bodies unsystematically and without any coordinating agency.

1.10 The extent of regulation planned for Thailand is not clearly defined. However, the Economic Law Commission has declared as a first priority an extensive de-regulation and regulatory reform of about 40 laws with the reform of the Announcement of the National Executive Council, No. 281 (Alien Business Law).

1.11 Which activities of an industry should be regulated depends on what the policy aims and objectives are, e.g., whether competition is a priority. It is possible, for example, to regulate:

(a) an enterprise in its capacity as a buyer by establishing detailed procurement laws for works and service contracts; this type of regulation has been widely adopted both in the USA and the EC;

(b) an enterprise as a seller usually by performance and quality of service monitoring and price regulation;

(c) an enterprise as a network owner generally by regulation of transportation charges and by stipulating the terms on which access or connection to that network is offered;

(d) an enterprise as an operator by setting security, quality or environmental standards, e.g., by regulating emissions or discharges.

2. The Need for Regulation

2.1 The regulatory system needs to be able to adapt over time to external changes and serve the interests of consumers, investors, and government in the regulated enterprise, which may well conflict.

2.2 **Monopoly.** The need for regulation arises where the structure or nature of an industry or an enterprise is such that it has the features of a monopoly. A natural monopoly occurs when it is most

economical for a single producer to supply the entire market. In particular, many utilities are characterized as natural monopolies, primarily because of the requirement for transport or transmission networks in the gas, electricity, water, telecommunications and, to a certain extent, transport sectors. The existence of monopoly in any industry and, in particular, in essential industries with relatively inelastic consumer demand, will inevitably leave scope for abuse both in terms of cost inefficiency and high prices. Regulation is needed therefore to protect consumers and encourage efficiency while preserving the beneficial (least cost) features of a monopoly, e.g., economies of scale. New networks are expensive to build and this can be a barrier to the creation of competition and deter new market entrants (particularly in the private sector). Similar arguments also apply where markets are dominated by only a small number of producers able to exploit or abuse their dominant positions.

2.3 Privatization in itself will never ensure efficiency or that the interests of consumers are protected. Private monopolies can perform just as poorly as public companies. Indeed, one of the original reasons for placing certain industries in the public sector was that they had performed unsatisfactorily either in terms of quality of service or price in private hands. Accordingly, it is appropriate to regulate industries in both the public and the private sectors.

2.4 One of the main reasons for the failure of industries (whether in the private or public sectors) to perform in a cost-efficient, consumer-orientated manner is lack of competition. However, competition is no panacea and, where essential industries are concerned, prudent governments will always have other objectives, including social policy objectives, in mind. Competition is, however, generally recognized as the best means of ensuring minimized costs, the lowest prices and the best quality of service.

2.5 In some industries, however, effective competition is not possible and to create it artificially would mean the loss of economic efficiency, e.g., from economies of scale or sub-optimal use of existing capacity. One of the principal aims of regulation is to replicate the benefits of a competitive market structure in industries in natural monopolies. The best regulation will introduce into a monopoly the same types of economic incentives that characterize a properly competitive industry while taking advantage of the economic benefits (primarily in terms of economies of scale) that characterize a natural monopoly.

2.6 **Consumer Protection.** Consumers do not simply need protection from monopoly abuse. They also need certainty that a service will be provided to them at a price they can afford and that the required quality of service be maintained. Investment in infrastructure must be encouraged in order to ensure that service can be offered and that the quality of service does not deteriorate.

2.7 **Investor Protection.** Regulation is also useful in protecting the interests of investors by preventing the direct or indirect expropriation of investment capital. If regulation is independent from government, it can act as a buffer against interference by that government in the investment and pricing decisions of the company. This buffer function is particularly important since a government may have its own objectives in relation to capital investment which may act as a disincentive to investment and, indeed, may not even be in the consumer interest. Similarly, governments, for political or social reasons, may wish artificially to deflate prices to the detriment of investors. Again, this will discourage private sector investment.

2.8 **Government Requirements.** The government's need for regulation is securing that essential industries operate efficiently and optimize the resources available to them in line with broader policy objectives ranging from social policy to environmental protection. Regulation can be used not only to monitor and control, but also to obtain the information that government needs to undertake essential or strategic planning and policy making.

2.9 **Enterprise Requirements.** The regulated enterprise needs regulation to ensure freedom from political influence and from being subject to the requirements of many governmental bodies and unforeseen changes in policy. Enterprises wish to have maximum flexibility to operate in their commercial and increasingly competitive environments, and are keen to see regulatory certainty, transparency and consistency of decision making, allowing for well informed business and investment decisions. The management and staff of state enterprises will want to be motivated and stimulated in their working environments by being responsible and accountable for the decisions they take.

2.10 The financial and other resources of the private sector and the state enterprises are limited. Banks, investors or the government cannot be asked to, nor will they agree to, write open checks. All commitments to provide finance or to invest will be finite. A well designed regulatory regime will ensure that the regulated enterprises plan for the future and make best use of their limited resources. The private sector needs a great deal of certainty and protection against unforeseeable changes and, therefore, a stable and predictable regulatory regime is a necessary precursor to private sector participation and privatization.

2.11 **Experience in Other Countries.** The privatization programs of such countries as the UK, Chile, Portugal and, to a certain extent, Argentina, have all commenced with the creation of a new legal and regulatory framework. The regulatory methodologies were different, but they all addressed the needs outlined above in this section.

2.12 There is considerable advantage to the public sector in establishing a stable regulatory framework to facilitate the acceptance by the private sector of more regulatory risk (the risk that the regulations may change in a manner that adversely affects an enterprise) and encourage investments. Regulatory risk is of increasing concern to private sector investors and lenders. Novel contractual terms are being introduced into infrastructure project documents (e.g., Northern Ireland, Portugal, Malaysia) which pass this risk back to the public sector. Where the regulatory risk is deemed considerable, it will take the character of political risk and will act as a complete disincentive to private sector investment.

3. The Goals of Good Regulation

3.1 **Regulation Does not Exist in Isolation.** Regulation cannot accomplish anything useful unless there is an underlying legal and commercial framework already in place. A sound legal and commercial foundation provides the essential precondition for private investment and ownership in all the sectors of the economy, not just the utilities or regulated sector. Among the key prerequisites are: respect for ownership rights and contracts, protection from implicit or explicit expropriation, impartial and timely arbitration of commercial disputes, and currency convertibility. All of these elements are present in Thailand. Resolution of these issues is especially important for private sector participants investing in infrastructure projects. The viability and financing costs of such investment will depend crucially on the terms of investors' contracts with the government and certainty that the such very long-term contracts will be honored. government's commitment to private sector participation in the Sixth and Seventh National Economic and Social Development Plans is therefore particularly welcome.

3.2 **Economic and Politic Certainty.** Given certainty in the legal, political and economic environment, investors will be willing to pay more for the assets of a government-owned enterprise. Where there is considerable uncertainty, investors will pay less when government assets are offered for sale either directly or through equity shares. Uncertainty also has an effect on the return that private developers seek on infrastructure investment. Government officials in countries that are beginning to open up to private sector participation often complain of the high rates of return that private developers are seeking. Yet, in many instances, high returns are sought to compensate for the uncertainty in the country's legal and commercial system. Therefore, there is a direct financial benefit to government in providing as much

certainty as possible in the legal, commercial and regulatory regime within which privately-owned entities will operate.

3.3 Government goals will not simply be a function of government policy, but also of where government wants the enterprise to be in the market which it is serving in the short, medium and long term. Key goals are to ensure that: (a) all reasonable demand for services of the regulated utility are met; (b) the interests of consumers in terms of price and quality of service are protected; (c) the economic efficiency of the regulated enterprise is achieved; (d) direct government intervention in the operating or investment decisions of the company are minimized; and (e) interests of investors are protected by encouraging cost efficiency, a reasonable return on capital and preventing expropriation of investment.

3.4 **Transparency.** Transparency of accounts and charging can go a long way to achieving many of these goals. In particular, separation of accounts in vertically or horizontally integrated industries (e.g., water/sewerage or generation/transmission/distribution) is a major step towards securing cost efficiency. Unbundled accounts highlight what the costs are and where losses are made, together with the extent of cross-subsidy between the different activities of the enterprise.

3.5 Where competition is being introduced into only one sector of an industry (e.g., in downstream gas supply) alongside an existing vertically integrated utility, operating both in that sector and in the next sector down (e.g., in gas supply and transportation), the need for transparency is particularly acute. In such circumstances, it is only through transparency that potential investors can be assured that they can play on "a level playing field" with the existing vertically integrated utility.

3.6 Transparency in charging is also essential to ensure that competition is fair. For example, where competing generators are seeking connection to a transmission or grid system, it will be important for them to be satisfied that they are being offered the same terms and conditions as their competitors. Further, if there is a requirement that all consumers are offered services of any regulated enterprise on a non-discriminatory basis, transparency will also be a pre-requisite for achieving this.

4. Industry Structure, Competition and Regulation

4.1 **Structure.** Industry structure is the single most important determinant of the kind of regulation that is appropriate. A regulatory approach that may serve a useful purpose under one industry structure may be unnecessary or even counter-productive in another. Regulation also reflects the degree of **competition** that is present in the industry. Competition is far from being a panacea, particularly in the context of essential industries, but if the customers already have a choice of supplier (however limited), then there is an argument that the need for price regulation, at least, could be reduced. As Mr. Charles Stallon, a former Commissioner of the Federal Energy Regulatory Commissioner (FERC) in the US says "competition is not a state of nature — it needs rules and the power of government to protect it."

4.2 In formulating a regulatory regime, other important issues and considerations are: (a) whether and where new competition is going to be introduced and where monopoly power will be retained; (b) what sorts of market mechanisms are going to be used in the competitive sectors; (c) what sort of regulatory regime will be used to govern and protect the non-competitive sectors and competitive sectors; (d) the extent to which the industry is vertically or horizontally integrated. In a vertically integrated business, there is more scope for hidden inefficiency, e.g., there may be cross-subsidy between the different businesses of the utility; and (e) ease of entry and exit into the industry. Where barriers to entry are high, the scope for monopoly abuse is correspondingly increased, for example, by encouraging predatory pricing.

4.3 **The Cost of Regulation.** Regulation is not costless. There is, of course, the obvious cost

of the regulatory commission's budget (which in many countries such as the UK and Argentina is met by the regulated enterprises). However, there is a potentially more important cost. Whenever economic behavior is controlled, it will inevitably be changed or distorted. The rate of return or cost of service regulation, for example, may result in too much capital investment and may encourage utilities to be lax over cost controls or even deliberately inflate them. Alternatively, regulating prices on an RPI-X basis may result in too little investment and a poorer quality of service. In creating a regulatory system, it is important that distortions on investments and operating decisions of the enterprises involved be minimized. At the very least, the guiding principle should be that the economic costs of regulation never outweigh its benefits.

5. Regulatory Independence

5.1 It is recognized that no regulator or regulatory commission can be totally independent of political considerations. Nor should it be. It is, after all, the function of any government to establish the broad political and economic goals for the country, which will inevitably include goals relating to essential industries. The issue, then, is a question of degree. Once the structure is in place and broad policy goals have been established, these goals are more likely to be achieved if government restrains itself from getting heavily involved in the investment and operating decisions of the sector's various commercial entities.

5.2 This would require keeping the involvement of bureaucrats in an enterprise to a minimum, as recognized by the government's Seventh Plan, establishing a policy that it should not engage in activities that can be better managed by the private sector. Those involved most closely in the day-to-day decisions of the regulated enterprise will almost invariably be in a better position to take necessary investment and operating decisions. The art of regulation is to know when to regulate and when not to regulate.

5.3 **Incentives are Better Than Controls.** The overall performance of the enterprise is likely to be better if the regulator can establish incentives to induce good performance rather than trying to mandate specific operating and investment decisions. In this way, regulation can be a tool to achieving better management and more accountability in an enterprise. Mandating a specific decision is sometimes referred to as conduct regulation. It is usually unsuccessful where no business or economic incentives exist that would indicate that the specific decision be taken (like transmission access in the US).

5.4 **Location of the Regulator.** The question of where to locate a regulator or regulatory commission will, therefore, be a crucial one. There are usually three basic options:

(a) leave regulatory responsibilities dispersed within various existing ministries or bodies;

(b) create a separate regulatory division within an existing ministry or body; or

(c) create an independent regulatory body that would be separate from existing government ministries and other governmental bodies or authorities.

5.5 We recommend the establishment of an independent regulatory as the best solution, since it would best avoid micro managing the investment and operating decisions of the various state enterprises. Government has a long and commendable tradition of not interfering in the day-to-day decisions of the main state enterprises. The creation of an independent regulator or regulatory commission would institutionalize this tradition of minimal political interference.

6. Regulatory Accountability

6.1 In all countries with significant regulatory regimes, there is debate about "who regulates the regulator?". No regulator or regulatory commission can be totally free from political considerations or government policy. The regulator will have been appointed by government and must reflect its overall priorities. The tasks allotted to the regulator must be performed in an efficient and satisfactory manner. It could be argued that the regulator should be accountable to all the interests he must balance, the Thai people, the enterprise and the enterprise shareholders or investors. However, this would put him in an impossible position, and achieving a balance of interests would never please everyone all the time.

6.2 In our view, the regulator should be accountable to government. The government, after all, appoints the regulator and sets the boundaries of his powers and the scope of his duties. Further, of all these interest groups, the government has the broadest political and social interests in mind, and is best able to achieve the necessary degree of balance and overview.

6.3 **Achieving Independence and Accountability.** Achieving both independence and accountability in regulation is a careful balancing act in itself. Independence may be achieved by:

(a) setting out clearly the powers and duties of the regulator or regulatory commission in the primary legislation; and

(b) appointing a regulator or commission members for a fixed term, during which they may only be removed in limited circumstances, such as incapacity or misbehavior.

6.4 During the period of his appointment, the regulator or commission member should be free from political interference (in a similar fashion to the judiciary where independence is enshrined in the Constitution of Thailand) although, depending on the length of appointment, it is inevitable that he will have one eye on reappointment. Independence may often be promoted by appointing a senior (or even retired) businessman or academic rather than a career bureaucrat, since they would be less dependent on the appointors. The US experience with regulators elected by the people is mixed. It seems likely that they will avoid unpopular but necessary decisions (e.g., to increase tariffs) in the run up to an election. An election is also an expensive process to carry out and is, therefore, not recommended.

6.5 Where a commission rather than a single regulator is in place, then staggering the terms of office of commissioners will lend continuity and a broader political blend since appointments would span governments.

6.6 Achieving accountability is difficult without creating a situation where the regulator is directly answerable to the minister or government appointing him. A specific reporting requirement, at least in the form of a published annual report, would be a first step.

6.7 Transparency can be achieved by: (a) imposing time limits on regulatory decision-making; (b) requiring the regulator to consult with affected interests, consumer groups, and government bodies in particular; (c) requiring the regulator to give reasons for his decisions (not a striking feature of the UK or US regimes); and (d) requiring the regulator to publish his agenda, planned deliberations, activities or issues that are to be addressed. In this way, the interests of the regulator, the regulated enterprise and the government could all be better served. Regulators usually resist transparency on the basis that they do not want to have their authority undermined by being proved wrong.

6.8 In England and Wales, scrutiny of regulator performance is carried out by the all-party Parliamentary Public Accounts Committee (PAC), which may require the regulator to appear in person and answer detailed questions. As the PAC is a cross-party committee, there is less direct political influence. The activities of regulators in England and Wales in terms of performance and value for money are also subject to detailed scrutiny by the National Audit Office, the UK government's independent financial watchdog, which reports on the performance of public bodies. There is a similar body in Thailand within the Ministry of Finance.

6.9 When establishing the independence of the regulator in any regulatory regime, it is important that the duties and powers of the minister responsible for appointing the regulator be clearly defined and consistent with those of the regulator. Such decision is one of the best ways of restricting political interference in a regulator's activities. A minister would be directly accountable to Parliament for performance.

7. A Single Regulator or a Regulatory Commission?

7.1 Any new regulatory regime must tackle the issue of whether to have a single regulator (following the British model) or a regulatory commission (following the US model). The benefits of a single regulator are:

- decisions can usually be made more quickly than would be the case if they were made by committee;
- transparent and direct accountability could be achieved (committee structures tend to mask or lack accountability);
- there might be greater certainty; and
- clarity and direction of political and economic purpose (committees are more likely to have conflicting motivations and political affiliations).

7.2 A single regulator poses these drawbacks:

- a single regulator may be more subject to political influence and may have a strong interest in securing tenure of office;
- it is doubtful whether one individual should be able, single-handedly, to control the fate of an industry; and
- the effectiveness of the regulatory regime will be at the mercy of the personality, preoccupations and interests of the regulator.

7.3 **Benefits of a Commission.** By contrast, if a commission were created, it is less subject to political interference and the terms of office for the regulators can be staggered. Further, it is possible (and highly desirable) to have commissioners with different backgrounds (accountancy, engineering, economics and law) to broaden and deepen the intellectual input into regulatory decision-making. Given Thailand's tradition of committee style and multi-disciplinary decision making, this option seem preferable for cultural reasons. Another advantage of a commission is that there is safety in numbers. Any individual can be manipulated by a special interest group, a regulated enterprise or the government. It is harder to embark on a manipulation process where more than one person is involved.

7.4 **Disadvantages of a Commission.** A commission also have some inherent disadvantages:

- reduced direct accountability.
- greater potential for conflict.
- delay in decision-making.
- compromise or sub-optimal decisions.
- increased regulatory uncertainty.

7.5 **The Use of Existing Organizations.** The danger of using existing government bodies to regulate industries lies in the potential for political manipulation. Regulation and private sector investment will not be successful unless they can be protected from the political pressures of each successive government. Further, a feature of regulation by government departments is the frequently overlapping and confusing responsibilities of departments in relation to the same industry. For example, in the Seventh Plan, there is some confusion on the electricity regulation (Chapter 6, Section 3.3.2 (2)); it seems to give primary responsibility to NEPO by recommending that it be upgraded to a permanent department within the Office of the Prime Minister. However, it also makes mention of reassigning a "regulatory role" to the National Energy Administration within the Ministry of Science, Technology and Energy. Adding to the confusion is the fact that EGAT's investment plans require approval by several departments within the Ministry of Finance. Simplicity and certainty of regulation are essentials to a successful regime. These are best achieved by an independent regulatory body with clearly defined responsibilities. This will create a single point of entry for the private sector to their relationship with government along the lines of the concept of "one stop shopping".

8. One Regulator for All Sectors?

8.1 An important question is whether it would be better to have one regulator or regulatory commission for all related industries, or individual commissions for each industry. The main issues are: (a) given the different natures, needs and stages of development of each industry, how far it is possible to apply common regulatory rules and methodology to each sector?; (b) whether it is desirable to place so much power in the hands of one regulator or regulatory commission; (c) whether a single regulator or regulatory commission for all sectors will have sufficient in-depth knowledge of each sector; and (d) the extent to which it is important to avoid inconsistency in decision making between sectors.

8.2 At state level in the US, utility commissioners regulate more than one sector and, on the whole, the experience is satisfactory. Perhaps the reason for this is that all sectors are bound by what is called the "Common Regulatory Pact"; they are all at a mature stage of development and they share a common regulatory methodology. At the federal level, the commissions are more specialized. In view of the interstate nature of the regulation and the national perspective, a cross-sectoral approach would probably be too cumbersome and bureaucratic. For example, the Federal Energy Regulation Commission (FERC) regulates electricity and gas.

8.3 There are clear advantages for regulating all the energy industries or all the transport industries together in order to achieve a coordinated policy and to optimize the best use of natural resources. There are also advantages in cross-fertilization of ideas and regulatory solutions from one sector to another, as some of the needs and goals of the regulatory regime will be similar. With good internal organization, sufficient and in-depth knowledge of a sector could be achieved. The danger of regulating all sectors is that there could be a tendency to assume that a common regulatory methodology or a particular regulatory solution is applicable to more than one sector when in fact there are good reasons for different treatments, methodologies or solutions.

8.4 In Thailand, however, given the very different stages of development and needs of each sector, not to mention their diverse nature, it seem less justifiable to establish a regulatory commission that deals with all sectors.

8.5 In order to achieve some consistency, the choice would lie between a single regulatory commission capable of extension from, for example, telecommunications (where the need for a regulatory regime is already evident) to electricity (where the need is clear but a structure must be determined) and then to gas, transport and water, if and when appropriate. The alternative is to replicate the chosen model for a regulatory commission and, when the need arises, to introduce a new regime for a particular sector. Ultimately, there could be separate telecommunications, energy and transport commissions, for example. The US (at a federal level), the UK, Malaysia and Argentina have adopted a sector-by-sector approach. However, this latter approach may give rise to political problems in that it may appear to the state enterprises and their staff associations or trade unions that government has singled them out for special treatment in a run up to privatization, even though privatization may not be planned in the short-term.

9. Organization of the Commission

9.1 The optimum number of commissioners is a small, odd number (three or five). Even numbers can, potentially, create deadlocks which prevent or delay decisions being made. If a chairman is given a second or casting vote in order to deal with deadlocks, there is usually perceived to be too much concentration of power in one person. A large number of commissioners would make the decision process long and unnecessarily bureaucratic. The time taken to conduct meetings is usually proportionate to the number of people present. Large numbers tend to engender the creation of factions and entrenched positions.

9.2 The main concern with the organization of a commission is to ensure that the decision making is carried out with the benefit of: (a) the best specialist knowledge of the enterprise or sector in question; and (b) cross-fertilization of ideas from informed specialists and generalists in other sectors. To achieve the ideal balance of specialist and generalist knowledge being applied in the decision and policy making process, it is always better to establish a simple and flexible structure rather than one that involves many working groups and committees where reporting lines and accountability can become extremely unclear. The only groupings suggested is by expertise in a particular state enterprise or sector legislation (water, electricity, gas, telecommunications, transport). The members of the specialist working groups would deal with the day-to-day issues affecting the sector with which they are concerned. They would be appointed on the strength of their background experience and specialist knowledge and not to represent a particular ministry or governmental body. Their method of working should not be over-specified or bureaucratic and they should have clear reporting lines and accountabilities.

9.3 It would be the task of the specialized working groups to report to the board or panel of commissioners themselves and also to a single policy group covering all sectors. The advantage of having a single policy group would primarily be:

(a) the ability to stand back from the specialist knowledge and advice with informed advice and observations from other disciplines, thereby achieving the necessary cross-fertilization of ideas;

(b) some consistency of treatment and regulatory methodology across all sectors could be achieved; and

(c) an integrated and coordinated policy relating to all aspects of the sector could be achieved.

It goes without saying that in policy making in particular, but also regulatory decision making in general, it is vital that the decision making is of the highest possible quality. The need for a coordinated policy is vital in order to optimize the natural financial and human resources involved in the sector (which will, of necessity, be limited).

9.4 The commission would need its own legal staff and, as recommended in the previous paragraph, there should be a single legal department covering all sectors.

9.5 **Appointing the Right People.** The key to good regulation, as with everything else, is the appointment of the right people with the best available background experience. It is also important that the appointments should not be political at any level within the Commission. Terms of office should be staggered for a sufficiently long period to achieve stability and consistency in the decision making process so that the government, the regulated enterprise, the consumers, the investors in the regulated enterprise and potential private sector lenders and investors in infrastructure projects in Thailand can all have confidence that the interests are being correctly balanced and the regulatory risk is minimized.

9.6 At the beginning there will be, inevitably, a shortage of trained manpower for regulatory positions. Part of the problem can be overcome by setting out clear powers and duties in the legislative framework of the regulatory regime so that it is clear what the tasks and priorities are. It would also be helpful, in the initial stages, to enlist the help of some experienced international regulators or regulatory consultants.

9.7 **Abuse of Power.** It is always a concern, whether there is a single regulator or a regulator commission, that the regulator will somehow abuse his powers or fail adequately to balance all the affected interests. Prevention is always better than cure, and it does not seem sensible to rely purely on some process of administrative law to establish a right of appeal against the decision of a regulator, or simply to remove a regulator from office.

9.8 At a more practical level, abuse of power can be addressed by imposing clear duties on the regulator such as in the UK utilities legislation. For example, the Director General of Electricity Supply is required to: (a) secure that all reasonable demands for electricity are satisfied; (b) secure that the regulated enterprises are able to finance the carrying on of their activities; (c) protect interests of consumers in respect of prices charged, continuity of supply and quality of service; and (d) promote efficiency and economy, and so on. These duties are very general and are open to interpretation by the regulator. In some cases, the duties may overlap or conflict with each other because, of course, the interests that have to be balanced inevitably conflict to some extent.

9.9 It is tempting to over-specify the duties of the regulator, but there is considerable danger in constraining the regulator, who must be in a position to regulate in what, by definition, is a very fast changing world for state enterprises and for Thailand. A better approach is to set out certain specific, but fairly general, duties indicating priorities (primary and secondary duties as in the UK legislation, for example), but subject to certain overriding principles that regulatory decisions must be even-handed and fair. This approach, coupled with the requirements as to transparency of the regulatory process which were recommended in section 6, should go a long way in minimizing the abuse of power. The question of appeals from the decision of the regulator is dealt with in Section 14.

9.10 **Experience in the UK.** The most developed experience of single regulators and regulatory commissions is in the UK and US. The adoption of a single regulator or director general for each sector in the UK is probably an accident of history. When the privatization of the telecommunications industry was undertaken, it was not clear at that time whether it would be possible or, indeed, whether it was on

the political agenda, to privatize the other utilities. There has been much talk of creating a commission to regulate electricity and gas (as opposed to having separate Directors General as at present), as they are very inter-related, primarily because the electricity industry is a large purchaser of gas. The current government does not intend to make any changes, but the Labour Party sees distinct advantages.

9.11 A brief but critical overview of the differences in style and functions of the UK regulators in the water, electricity, telecommunications and gas industries are explained below.

(a) **Water.** The Director General appears to be extremely interested in all activities, even the unregulated activities of the privatized water companies. He exercises all of his powers and even some that he does not technically have. For example, he has issued guidelines, relating to unregulated activities overseas, where he is asked for undertakings that management time will not be deflected from the core domestic businesses. The water companies feel over-regulated, but the consumer is also unhappy as prices for water have increased dramatically over recent years, largely resulting from the need to make the major investments in infrastructure which many previous governments have managed to avoid.

(b) **Telecommunications.** The Director General has been preoccupied with introducing competition into the telecommunications sector. From the point of view of the consumer, it has taken him a long time to achieve a real change in culture in British Telecom, and he has had to introduce a penalty system in order to achieve a real improvement in the quality of service at a domestic level.

(c) **Gas.** The Director General appears to have entered into a personal vendetta against British Gas, which may have been aimed at achieving the restructuring of British Gas (which many believe should have been undertaken before it was privatized as an integrated monopoly). There has been a long, time-consuming and expensive reference to the Monopolies and Mergers Commission (at the expense of both the shareholders and the consumers), which might have been avoided by negotiation. However, the Director General has achieved a reduction in gas prices and significantly improved terms offered to the industrial market.

(d) **Electricity.** The Director General of Electricity Supply is often said to keep the lowest profile of all. Part of the problem may not be of his own making. The electricity market is governed by a commercial agreement under which he has very few rights and powers. The legal and regulatory framework in which he is required to operate does not allow him to cut across the principles of ordinary contract law or to re-write the contracts as he would like to see them.

9.12 The conclusion is that the regulatory treatment in the different sectors in the UK is perhaps more different than warranted by differences in the states of development and the nature of the regulated industries would dictate. Regulation has its costs, and these costs will either be paid for by the consumer or the investors/shareholders in the regulated industries. So far, there has not been much criticism from the consumers concerning inconsistency of treatment. However, there is growing dissatisfaction on the part of major institutional investors in the regulated industries, although, perhaps, less from the point of view of inconsistency of treatment between one industry and the next and more from the point of view of simple regulatory uncertainty. The main point is that they invested on the basis of a description of the regulatory regime in a prospectus which is now proving to be very different in practice. It is also curious that the investors rather than the consumers are shouting more loudly because share prices in the regulated utility industries have performed extremely well, presumably at the expense of the consumer. Clearly, regulatory risk or uncertainty is of increasing concern to potential investors, even where the framework is relatively

stable.

9.13 While consistency of regulatory methodology or treatment is a good idea in theory, it seems to be of marginal value in practice, primarily because the needs, market conditions, states of development and diverse natures of the sectors are all so different. However, as regulation has its cost, ultimately inconsistency of treatment is going to be an issue for investors and consumers. Inconsistency, of course, creates uncertainty and regulatory uncertainty is of the utmost concern to government, consumers, the regulated enterprise and, above all, private sector investors in infrastructure. Everyone must have confidence in the regulatory regime.

9.14 **Experience in Norway.** The Norwegian regulator of the private sector energy industry is NVE (Norwegian Water Resources and Energy Administration). It regulates the developed, sophisticated and interactive markets in electricity, gas and water. Norway has very considerable hydro generating capacity. The regulatory regime is relatively light-handed and appeals from NVE's decisions can be made to the Minister of Energy. For example, an appeal is currently being considered on a decision by NVE not to require a transmission line to be undergrounded.

9.15 **Argentina.** Argentina put in place new regulatory regimes for most of its industries before privatizing them. It has adopted a commission-style approach on a sector-by-sector basis i.e., telecommunications, energy, water etc. The regulating body is set up by legislation and its powers and duties clearly specified. Five commissioners hold office for a period of 5 years. Accordingly, there is independence in theory, although the staffing by civil servants is undermining this to some extent. The legislation also undermines the independence of the regulatory body by placing it under the "ambit" of the relevant government ministry. It is too early to draw any conclusions from the Argentine experience.

10. Division of Responsibilities between the Regulator and Government

10.1 As has explained above, no government regulatory commission can be totally independent of political considerations. The role of government in relation to a regulated industry is an important one, that is, to set the broad strategic and political framework for the industry. For example, for the power sector, government policy decisions will include:

(a) the type of fuel that will be used, including the degree of imports acceptable;

(b) environmental factors and the extent to which these should be taken into account in setting targets for industries;

(c) the extent to which provision for security of supply is necessary;

(d) social policy objectives, for example, whether all consumers be charged at the same rate, including those in rural areas — a universal service obligation — a disconnections policy or rebates; and

(e) macroeconomic policy objectives, for example, whether the output of certain industries or the provision of services should be publicly subsidized.

10.2 The regulator, by contrast, will be concerned with narrower microeconomic objectives within the political framework set by the government. These will generally include: (a) price setting; (b) quality of service monitoring; (c) monitoring compliance with public service obligations; (d) dealing with customer complaints; (e) ensuring fair and open competition wherever possible; (f) monitoring

investment in and repair of infrastructure; and (g) third party access to networks, grids, pipelines, etc.

11. How are Regulatory Rules Created?

11.1 **Legislation.** Regulatory regimes are best created by primary legislation. Indeed, we know of no cases where an effective regulatory regime has been created without it. Primary legislation sets the framework for the industry and will generally reflect the overall political objectives of the government of the day. The responsibilities and powers of the relevant minister and the regulatory commission or single regulator will usually also be an integral part of the regime as well as enabling subordinate (delegated) legislation to be promulgated in relation to specific issues. The powers could also include the authority to issue licenses to which conditions can be attached. These conditions are simpler to set in the details of the regulatory regime in language that is simpler to write than in legislation (whether primary or subordinate). Legislation is usually written in language of general application, whereas a regulatory regime will need to be very specific to the needs of the industry and the separate participants. A license is, therefore, a vehicle to introduce specific requirements.

11.2 **Licenses.** Licenses are often a key feature of the legal framework under which a regulated industry operates. A license will usually define the relationship between a particular regulated company and the government. Although operating without being duly licensed will usually be an offence, this is not the primary enforcement tool. Indeed, if a license has to be revoked, it will probably mean that major areas covered by a license may include: (a) price regulation; (b) quality of service; (c) investment obligations; (d) third party access to networks; (e) infrastructure maintenance obligations; (f) transparency of accounts and charging methodology; (g) cross-subsidy issues; and (h) restriction on disposal of assets. In other words, it will cover the areas within the competence and concern of the regulator, rather than the government.

11.3 **Concessions.** Alternatively, the regulatory regime for a regulated industry may take the form of a concession agreement supported either by specific primary legislation or a developed body of administrative law, as in France. Concession agreements are most commonly used for the development of new infrastructure projects such as build-own-operate (BOO) or build-own-operate-transfer (BOT) schemes for roads, bridges or water treatment or sewerage plants.

11.4 Concession agreements perform an analogous role to licenses in that they define the service operator's rights and obligations for the length of the concession period. Sometimes the word "license" and the word "concession" are used to mean the same thing. For example, an Argentine concession agreement has all the characteristics of an English license. However, they may also operate as a contract between the service provider and the government, setting out allocation of risk for matters such as construction, environmental liabilities and financing.

11.5 **Regulator's Decisions.** Other important forms of regulatory rules include "case" law built up from the regulators' decisions and their "interpretation" of various provisions in legislation or licenses. Such decisions may, once the regulatory regime is well established, form a significant body of jurisprudence in their own right.

11.6 Other types of regulatory rules may include: (a) codes of practice; (b) agreed procedures; (c) performance contracts (between the government and the regulated enterprise); (d) management contracts; and (e) lease and operate (affermage) contracts.

11.7 In the water industry in France, for example, the only means of regulating all of the issues referred to in Section 12.2 is by means of concessions and contracts such as these, supplemented by a

well developed body of administrative law. Some of these may be drawn up by government in standard form, others may be heavily negotiated between the parties, but certain documents may be better drawn up implemented by the industry itself, subject to regulatory oversight.

11.8 For example, the technical, day-to-day operating procedures in the electricity industry in the UK are drawn up by the industry, subject to minimal regulatory oversight. In the US and Portugal, the same approach is taken with even less oversight. The view is taken rightly, that the specialist knowledge of what is needed rests with the industry. However, in Malaysia, the Director General is undertaking the review, but has asked for outside assistance. In Argentina, the rules are entrenched in subordinate legislation and are thought to be inflexible and difficult to change to reflect the daily needs of a dynamic system. In a sense, the regulator can delegate day-to-day regulatory activities to an industry participant such as the network operator subject to certain rules and monitoring by the regulator.

12. Enforcement of Regulatory Rules

12.1 Regulatory rules may be enforced in a number of ways:

(a) **by the regulator:** this requires giving the regulator powers to decide disputes between parties (particularly in relation to contracts for connection to or use of networks); to amend and revoke licenses in the event of non-compliance; to set performance targets, obtain information and monitor activities closely;

(b) **by the government:** this involves a department of government fulfilling some of the same functions as the regulator, but with the disadvantage that it may severely undermine the independence of the regulator and the regulatory regime;

(c) **by the courts:** e.g., by fines and injunctions; the courts usually have the disadvantage of being slow and uncertain; the courts may also lack the specialist knowledge required to give the best decisions;

(d) **by the petitions councils;** or

(e) **by special administrative tribunal:** such a body may be quicker than the courts and have the requisite specialized industry knowledge, but the need for independence of the tribunal is even greater than that of the regulator and may be difficult to achieve.

12.2 **Regulatory Process.** The way in which the regulator or regulatory authority exercises powers and duties is always a matter of some debate. In the US, the process is criticized for being over legalistic and formalized. There are many judicial type hearings and formal filings of evidence. In the UK, the process is almost the reverse and much of the regulation is conducted over the telephone, by letter and by discussions in meetings between the regulators, the regulated companies and the consumer interests. Under English administrative law principles, the process, if it is abused, can be the subject of judicial review although, in the ten year history of modern utilities regulation, this has never happened. There have, instead, been references on specific regulatory issues to the minister concerned.

12.3 Given the Thai culture and method of decision making, we recommend that the lighter, more informal style of the UK would be more appropriate for Thailand. It is also much less expensive and bureaucratic. It may be advisable to allow appeals to the Supreme Court for judicial review, which

is a mechanism to question the process rather than the decisions on particular issues.

12.4 The UK system is a product of the technique of imposing a regulatory regime through licenses which can be made very specific to the needs of a particular industry or regulated company. Even where formal regulatory approval is needed for particular action or where a license modification is needed, the license can be drafted much more easily than is the case with primary or secondary legislation, to create a simple and speedy process to ensure that no unnecessary time or money is spent on the exercise. The license can be used as a mechanism to create transparency in the regulatory process on the lines recommended in Section 6. It can also impose deadlines and timetables for the various processes.

12.5 Another important and widely accepted principle is that there needs to be some level of participation in the regulatory process by industry stakeholders and consumers, although there is a legitimate caution that this should not be carried too far. Ultimately, it is a question of achieving a balance. If there are rules as to the transparency of the regulatory process or the so-called "sunshine" or open meetings legislation, it is possible to dispense with a legalistic or over judicialized regulatory process. However, in the UK the criticism is made that the Directors General take the informality to an untransparent extreme. It is possible for the regulator to go into a series of essentially private negotiations with the regulated entities and, indeed, impose some level of confidentiality on them. At the end of the process, the regulator issues his decision, but need not consult the public about it. There is, however, considerable pressure on the UK Directors General to consult widely. The current UK process can provide for a high level of expedition and efficiency in the decision making process, but it seems largely to preclude transparency and participation, at least until the later stages of the process.

12.6 **Appeals.** In establishing a regulatory regime, consideration also needs to be given to whether a right of appeal should be given against a regulator's decision and, if so, to what body such an appeal should be directed. Provided that the regulator's powers and duties are clearly specified in the legislation, it may be possible to rely on the general law to safeguard against abuses of the regulator's powers. Alternatively, it may be desirable to create a full blown appeals procedure. In the UK, utility companies who are unhappy with license amendments proposed by their industry regulator have the right to refer them to the MMC, which can only make decisions on public interest grounds. However, utility companies will generally only be willing to use their rights of referral as a last resort. Companies will usually be anxious not to get on the "wrong side" of their regulator.

Thailand

Private Sector Participation and Improved Efficiency of State Enterprises

Key Legislation on Privatization

(A) Royal Act on Private Participation in State Affairs (BE 2535)

(March 11, 1992)

In the 47th year of the present reign, H.M. the King Bhumibhol Adulyadech instructed to announce that it is appropriate to promulgate a law on Private Participation in State Affairs. As a result, this Royal Act was enacted by the National Assembly serving as the Parliament as follows:

Article 1. This Royal Act is called "the Royal Act on Private Participation in State Affair B.E. 2535"

Article 2. This Royal Act shall be in force on the date following the date of announcement in the Royal Gazette.

Article 3. All laws, rules, regulations, cabinet resolutions and other orders already enacted or conflicting with this Royal Act shall be superseded. This Royal Act shall be applicable to private participation in state affairs except for concessions by the law on petroleum and minerals.

Article 4. The Prime Minister and Minister of Finance are to implement this Royal Act and be empowered to issue ministerial rules to ensure the implementation of this Royal Act. Such ministerial rules are to be in force after being gazetted.

Chapter 1 - General

Article 5. By this Royal Act,

"Project Owner" means a government agency which is a department or equivalent, a state enterprise, a state agency or local administration owning the project.

"State Enterprise" means a state enterprise by the Budgetary Procedures Law.

"Local Administration" means local administration by Government Administration Law.

"Reporting Ministry of Government Units means a ministry or a bureau with reported government units by the law on improvements of ministries, bureaus and departments.

"Reporting Ministry of State Enterprises."

1. For limited companies, it means Finance Ministry or a ministry or a bureau authorized to exercise their share holder's rights for Ministry of Finance.

2. For non-limited companies, it means a ministry or a bureau which the minister takes care of by the law on state enterprise setup or the minister responsible for such state enterprise.

"Reporting Ministry of Local Administration" means Ministry of Interior.

"State Affairs" means affairs that one or any of the government agencies, state enterprises, government units or local administration empowered by law, or those needing to utilize natural resources or assets of any government agencies, state enterprises, other government units or the local administration.

"Project" means an investment in state affairs whose fund or assets exceeds a billion baht or more an accordance with the royal decree.

"Joint Venture" means joint investment with private sector by any means or sole private investments by permission or concession or grant of rights in any manner.

"Committee" means the committee that selects the private sector to participate by Article 13.

Chapter 2 - Project Proposal

Article 6. The project owner desiring private participation in any project is to propose to the reporting ministry a detailed study and project analyses of the items required by the Office of the National Economic and Social Development Board.

Article 7. If the project by Article 6 has to finance assets that exceed five billion baht, the project owner should hire a consultant, who must prepare a separate report following requirements established by the office of National Economic and Social Development Board and others matters as deemed appropriate by the consultant. The project owner shall also send the consultant's report for consideration by Article 8. The consultant by the first paragraph must be qualified according to the requirements of the Minister of finance announced in the royal gazette.

Article 8. The reporting ministry of the project owner shall review the study results and project analyses and present a proposal to the following government agencies:

1. New projects should be proposed to the Office of National Economic and Social Development Board.

2. Projects with existing assets should be proposed to Ministry of Finance.

Article 9. The Office of National Economic and Social Development Board or Ministry of Finance shall proceed as follows:

1. New Projects:

(a) If the Office of National Economic and Social Development Board agrees with the project a proposal shall be made to the Cabinet for approval in principle.

(b) If the Office of National Economic and Social Development Board disagrees with the project, the project owners will be notified. If the project owner disagrees with Office of National Economic and Social Development Board additional explanations shall be presented to the reporting minister for a Cabinet review and decision, by presenting the requirement of the Office of National Economic and Social Development Board (Article 6) as well as other information deemed relevant by the project owners.

2. Projects with Assets.

(a) In case the Ministry of Finance agrees with the project a proposal shall be presented to the Cabinet for approval principle.

(b) In case the Ministry of Finance disagrees with the project, the project owners shall be so notified. If the project owner disagrees with the Ministry of Finance, additional explanations shall be presented to the reporting minister for a Cabinet review and decision, by presenting the information required by Article 6. to Office of National Economic and Social Development Board as well as other information deemed relevant by the project owners.

The Office of National Economic and Social Development Board, and the Ministry of Finance shall complete the review of projects by this Article within sixty days after their receipt. After this period, the Office of National Economic and Social Development Board and the Ministry of Finance are held in agreement.

Article 10. In case a government agency, a state enterprise, another government unit or local administration is to be engaged with state affairs and the Cabinet approves private participation, such agency shall proceed along the Cabinet resolution and comply with this Royal Act.

Article 11. For any project costing less than one billion baht or less than the amount increased by the royal decree, the Cabinet may allow implementation by this Royal Act.

Chapter 3 - Project Implementation

Article 12. After the Cabinet approves a project, the project owner shall draft an invitation for private participation or the project scope and conditions required for inclusion in the joint venture agreement.

Article 13. The project owner is to appoint a committee comprising representatives of the reporting ministry including a permanent civil servant, a state enterprise employee, an employee of another government agency or a local administrator, whichever the case, as chair person, Ministry of Finance, Judicial Council, Supreme Public Prosecutor's Office, Office of National Economic and Social Development Board, Budget Bureau and two other ministries and no more than three qualified representatives of the project owner as members and as member and secretary.

Article 14. The committee by Article 13 shall have the following powers:

1. approve the invitation draft for private participation or the draft of project scope and requirements of the joint venture agreement.

2. Determining guarantees for bidding and agreements.

3. Selecting the private sector to participate.

4. Other related undertakings as appropriate.

Article 15. Public invitations, joint venture proposals, public invitations methods, committee review methods which are bidding, and the bidding and contractual guarantees must contain the details required by ministerial rules.

Article 16. In the process of selection, if the committee agrees not to implement bidding methods, with the

project owner agreement, this shall be reported to the Office of National Economic and Social Development Board and the Ministry of Finance and if both agree, cabinet approval will be sought. If the project owner disagrees which the committee opinions a report shall be presented to the Office of National Economic and Social Development Board and the Ministry of Finance, and if both agree or either of them opines differently a bidding method should be followed.

Article 17. In case the Cabinet approves the project by Article 12 costing or with assets exceeding five billion baht, the project owner shall require the qualified consultant (Article 7) to draft the project scope and prepare evaluation systems for the private participation in such project.

Article 18. If there is no response to the public invitation on private participation, such invitation shall be canceled and repeated. In case of a single or multiple responses, one of which satisfies the description of the joint venture proposals on Article 15, the contracting can be completed provided the government will benefit.

Article 19. At a committee meeting, at least three-fourths of the members must be presented to be a quorum. Resolutions approving selection and negotiation must be voted in favor by at least three-fourths of the attendees. A committee member represents one vote In case of a tie-up, the chair person will rule.

Article 20. The Office of Supreme Prosecutor shall review the joint venture agreement prior to affixing signatures.

Article 21. The committee shall propose the selection results, justification, issues discussed on government interests, agreement draft and other papers to the reporting minister for consideration by the Cabinet within ninety days after the committee decision. If the Cabinet disagrees, the matter will be back to the committee for revision and the results will be proposed to the Cabinet for a final decision.

Chapter 4 - Supervision and Monitoring

Article 22. After contract signing, the project owner shall form a coordinating committee, each of whose members represented by itself as chair person, Ministry of Finance, Office of National Economic and Social Development Board, another agency than itself, joint private sector, reporting ministry and the others, at most three, deemed suitable by it, totalling to not exceed nineteen, as members. The meeting of such committee in Paragraph 1 and the quorum shall be as it requires.

Article 23. The Coordinating Committee will have the following powers:

1. Monitoring and supervision of operations according to the contract.

2. Reporting of activities, progress, problems and solutions to the reporting ministry. Reporting periods shall be as required, but not exceeding once every six months.

Article 24. In case the project owner ignores or does not comply with the obligations in the signed contract, the representative of Ministry of Finance on the Coordinating Committee shall report this to the Ministry of Finance for Cabinet review.

Chapter 5 - Provisional

Article 25. Any project participated or implemented by a private sector before this Royal Act comes into effect remains valid, however, all its future implementation shall follow this royal Act.

Anand Panyarachun
Prime Minister

Note The justification for the promulgation of this Royal Act is that most of the present laws on concession or grant of rights to private sector or joint public-private investment define the review authority as a single person or agency, and all important matters with the minister. As a result, the review criteria is uncertain, especially the concession by the Revolutionary Council Announcement No. 58, dated January 26, 1972, most of which does not define methods of compliance. Therefore, the law on private participation in state affairs is required to be enacted to set an approach and enforce the concession or private participation, especially in the project whose investment or asset exceeds a billion baht.

Attachment 1

Guidelines for Reviewing Private Sector Participation Projects

By virtue of Article 6 of the Royal Act on Private Participation in State Affairs B.E. 2535, the National Economic and Social Development Board deems it appropriate for project owners desiring private participation in any project to provide preliminary guidelines on the following matters:

1. **Project Requirements: Proposed projects should study and analyze the followings**

1.1 Policy outline: Study and analyses of compliance of proposed projects with:

National Economic and Social Development Plan

Government Policy

1.2 Socio-Economic State: Study and analyses of advantages and disadvantages for the country's overall socio-economic system.

1.3 Convergence with other projects in the same or different categories

1.4 Organizational Preparation: Study and analyses of preparedness of the government agency that will participate with the private sector on personnel and related rules and regulations.

2. **Suitability of Projects: Preliminary feasibility study and analyses are to be made on:**

- Project location
- Related infrastructure of the project
- Steps and timetable for project implementation
- Technical appropriateness
- Financial appropriateness, such estimated investment expenses, sources of fund and computation of the project financial return.
- Economic appropriateness: Study and analyses of economic gains or returns for the state.

3. **Impact of the Project: Study and analyses on the project impact on, for example:**

3.1 The environment and the community as well as public users.

3.2 Political and national stability.

3.3 Long-term operations of the project owner, such as financial status, administration, organization, personnel and long-term work plan.

3.4 Requirements to comply with other laws, rules and regulations.

4. Role of Private Sector: Study and analyses should be made on the following matters:

4.1 Rational and need for private participation and benefits accrued to the project owner.

4.2 Alternatives for appropriate joint private-public ventures.

4.3 Private sector conditions requested from the government, such as application for investment promotional privileges, land procurement, request for state joint investment and state protection.

Effective from now on. Announced on January 13, 1993.

Signed

Mr. Pisit Pakkasem
Secretary-General

Office of the National Economic
and Social Development Board

(B) P.M. Order Regarding the Selling of Business and Shares of SEs
B.E. 2504 (1961)

Whereas it is appropriate to have regulations on selling off of businesses and shareholdings by the official and SEs, the cabinet has decided to have regulations as follows:

1. This order shall be called "the cabinet's order on selling off businesses and shareholdings by the government. B.E. 2504".

2. This order shall be enforced from now onward.

3. Definitions in the order include:

"selling off" means to sell, exchange, give, let, let-hire-purchase or transfer rights by any means; but does not include temporary share transfers to any individual or a limited company for the purpose of being director in the company.

"business" means an asset or business incorporated into an organization when selling off shall render the seller to be away from that business or liquidation.

"shares" means shares in the limited company or partnership or equity in other businesses.

"official" means official in legal term in relation to budgetary procedures.

"SEs" means state enterprise under the law governing budgetary procedures.

"Ministry in charge of a state enterprise" means ministry or sub-ministry official or state enterprises who owns the businesses or holds shares.

4. Selling off businesses or shares of the official or SEs in the following cases must be in principle approved by the cabinet prior to further action.

(1) the businesses or shares to be sold should be valued more than 500,000 Bht.

(2) the shares to be sold should be valued not more than 500,000 Bht, but selling off shares deprived the business or being SE or

(3) selling off businesses or shares in other cases which the min-in-charge of SE deems it as a policy issue.

5. Selling off businesses or shareholding by the official or SEs in any other cases apart from No. 4 must be principally approved by the ministry in charge of SE before

6. After the approval by its authority in selling off of businesses or shareholdings by the official or SE. The ministry in charge shall nominate a committee members comprising representative from the ministry in charge, MOF, Budget Bureau, NOSEB and from the Office of National Finance Auditing Board as follows:

7. The board of committees shall take responsibilities as follows: -

(1) To recommend the means to sell off with great concerns the SE's benefits

(2) To recommend on the price to sell with great concern to the security, financial status, profit earning efficiency and timing.

(3) To recommend any other issues (if any).

8. Meeting of the Board of Committees shall constitute all the members to constitute the quorum. The meeting's resolution shall be judged by majority, in case of even votes the chairman vote will be made to conclude or finalize the issue.

9. It deems to propose the consideration result to the ministry in charge and to the MOF, whereas the min-in-charge and the MOF final decision shall be carried out subsequently under the rule No. 10.

10. In case that the min-in-charge and MOF can not agree with each other, or in case that businesses have more than 5 million Bht value or the price to be sold is more than 5 million Bht; the min-in-charge have to ask for the cabinet's approval.

Issued on March 17, 1961
By General Thanom Kittikajorn
Deputy Prime Minister

Signed in lieu of Prime Minister